Strategic Compliance Plan

The Compliance Planning Assistance Program

November 2011

Improving Energy Code Compliance in Michigan’s Buildings

MICHIGAN

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The Compliance Planning Assistance Program
Acknowledgements

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www.michigan.gov/bcc

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Introduction

This Strategic Compliance Plan is the final phase of the Compliance Planning Assistance (CPA) Program, a collaborative effort undertaken by the Building Codes Assistance Project (BCAP), the Michigan Department of Energy, Labor, and Economic Growth (DELEG) and the Bureau of Construction Codes (BCC) beginning in August of 2010. Over the past eighteen months, this project has identified specific vulnerabilities and opportunities in widespread code compliance across Michigan’s building sector. The product of this initial research has been published in the Michigan Gap Analysis Report. Based on the findings from that report and other state-specific resources, this Strategic Compliance Plan charts a course to achieving 90 percent energy code compliance with the 2009 Michigan Uniform Energy Code (MUEC) by 2017.

The objectives of this Strategic Compliance Plan are twofold:

- Provide a realistic and effective model of a well-functioning energy codes infrastructure, given the current building code environment in Michigan; and
- Based on existing gaps identified in Michigan’s building code infrastructure, this plan describes the near-term critical actions needed to achieve 90 percent energy code compliance with the 2009 IECC by 2017.

Funded by the U.S. Department of Energy under the American Recovery and Reinvestment Act (Recovery Act), Michigan was chosen as one of ten states to participate in the second phase of this project founded on input from project stakeholders and the likelihood of plan implementation.

Challenge

Michigan’s buildings represent approximately 49% of total statewide energy consumption. Therefore, productive strategies to advance energy efficiency at the state level must include tactics to raise the minimum standard of building energy performance. Building energy codes, such as the current 2009 IECC and the 2007 ASHRAE Standard 90-1, represent a systematic approach to influence sector-wide energy consumption at the point of construction or renovation – the easiest, most cost-effective opportunity to address component upgrades over the 70 year lifetime of a commercial building.

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1. Near the end of this project, the state government reorganized where the Michigan Department of Energy, Labor, and Economic Growth (DELEG) was renamed the Department of Licensing and Regulatory Affairs (LARA).
2. The MUEC is the state-amended energy code and equivalent to the 2009 International Energy Conservation Code (IECC).
The following Strategic Compliance Plan presents the components of a dynamic energy code infrastructure that achieves energy savings while limiting the financial and administrative responsibilities of state and municipal governments.

Figure 1. Compliance Flowchart

Michigan’s Strategic Compliance Plan is organized around four focus areas needed to achieve 90 percent energy code compliance for buildings: funding, outreach, compliance evaluation, and training. These activities are largely overseen by an energy codes cooperative, the “Energy Code Ad Hoc Committee,” featuring representation from interested and invested stakeholders throughout the state. Figure 1 illustrates the collective importance of each of these focus areas that lead to 90 percent compliance with energy codes in Michigan.

Given the variability of the political and economic landscape in Michigan, this plan does not and cannot identify every activity involved in reaching the 90 percent energy code compliance target. Rather, Michigan should use this plan as an overarching 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 AD HOC COMMITTEE

The BCC has several committees that focus on code development. One is the Energy Code Revision Committee, which meets as-needed to discuss energy code updates. The committee is only involved in adoption of energy codes and the technical components of the code, not compliance following adoption. The state of Michigan could benefit greatly from the Energy Code Ad Hoc Committee that addresses compliance issues.

The establishment of the Energy Code Ad Hoc Committee organizes a group of knowledgeable and influential stakeholders around sound energy code implementation and compliance. Through coordination, the Ad Hoc Committee can help shape a functional and effective energy code infrastructure that fits the needs of the state. This Ad Hoc Committee would be a group comprised of affected parties and comply with the Michigan Open Meetings Act.

Why the Energy Code Ad Hoc Committee?

