NEW HAMPSHIRE

Strategic Compliance Plan
Improving Energy Code Compliance in New Hampshire’s Buildings

November 2011

The Compliance Planning Assistance Program
Acknowledgements

NH Energy Code Challenge
www.nhenergycode.com

GDS Associates, Inc.
www.gdsassociates.com

The New Hampshire Office of Energy and Planning
www.nh.gov/oep

The Building Codes Assistance Project
www.bcap-ocean.org

www.eere.energy.gov

The American Recovery and Reinvestment Act of 2009
www.recovery.gov

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www.neep.org

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¹ Other states included in phase II of the Compliance Planning Assistance (CPA) project include: Kentucky, Colorado, Michigan, South Carolina, Virginia, Texas, New Mexico, Delaware and Illinois.
This Strategic Compliance Plan constitutes the final phase of the Compliance Planning Assistance (CPA) program, a collaborative effort undertaken by the Building Codes Assistance Project (BCAP), GDS Associates, Inc. and the State of New Hampshire’s Office of Energy Planning (OEP) beginning in August 2010. Over the past fifteen months, this project has mapped out the existing energy codes landscape to identify specific vulnerabilities in widespread code compliance across New Hampshire’s residential and commercial building sectors. The product of this research has been published in a companion piece, BCAP’s New Hampshire Gap Analysis. Now, as a follow on, this Strategic Compliance Plan charts a course forward to achieve 90% energy code compliance by 2017.

The objectives of this Strategic Compliance Plan are two-fold:

- Provide a realistic and effective model of a well-functioning energy codes infrastructure, given the current building code environment in New Hampshire; and
- Based on existing gaps identified in the New Hampshire’s building code infrastructure, propose the critical actions to progress on the path toward 90% energy code compliance with the 2009 IECC by 2017.

**Challenge**

New Hampshire’s buildings represent approximately 52 percent of total statewide energy consumption. As such, productive strategies to advance energy efficiency at the state level should include sound building energy codes to raise the minimum standard of building energy performance. Building energy codes, including the current 2009 IECC, represent a systematic approach to influence sector-wide energy consumption at the point of construction or renovation—the easiest and most cost effective opportunity to address component upgrades over the 40+ year lifetime of the building.

Historically, the state of New Hampshire has adopted statewide energy codes as a minimum standard of performance, but has deferred to local jurisdictions—often short on both funding and capacity—for implementation and enforcement. Under this model, many construction professionals and code officials are left without adequate training and resources to apply and enforce code-compliant building techniques. As a result, New Hampshire consumers may unknowingly be buying homes and buildings which fail to meet existing energy codes.

Energy-efficient homes and buildings are designed to reduce operational energy costs, which improves the standard of living for New Hampshire families and supports the competitiveness of New Hampshire businesses. In aggregate, statewide energy savings also reduce the burden of projected energy demand growth while advancing environmental objectives.

Throughout this Strategic Compliance Plan, BCAP presents the components of a dynamic codes infrastructure that achieves the mutual interests of effective energy codes while limiting the financial and administrative responsibilities of state and municipal governments.

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New Hampshire’s Strategic Compliance Plan is organized around five focus areas that are considered requisite to achieving 90% energy code compliance for buildings: funding, training, outreach, state and local policy, and compliance evaluation. Figure 1 illustrates the collective importance of these five focus areas, and their broader influence on stakeholder behavior.

Given the variability of the political and economic landscape in New Hampshire, this plan does not and cannot identify every activity involved in reaching the 90% energy code compliance target. Rather, New Hampshire can use this plan as a guideline to inform strategic decisions about how and where to allocate funding and resources, with the understanding that new challenges and opportunities may alter the state’s strategy in the future.
Energy Code Compliance Collaborative

The establishment of an energy code collaborative organizes knowledgeable and influential stakeholders around sound energy code implementation and compliance principles. Through coordination among the actors involved, a collaborative can help to shape a functional and effective energy code infrastructure that fits the needs of New Hampshire.

Why an Energy Code Compliance Collaborative?

In order to meet the assurance of 90% energy code compliance by 2017, a strategic plan must be communicated to the state in a well-organized manner which adequately represents the views of stakeholders statewide. As the representative group of the state’s energy codes stakeholders, New Hampshire’s Energy Code Compliance Collaborative (“Compliance Collaborative”) is actively working to develop a vision that can accomplish this goal without placing undue burden on any single constituency. The collaborative format offers a deep understanding of what can be realistically implemented statewide and will be best-suited to prioritize the necessary tasks to the state.

Roles of the Compliance Collaborative

Collective Voice on Code Issues
The Collaborative can provide a collective voice to communicate with policymakers and other stakeholders on a unified front.

Securing Funding for Projects
The Collaborative will be uniquely qualified to align respective viewpoints and advance mutual interests within the code community. Featuring broad representation, it is well-positioned to secure and coordinate funding for projects that fundamentally strengthen the state’s energy code infrastructure.

Targeted Outreach
Collaborative members include a number of active practitioners that can help to craft targeted value propositions for specific market actors. Executing focused outreach campaigns will be critical to achieving code compliance.

