DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

2009 INTERNATIONAL ENERGY CONSERVATION CODE STATUS REPORT

Prepared for:

DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

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1. EXECUTIVE SUMMARY

This report presents findings from a statewide survey administered to Delaware jurisdiction building code personnel regarding Delaware's implementation and enforcement of the 2009 International Energy Conservation Code (IECC). Supplementing these findings are the results of a Delaware residential new construction baseline analysis. This report is intended to build on prior energy code studies in order to assess the current status and future needs of Delaware jurisdictions with regard to implementing and enforcing the 2009 IECC and to determine how best to achieve 90% compliance with the code by 2017.

In 2010, the state of Delaware formally adopted the 2009 IECC. This code adoption was followed with studies conducted by the Building Codes Assistance Program and the Delaware Energy Office (succeeded by the Division of Energy and Climate) that assessed the ability of the state and its jurisdictions to implement and enforce the newly enacted 2009 IECC. In 2011, the Delaware Gap Analysis and the Delaware Strategic Compliance Plan were published based on this assessment and provided an overview of the strengths and weaknesses of Delaware's energy code adoption, implementation, and enforcement. Building on these studies, the evaluation team interviewed building code officials across the state to understand better how those officials and their staffs are currently implementing and enforcing the 2009 IECC and where barriers or issues are arising in the process. To supplement this portion of the analysis, the evaluation team also incorporated findings from its residential new construction baseline analysis to provide insight on how successfully builders have adapted to the new energy code requirements.

The evaluation team found that jurisdiction code officials have local inspection policies that are generally operating adequately to meet energy code requirements. However, there is a lack of communication among code officials at the local, county and state level. Code officials do require their staff to have some training, yet no energy code training or certification is consistent across jurisdictions. Furthermore, code officials indicated that there is a need for additional training on technical aspects of the 2009 IECC for both jurisdiction code staff and the building community.

With regard to actual building practices, the evaluation team found that Delaware residential builders, on average, currently builds above minimum prescriptive 2009 IECC requirements by 6.6%, i.e., the average or typical home consumes about 6.6% less energy compared to the energy consumption of a home built to minimum code standards. Despite this success, jurisdiction code officials did note that contractors are often uncertain about energy code requirements, and that they often cite specific recurring code violations during plan or site inspections. Thus, while residential builders are generally building beyond code requirements, areas in need of improvement do still exist.

Based on findings from the jurisdiction code survey and results from the residential baseline analysis, key recommendations to realize the target of 90% compliance by 2017 are to:

- Increase education and training opportunities for both jurisdiction code officials and building industry stakeholders. To increase the effectiveness of such training, it should be custom tailored to meet the direct needs as requested by stakeholders.

- Establish and build stronger relationships among the state, counties, and other jurisdictions in order to develop code compliance tracking infrastructure that will allow stakeholders to understand better where barriers to energy code implementation and enforcement are occurring and to track the state's overall level of compliance.

2. INTRODUCTION

The Department of Natural Resources and Environmental Control (DNREC) retained Nexant (evaluation team) to assess the current status and future needs of jurisdictions with regard to implementing and enforcing the 2009 IECC. The evaluation team surveyed jurisdiction building code officials across the state to understand better how those officials and their staffs are currently implementing and enforcing the energy code and where barriers or issues are arising in the process. A goal of this survey was to understand how the state can best achieve the Department of Energy's target of demonstrating that 90% of the state's building stock is in compliance with the 2009 IECC by 2017[1].

In 2010, the state of Delaware formally adopted the 2009 IECC. This code adoption was followed by studies conducted by the Building Codes Assistance Program and the Delaware Energy Office (succeeded by the Division of Energy and Climate) that assessed the ability of the state and its jurisdictions to implement and enforce the newly enacted 2009 IECC. Published in 2011, the Delaware Gap Analysis and the Delaware Strategic Compliance Plan published and provided an overview, based on this assessment, of the strengths and weaknesses of Delaware's energy code adoption, implementation, and enforcement. These recommendations were reviewed by the evaluation team and are referenced throughout this report. In addition, results from the residential baseline analysis conducted as part of the Green for Green residential new construction evaluation are also included in the report to provide insight on how successfully builders have adapted to the new energy code requirements and to what extent new construction residential buildings are in compliance across Delaware.

