

Code Enforcement Workforce Gap Analysis: New England and Mid-Atlantic Region



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About NEEP

NEEP was founded in 1996 as a non-profit whose mission is to serve the Northeast and Mid-Atlantic to accelerate regional collaboration to promote advanced energy efficiency and related solutions in homes, buildings, industry, and communities. Our vision is that the region's homes, buildings, and communities are transformed into efficient, affordable, low-carbon resilient places to live, work, and play.

Disclaimer: NEEP verified the data used for this white paper to the best of our ability. This paper reflects the opinion and judgments of the NEEP staff and does not necessarily reflect those of NEEP Board members, NEEP Sponsors, or project participants and funders.

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Executive Summary

NEEP conducted a survey of building code officials across the New England and Mid-Atlantic region to identify workforce gaps and challenges. The survey gathered insights on current training programs, recruitment strategies, diversity and inclusion efforts, and familiarity with energy efficiency standards such as the International Energy Conservation Code (IECC) and ASHRAE 90.1. The findings highlight several critical gaps and opportunities, including the need for proactive recruitment, enhanced training, and addressing financial barriers that limit recruitment and retention of new professionals. Key findings from the survey include

- Workforce Succession Challenges: A significant number of code officials are nearing retirement, with nearly 39 percent expecting to retire between 2024 and 2029 and an additional 18 percent between 2030 and 2034. Combined with current staffing shortages, this underscores the urgency of effective succession planning, mentoring, and targeted recruitment.
- Training and Certification Gaps: There is considerable demand for more comprehensive training opportunities focusing on advanced energy codes and energy efficiency. Only 15 percent of respondents reported a comprehensive understanding of key energy codes like the IECC and ASHRAE 90.1, emphasizing the need for targeted, hands-on training such as mock inspections and practical applications to bridge the gap between theoretical knowledge and enforcement.
- **Diversity, Equity, and Inclusion (DEI):** While 60 percent of respondents reported DEI initiatives at their workplaces, many cited a lack of these initiatives. Responses indicate that DEI efforts vary in scope, with some workplaces having structured initiatives while others do not.
- **Challenges in Renovation and Retrofits:** Retrofitting existing buildings to meet current codes presents challenges, including knowledge gaps and integrating new codes into older structures. Respondents highlighted the need for specialized training geared towards handling renovation projects to navigate these complexities effectively.
- Barriers to Entry and Recruitment: Inadequate pay, lack of career awareness, and limited outreach were identified as significant barriers to attracting new talent. Respondents emphasized the importance of better compensation, clear career pathways, and outreach initiatives targeting high school and trade school graduates.

Addressing these challenges through strategic interventions such as improved training, enhanced support for certification, and structured mentorship can help ensure the long-term resilience of the code enforcement workforce. A robust workforce is essential for advancing building standards that prioritize safety, sustainability, and community well-being.

Introduction

NEEP conducted a comprehensive workforce gap analysis for code enforcement professionals across the New England and the Mid-Atlantic regions, collectively referred to as the Northeast in this paper. The objectives of the research are to understand the current challenges facing this essential workforce and to offer a platform for code enforcement professionals to recommend improvements. This initiative would not have been possible without the valuable input from code officials, who shared their experiences and insights in response to our survey.

Building code enforcement professionals are responsible for ensuring compliance with all local building codes. Building codes establish health, welfare and safety standards, and ensure safe, resilient, and energy efficient buildings. While building code requirements are set by state or local jurisdictions, enforcement of codes often takes place at the local government level. Code enforcement departments may be called building departments or departments of licensing and inspections. They play a critical role in ensuring the health and safety of people within a community. Code enforcement professionals review plans for building permits, and conduct electrical, mechanical, plumbing, fire protection, energy, elevator, and accessibility inspections for both residential and commercial buildings. Careers in code enforcement require specialized knowledge and continuing education.

The code enforcement community is at a critical juncture. Code enforcement professionals are retiring at high rates, often without replacements to offset their departures. Understaffed code and building departments can result in delays to permitting, inspections, and construction. The National Institute of Building Science (NIBS) conducted a survey on behalf of the International Code Council (ICC) in 2014. That same year, NIBS and the ICC published the report <u>The Future of Code Officials: Results and Recommendations from a Demographic Survey</u>. The survey projected that 30 percent of the 2014 workforce would retire by 2019, and that 80 percent of the 2014 workforce would retire by 2019.