Implementation Program Oversight
In cases where the State Energy Office and Public Utilities Commission do not have the resources necessary to oversee specific code implementation programs (eg: a new training series, targeted consumer outreach), the Collaborative could assist with oversight of these specific programs.

A Shared Forum
The Collaborative can become a place to exchange viewpoints and perspectives, organized around productive collaboration.

A Clearinghouse on Code Information
Because of the diverse collective knowledge of its members, the Collaborative can serve as an authoritative source of code-related information and validation for state agencies, policymakers, and others.
NH Energy Code Compliance Collaborative
A Cooperative Approach to Code Compliance

In support of the New Hampshire Building Codes Compliance (NHBCCC) project—a two and a half year, $600,000 effort funded through the American Recovery and Reinvestment Act—the State Energy Program and GDS Associates, Inc. assembled a working group of energy code stakeholders to inform the build-out of existing code infrastructure throughout the state. Cooperatively, this Collaborative worked with NH’s Office of Energy and Planning (OEP) and GDS Associates to:

- Design, build and launch NHenergycode.com, a dedicated energy code website offering a one-stop resource for energy code information, tools and training
- Develop and coordinate 33 energy code trainings and workshops for construction professionals, code officials and real estate specialists
- Conceptualize and oversee the production of a cross-media outreach initiative
- Survey documented perceptions about code compliance among NH’s code officials
- Provide input and insights regarding existing barriers and future solutions to inform an Energy Code Compliance Roadmap
- Development of technical resources, including an updated energy code field guide for residential new construction

Collaborative Structure
An effective energy code collaborative includes a representative cross-section of New Hampshire’s energy codes community so that all parties affected are able to support a functional framework for energy code compliance. In addition to the current representatives participating in New Hampshire’s Compliance Collaborative, consider including the following parties in future meetings:

- NH representatives from advocacy groups and trade associations (U.S. Green Building Council—NH, Northeast Energy Efficiency Partnerships, The Jordan Institute, American Institute of Architects—NH Chapter International Code Council, etc.)
- Additional representatives from state utilities (gas, water, electric)
- Building product manufacturers in the state or region
- State-level laboratories, universities, or other research groups that focus on energy policy or advancing building performance
- Consumer protection, low income advocates (NH’s Office of Consumer Advocate)
- Real estate lenders and appraisers

The collaborative should meet on a regular basis—perhaps quarterly, or as deemed appropriate. This will ensure that efforts remain ongoing and issues are quickly resolved.
Legislative adoption of 2009 IECC energy code is an important first step to advance the energy performance of newly constructed and renovated buildings across the state of New Hampshire, but without stable and sufficient funding to support implementation, outreach and enforcement activities, research shows that energy code compliance can fall well short of its potential. Ultimately funding determines the scope and scale of code training, market outreach, enforcement capacity and compliance verification—each critically important to functional and effective building energy codes.

**NH Status Summary:**

In New Hampshire, energy code activities are traditionally funded at the local-level. For many municipalities this requires staffing one or more code officials to conduct energy code plan reviews and site inspections on top of other code responsibilities including fire code, electrical code, and plumbing code, among others. For those municipalities and unincorporated areas without dedicated code inspectors, the New Hampshire Public Utilities Commission (PUC) is authorized to assist with plan reviews while the Department of Safety (DOS) can assist with on-site inspections, though both are burdened with their own capacity constraints.

New Hampshire’s regulated utilities, have also provided limited funding assistance for energy code and beyond code trainings targeted towards local code officials. From 2008 through 2010, utilities funded a total of eight code trainings each year, divided evenly between residential and commercial.

Over the past two years the State of New Hampshire’s Office of Energy and Planning (OEP) has overseen the state’s first comprehensive energy code compliance initiative, the New Hampshire Building Code Compliance Program, funded solely through American Recovery and Reinvestment Act (ARRA) and the State Energy Programs (SEP) monies. However, despite the foundational investment in a statewide energy codes infrastructure, the Building Codes Compliance Program faces a full discontinuation of funding after April 2012. In order to sustain coordinated efforts that support energy code compliance throughout New Hampshire, new sources of funding must be identified to bolster individual activities at the local-level beyond April 2012.

**Energy Code Funding Mechanisms: What’s Working Around the U.S.?**

Maximizing the sources of funding for energy code implementation is necessary in order for New Hampshire to achieve 90% compliance by 2017. Below are some funding approaches that are being used successfully in other states to pay for critical tasks such as outreach and training.

**Raising Permit and Re-Inspection Fees**

At the local level, raising permit fees and instituting re-inspection fees for failed inspections are possible options to offset the additional cost of energy code compliance activities. In Michigan, the state publishes a suggested fee schedule to help municipalities ensure permitting revenues are structured adequately to support local code compliance activities.

**Direct Utility Support**

In some instances, utilities may provide in kind support for energy code activities within their service area such as meeting space, technical expertise, or lunch for attendees. There are also a few cases where utilities have offered rebates to offset the cost of third-party energy ratings that can be used to demonstrate energy code compliance.
**Energy Efficiency Resource Standard (EERS)**

An EERS is a regulatory mechanism, typically administered by a state’s public utility commission, which requires obligated utilities to meet a specified portion of their electricity demand through energy efficiency within a defined timeframe. To date, more than half of all states have implemented an EERS.