3. METHODOLOGY

Telephone surveys were the primary method for collecting relevant data on the building code protocols in Delaware jurisdictions. Additional data were extracted from the Delaware residential new construction baseline analysis and from prior studies including the Delaware Gap Analysis and the Delaware Strategic Compliance Plan. This section provides an overview of the data collection methodology.

Determining 2009 IECC Status

In order to understand the current status of the 2009 IECC in Delaware, the evaluation team conducted the following tasks:

[1] The Department of Energy added the stipulation that states which accepted American Recovery and Reinvestment Act funds for energy code must demonstrate that 90% its building stock meets the requirements outlined by the 2009 IECC.

- *Delaware Energy Code Review.* The evaluation team reviewed the Delaware Gap Analysis and Delaware Strategic Compliance Plan to understand the context and prior efforts made to adopt, implement, and enforce the 2009 IECC. The evaluation team focused its review on issues and recommendations highlighted in the Gap Analysis report to assess the amount of progress since the report was released.

- *Survey Development.* The jurisdiction building code survey was adapted from the previously administered Building Codes Assistance Program survey. Additional questions were included to understand better the protocols, processes, and data collected by each jurisdiction. The evaluation team developed two sets of survey questions intended for the jurisdiction's Chief Building Officer/Director and for field inspectors. The survey questions were multiple-choice, open-ended, and divided into three sections: Local Inspection Policy, Education and Training, and Enforcement/Compliance. Both surveys were programmed into Qualtrics Online Survey Software to allow for automated recording.

Survey Administration. The evaluation team administered surveys for jurisdiction code officials across all three counties: New Castle County, Kent County, and Sussex County. Contact information for 30 of the 57 jurisdictions engaged in building code implementation and enforcement was provided by DNREC. The appropriate jurisdiction representative was contacted *via* email or phone requesting a scheduled time to interview by phone. Participants were also provided an online self-report option. Respondents were comprised of a single or multiple jurisdictions' building code personnel. As mentioned above, custom surveys were developed for both the jurisdiction's Chief Building Officer/Director and the field inspectors. However, several interviewed respondents shared these roles and therefore interviews were conducted using the Chief Building Officer/Director survey supplemented with field inspector questions. The Evaluation Team developed a weighted sample based on permits issued at the county level in 2011.

Table 3-1 illustrates the anticipated and actual sampled participants. An initial low response rate from jurisdictions prompted DNREC to contact jurisdictions directly and encourage their participation in the study. After this outreach was made, the evaluation team completed 12 surveys with code officials representing 42[1] jurisdictions across Delaware.

Table 3-1: Code Survey Sample

Jurisdiction	Anticipated Sample Size	Actual Sample Size
New Castle County	4	9
Kent County	4	15
Sussex County	8	18

[1] County building departments conduct code review and inspections for multiple communities within their county.

Determining Baseline Building Practices

The evaluation team took a multifaceted approach to determine baseline residential building practices indicative of the "typical" Delaware newly constructed home. These are the practices of the "typical" or "average" residential builder in the state. To determine these practices and assess the extent to which these practices met or exceeded code, the evaluation team completed the following tasks:

- *Code Review.* For context, the evaluation team reviewed Title 16, Chapter 76 of the Delaware Energy Code that stipulated statewide adoption and implementation of 2009 IECC beginning July 1, 2010. The enactment of the 2009 IECC set a minimum baseline for new residential construction.

- *Telephone Survey.* These interviews were drawn from a random sample of builders across the state and were intended to allow the evaluation team to assess the extent to which common building practices in Delaware met or exceeded minimum code requirements. The sample for this effort was developed from a Hoovers database of Delaware businesses classified as residential homebuilders. The reliability of the Hoovers database proved to be low as several contacts had incorrect or disconnected phone numbers listed or the contacts were not residential homebuilders. This effort yielded 13 completed phone surveys. Due to limited success with cold call recruitment, the evaluation team abandoned these phone surveys and substituted building plan reviews of homes built by builders from across the state (see below).