In the absence of significant research into this topic in the last 10 years, NEEP decided to undertake a new survey of the Northeast region. In 2024, the code enforcement community is still facing a retiring workforce without sufficient new code enforcement professionals taking its place. The loss is significant considering many code enforcement professionals perform multiple roles such as plan reviewer, building inspector for building structures, mechanical inspector for mechanical systems, and fire inspector for alarms, sprinklers, and egress. Code enforcement professionals have specialized knowledge which they are continually updating, and the building sector cannot afford a reduction in this workforce.

NEEP undertook this survey to assess the regional workforce, identify current challenges, and gather insights on strategies to sustain and strengthen the profession. The results of NEEP's workforce gap analysis highlight several critical areas that need attention, including enhancing career pathways, broadening training and certification options, and improving public awareness. With the expertise required in code enforcement continually evolving, maintaining a robust and skilled workforce is essential to the building sector and to the communities it serves.

Methods

NEEP reached out to code enforcement professionals across 12 states and the District of Columbia, collectively referred to as the Northeast region. This region includes Connecticut, Delaware, the District of Columbia, Maine, Massachusetts, Maryland, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, and West Virginia. To capture a diverse representation of experiences and perspectives within the workforce, NEEP engaged with code enforcement professionals through multiple channels, including:

- State energy offices and building code departments and boards.
- Professional associations and other professional networks.
- Direct communication through emails and calls made to local code departments.
- Social media posts targeting code professionals helped increase awareness and access to the survey.
- Other organizations that frequently work with code officials and have strong community engagement in the region. Staff at the ICC played a key role in disseminating the survey throughout their network.

Survey Design, Content and Response Analysis

The workforce gap analysis survey was designed to capture comprehensive data on training, diversity, recruitment challenges, enforcement processes, and perspectives on the IECC and the ASHRAE 90.1 standard. The survey consisted of 20 multiple-choice questions and eight open-ended questions. The questions were meant to capture workforce challenges, including those affecting underrepresented or underserved regions and communities. Additionally, NEEP included questions on potential solutions, such as creating structured training programs, partnerships with educational institutions, and incentives to attract new professionals. A small sample group of code officials reviewed a draft survey before its official release. Their feedback was instrumental in refining the questions to ensure clarity and relevance. To make the survey manageable and maximize participation, NEEP shortened the draft survey and designated written responses as optional, balancing depth with respondent convenience to encourage higher completion rates. All responses were collected anonymously to promote candid participation.

Not all survey respondents answered all survey questions. When analyzing the answers to the optional open-ended questions, responses were grouped according to recurring themes, with the understanding that one survey response may encapsulate multiple themes. Therefore, the frequency with which a single response is recorded may exceed one.

Survey Reach and Response

We initiated outreach to all states within the NEEP region. Methods included: social media posts on LinkedIn and other platforms; approximately 400 emails sent directly to code officials; emails to professional associations; emails sent out on behalf of NEEP by other stakeholders and non-profit organizations; and emails sent out on behalf of NEEP by building departments or code adoption and enforcement departments in included states. Altogether NEEP received responses from 490 participants. Each state within the NEEP region is represented by at least five responses, allowing for geographic and experiential diversity in the data. New Jersey, Massachusetts, Maine, and New York provided the highest numbers of responses.

Limitations

This analysis is based on a limited sample size, with certain states showing disproportionately high response rates that may affect the overall data interpretation. In particular, New Jersey contributed the highest number of responses, while the District of Columbia, Maryland, Connecticut, and Rhode Island had fewer participants despite outreach efforts. We were fortunate to have the New Jersey Department of Community Affairs directly share the code survey through their own official communications, resulting in a very high response rate from New Jersey.

To address concerns about potential bias introduced by this response disparity, we include an appendix analyzing the statistical impact of excluding New Jersey responses. The appendix shows that some statistically significant differences in responses were observed between New Jersey and other states, which may reflect slight regional variations in experiences and priorities. These differences do not affect the overall conclusions, which remain consistent and broadly applicable across the Northeast region. The appendix provides additional transparency and reinforces confidence in the data's representativeness.