EERS are designed to capture cost effective energy efficiency opportunities in order to moderate electricity demand growth within the state. Effective statewide energy efficiency initiatives can dramatically reduce electricity demand, delaying or averting the need for new generating capacity. Some states—Arizona, California, Massachusetts, Minnesota, and Washington—allow utilities to credit energy savings attributable to energy codes and standards toward EERS goals.† As a result, utilities have a vested interest in advancing sound energy codes and code compliance. Typically utility-backed energy code initiatives are funded through a System Benefits Charge or a similar volumetric fee imposed on consumers’ energy bills (see PBF and SBC).

**Public Benefit Funds (PBF)**

**Energy Efficiency Trusts and the System Benefits Charge (SBC)**

A PBF is a way to provide long-term funding for energy programs, typically via a System Benefits Charge (SBC) – a small, volumetric charge added to customers’ electricity bills each month. SBCs are usually collected from customers of investor-owned utilities and the funds are administered by a state agency, a third-party or the utility. Some states, including New York, are successfully using funds collected from their SBC for energy code-related work.

Other states have simply established trust funds with state monies, often overseen by a public utilities commission, that are used to pay for statewide energy efficiency initiatives. For example, in 1997 in Illinois, electric industry restructuring legislation created a fund that provides $3 million annually to be used for renewable energy and residential energy efficiency. In addition, the Illinois Clean Energy Community Trust was established in 1999 with $225 million – some of which goes toward energy efficiency projects in the state.

**State Appropriations**

A common way to fund energy code training and outreach is leveraging federal funds via State Energy Programs (SEP), or through direct appropriations by the state. In Texas, the state appropriates monies to the Texas State Energy Conservation Office (SECO) for programmatic use. SECO then allocates a portion of these dollars to energy code training and outreach.

The U.S. Department of Energy (DOE) also offers formula and competitive grant awards that could be used for energy code-related projects. Often these funding awards are granted to State Energy Programs (SEP). Historically in NH the SEP base grant is limited, only covering basic office administration. Therefore without an adjustment in budget, code work falls outside the scope of funding.

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† For more information about how energy code savings are credited to utilities, see page 7 and 8.
COST-EFFECTIVE APPROACH TO ENERGY EFFICIENCY

Funding coordinated and sustained energy code compliance activities remains a fundamental challenge for the state of New Hampshire. Without dedicated funds available from the state or federal governments, New Hampshire must identify other stable sources of monies that can support energy code outreach and training initiatives statewide.

Fortunately, New Hampshire has already established a funding mechanism—the state’s System Benefits Charge—specifically intended to capture cost-effective energy efficiency. However, to date, building energy code compliance has received limited support under programmatic budgets, allocated $40,000 of a 2011 budget totaling over $19 million.

System Benefits Charge

Beginning on June 1, 2002, the state of New Hampshire imposed a nominal System Benefits Charge (SBC) of 3.3 mils, or .33 cents per kilowatt hour, on residential and commercial electric bills statewide. Of the 3.3 mils levied on each kilowatt hour, 1.5 mils funds the Electric Assistance Program, a program that discounts electricity expenses for low-income families, while the balance of 1.8 mils finances the New Hampshire’s CORE Energy Efficiency Programs, a standardized set of efficiency programs available through each of New Hampshire’s four electric utilities: Public Service Company of New Hampshire (PSNH), Unitil, National Grid, and New Hampshire Electric Co-op (NHEC). In an effort to capture some of the unrealized energy efficiency potential in the state of New Hampshire, CORE Energy Efficiency programs are intended to support cost-effective energy savings “that may otherwise be lost due to market barriers.”

Although the SBC currently funds a number of worthy energy efficiency programs including

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Secure Funding
In Arizona, investor-owned utilities are able to apply one-third (1/3) of verified energy savings towards their energy efficiency targets under the statewide Energy Efficiency Resource Standard. As a result, utilities are increasingly interested in supporting code compliance activities as a means to achieve the required 22% cumulative reduction in electricity sales by 2020.

Limited Transition Periods

Support for energy code compliance activities is particularly important during periods of market transition, such as the adoption of a new minimum energy code at the state-level. In Washington state, recognizing the influential role of utility involvement and the mutual interest of capturing cost-effective energy savings, the Washington state legislature allows utilities to report verified energy savings resultant from energy codes implemented within their jurisdiction for up to two years after a new statewide energy code is adopted. These reported savings can be applied toward each utility’s obligations under Washington’s Energy Efficiency Resource Standard (EERS), a law requiring affected utilities to pursue cost-effective energy conservation against biennial goals.

Capped Portion of Verified Energy Savings

In Arizona, investor-owned utilities are able to apply one-third (1/3) of verified energy savings towards their energy efficiency targets under the statewide Energy Efficiency Resource Standard. As a result, utilities are increasingly interested in supporting code compliance activities as a means to achieve the required 22% cumulative reduction in electricity sales by 2020.

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Energy code training is a critical element of a functional codes system. Ensuring designers, engineers, builders and inspectors are proficient in code requirements and advanced building techniques are fundamental to energy code compliance.