- *Plan Reviews.* The evaluation team selected a random sample of residential building permits from across the state based on the number of permits issued in the 2011 calendar year. DNREC provided the total number of permits issued in 2011 by county: a total of 3,027 permits for multifamily and single-family homes. From this, the evaluation team made requested from Delaware jurisdictions for energy measure documentation including building permits, RESCheck files/certificates, HVAC worksheets (e.g., Manual J), as well as floor plans, elevations, and building sections. The evaluation team completed a thorough review of all available documentation for each project to determine crucial building parameters including conditioned square footage, foundation type, insulation details, and glazing area. This documentation was used to calculate the baseline building conditions. Jurisdictions were asked to provide one building plan issued for each month from March 2011 through March 2012. The evaluation team made this request to increase the variation in building types by avoiding the receipt of similar or identical plans filed by a single builder. Building plans and associated documentation were collected by the evaluation team electronically, in hard copy form by mail, or by on site pick up at the jurisdiction office. This time frame balanced the need to conduct follow up site visits with homes that were in mid-construction or recently constructed while maintaining a level of randomness. DNREC provided a contact list of jurisdictions. A total of 14 of 30 reporting jurisdictions provided the requested documentation[1]. In total, the evaluation team completed plan reviews on a total of 70 homes to achieve a 10% precision at a 90% confidence level. Results were weighted by permits issued at the county level.

- *Site Visits.* To verify and supplement the data collected from building plans, the evaluation team solicited those builders whose plans were collected for a site visit to the corresponding home or to a similar home in the surrounding vicinity. The evaluation team cross-referenced data collected on site with building plans to validate data extracted from the plans. If a discrepancy

[1] Not all jurisdictions were able to provide one plan for each month requested; requests were fulfilled based on permit availability.

was noted, values recorded from the site visit were used in the analysis. The evaluation team recruited these builders *via* cold calls after gathering contact information from building plan documentation and provided these builders with a $125 gift card as an incentive for their participation in an on-site visit. The purpose of the on-sites was to validate the information observed on building plans as well as to provide further data for developing the baseline building conditions. In total, the evaluation team completed 16 site visits, five of which were recruited during the phone survey process.

The result of this multifaceted effort was a list of energy measure values (insulation R-values, window U-factors, HVAC efficiencies, etc.) that represent the typical building practices employed in Delaware. The evaluation team determined measure values by taking a weighted average of each measure based on the number of permits issued by county in 2011. For example, the baseline R-value for above-grade walls was determined by taking an average of all observed R-values weighted by the number of building permits issued by county.

4. QUALITATIVE FINDINGS

The findings outlined below reflect survey responses provided by jurisdiction code officials as well as results from the residential baseline analysis. The evaluation team successfully interviewed 11 respondents and received one self-reported survey. As some respondents represented multiple jurisdictions, the evaluation team collected responses representing 42 jurisdictions.

The findings are organized into four sections: Local Inspection Policy, Education and Training, Enforcement/Compliance, and Residential Baseline Practices. Each section concludes by listing recommendations for actions that would improve energy code implementation and enforcement.

Local Inspection Policy

Nearly all jurisdictions are allowed by state and local law to set enforcement rules at the local level. The building inspection and plan review process includes communication with design and construction professionals until the plans meet all code requirements. Building code officials perform on-site inspections throughout the process issuing inspection write-ups, change orders, or stop-work orders for violations as needed. Beyond this standard outline, however, each jurisdiction adopts its own methods for conducting reviews and inspections. When asked what the relationship is between city and county policy in the state, most jurisdictions indicated they were not aware of any relationship. Counties are responsible for unincorporated areas, as well as jurisdictions that cede enforcement duties to the county. Of the surveyed respondents, only four jurisdictions have enforcement strategies that oversee energy code enforcement in areas that do not have sufficient infrastructure. These areas lack code officials to ensure that plans meet all code requirements. Outside of these arrangements, city and county inspection departments operate within their separate jurisdictions and generally do not collaborate or share resources.

Most of the survey respondents are not aware of a local climate change plan, even though several jurisdictions are either signatories to the US Conference of Mayors Climate Protection Agreement or are members of the International Council for Local Environmental Initiatives - Local Governments for Sustainability. One specific goal of the Local Governments for Sustainability is to develop local climate

change action plans. For those respondents that were aware of a climate plan, one respondent reported having attended meeting regarding a local climate plan but was unclear of the plan's current status and stated the energy code was not a component of it. Other mentions of a climate plan related to the need for new dikes due to sea level rise and new zoning requirements to avoid high wind corridors for building sites.