While the main report integrates responses to optional open-ended questions, these qualitative responses are not included in the appendix. This is primarily due to their optional nature and the additional time required to analyze them separately. As such, the appendix reflects only the quantitative data. Additionally, the open-ended questions had fewer responses compared to the total number of survey participants, which limits their ability to represent the broader perspectives of all respondents. This disparity is acknowledged but does not diminish the validity of the report's overall conclusions.

Survey Results

1. Regional Representation and Professional Demographics:

The first survey question sought to determine the geographic distribution of participants within the NEEP region. Respondents were asked, "Which state within the NEEP region are you a code enforcement officer, building code official, or certified inspector?"

Figure 1. Answer to Survey Question 1:

Which state within the NEEP region are you a code enforcement officer, building code official, or certified inspector?



2. Addressing Workforce Aging and Recruitment:

Participants were asked to identify how the code enforcement community can address the issue of an aging workforce and ensure a new generation of professionals enter the field. Answers to this open-ended question were grouped into response categories. The most common themes were compensation and benefits, awareness and recruitment initiatives, and education and training initiatives. The main responses around compensation and benefits were that code enforcers should be paid a competitive wage and offering full time employment opportunities. Common ideas of how to increase awareness and recruit more code officials was to focus on high schoolers, particularly in vocational programs, to use firefighters as a source of code officials because of their knowledge base and non-traditional work schedule, to recruit from union halls, and to visit more career fairs. Education and training responses also repeated the need to focus on high school and vocational programs, more training options, and better advertisement for training options.

Figure 2. Answer to Survey Question 2: How can the code enforcement community address the issue of an aging workforce and ensure a new generation of professionals?



3. Diversity, Equity, and Inclusion (DEI):

Respondents were asked if their workplaces had implemented DEI programs, and Figure 3 displays the extent of DEI implementation across jurisdictions.

Figure 3. Answer to Survey Question 3: Are there DEI initiatives in your workplace?



4. Serving Underserved Communities:

Survey participants were asked whether their jurisdictions included disproportionately underserved communities, helping to assess the extent to which code enforcement professionals work with communities that may face additional socioeconomic barriers. Responses are represented in Figure 4, which provides an overview of whether respondents' jurisdictions include underserved communities.

Figure 4. Answer to Survey Question 4:

Does your jurisdiction include disproportionately underserved communities?



5. Attracting New Professionals to Code Enforcement:

Participants were asked in an open-ended question to share insights on effective strategies for attracting new professionals in the field. The survey data reveals a range of opinions on key issues (Figure 5). A significant portion of responses focus on community outreach and engagement. Training and education also feature prominently. A third category of responses focused on qualifications and merit, with some respondents expressing concern about maintaining high standards for qualifications and merit in hiring while also making efforts to diversify the workforce. Equitable compensation and benefits were considered important for attracting and retaining talent. Additionally, some respondents considered diversity a non-issue or expressed criticism and skepticism towards DEI initiatives. Responses in outlier categories point to the need for simpler codes and improved public perception.

Figure 5. Answer to Survey Question 5: How can diversity in the code enforcement profession be increased?



6. Perceived Barriers to Entry in the Code Enforcement Profession:

The survey assessed perceived barriers to entry in the code enforcement profession, with responses gathered on factors like training accessibility, pay and benefits, and awareness of career opportunities. Respondents rated their agreement with statements about these barriers, with the goal of identifying major entry obstacles. Figure 6 illustrates the distribution of responses regarding these barriers. Inadequate pay and benefits, as well as lack of professional awareness were identified as major barriers for entering the code enforcement field.

Figure 6. Answer to Survey Question 6: The following may be considered barriers to entering the code enforcement profession. How much do you agree?



7. Attracting New Professionals to Code Enforcement:

To understand factors that could attract more professionals to the field, respondents rated factors like improved competitive salaries, better outreach and recruitment, clear career paths and additional support. Many felt that more competitive salaries and benefits, enhanced support from municipal managers, and opportunity for growth would be instrumental in drawing new talent. Figure 7 shows the level of agreement with these statements among respondents.