Energy codes cover all elements of building science and design, from lighting and insulation to windows, HVAC, and more. Even experienced code officials and design and construction professionals require hours of training to understand the energy code and its application in the field. Fortunately, training is one of the most cost-effective ways to ensure building professionals are proficient in energy codes.

Expanding a Training Program

Training is an ongoing process. While some code and beyond code training has been offered as part of New Hampshire’s CORE Energy Efficiency programs, New Hampshire’s workforce requires sustained and expanded code training to support their roles in energy code compliance.

As the New Hampshire legislature deliberates a formal ratification of the 2009 IECC, the NHBCC program has taken advantage of this time to design a statewide training program to prepare code officials and design and construction professionals for the updated requirements. Using the results of a recent Code Compliance Perception Survey administered among New Hampshire code officials, the NH Compliance Collaborative (described on pages 3 and 4) has developed a training program for New Hampshire’s workforce that fills the knowledge gaps identified and reaches more professionals throughout the state, including rural regions. The challenge in New Hampshire continues to be sustaining code training beyond the exhaustion of Recovery Act funding to promote an ongoing expectation of code compliant construction.

**NH Status Summary**

Using Recovery Act and State Energy program funds, the New Hampshire Building Codes Compliance (NHBCC) project has organized and administered over 29 energy code trainings for building code officials and other technical professionals throughout 2010 and 2011. To date, this training initiative has reached over 1,140 building professionals.

In the absence of Recovery Act funding, which is set to expire in the spring of 2012, a total of eight energy code trainings—four residential and four commercial—were offered annually between 2008 and 2010, funded through New Hampshire’s System Benefits Charge.
Based on the success of NHBCC training initiative and other successful training models throughout the U.S., energy code trainings in New Hampshire should be offered at low or no cost to participants, and held in multiple jurisdictions across the state to increase the accessibility to overworked inspection departments and rural regions. The NHBCC has also been successful in coordinating its free trainings for code officials in partnership with the Training & Education Committee of the New Hampshire Building Officials Association (NHBOA) to ensure the curriculum is approved to provide members with continuing education credits (CEUs) for participation.

The following training scheme is a starting point to design a more permanent training program in New Hampshire and builds off the NHBCC’s lessons learned through recent training activities.

### Tiered Training

<table>
<thead>
<tr>
<th><strong>Basic Training</strong></th>
<th><strong>Intermediate Training</strong></th>
<th><strong>Advanced Training</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AUDIENCE:</strong></td>
<td>All code officials and design and construction professionals</td>
<td>Code officials and building professionals with working energy code knowledge</td>
</tr>
<tr>
<td><strong>LENGTH (RESIDENTIAL):</strong></td>
<td>Half-day training residential</td>
<td>Full-day training</td>
</tr>
<tr>
<td><strong>LENGTH (COMMERCIAL):</strong></td>
<td>Half-day training commercial</td>
<td>Full-day training</td>
</tr>
<tr>
<td><strong>COVERAGE:</strong></td>
<td>Basic energy code provisions</td>
<td>All energy code provisions including compliance examples using NH-specific tools and resources</td>
</tr>
<tr>
<td><strong>FREQUENCY:</strong></td>
<td>Ongoing; revamped after every code update or new code adoption</td>
<td>Ongoing around new code adoption — six months prior and after effective date</td>
</tr>
<tr>
<td><strong>ADDITIONAL:</strong></td>
<td>Refresher webinar posted on NHenergycode.com, Course materials also available online</td>
<td>Field training, Train-the-trainer, Ongoing technical/community college program</td>
</tr>
</tbody>
</table>

### Targeted Workshops

| **AUDIENCE:** | Real estate professionals; appraisers; commercial lenders; building material suppliers and retailers |
| **LENGTH (RESIDENTIAL):** | Half-day |
| **LENGTH (COMMERCIAL):** | Half-day |
| **COVERAGE:** | Basic energy code principles; Additional energy efficiency concepts as relevant to targeted participants |
| **FREQUENCY:** | Ongoing; revamped after every code update or new code adoption |
| **ADDITIONAL:** | Course materials also available on NHenergycode.com |

### Online Training

| **AUDIENCE:** | Code officials, building professionals and others interested in developing a practical understanding of the energy code |
| **LENGTH (RESIDENTIAL):** | 5-10 minute video segments |
| **LENGTH (COMMERCIAL):** | 5-10 minute video segments |
| **COVERAGE:** | Focused on select energy code provisions and relevant technical skills |
| **FREQUENCY:** | Available online at NHenergycode.com |

* Checkmarks represent NHBCC training programs currently in progress through Spring 2012.
Training

Energy Code Ambassadors Program

Over the past decade we have seen the significance of energy code “champions” at the community level – those code officials who take special interest and professional pride in fully understanding and enforcing energy codes. The presence of such champions on the ground can add a valuable human element to effectuating cultural change within the building community.

An Energy Code Ambassadors Program (ECAP) creates “mentors” who are capable of supporting their peers throughout the energy code inspection and enforcement process through communication, technical support, code interpretation and other guidance. These individuals are a valuable asset to influencing stronger code compliance, particularly in rural regions of the state.