In order to meet the commitment of 90 percent energy code compliance by 2017, a strategic plan must represent the views of statewide stakeholders. As the representative group of the state’s energy codes stakeholders, the Energy Code Ad Hoc Committee will develop a vision that can accomplish this goal without placing undue burden on any single constituency.

Additionally, the Ad Hoc Committee will offer a deep understanding of what can be realistically implemented statewide and will be best-suited to prioritize the necessary tasks to the state.

Potential Roles of the Energy Code Ad Hoc Committee

There are a number of synergistic functions that the Ad Hoc Committee is well-positioned to oversee:

Collective Voice on Code Issues
The Ad Hoc Committee can provide a collective voice to communicate with policymakers and other stakeholders to create a unified effort.

A Shared Forum
The Ad Hoc Committee will become a place to exchange viewpoints and perspectives, organized around productive collaboration.

A Clearinghouse on Code Information
Because of the diverse knowledge of its members, the Ad Hoc Committee can serve as an authoritative source for code-related information and provide validation for state agencies, policymakers, and others.

Securing Funding for Projects
The Ad Hoc Committee will be uniquely qualified to advance mutual interests and, therefore, well-positioned to secure funding for code-related projects.

Targeted Outreach
Ad Hoc Committee members will likely 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 agency does not have the resources necessary to oversee specific code implementation programs (i.e. a new training series, targeted consumer outreach), the Ad Hoc Committee could assist with oversight of these specific programs.

Coalition Structure

It is imperative that the Ad Hoc Committee include a diverse set of stakeholders, so that all parties affected by the energy code are able to participate in designing a functional framework for energy code compliance. Additionally, it would be best if the Ad Hoc Committee met on a regular basis, as determined by its members. This will ensure that efforts remain ongoing, and issues are quickly resolved.

Ad Hoc Committee members could represent the Michigan Department of Licensing and Regulatory Affairs, local code enforcing agencies, local units of government, state association of home builders, state general contractor associations, state advocacy groups, building owners, utilities, and building product manufacturers.
Adoption of 2009 MUEC is an important first step to advancing the energy performance of newly constructed and renovated buildings across the state, but without stable and sufficient funding to support implementation, outreach, and enforcement activities, research shows that energy code compliance falls well short of its potential. Ultimately, it is funding that determines the scope and scale of code training, market outreach, enforcement capacity and compliance verification—each critically important to effective building energy codes.

In Michigan, energy code activities are traditionally funded at the state level. For many municipalities this requires staffing one or more code officials to conduct energy code plan reviews and site inspections in addition to other responsibilities including enforcing the fire code, electrical code, and plumbing code, among others. Unfortunately, with residential construction down 34 percent in the state from 2008 to 2009, this has resulted in a significant decrease in revenue from building permits, leaving local building departments with significantly less funding than they have had in the past.

Michigan provides local jurisdictions with a Model Code Fee Structure, which was developed with the assumption that building departments would conduct at least one additional inspection for energy. The state could adjust the Model Code Fee Structure, the revenue of which would increase the local building departments’ Construction Code Fund. Funding could be used to absorb the additional training necessary for accurate energy code implementation and resources that support the code, such as blower doors that service regions throughout the state.

The Michigan Public Service Commission funded a large contract that supported implementation and enforcement efforts of the 2009 MUEC. This included training, baseline studies, compliance assessments, as well as professional and consumer outreach. In October of 2011, the project was terminated due to state disagreements with disbursement efforts.

Currently, the state has very little funding to support energy code trainings and enforcement activities of the newly adopted 2009 MUEC. Thus, funding should be a priority for the state and/or Energy Code Ad Hoc Committee in the coming years.
Energy Code Funding Mechanisms Around the U.S.  
What’s Working?

Funding can be raised using strategies, such as, public benefit funds, increasing building permit fees, and penalties for repeated noncompliance. Below are some funding approaches that are being used successfully in other states to pay for energy code programs.