Additionally, an executive order passed by Delaware Governor Markell requires the consideration of Leadership in Energy and Environmental Designs (LEED) standards in construction, renovation, and operation of state-funded facilities. Notwithstanding, the vast majority of interviewed jurisdictions indicated that state facilities are not inspected differently from other buildings. The Gap Analysis suggested that "Delaware should pass legislation that mandates that all state-funded facilities meet the requirements of a recognized national green building or high performance standard or code." The jurisdictions indicated they are not aware of any mandate of this nature.

Recommendations

- Given the apparently disconnected relationship between the city and county inspection programs, the state should encourage more collaboration and cooperation among jurisdictions. Training sessions, workshops, and the Delaware Energy Codes Coalition provide strong opportunities to build these relations through the exchange of ideas and best practices among jurisdictions and other stakeholders. Moreover, strengthening the relationships among jurisdictions will lay the foundation to establish tracking protocols or other systems that will help assess the percentage of Delaware's building stock that is in compliance with the 2009 IECC and other measures of progress. See recommendations listed under Enforcement/Compliance for more details regarding needs for tracking.

- As there are both local- and state-wide interests in pursuing climate initiatives and green buildings, jurisdictions should develop and implement protocols to integrate building code requirements into local climate plans or state initiatives. Additionally, DNREC should provide support and work directly with those jurisdictions that demonstrate interest to pursue climate initiatives through building regulation.

Education and Training

While none of the jurisdictions have formal requirements for becoming a building inspector, most of the respondents stated that they encourage International Code Council (ICC) certifications for their employees. One building code officer said: "An energy efficiency requirement doesn't currently exist for employment, but it's something that will be discussed for future hires. As for current certifications, a Certified Building and Site Inspector must maintain four ICC certifications. Those certifications are: Residential Inspector, Commercial Inspector, Commercial Mechanical Inspector, and Commercial Plumbing Inspector." Approximately just half of the surveyed jurisdictions indicated that Continuing Education Unit (CEU) requirements are required for code officials. Several respondents stated that a lack of resources, primarily time and funding, precludes their staff from keeping their ICC certifications current.

When asked about cultural attitudes in the state toward energy efficiency provisions, five respondents indicated that energy efficiency is seen as a "priority," one respondent stated that the culture was "trusting" of energy-efficiency provisions, and other respondents were either unsure or felt the state's culture surrounding energy efficiency was mixed. These responses show a general improvement in attitudes since the Gap Analysis survey, which indicated jurisdiction code officials felt there was little if any support for energy efficiency.

All respondents stated that their staff had attended classroom training in energy code plan review and inspection; about half of respondents claimed that their staff attends these classes regularly (every two or three years) to maintain certification as outlined by the ICC. Although most of the jurisdictions use resources published by the ICC, less than half of the respondents claim that energy code books are made available by the state.

Recommendations

- To increase the rate of 2009 IECC compliance, DNREC should consider options standardize requirements for code officials to ensure all inspectors are knowledgeable of the energy code requisites. Additionally, DNREC should prioritize CEU-eligible classroom/field training and workshops accessible to code officials as well as architects, contractors, and other stakeholders. These trainings and workshops should be custom tailored to the needs specified by jurisdictions. That is, trainings and workshops may cover broad subject matter such as an overview of the 2009 IECC while other trainings may cover very specific topics such as blower door testing. Code books and other relevant materials should be provided at all training events.

- In order to continually improve the cultural attitude of energy efficiency throughout the state, outreach should be extended to consumers to raise awareness and make energy efficiency a more widespread issue. Fact sheets and brochures can be provided to energy consumers who will be residing in a new home and to businesses that are being established in new buildings. Outreach can involve raising awareness of the need for energy codes and promoting their adoption and implementation, which would increase trust and help to make energy efficiency provisions a priority state-wide.