Program Structure

Generally, ECAP training is given by a well-established energy code trainer to three to five selected code officials from the state. This training consists of three parts: energy code advocacy, residential provisions of the code, and commercial provisions of the code. The size of the class allows for the trainer to go at a slower pace, focusing on parts of the code and advanced segments that are in need of greater understanding. In some cases the instructor may spend a second day reviewing the content of the three ICC energy certification exams, and then proctoring the admission of the tests.

Motivation for Participation

It is rare that financial compensation for code officials is allowable if the program is supported with state or federal funding, but since these attendees are generally taking off a day of work, it is suggested that the ECAP program be provided to them at no cost. This means that they should be reimbursed for any travel expenses to and from the meeting, as well as for any travel throughout the state to train code officials at other building departments. Additionally, providing the attendees with free code books and ICC vouchers to take the energy certification tests at no cost is a valuable alternative to payment.

Ambassador Selection

The state should post the ECAP description to local ICC chapters and invite members to apply. Well-known and respected ICC members should be targeted, and the group should be formed by a diverse set of building departments.

more information

Based on ECAP programs in other states, the following table provides a template for pricing the program for six ambassadors spread over two days. Costs may vary in New Hampshire.

<table>
<thead>
<tr>
<th>Expense</th>
<th>Cost Each</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trainers’ Fee</td>
<td>$1,200</td>
<td>$2,400</td>
</tr>
<tr>
<td>Ambassador Travel Reimbursements</td>
<td>$1,000</td>
<td>$8,000</td>
</tr>
<tr>
<td>Code Books</td>
<td>$202</td>
<td>$1,616</td>
</tr>
<tr>
<td>2009 IECC/ASHRAE Standard 90.1-2007</td>
<td>$123</td>
<td></td>
</tr>
<tr>
<td>2009 IECC w/ Commentary</td>
<td>$44</td>
<td></td>
</tr>
<tr>
<td>2009 IECC Workbook</td>
<td>$35</td>
<td></td>
</tr>
<tr>
<td>ICC Energy Exam Vouchers (3 tests)</td>
<td>$540</td>
<td>$4,320</td>
</tr>
<tr>
<td>Commercial Plans Examiner</td>
<td>$180</td>
<td></td>
</tr>
<tr>
<td>Commercial Energy Inspector</td>
<td>$180</td>
<td></td>
</tr>
<tr>
<td>Residential Plans Examiner/Energy Inspector</td>
<td>$180</td>
<td></td>
</tr>
<tr>
<td>Curriculum Subtotal</td>
<td></td>
<td>$16,336</td>
</tr>
<tr>
<td>Oversight Costs—can be subcontracted</td>
<td></td>
<td>$16,000</td>
</tr>
<tr>
<td>Program Administration</td>
<td>$7,000</td>
<td></td>
</tr>
<tr>
<td>Curriculum Prep and Development</td>
<td>$7,000</td>
<td></td>
</tr>
<tr>
<td>Travel</td>
<td>$2,000</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>$32,336</strong></td>
</tr>
</tbody>
</table>
Energy codes have experienced some promising success in New Hampshire, but many residents still remain unaware of building energy codes and their benefits. Because minimum building codes are written into state legislation, many consumers expect that new buildings are code compliant and that energy codes are enforced. However, according to a 2010 survey of New Hampshire code officials, approximately one-third of code officials “don’t know” how many new homes meet the existing energy code, and an additional one-in-six responded that less than 50% of new homes comply with the existing energy conservation code.\(^\text{11}\) For those with a stake in energy code compliance, it is important that codes are well understood and their respective benefits are clearly communicated.

### Strategy

Energy code implementation and compliance requires buy-in and support from a diverse group of audiences. On the frontlines are the inspection, design, and construction communities—collectively the professionals who integrate energy codes into existing construction practices. State legislators, city council members, mayors’ offices, and other decision-makers must also recognize the public value of building energy codes, and enact reasonable policies that promote quality construction and assist building practitioners to consistently achieve code compliance. Utilities, state and local agencies, environmental and energy efficiency organizations often view energy codes as a fundamental strategy to advance energy security, temper demand growth and progress against environmental priorities.

Consumer groups, realtors, lenders, appraisers, and other interested parties, each play a crucial role in promoting energy codes as a market-driven standard of quality construction. These roles include funding to improve the energy code infrastructure, providing technical expertise and materials, and strengthening support for building energy efficiency across all government levels.

### NH Status Summary

Over the past two years the NHBCC program has represented New Hampshire’s first statewide energy codes awareness and education campaign. Although funding for energy codes outreach beyond April 2012 has not yet been identified, the campaign has successfully laid the groundwork for a more sustained outreach effort in future years.

Finally, consumers may represent the greatest force to move real estate markets by decidedly making energy cost savings a purchasing priority—demanding that homes, offices, and public buildings meet or exceed the minimum energy code.

Unifying stakeholders and aligning common interests is an important element of a healthy building codes system. Using targeted outreach messaging—some detailed in the chart on page 14—and resources developed with the help NH’s Compliance Collaborative helps to communicate the benefits of energy codes to relevant market actors, and keeps energy savings top-of-mind for New Hampshire real estate consumers. To access the NH-specific resources already developed through the NHBCC Program, please visit the NH Energy Code website at [www.nhenergycode.com](http://www.nhenergycode.com).