Figure 7. Answer to Survey Question 7:

On what level do you agree the items below would draw more people to the code enforcement profession?



8. Outreach and Recruitment Channels:

Respondents were also asked to identify effective outreach and recruitment channels for code enforcement, such as trade schools, universities, and high school workshops. Figure 8 depicts the consensus on where recruitment efforts should be focused to maximize reach and attract interest in code enforcement careers. Outreach and recruitment for the code enforcement professionals should be focused on the following items: trade schools, colleges/universities, workshops through high schools.

Figure 8. Answer to Survey Question 8: Outreach and recruitment for the code enforcement professionals should be focused on the following:



9. Advice for Aspiring Code Enforcement Professionals:

Respondents were asked about what advice they would give to someone interested in becoming a code enforcement professional, and the most frequently mentioned theme is education, training, and continuous learning. Respondents emphasized the importance of obtaining formal certifications, staying updated on code changes, and engaging in continuous learning to keep pace with the evolving demands of the profession. Practical experience was the next most commonly referenced theme. Many respondents advised gaining hands-on experience in the trades or through job shadowing, noting that understanding the real-world application of codes is critical for success in the field. Soft skills and communication were also frequently mentioned. Respondents stressed the need for strong interpersonal skills, including effective communication and conflict resolution, to navigate the challenges of working with the public and enforcing compliance.

Several respondents acknowledged challenges and realities of the job, noting that the profession can be demanding. Stress related to high workload, difficult interactions, and low pay were cited as common issues. However, despite these difficulties, many respondents still highlighted the rewards and career opportunities available in the field, including a sense of fulfillment, career advancement potential, and good work-life balance. Additionally, some respondents recommended seeking mentorship and networking opportunities to build professional connections and gain insights into the industry. These relationships can provide valuable support and guidance for aspiring code enforcement professionals.



Figure 9. Answer to Survey Question 9:

What advice would you give to someone interested in becoming a code enforcement professional?



10. Initial Training and Certification Requirements:

Respondents shared their opinions on how the training process for new code enforcement officers should be structured, with options ranging from completing the International Residential Code (IRC) training first to pursuing certifications in a specific sequence. Figure 10 presents the survey responses regarding training preferences for new officers. Most respondents prefer a structured approach to certifications, beginning with the IRC, while others emphasized flexibility in the certification process.

Figure 10. Answer to Survey Question 10:

How should the training process for new code enforcement officers unfold, and what areas should be covered in the initial training?



11. Utilization of Existing Training Programs:

The survey gathered data on the most commonly used training programs among code enforcement professionals, listing organizations like the InteICC, ASHRAE, and various state-specific institutions. Figure 11 outlines the frequency of use for each training program. Respondents primarily rely on established organizations like the ICC for training.

Figure 11. Answer to Survey Question 11: What existing training programs do you use?



12. Additional Training Needs for New Code Officers:

This question asked respondents if new code enforcement officers need further support with key certifications (IRC, IBC, IPC, IMC, IECC, and legal aspects). Responses, rated from "strongly disagree" to "strongly agree," indicate which areas may require enhanced training. Figure 12 shows the results. There is broad agreement on the need for enhanced training to support comprehensive understanding across key certification areas.



New code enforcement officers tend to need additional training or support for certifications listed below?



13. Need for Practical Hands-On Training:

Respondents shared their views on the value of practical training facilities, similar to firefighter mock structures, to support hands-on code enforcement training. Figure 13 reflects the level of agreement on the benefits of such facilities. Many respondents see practical, hands-on training facilities as beneficial for improving real-world code enforcement skills.

Figure 13. Answer to Survey Question 13:

It would be beneficial for code enforcement officers to have access to code enforcement training structures similar to fire fighter training structures (mock homes and buildings).



14. Need for Specialized Program in Energy Codes and Efficiency:

This question gauged whether code enforcement professionals see a need for specialized training in energy codes and efficiency. Figure 14 shows most respondents see a need for energy-focused training programs.

Figure 14. Answer to Survey Question 14:

Do you see a need for more specialized programs in areas such as the energy code and energy efficiency within code enforcement?