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**Raising Permit Fees**

Raising permit fees and assessing re-inspection fees for failed inspections is a straightforward way to offset the cost of energy code inspections and raise funds for energy code trainings. Some states mandate that local governments responsible for enforcing the energy code cover their costs through building permit fees, and those fees may not be used for other purposes. In other states, some municipalities have found that issuing consistent re-inspection fees that fully cover the cost for additional inspections not only help cover departmental costs, but also act as a deterrent to noncompliance.

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**State Appropriations**

A common way to fund energy code training and outreach is via SEP funds or direct appropriations by the state. For example, New Hampshire spent about $600,000 in SEP funds for training and outreach over two-and-a-half years. In Texas, the state appropriates funds to the state energy office for programmatic use. The energy office then allocates a portion of these dollars to energy code training and outreach.

DOE also offers formula and competitive grant awards that could be used for code-related projects. Typically, funding proposals are submitted through the State Energy Programs (SEP) to compete for these funding opportunities.

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**Direct Utility Support**

In some instances, utilities may provide in-kind support for energy code activities within their service territory, such as providing meeting space, technical expertise, or lunch for attendees.

Some utilities offer rebates to offset the cost of third-party energy ratings that can be used to demonstrate energy code compliance.

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**Subsidized Training Fees**

While it is incumbent on the state to provide the funding for the training needed to bring the construction industry up to speed on new energy codes, it is recommended to charge a small admission fee (perhaps $25) for energy code training. Although the fee will not completely offset the cost of training, it does help ensure that participants attend (after enrollment), as they seek a “return” on their investment.
Secure Funding

Achieve Support for the MUEC  CRITICAL TASK

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

- Reach out to key decision-makers to bring them up-to-speed on the importance of the MUEC to Michigan’s economy; how the MUEC can help low-income households by keeping monthly costs down for the lifetime of the structure; how Michigan compares to other states.
- Conduct one-on-one meetings with utilities subject to the energy optimization savings standard to discuss using energy codes to meet their goals. An Energy Code Ad Hoc Committee could be especially helpful in such meetings to lend political support, expertise, and additional ideas for coming to an effective agreement.
- BCC could consider the use of third-party certified energy raters to confirm homes meet the MUEC standard. This would decrease the cost of energy code compliance from local jurisdictions. Michigan should study whether this is a feasible option for all or some areas in the state. Perhaps this approach should be piloted in areas where local building departments are especially under-funded, under-staffed, or where code enforcement personnel is not trained in energy codes, but where new buildings are being constructed.
Following the successful adoption of the 2009 MUEC, the state’s efforts are now focused on training the professionals within the design and construction industry to gain familiarity with the code components. However, energy code implementation and compliance require buy-in and support from a diverse group of audiences in addition to the very important inspection, design, and construction communities. For instance, decision-makers, such as state legislators or city council members, must recognize the public value of building energy codes in order to enact policies that promote quality construction and assist building practitioners to consistently achieve code compliance. Consumers should also be brought in to the energy code realm, as they have the power to 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. Therefore, the BCC and the Energy Code Ad Hoc Committee could work to expand their reach and consider outreach efforts to audiences beyond the standard vocations. Unifying stakeholders and aligning common interests is an important element of achieving compliance with the MUEC by 2017.
Develop a Coordinated Outreach Strategy

Conduct a Consumer Outreach Campaign

Energy codes have experienced some promising success in Michigan, but many residents remain unaware of building energy codes and their benefits. Most consumers expect that new buildings are code compliant and that energy codes are enforced.

According to a nationwide survey of over 5,000 households conducted by BCAP and Consumers Union (author of the popular magazine, Consumer Reports), consumers expect and assume their home is meeting the energy code:

- 82% believe that homeowners have a right to a home that meets national energy standards.
- 70% believe that energy codes protect homeowners and renters from excessive energy costs.
- 79% believe that disclosing a home’s energy usage would enable them to make an informed decision about a new home purchase.
- 84% believe that more energy efficient buildings will reduce energy use and pollution.
- 74% believe that energy code standards will help ensure that homeowner and taxpayer dollars are used wisely and efficiently as new building will be required to be built right the first time.