Cost, Reach, Impact Considerations for Outreach Campaign

An effective mixed-media outreach campaign uses a combination of outreach strategies to target specific market segments. When designing an outreach initiative, it is critical to understand the reach and impact of various outreach media, then evaluate each against cost to formulate a cost-effective approach. Based on BCAP’s experience with the design and execution of advanced outreach campaigns, the following chart conveys a series of attributes—cost, reach and impact—to sustain the productive outreach initiated under the NHBCC program.

Cost Estimates for Coordinating a Multi-Media Campaign

Based on previous campaigns, below are some relative cost, reach, and impact estimates for different types of outreach using a high-medium-low scale.
Know Your Resources: Use What’s Out There!

Outreach can be a daunting challenge for state officials as energy code stakeholders span a broad demographic. However, outreach can be a key element in motivating the market to value and demand energy-efficient homes and buildings. To support this endeavor, a number of energy code resources developed by the NHBCC program, utilities, federal agencies and national and regional energy efficiency advocates already exist, intended for distribution. The following list features available resources that could be distributed “as is” or adapted specifically for use in New Hampshire:

### Consumer Resources

**The Need:** While home and building owners are the ones directly impacted by the efficiency of their properties, few know about energy codes and assume that new buildings already meet modern energy standards.

**The Goal:** To empower consumers to demand greater energy efficiency in new and renovated buildings.

<table>
<thead>
<tr>
<th>Core Messaging</th>
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<tbody>
<tr>
<td>• When the incremental cost of a code-compliant building is rolled into a standard mortgage, the net savings begins in the first year and saves owners money every month thereafter for the lifetime of the building</td>
</tr>
<tr>
<td>• Confirm energy code compliance of a property before you buy or rent</td>
</tr>
<tr>
<td>• Energy code checklists give you the power to be a smart home buyer</td>
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<table>
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<tr>
<th>Outreach Channels</th>
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<tbody>
<tr>
<td>• Website</td>
</tr>
<tr>
<td>• Print media (newspapers, magazines, blogs)</td>
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<tr>
<td>• Radio</td>
</tr>
<tr>
<td>• Television</td>
</tr>
<tr>
<td>• Home and trade shows</td>
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<tr>
<td>• Big-box retail events</td>
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<table>
<thead>
<tr>
<th>Outreach Strategies</th>
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</thead>
<tbody>
<tr>
<td>• Develop factsheets and web content</td>
</tr>
<tr>
<td>• Draft press releases</td>
</tr>
<tr>
<td>• Blog articles</td>
</tr>
<tr>
<td>• Video spotlights</td>
</tr>
<tr>
<td>• Cost savings calculators</td>
</tr>
<tr>
<td>• Develop Public Service Announcement</td>
</tr>
<tr>
<td>• Produce pre-produced television spots (see buildenergyefficiency.org)</td>
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<thead>
<tr>
<th>Ready-made resources</th>
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<tbody>
<tr>
<td>• Available from NHBCC at: NHenergycode.com and BCAP at: BCAP-ocean.org/consumers-take-action</td>
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### Real Estate, Lending, and Appraisal Community

**The Need:** The largest untapped resource for improving support for energy codes is the real estate, lending, and appraisal communities, which have significant influence on the marketability and value of homes and buildings, as well as buyers’ and renters’ awareness of energy-efficient construction.

**The Goal:** Engage these stakeholders in support of energy codes and energy efficient buildings.

<table>
<thead>
<tr>
<th>Core Messaging</th>
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<tbody>
<tr>
<td>• Marketing the “invisible benefits” of energy efficiency can be practical tool to motivate buyers</td>
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<tr>
<td>• Home and business owners occupying code compliant properties are reducing monthly energy expenses, which can reduce the riskiness of mortgage and commercial real estate loans</td>
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<tr>
<td>• Code-compliant homes can be a significant selling point as they are more comfortable, and have lower monthly costs</td>
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<table>
<thead>
<tr>
<th>Outreach Channels</th>
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<tbody>
<tr>
<td>• NH Realtors Association, local banks and credit unions, NH Banking Deparment, Code Ambassadors</td>
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<th>Outreach Strategies</th>
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<tr>
<td>• Individual meetings to explore partnerships and pilot projects</td>
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<td>• Half-day workshops</td>
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<td>• Home and trade shows, annual conferences and monthly meetings</td>
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<td>• Energy code checklist</td>
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<td>• Factsheets</td>
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### Code Enforcement, Construction Professionals

**The Need:** Traditionally, the energy code receives little attention as compared to other building codes. The **Goal:** Promote a recognition and appreciation of energy code compliance among code officials and construction professionals. Ensure all parties have sufficient access to the resources necessary to enable code compliant construction.