15. Support for Continuous Learning and Professional Development:

Respondents were asked whether they receive support in ongoing professional development and continuous learning, with most of them indicating that they feel they receive the necessary support.

Figure 15. Answer to Survey Question 15: Do you receive support in ongoing professional development and continuous learning?



16. Encouragement of Professional Development by Municipalities and Third-Party Agencies:

In a follow-up question, respondents that answered no to the previous question and felt unsupported in ongoing professional development and continuous learning response were asked how municipalities and third-party agencies can encourage and support professional development. Respondents expressed a strong desire for more accessible and frequent training opportunities, highlighting the need for municipalities to offer better training resources and support, including financial support and paid time allocation for training and professional development. They emphasized that ongoing professional development is essential for keeping up with evolving codes and standards, and many suggested that municipalities should incentivize learning through career advancement opportunities, additional pay, or tuition reimbursement. There was also a call for third-party training options and opportunities for peer knowledge-sharing to further enhance learning.

Along with these training needs, respondents noted the importance of financial support and incentives, such as paid time off for training and certifications, to encourage participation in professional development. Several pointed out that municipalities need to better recognize the value of code officials by providing structural support and clearer mandates for training. Time constraints also emerged as a significant barrier, with many indicating that flexible training schedules or more time built into work hours could help balance training with daily responsibilities. These responses underscore a broad consensus that improved organizational support, financial incentives, and flexible scheduling are key to fostering continuous learning and professional growth.

Figure 16. Answer to Survey Question 16:

If you answered no to question 15, how can municipalities and third-party agencies encourage and support professional development.



17. Trends in Building Permits: Renovations vs. New Construction:

To understand current building trends, respondents were asked if permits in their jurisdictions more frequently involved renovations or new construction projects. Responses, shown in Figure 17, offer insights into the focus areas for code enforcement officers.

Figure 17. Answer to Survey Question 17:

In the jurisdiction you enforce, do there tend to be more permits for renovations of existing buildings or new construction?



18. Challenges in Code Enforcement Triggered by Major Renovations:

In an open-ended question, respondents were asked about the challenges and areas of difficulty code enforcement officers encounter when enforcing building codes triggered by major renovations, and how these challenges can be minimized. The most frequently cited issues included knowledge gaps and training deficiencies, particularly among contractors and building professionals who may lack up-to-date understanding of code requirements. This lack of training is compounded by an insufficient number of qualified inspectors

and challenges in coordinating with other professionals involved in renovation projects. Respondents identified gaps in education around new code updates, particularly for unlicensed contractors and homeowners performing their own work without full understanding of the code. Permit and inspection processes are further complicated by delays due to staffing shortages and incomplete or incorrect paperwork. Additional costs for upgrades (e.g., energy efficiency requirements or fire protection) may impact energy code compliance.

To minimize these challenges, respondents emphasized the need for ongoing, standardized training for all involved in construction, including building officials, contractors, and designers. Increased access to training resources, clearer guidelines for permit applications and renovation thresholds, and better coordination between design professionals and enforcement officers are also seen as critical steps. Further, a concerted effort to engage the public and raise awareness about code requirements would help reduce unpermitted or unsafe work, especially in communities with low levels of understanding about building regulations. Additionally, streamlining inspection and permitting processes and offering compliance pathways that consider the realities of older buildings could help reduce enforcement burdens. Finally, reducing resistance to new regulations through clearer communication and more practical, cost-effective approaches to compliance would help alleviate some of the financial and operational hurdles associated with major renovations.

Figure 18. Answer to Survey Question 18:

What types of challenges or areas of difficulty do code enforcement officers encounter when enforcing building codes triggered by major renovations, and how can these challenges be minimized?



19. Challenges During Enforcement Process:

Respondents were asked to identify the most common challenges or areas of friction they face as code officials during the enforcement process. A significant portion of the feedback highlights challenges related to knowledge and training gaps in code compliance, with many respondents noting widespread confusion among contractors, builders, and property owners regarding building and energy codes. This lack of understanding often stems from

outdated knowledge, poor-quality construction documents, and insufficient education and training, particularly around energy code updates and new materials. Respondents emphasized the need for targeted training, better communication, and clearer outreach to ensure that stakeholders stay informed and compliant with current standards.