Elements of a Campaign

Print Media

Reporters for print media (articles in newspapers, magazines, and newsletters) are always looking for new, interesting, and compelling stories with great visuals. Energy codes can meet all these needs when pitched the right way.

TV and Radio Media Tour

Prepare a spokesperson with the message the state wants to promote by giving them background information and basic talking points. Pitch to local TV and radio news broadcast outlets (e.g., morning shows or 6:00 news shows) that an expert will be available on a certain day for interviews and book back-to-back interviews for your spokesperson to share the message.

Produce a News Story with B-roll

A state can make it easier for a TV station to cover an energy code story by providing it with ready-made interviews and video (called “b-roll”). These one to two minute news-style stories save TV stations time as they don’t have to travel to get good images of energy efficiency.

Outreach to Editorial Boards

Editorial boards are comprised of editorial writers that meet regularly to discuss the latest news, trends in public opinions, and what the newspaper (or magazine) should say about a current issue. Setting up a meeting with an editorial board to inform them about the importance of energy codes is a no-cost activity that can go a long way toward raising public awareness about energy codes.

Podcasting

Podcasts are comprised of a series of audio files that are distributed through an RSS feed or downloadable from a homepage or blog and generally released in chronological order. It is a simple and convenient way for a host – or podcaster - to share information with their subscribers, who are able to listen to the material at their leisure after it is downloaded to their computer or MP3 player.
Earned Media

Earned media refers to publicity gained through outreach efforts rather than paid advertising. This is a low-cost way to reach thousands of people via regular media outlets. States can put together stories that describe to consumers the benefits of energy codes.

Public Service Advertising (PSAs)

PSAs are advertisements that you pay to create, but don’t pay to place. PSAs can be created in any format that regular ads come in: TV, radio, Internet, billboards, and print (for newspapers, magazines) and often fill unsold advertising space. The cost is highly dependent on the type and designing of the ad.

Do your research – energy codes can be boring and confusing to consumers. Prior to designing a PSA, conduct focus group studies with targeted audiences to test different messages and learn what resonates well. Prior to producing a PSA, test it with focus groups to get feedback on what they like/dislike, what’s memorable, and what images/messages resonate well.

Have only one “call to action” – what you want the consumer to do upon seeing or hearing your ad. Visiting a website (as long as it’s easy to remember) is a good call to action. During focus groups, test to assure that the placement of the URL is memorable.

Educate media on why your PSA should be placed – after distributing the PSA to media markets in Michigan, conduct outreach to stations to tell them why energy codes are vital to the state. A simple phone call and email can be the deciding factor on which PSA gets placed.

Utilize a ready-made PSA – New Hampshire is willing to share their radio PSA with other states free-of-charge (the state will have to customize the call-to-action). The ad is available online at: http://nhenergycode.wordpress.com/2011/08/29/psa-highlights-the-advantages-of-building-to-new-hampshire%E2%80%99s-energy-code/

Provide Professional Outreach

While professionals are also members of the “public” and will be reached by public awareness campaign efforts, specific outreach to disengaged stakeholders can build strong support for energy codes. The state or Energy Codes Ad Hoc Committee can go where necessary to reach these professionals: public hearings, conferences, home shows. It may be more effective to reach out directly to stakeholder associations to gain support from the top. For example, support from the Michigan Municipal League and the Michigan Townships Association (MTA) will allow the state to reach local governments; code enforcement associations can funnel information on upcoming trainings or best practices directly to members; and the American Institute of Architects (AIA), the Association of Licensed Architects (ALA), the Michigan Chapter of ASHRAE, and the Michigan Society of Professional Engineers (MSPE) can reach design professionals. Including appraisers and lenders has the potential for increasing energy code by increasing the value for energy efficient homes at the federal level (this will require a longer-term effort that could be led by the Ad Hoc Committee).
Another outreach effort often overlooked is the Internet. A website or homepage should hold valuable and timely information and be easy for audiences to locate their desired information, especially if a “call to action” as discussed above has been sent to media outlets. Below is an example of some resources that LARA and BCC can make available on their websites. In addition, a number of energy code resources developed by utilities, federal agencies, and national and regional energy efficiency advocates already exists.