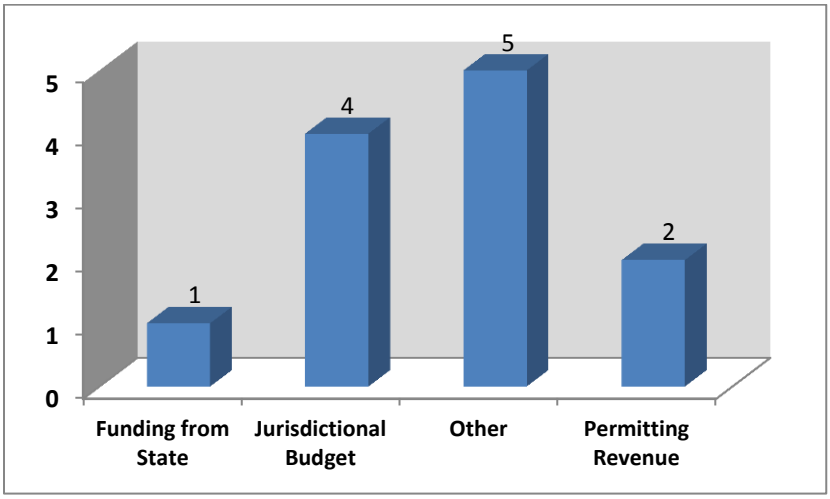
Enforcement/Compliance

According to the Gap Analysis, "The state has outlined some enforcement guidelines for local jurisdictions for all building codes. Chapter 76 of Title 16 states that Delaware's three counties may 'enforce building codes…and charge reasonable fees for the enforcement of said codes.'" All surveyed jurisdictions charge fees to cover the cost of inspections. When asked how the economic downturn has affected construction and permit fees, all responses stated that the building industry is down and consequently permit revenue is also down. Three respondents claimed to have reduced staff in recent years due to the economic downturn. However, most respondents indicated that economic conditions had brought about hiring freezes. Only four respondents claimed that the state helped to subsidize the use of handheld electronics or other technologies to facilitate building inspections. The remaining jurisdictions were not aware that the state offered subsidies for these resources.

Most jurisdictions are funded through jurisdictional budgets, and none of the jurisdictions mentioned a lack of funding to complete energy code enforcement.

Table 4-1 below provides a breakdown of how surveyed jurisdictions are funded:

Figure 4-1: Jurisdiction Building Code Funding Sources



'Other' funding was described as a jurisdiction General Fund, taxes, or a combination of revenue sources such as permit fees and the jurisdictional budget. As mentioned in the Gap Analysis, funding is sufficient for enforcement of building codes. However, multiple respondents indicated a general constraint on resources, including staff, time, and funding, that is stretched across competing responsibilities.

Each respondent was asked to estimate the population of all the jurisdiction(s) they serve, and the number of new construction residential and commercial building permits they issued in the previous fiscal year (i.e., FY2011). Table 4-1 below summarizes the population and permits issued.

Table 4-1: Population and Permits Issued

Respondent	Total population served by agency	Residential building permits issued in previous year	Commercial building permits issued in previous year
1	1,060	300	20
2	2,000	6	2
3	2,800	30	5
4	6,000	3	3
5	100,000	488	24
6	180,000	1260	274
7	400,000	481	87
8	36,000	200	900
9	3,000	17	1
10	3,800	7	2
11	1,500	13	1
12	6,900	12	8

Additionally, respondents were asked what percentage of the time builders use a prescriptive approach, what percentage of the time builders use a trade-off approach including RESCheck, and what percentage of the time they use a performance approach. Table 4-2 below provides the breakdown of the responses.

Table 4-2: 2009 IECC Compliance Path Frequency

Respondent	Prescriptive Path	Trade-Off Path	Performance Path
1	90%	5%	5%
2	5%	0%	95%
3	20%	0%	80%
4	90%	0%	10%
5	100%	0%	0%
6	5%	90%	5%
7	60%	40%	0%
8	20%	80%	0%
9	80%	20%	0%
10	50%	5%	45%
11	95%	0%	5%
12	50%	0%	50%

Based on these responses in Table 4-1 and Table 4-2, approximately 53% of residential builders use the trade-off path, 42% use the prescriptive path, while only 4% use the Performance path. The low use of the performance path is not unexpected as it can require higher costs due to specific energy testing such as blower door tests. Similarly, only 2% of commercial builders use the performance path; 76% use the trade-off path and 22% use the prescriptive path.

In regard to implementing the 2009 IECC, the majority of survey respondents stated the code requirements are clear and easy to follow. For plan reviews, all jurisdictions indicated that energy efficiency is incorporated into the review process, and the average plan review to assess energy code compliance takes approximately two hours for commercial buildings and 30 minutes for residential buildings. A minority of respondents utilizes software to help facilitate plan reviews and inspection processes including Microsoft Access, Citizen Serve, and ApplicationXtender. These software programs are used primarily for data storage and record keeping. No jurisdiction accepts software compliance reports in lieu of a plan review with permit applications. When asked about site visits, on average jurisdictions reported that energy efficiency is involved during at least two site inspections throughout the construction process. However, the current compliance checklist protocol outlined by the Department of Energy requires site inspections during four different phases of construction in addition to the plan review in order to meet the requirements of the 2009 IECC.