#### Core Messaging
- Code compliant, energy-efficient construction demonstrates skill and knowledge as a building professional—a trait that will be recognized by clients and customers
- Code compliant construction is less expensive than perceived
- When the incremental cost of building to the energy code is rolled into a standard mortgage, break-even occurs in the first year
- Do it right the first time—new construction and major renovations are the easiest and least expensive opportunities to enhance a building’s energy efficiency
- Energy-efficient construction result in fewer builder callbacks related to consumers complaints and discomfort
- Code-compliant construction can result greater occupancy comfort and superior air quality while reducing moisture issues

#### Outreach Channels
- Local Homebuilder Associations and recognized industry associations (AIA, ASHRAE, USGBC, etc.)
- Trade Press
- Home and tradeshows
- Big-box retail stores and events

#### Outreach Strategies
- Incremental cost studies
- Factsheets
- Cost-savings calculator
- Calendar of upcoming trainings (including availability of CEU credit)
- Energy code checklists
- Energy code work books
- Energy code field guide
- Presentations at conferences/meetings/trainings
- “Ask the Expert” blog
- Energy code pocket guide

#### Ready-made resources
- Available from NHBCC at: NHenergycode.com and BCAP at: BCAP-ocean.org

### Policymakers

**The Need:** Policymakers rely on information from trusted constituencies regarding the value of energy codes and their benefits for state residents and businesses. **The Goal:** Ensure policymakers value the benefits of sound building energy codes and promote a well-functioning code infrastructure with appropriate legislative support.

#### Core Messaging
- Energy codes foster economic growth as energy cost savings can be spent elsewhere
- Energy codes protect citizens from substandard construction and a lifetime of excessive energy bills
- Energy codes can contribute to overarching state energy goals including increased energy efficiency, reduced energy demand growth, and improve grid reliability and delay the need to build expensive new power plants
- Building energy code compliant buildings the first time precludes expensive energy efficiency retrofits later
- Energy efficiency can serve as a selling point for new or newly renovated homes and buildings

#### Outreach Channels
- New Hampshire General Court
- Local governments and energy committees
- New Hampshire Association of Counties
- New Hampshire Municipal Management Association

#### Outreach Strategies
- Factsheets
- Cost/impact study
- Constituent polls/surveys
- Resource guide for policymakers

#### Additional Resources
- Available from NHBCC at: NHenergycode.com and BCAP at: BCAP-ocean.org
In New Hampshire, the Building Code Review Board has the authority to amend the standards within the State Building Code; however, within two years of the Review Board’s amendment, minimum building energy codes must be formally adopted at the state level through a legislative process. If the amendments are not written into state legislation, the Review Board’s amendments sunset after two years, and the code reverts back to the previous version.

Beyond energy code adoption, state and local policy can play an essential role in supporting an effective energy code infrastructure, particularly with respect to funding allocation, resources and other complementary programs such as credentialing of qualified professionals.

**Third-Party Performance Testing**

Third-party energy performance testing has become more common with the rise in above-code construction. Looking ahead, code officials and the construction industry need clear direction on topics such as who is allowed to conduct testing and what the code official’s responsibility is for inspecting buildings that also receive testing. The state can provide guidance to ensure appropriate testing procedures and improve uniformity throughout the state.

For example, Georgia specifies in writing what constitutes a certified tester. It uses a menu approach, citing multiple nationally recognized certifications as well as its own state certification:

http://www.dca.state.ga.us/development/ConstructionCodes/programs/DET.asp

In New York, the state offers BPI certification through its community college system:

https://www.hvcc.edu/ceebs/trainings.html

**NH Status Summary**

In May 2009, New Hampshire’s Building Code Review Board revised the State Building Code to reference the 2009 IECC. Accompanied by a few focused amendments, the updated code took effect on April 1, 2010. This latest iteration of the NH State Building Code is currently under review in the legislative process, included in House Bill 137.
Building Energy Codes to Advance NH Policy Goals

New Hampshire policymakers can employ focused public policy to shape the state’s real estate market and encourage improved energy code compliance while making strong progress against overarching energy and climate goals. In fact, in New Hampshire’s Climate Action Plan, released in March 2009, building energy codes received explicit mention, recommending that the state improve building energy code compliance through increased funding, outreach to municipalities and regular training offered to local inspection departments.

Policy options observed in other states that have been effective in bolstering energy code compliance efforts include:

- Dedicated funding to offer free energy code training for code officials and design/construction professionals
- Dedicated funding to support 2 state-employed “roving code officials” to support understaffed and/or rural regions
- Minimum licensure requirements, including continuing education units (CEUs), for state- and municipally-employed code officials
- Minimum licensure requirements, including CEUs, for New Hampshire contractors
- Minimum licensure requirements for certified “third-party” code inspectors
- Enable and encourage energy code compliance activities to be funded under the state’s System Benefits Charge
- Dedicate a state-level representative to participate in the Energy Code Collaborative, pursue funding opportunities, maintain energy codes website, and coordinate compliance evaluation program
Compliance evaluation is critical to validate the usefulness of energy code compliance activities such as outreach and training—and ultimately to substantiate the role of energy codes in advancing statewide energy efficiency. Furthermore, New Hampshire is committed to achieve 90% compliance with the 2009 IECC as a condition of accepting a State Energy Program (SEP) formula grant totaling $25.8 million, awarded by the U.S. Department of Energy under ARRA.

**Achieving 90% Energy Code Compliance**

Education and outreach for building professionals and inspectors is perhaps the most important work needed to reach 90% compliance by 2017. But to assess the effectiveness of these efforts, New Hampshire needs to tackle the challenge of developing a compliance evaluation program with a number of specific outcomes in mind:

1. Establish an energy code compliance baseline;
2. Use data to inform future compliance strategies;
3. Track progress toward overarching statewide energy efficiency goals;
4. Monitor energy savings attributed to the building energy code; and
5. Document cost effectiveness of energy code compliance activities.