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Outreach Materials They Need</th>
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<tbody>
<tr>
<td>State and Local Policy-makers</td>
<td>• Concise (one-page, bulleted) factsheet on why energy codes are important and protect consumers. “Top Ten Reasons for Energy Codes”: <a href="http://www.energycodes.gov/why_codes/">http://www.energycodes.gov/why_codes/</a></td>
</tr>
<tr>
<td>Appraisers</td>
<td>• Incremental cost information: <a href="http://bcap-ocean.org/incremental-cost-analysis">http://bcap-ocean.org/incremental-cost-analysis</a></td>
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<tr>
<td>Lenders</td>
<td></td>
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<tr>
<td>Real Estate Professionals</td>
<td>• Online cost-savings calculators: <a href="http://bcap-ocean.org/resource/energy-code-calculator">http://bcap-ocean.org/resource/energy-code-calculator</a></td>
</tr>
<tr>
<td>Construction Professionals</td>
<td>• Info on trainings available with CEU requirements</td>
</tr>
<tr>
<td></td>
<td>• Code cycles and scheduled review meetings</td>
</tr>
<tr>
<td>General Public &amp; Consumers</td>
<td>• Ready-made consumer materials are available free of charge here: <a href="http://bcap-ocean.org/consumers-take-action">http://bcap-ocean.org/consumers-take-action</a></td>
</tr>
</tbody>
</table>
To ensure Michigan’s efforts of outreach, education, and training are successful, the state needs to develop a long-term compliance evaluation program. The purpose of a compliance evaluation is to determine what is working and where efforts could be improved. Michigan understands that at its core, compliance evaluation is not about doubting the competency of code officials. Rather, a compliance evaluation will determine how well construction and design professionals are doing their job—and help the state know how to support them by providing the right resources to build homes and businesses that meet or go beyond the energy code requirements.

While Michigan has five years and a great deal of flexibility to develop a strategy that works best for its unique needs, beginning early will make that process much easier. By beginning now, the state will have ample time to assess existing construction practices, build feedback loops, and take strategic steps to promote compliance. Fortunately, Michigan will not have to craft a plan from scratch. The state can draw on lessons from the nine compliance pilot studies DOE sponsored across the country.

**Program Structure**

While the state is responsible for reporting compliance results, the responsibility will fall to local governments—usually their inspection departments—to collect data on how designers and construction professionals are designing and constructing a small sample of buildings. Sometimes, there is a state-designated inspector that marshals this effort. DOE has suggested that evaluation of design and building practice for each state can be structured in a number of ways:

- First party evaluation by local inspections departments;
- Second-party inspection by the state;
- Third-party evaluation by private sector firms.

**Cost**

The cost will vary depending on factors including: number of buildings evaluated, method of data collection (telephone, plans-only, or in-person inspections, and the number of inspections), cooperation from code officials in capturing data and contractors' cost. Additionally, the compliance evaluation may vary greatly depending on the level of detail the state desires. Due to these factors, DOE’s pilot compliance studies ranged from $75,000 to as much as $750,000.
Compliance Evaluation

Develop a Protocol for Compliance Evaluation

CRITICAL TASK

Baseline is Necessary
Baseline information is the first step for compliance evaluation. A baseline study will determine current energy code practices and compliance and will provide a point of reference from which to compare future results. This information can help to identify key points that need to be focused on for the state to achieve full compliance.