The evaluation team asked jurisdictions about the primary barriers and challenges with energy code enforcement. A common response was the lack of understanding of technical aspects of the 2009 IECC by jurisdiction code staff and other stakeholders. One respondent said the technical information is difficult for their field engineers to understand, while multiple respondent stated contractors are not sufficiently educated on the energy code, and more training is needed to ensure that they know how to comply with the code during construction. All jurisdictions were asked what plan review or inspection items they generally find do not comply with the energy code. The most common response was R-values, especially for ceiling insulation. One respondent claimed that contractors are under the impression that R-30 is the correct value for ceiling insulation, while the minimum prescriptive code is R-38. Respondents also indicated that Manual J documents and RESCheck outputs were the most commonly missing documentation from building plans, specifications, or actual construction.

Recommendations

- Moving forward, the state should use available funding to increase its energy code outreach and support activities. For example, as several respondents were not aware of state funding for the use of handheld electronics or other technologies to help facilitate building inspections, the state should consider advertising its ability to support jurisdiction resource needs. This outreach and monetary support will signal to jurisdictions that the state is committed to working with local code officials to ensure the state's housing stock meets or exceeds minimum energy code requirements.

- As noted above, jurisdictions may not be conducting sufficient site inspections as required by the 2009 IECC. Minimum site plan review and on-site inspection protocols should be standardized across jurisdictions to ensure all buildings meet the 2009 IECC requirements. A standardized approach will allow for easier progress tracking with regard to code compliance across the state.

- Establish a centralized tracking system that maintains jurisdiction records of 2009 IECC compliance. Tracking systems will allow for internal verification of compliance across the state and will also identify areas of energy code that represent barriers to compliance, e.g., the

common problem of insufficient ceiling insulation revealed by the energy code survey. A standardized inspection protocol and associated tracking system would allow for identification of similar common issues.

Residential Baseline Practices

The baseline analysis assessed the current residential building practices with regard to installed energy measures. The Evaluation Team found that builders across the state were building above code and that their homes typically exceed minimum 2009 IECC compliance by approximately 6.6%, i.e., the average or typical home consumes about 6.6% less energy compared to the energy consumption of a home built to minimum code standards. This value represents the average RESCheck score cited from documentation received in the set of reviewed building plans. The sample of building plans were weighted by number of 2011 permits issued by county. Table 4-3 below illustrates the findings from this study on a measure-by-measure basis.

Table 4-3: Delaware Residential Baseline Building Practices

Measure	Measurement	Prescriptive 2009 IECC Minimum (CZ4)	Delaware Average Baseline Practices
Slab foundation insulation	R-value	10 (unheated)	9[1] (unheated)
Interior foundation wall insulation	R-value	10	11
Exterior foundation wall insulation	R-value	10	10[1]
Rim joist insulation	R-value	N/A	18
Frame floor insulation	R-value	19	23
Above grade wall insulation	R-value	13	17
Ceiling/Attic insulation	R-value	38	37
Window U-Value	U-value	0.35	0.33
Window SHGC Value	SHGC value	N/A	0.32
Forced air furnace efficiency	AFUE	78%	89%[1]
Heat pump efficiency	HSPF	8.5	8.1[1]
A/C efficiency	SEER	13	14[1]
Percentage better than 2009 energy code	%	-	6.6%[2]

[1]Values derived from less than 50% of building plan sample

[2]Average RESCheck values from building plan sample

As Table 4-3 illustrates, residential builders in Delaware are exceeding prescriptive code requirements for nearly all energy measures. Ceiling insulation, however, does not meet minimum code requirements, as corroborated by statements made by the jurisdiction code officials. It should also be noted that the evaluation team found that energy measures observed during site visits were typically of higher efficiency than stipulated on building plans. These trends indicate a strong probability that Delaware will meet the 90% compliance target by 2017 for its residential housing stock. However, there are definite gaps that need to be addressed through increased outreach and education. Moreover, there is no current assessment of commercial building practices for Delaware.