Other major challenges identified included staffing and workload issues. Code officials reported being overwhelmed by large workloads, insufficient staff, and the difficulty of recruiting and retaining qualified personnel. The shortage of inspectors and administrative support leads to rushed inspections, inconsistent enforcement, and challenges in providing adequate support to contractors and homeowners. The feedback suggests that overburdened staff struggle to maintain the quality of enforcement, highlighting the importance of increasing resources and improving compensation to attract and retain skilled staff.

Finally, challenges related to communication, compliance, and enforcement effectiveness were frequently mentioned. Respondents noted that misunderstandings between contractors, homeowners, and code officials often arise from communication breakdowns, language barriers, and the complexity of code requirements. These issues are further compounded by political pressures and legal hurdles that undermine enforcement efforts. For example, some respondents pointed to political pressure from local governments, which can lead to leniency in code compliance. Additionally, financial and budget constraints were frequently cited as a barrier to effective enforcement, with many owners reluctant to comply with code requirements, particularly energy code requirements, due to budget limitations. The inability to secure adequate funding for staffing and enforcement exacerbates these issues, creating a cycle of non-compliance and weakened enforcement.

Figure 19. Answer to Survey Question 19:

What are the most common challenges or areas of friction you face, as a code official, during the enforcement process?





20. Common Misunderstandings that Impact Code Enforcement Process:

In a short answer question, respondents were asked about the most common issues or misunderstandings between code officials and design professionals that impact the enforcement process. Respondents identified several key challenges impacting the enforcement process, with knowledge gaps and misinterpretation of codes being the most frequently cited issue. Many respondents noted that both code officials and design professionals struggle to stay up to date with code changes, leading to non-compliant designs and missed opportunities for energy efficiency. Communication and collaboration also emerged as a major barrier. Poor communication and limited feedback opportunities between code officials and design professionals were commonly mentioned, contributing to misunderstandings and inconsistent interpretations across jurisdictions. The lack of coordination between contractors and designers was also a concern. Plan detail and completeness was another challenge, with incomplete or unclear plan submissions making it difficult to ensure code compliance. Missing structural details, inadequate fire-rated assemblies, and a lack of HVAC and energy system specifics were commonly cited. Respondents also highlighted practical impacts and considerations as a concern, with some noting that designers sometimes prioritize consumer preferences over code compliance, resulting in impractical or unrealistic designs that do not account for construction limitations. Lastly, code compliance in specific situations was raised as an issue, particularly when dealing with snow load requirements, floodplain regulations, and seismic codes. These specialized sections of the code were seen as difficult to interpret, especially in rural or unique environmental conditions.

Figure 20. Answer to Survey Question 20:

What are the most common issues or misunderstandings between code officials and design professionals that impact the enforcement process?



21. Adoption of Energy-Efficient Measures:

Respondents rated the prevalence of energy-efficient measures in buildings, such as heat pumps, solar energy, electric vehicle (EV) charging stations, and electric-ready infrastructure. Figures 21-25 display the frequency of these features in the jurisdictions of the code enforcement officials surveyed. This data underscores the increasing complexity of code enforcement tasks, as officials must be familiar with and prepared to inspect emerging technologies. It also points to potential areas where enhanced training and professional development could bridge knowledge gaps and support effective enforcement of evolving energy standards.

Figure 21. Answer to Survey Question 21:

What proportion of buildings in your jurisdiction use heat pumps? Rate from 1 through 10 with 1 being very few use heat pumps and 10 being most use heat pumps.



Figure 22. Answer to Survey Question 22:

What proportion of buildings in your jurisdiction use solar energy? Rate from 1 through 10 with 1 being very few use solar energy and 10 being most use solar energy.



Figure 23. Answer to Survey Question 23:

What proportion of buildings in your jurisdiction use EV charging stations? Rate from 1 through 10 with 1 being very few use EV charging stations and 10 being most use EV charging stations.



Figure 24. Answer to Survey Question 24:

What proportion of buildings in your jurisdiction are *electric ready*? Rate from 1 through 10 with 1 being very few are electric ready and 10 being most are electric ready.