Another helpful way to determine the status of energy codes from the standpoint of the local jurisdiction is to survey the understanding and confidence of the state’s code enforcement professionals. In 2011, PSC completed a perception survey for code officials, which presented the following findings:

- Compliance with the new MUEC is low. Respondents estimate that only about a third of both residential and commercial buildings are currently in compliance with the MUEC.
- Barriers exist to enforcing the MUEC. In addition to not having enough time, money, and adequate staff (issues pervasive in many local jurisdictions as a result of Michigan’s struggling economy and budget challenges), respondents indicated that insufficient data is submitted with plans. Reviewers need better data on insulation (R-values), windows (U-values), and fenestration.
- There is a need for additional energy code training. While formal training of some kind is used by about three-quarters of energy code officials, about a third expressed a desire for additional training in written comments. Classroom and in-the-field training are preferred over online methods.
- Plan review and inspection processes are not aligned with the new MUEC. About half of respondents feel that only 0–25 percent of the MUEC is covered under their current plan review and inspection processes.
- Residential and commercial codes follow similar patterns. Processes, violations, and barriers all follow a similar pattern for both residential and commercial energy codes. This should help in more efficiently designing training materials and learning opportunities.5

Evaluation
Measuring compliance will require the state to evaluate a small sample of construction projects. To make this process as simple as possible, the state may consult 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 construction and residential renovations. Sample sizes are relatively small and are based on the recent number of permits over preceding years. Choosing which buildings to include in the sample should be left up to responsible local jurisdictions. Fortunately, officials are not required to track specific buildings throughout every stage of the inspection process. Instead, to make data collection more efficient, DOE suggests that local officials may perform inspections of various code requirements across a larger group of buildings (each at a different level of completeness) simultaneously. For more information, please see: http://www.energycodes.gov/arra/compliance_evaluation.stm. Any evaluation must be done per requirements prescribed by 1972 Public Act 230, the Stille-DeRossett-Hale Single State Construction Code Act.

Create Feedback Loops
Creating feedback loops is part of a tactical enforcement plan. These code procedures – enforcement and evaluation – provide buckets of information that should be looped back into the process in order to fix where efforts or knowledge of the energy code are weak. For example, if a code official were to notice over several inspections that one element of the code is routinely misinterpreted or completed incorrectly, this information should be gathered to create training to correct the lack of knowledge or misunderstanding. The simple task of information gathering will save the state added enforcement efforts and, eventually, improved construction practices. Any evaluation must be done per requirements prescribed by 1972 Public Act 230, the Stille-DeRossett-Hale Single State Construction Code Act.

Monitor & Document
Monitor energy savings attributed to the building energy code and document cost effectiveness of energy code compliance activities.

Energy code training is a critical element of energy code compliance. The state must ensure that designers, engineers, builders and inspectors are proficient in code requirements and advanced building techniques, which are fundamental to energy code compliance. Even experienced code officials and design and construction professionals require hours of training to understand the energy code and its application in the field to lighting, insulation, windows, HVAC, and more. Training is one of the most cost-effective ways to ensure that building professionals are proficient in energy codes.

Since 2003, a project team led by MSU has conducted energy code training under seven separate federal and state grants. These trainings targeted building officials and industry participants, including:
- Architects
- Engineers
- Contractors
- Homebuilders
- Subcontractors
- Vendors
- Suppliers

Over 100 training programs have been conducted that emphasized both residential and commercial energy codes and educated approximately 5,000 attendees. In recent years, with preparation for the adoption of the 2009 MEUC and Recovery Act funding available, Michigan ramped up training efforts in 2011. To offer statewide training and maximum participants, MSU worked closely with the Michigan Association of Home Builders (MAHB) to contact all Local Home Building Associations (HBAs) in Michigan. This created a positive symbiotic relationship where local HBAs sponsored trainings and received $1,000 to offset administrative costs, room costs, and advertising while MSU successfully trained builders on new code requirements. MSU trained a high amount of builders and code officials. Overall, trainings were conducted in 21 of the 22 active Michigan HBAs and 324 builders were trained. During this training cycle, MSU used their four commercial and four residential energy code training curricula that were submitted and approved for Building Official continuing education under Michigan Public Act 54.

Additionally, drawing from input gathered from training evaluations, as well as focus groups and code official surveys conducted by Public Sector Consultants (PSC) in the spring of 2011, MSU developed four new one-hour programs that focused on plan review and building science.