Recommendations

- Identify where residential builders may be missing code compliance and develop targeted outreach and education campaigns to address these shortcomings.
- Conduct a new commercial construction baseline analysis to determine current commercial building practices and identify any energy code shortcomings.

APPENDIX: SURVEY INSTRUMENT

1. DELAWARE ENERGY CODE SURVEY INSTRUMENT

Local Inspection Policy
Does state/local law allow your jurisdiction to set enforcement rules at local level?
What is the relationship between city and county policy in the state?
In what jurisdiction do you provide services? {If more than one applies, please identify the jurisdiction where you are most actively involved}
Does your jurisdiction and/or locality have enforcement strategies that oversee energy code enforcement in areas that do not have sufficient infrastructure? Who is responsible for unincorporated areas?
Is your jurisdiction and/or city allowed to charge fees to cover the cost of inspection?
Do cities and counties cooperate on enforcement?
Does the state/city have a process in place to measure and evaluate compliance? Has the state/city reviewed DOE's guidance on measuring code compliance?
Do rural communities share enforcement staff?
What is the number of RESNET certified HERS raters or other 3rd party certified infrastructure?
How has the economic downturn affected construction and permit fees?
Has your office had to reduce staff in recent years due to the economic downturn?
Is there a local climate change plan? If so how does it compare with other local jurisdictions?

Education and Training
What are the requirements for becoming a building inspector? Is there an energy efficiency requirement?
What is the main background/education/certifications of code inspectors?
Has your staff attended certified training in energy code plan review and inspection?
If so, how was this training delivered? Online/Webinar, Classroom/Institute, In the field, etc. Which of these methods do you prefer?
How is certification maintained? Is there a standard process for CEUs?
Are there CEU requirements for code officials, builders, architects, others? If so, how many?
What is the culture in the state towards energy efficiency provisions? (lack of interest, priority, trust, resources)
Are energy code books are made available by the state?
Do you use resources published by the ICC?

Enforcement/Compliance
Have any compliance studies been performed, or are any planned (locally or statewide)?
Please estimate the population of the jurisdiction served by your agency.
During the previous year, how many residential building permits were issued by your agency?
During the previous year, how many commercial building permits were issued by your agency?
How is your agency funded? Permitting revenue, Jurisdictional budget, Funding from the State, etc.
Who conducts plan reviews for energy code compliance?
Who conducts field inspections for compliance?
Do you feel that the requirements in the code are clear enough to follow easily?
How much time is devoted to the average plan review for energy codes in a new commercial building? If energy plan reviews are performed in conjunction with reviews for other code provisions, please estimate the time for the energy-related reviews only.
How much time is devoted to the average plan review for energy codes in a new residential building? If energy plan reviews are performed in conjunction with reviews for other code provisions, please estimate the time for the energy-related reviews only.
To document energy code compliance in residential buildings, over the last 2 years in your jurisdiction, what percentage of the time do builders use a prescriptive approach, what percentage of the time do builders use a trade-off approach including RESCheck, and what percentage of the time do they use a performance approach?
What major issues impede your ability to enforce the energy code in residential buildings?
What major issues impede your ability to enforce the energy code in commercial buildings?
How many times per project is the site visited for inspections? How many inspections involve the energy code?
Is energy efficiency incorporated into the building code plan review/site inspection process? Or is it a separate process?
Are state buildings inspected differently?
Is the Energy Inspection checklist used? How long does it take to complete?
Are "stop work orders" issued after an inspection and or plan review reveals an energy code violation?
Does your jurisdiction require a change order and re-review of energy code violations?
What are the primary barriers/challenges with energy code enforcement?
Does your state/locality provide penalties for re-inspection and repeated reviews?
Is the state developing third-party enforcement and verification infrastructure?
Are there mechanisms for 3rd party inspectors to perform plan review and inspection?
If you receive software compliance reports with permit applications or plans, do you accept them in lieu of a plan review?
What software and/or other information technologies do you use to facilitate the plan review and inspection process and associated record keeping and communications with permitees?
In your jurisdiction, what plan review and/or inspection items do you generally find do not comply with the code?
What information is typically missing from plans, specifications, and/or actual construction, which precludes your ability to determine compliance?
Does your state/locality help to subsidize the use of handheld electronics or other technologies to facilitate building inspection?
What information is available to your staff during field inspection?