Fortunately New Hampshire will not have to craft a plan from scratch. Among the resources available, the U. S. Department of Energy (DOE) has created a website that provides videos, best practices, and web tools to demonstrate how states and local inspection departments create a plan that is specifically tailored to its individual needs. In addition, New Hampshire can draw on lessons from the nine compliance pilot studies sponsored in states across the country.

**Program Specifics**

Measuring compliance will require New Hampshire to evaluate a small sample of construction projects. To make this process as simple as possible, begin by consulting DOE’s State Sample Generator, an online resource that provides a suggested sample size in four categories: new commercial construction projects, commercial renovations, new residential

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12 At the time of this publication, nine U.S. states are participating in federally funded state compliance evaluation pilots, while an additional seven states are undergoing state-funded studies. States participating in the federally funded projects include: Massachusetts, Georgia, Wisconsin, Iowa, Utah, Montana, Idaho, Washington and Oregon. For more information, visit the U.S. Department of Energy’s website at [http://www.energycodes.gov/states/maps/stateComplianceActivities.stm](http://www.energycodes.gov/states/maps/stateComplianceActivities.stm).
LEVERAGE EXISTING EXPERTISE FOR COMPLIANCE EVALUATION

construction and residential renovations. Sample sizes are relatively small and are based on the number of permits issued over recent years.

For example, for new single family construction, a single run of DOE’s State Sample Generator suggests that Hillsborough County would require a sample of only 8 residential buildings out of an annual average of 404 housing starts between 2008 and 2010. For more information, please visit: http://www.energycodes.gov/arra/compliance_evaluation.stm

Leverage Utility Experience with Measurement and Verification (M&V)

New Hampshire utilities already have extensive experience validating and measuring the energy savings of their CORE NH Energy Efficiency programs funded through the state’s System Benefits Charge (SBC). As a requirement of each CORE Energy Efficiency program funded through the SBC, 5% of programmatic funds are dedicated to the M&V of resultant energy savings. An inventory of CORE programs and associated energy savings are then published each year in an annual report written jointly by New Hampshire’s utilities.

Given the sophistication of many accepted M&V protocols, the state should draw from the experience and expertise of the Public Utilities Commission (PUC) and local utilities to inform the development of a credible compliance evaluation methodology. Furthermore, if code compliance activities are ever approved as a cost-effective energy efficiency endeavor under the state’s SBC, utilities and the PUC will have an interest in designing a sufficient M&V protocol to validate and quantify the associated energy savings statewide.

Pilot Compliance Evaluation

In order to test and validate the state’s approach to evaluating energy code compliance, New Hampshire should consider a series of focused pilots. These pilot studies will serve as a test bed for compliance evaluation techniques and will offer insights regarding opportunities for improvement.

Further, for municipalities that are actively engaged in meeting 90% energy code compliance, these pilots will offer an early indication of progress towards the 2017 compliance goal. To ensure a widely accepted compliance evaluation methodology by 2017, these pilots should be initiated by 2014.
This timeline should act as a mile marker and reference guide. Moving forward, New Hampshire can chart its own course towards energy code compliance, built on a solid foundation of proven practices.

**2009**

- Establish NH Compliance Collaborative
- Design, build and launch dedicated NH energy code website (NHenergycode.com)
- Launch multi-media outreach campaign
- Conduct outreach necessary to establish long-term energy code funding
- Establish code compliance infrastructure for long-term objectives
- Develop/launch online training resources
- Coordinate statewide training initiative
- Engage real estate, appraisal and lending communities in energy code training

**2012**

- Examine value of continuing collaborative effort
- Promote and grow online presence
- Operate and maintain website as a core element of energy codes outreach
- Grow participation in NH Compliance Collaborative
- Leverage support to sustain outreach activities
- Work through NH Compliance Collaborative to secure stable funding
- Ensure continued funding
- Support and coordinate NH Compliance Collaborative
- Recognize exemplary efforts within NH
- Adapt online resources into self-paced online training modules
- Grow sustained statewide training initiative
- Evaluate Perception Survey to inform outreach and training initiatives

Five years ago, it would have been nearly impossible to predict what the energy codes landscape would look like on the national, state, and local levels. Similarly, the next five years will bring new unforeseen realities and opportunities for energy codes.
2017

- Ongoing NH Compliance Collaborative
- Operate and maintain website as a core element of energy codes outreach
- Grow participation in NH Compliance Collaborative
- Leverage support to sustain outreach activities
- Ensure continued funding
- Support and coordinate NH Compliance Collaborative
- Recognize exemplary efforts within NH
- Adapt online resources into self-paced online training modules
- Grow sustained statewide training initiative
- Maintain relationships with broader real estate market actors
- Develop a compliance evaluation methodology
- Pilot compliance evaluation methodology
- Conduct final compliance evaluation study within NH
For more information on the Compliance Planning Assistance Program, please email bcap-ocean@ase.org.

For more energy code compliance resources, please visit:
www.bcap-ocean.org/resources
www.energycodes.gov

For more information on the New Hampshire Office of Energy and Planning (OEP):

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