After making great progress in establishing a training program, Michigan is currently lacking a sustainable funding stream to support on-going energy code training for the current and next code update cycle.
Maintain the Energy Codes Training Program

CRITICAL TASK

As is the case in most states, the administration and enforcement of the energy code is primarily the responsibility of the building departments of local cities, counties, and communities. In Michigan, the services provided by local building departments include: plan review, inspections, and the code appeals process. PSC’s 2011 survey results suggest that processes are in place that will facilitate implementation of the code. Most jurisdictions, for example, require energy code compliance documentation for permit applications. Those communities that do not operate their own building department are eligible to apply for services to be administered by the BCC.

While Michigan has a solid history of providing basic statewide training, especially in the past two years, BCC must continue and expand upon these efforts. As shown in Figure 2, roughly 82 percent of the state’s code officials have attended trainings on the MUEC, and participation has been increasing among design and construction professionals.

The following training scheme outlines three levels of training for code enforcement and construction professionals. Michigan was operating in Level 2 as it had an established program: curriculum, training kits, and knowledgeable trainers. However, the lack of funding has stalled statewide training efforts.

Training

<table>
<thead>
<tr>
<th>Level 1: Basic Training</th>
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<tbody>
<tr>
<td>LENGTH (RESIDENTIAL): Half-day</td>
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<tr>
<td>LENGTH (COMMERCIAL): Half-day</td>
</tr>
<tr>
<td>COVERAGE: Basic energy code provisions</td>
</tr>
<tr>
<td>FREQUENCY: Ongoing; updated after every code adoption or update</td>
</tr>
<tr>
<td>ADDITIONAL: Online training opportunities</td>
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<th>Level 2: Intermediate Training</th>
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<tbody>
<tr>
<td>LENGTH (RESIDENTIAL): Full-day</td>
</tr>
<tr>
<td>LENGTH (COMMERCIAL): Full-day</td>
</tr>
<tr>
<td>COVERAGE: All energy code provisions</td>
</tr>
<tr>
<td>FREQUENCY: Organized around code adoption—six months prior to and after new effective date</td>
</tr>
<tr>
<td>ADDITIONAL: Online training opportunities</td>
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<table>
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<th>Level 3: Advanced Training (*Best Practice)</th>
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<tbody>
<tr>
<td>LENGTH (RESIDENTIAL): Full-day and multi-day training, or on-site training</td>
</tr>
<tr>
<td>LENGTH (COMMERCIAL): Full-day and multi-day training, or on-site training</td>
</tr>
<tr>
<td>COVERAGE: In-depth coverage of individual aspects of the code:</td>
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<tr>
<td>• HVAC, lighting systems, envelope, scope and administration, etc.</td>
</tr>
<tr>
<td>• Installation, advanced building techniques</td>
</tr>
<tr>
<td>• Additional code interpretation</td>
</tr>
<tr>
<td>FREQUENCY: Ongoing; updated after every code adoption or update</td>
</tr>
<tr>
<td>ADDITIONAL: On-site training; train-the-trainer program; part of community/technical college curriculum</td>
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Figure 2: Code Official Training

Provide Advanced Training Opportunities  CRITICAL TASK

Following the 100 trainings conducted between 2010 and 2011, MSU gathered program evaluations from attendees where suggestions and ideas for further energy code training topics were sought. Their suggestions were discussed with industry experts to identify and develop an advanced program curriculum. MSU then created four new one-hour programs that have been submitted and approved under Michigan Public Act 54:

- Residential Energy Plan Review Program (1 hour)
- Residential Energy Inspection Program (1 hour)
- Residential Energy Code Air Sealing Requirements Program (1 hour)
- Energy Code Addition/Renovation Requirements Program (1 hour)

Given that the training curriculum already exists, and state and federal money was invested to create them, the BCC should make it a priority to provide Michigan professionals with these ready-made resources (and the related CEUs). BCC could potentially host such a training and compensate MSU for administration of the program.

It is also important to note that PSC’s focus groups gathered a few more topics suggested by professionals, but did not have curriculum development. They are: (1) new and advanced technologies (HERS, ENERGY STAR), (2) code application to renovations, and (3) specialized software training. These are areas where the building community has requested additional training and support and could serve as the next cycle of advanced training curriculum development.

Create a Centralized Online Portal for Energy Codes  CRITICAL TASK

Under the Department of Licensing and Regulation’s (LARA) website, information on the MUEC is found on BCC’s page, with more details located under the Building Division, where the Division lists the energy code regulations, commission meetings, permitting, code official registration, and Code Works! articles. More resources and tools are found scattered throughout numerous websites of state agencies, training providers, and educational institutions; having them centralized will benefit building professionals expected to carry out these regulations.

To that end, findings from PSC’s focus groups and surveys underscore this need as many professionals said they would greatly benefit from online tools and trainings. As noted within their final report, “All participants were generally in favor of a central online platform for energy code training and information, and thought that greater consistency in the message and quality of energy code training programs is important going forward.”

The structure and approach of an online portal has been previously examined by PSC, where it was concluded that there are a few options, listed in the Summary of MEC Portal Options Table (page 16).

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Program Structure

Generally, the initial 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 monetarily compensating these code officials will be permissible if the program is supported with federal or state funding. But, since these attendees are generally taking off a day of work, it is desirable 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 an allowable alternative to payment when using government funding.

Summary of MUEC Portal Options

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Drawbacks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>State BCC Website</strong></td>
<td>• Highest degree of control over the portal</td>
</tr>
<tr>
<td></td>
<td>• First source the building community will look to for information</td>
</tr>
<tr>
<td></td>
<td>• State is code developer and enforcer, so it makes sense to have MUEC information available directly through their site</td>
</tr>
<tr>
<td></td>
<td>• Keeps BCC staff connected to local energy code issues</td>
</tr>
<tr>
<td><strong>Contact with a Michigan University</strong></td>
<td>• Michigan focused and supporting a Michigan institution</td>
</tr>
<tr>
<td></td>
<td>• Credible, trusted source for information</td>
</tr>
<tr>
<td></td>
<td>• Offer opportunities to provide advanced energy code and/or green building information based on university research</td>
</tr>
<tr>
<td></td>
<td>• Provide student learning opportunities at the hosting institution</td>
</tr>
<tr>
<td><strong>Contract with a State or National Nonprofit</strong></td>
<td>• Energy efficiency and/or green building expertise</td>
</tr>
<tr>
<td></td>
<td>• Flexible on format, content</td>
</tr>
<tr>
<td></td>
<td>• Opportunity to leverage knowledge/resources from other programs</td>
</tr>
<tr>
<td></td>
<td>• Timely and responsive</td>
</tr>
</tbody>
</table>

Energy Code Ambassadors Program CRITICAL TASK

One of the cheapest and easiest ways to keep the roughly 1,899 code officials throughout the state trained and up to date on the energy code is to institute an Energy Code Ambassadors Program (ECAP). This train the trainer approach keeps costs down by requiring only one to two official training sessions, and allows for code officials to become well-versed in the code by learning from their peers. BCC should consider investing and implementing ECAP or a similar program.
Ambassador Selection

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

Cost Estimate

Based on ECAP programs in other states, the following can be used as a model template for pricing the program for eight ambassadors spread over two days:

<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>Room Rental</td>
<td>-</td>
<td>$5,000</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>$180</td>
<td>$4,320</td>
</tr>
<tr>
<td>Oversight Costs – can be subcontracted to BCAP/ICC</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>Total</td>
<td></td>
<td>$37,336</td>
</tr>
</tbody>
</table>
For more information on the Compliance Planning Assistance Program, please email bcap-ocean@ase.org

www.bcap-ocean.org/resources
www.energycodes.gov

For more information and assistance on the Michigan Bureau of Construction Codes

Construction Codes
P.O. Box 30254
Lansing, MI 48909
www.michigan.gov/bcc

For more information on the Compliance Planning Assistance Program, please email bcap-ocean@ase.org