Figure 25. Answer to Survey Question 25:

What proportion of buildings in your jurisdiction do not use fossil fuels? Rate from 1 through 10 with 1 being all use fossil fuels and 10 being very few use fossil fuels.



22. Exceeding Code Requirements for Energy Efficiency:

The survey also asked respondents to identify which energy-efficient features in buildings tend to exceed code requirements. Figure 26 reflects responses, with insulation and high-performance windows and doors leading the way. The respondents could select more than one answer.

Figure 26. Answer to Survey Question 26:

Which energy efficient features below typically exceed the code requirement? - More than one answer could be selected for this question.



23. Familiarity with Energy Codes:

Respondents were asked to rate their level of understanding of the IECC and ASHRAE 90.1, with only about 15 percent of respondents answering that they have a comprehensive understanding of these two national model codes.

Figure 27. Answer to Survey Question 27: What is your level of understanding of the International Energy Conservation Code and/or ASHRAE 90.1?



24. Effective Aspects of IECC or ASHRAE 90.1 for Energy Efficiency:

In an open-ended question respondents were asked to identify specific aspects of the IECC or ASHRAE 90.1 that they find effective in promoting more energy-efficient buildings. The majority of respondents highlighted insulation and building envelope as the most effective aspects, with many emphasizing continuous insulation and higher R-values as key to improving energy efficiency. Tight building envelopes, further enhanced by proper air sealing, were frequently mentioned as critical for reducing energy loss and improving overall building performance, though some expressed concerns about the cost of modern insulation materials. In the context of air changes per hour (ACH), some respondents emphasized that combining well-sealed building envelopes with integrated HVAC systems offers the most effective strategy for improving energy efficiency in buildings. While the focus was often on insulation and air sealing, respondents also mentioned that achieving optimal air exchange rates, especially in energy-efficient designs, is crucial for maintaining indoor air quality and overall building health.

Beyond these direct responses, other themes emerged that, while not explicitly answering the question, provided additional context. Many respondents highlighted cost and knowledge/training gaps as significant barriers to achieving the full energy efficiency potential of the codes. Additionally, gaps in education and training for contractors, designers, and the general public were seen as obstacles to better compliance. Some respondents cited concerns about code complexity and called for more flexible compliance options and clearer guidelines, especially for smaller projects and renovations, to make codes more practical and achievable.



Figure 28A. Answer to Survey Question 28:

What specific aspects of the IECC or ASHRAE 90.1 do you find effective in promoting more energy efficient buildings?



Figure 28B. Answer to Survey Question 28:

answers not directly related to specific measures from IECC or ASHRAE 90.1



25. Retirement Trends:

The survey concluded with a question on anticipated retirement timelines, helping to gauge potential workforce turnover in the near future. Figure 29 presents these retirement projections, underscoring the urgency of workforce succession planning.

Figure 29. Answer to Survey Question 29: What year do you expect to retire?

What year do you expect to retire?	Number of Respondents	Percentage of Respondents
2024-2029	146	38.9
2030-2034	67	17.8
2035-2039	31	8.2
2040-2049	43	11.4
2050+	19	5
Already retired	22	5.8
Don't know	17	4.5
Never	17	4.5
Semi-retired	13	3.4

Findings from the Code Enforcement Survey: Gaps and Opportunities

The survey conducted across the NEEP region provides valuable data that offers insights into the state of the code enforcement profession. The survey responses highlight both the current challenges and the opportunities for enhancing the future readiness of the profession. This discussion investigates key themes, drawing from survey data to outline actionable strategies for improvement, with the goal of fostering a more robust and skilled workforce capable of meeting evolving demands.

There were significant disparities in survey participation across the NEEP region. New Jersey, Massachusetts, and Maine exhibited particularly high levels of engagement, with 338, 38, and 36 respondents respectively, while states like Delaware, Rhode Island, and Vermont showed much lower participation, each with fewer than ten respondents. As a result, perspectives from New Jersey are more prominently represented in the dataset. To address potential concerns about this disproportionate response rate, an appendix has been included that represents the survey results without New Jersey's responses. The appendix aims to ensure transparency and demonstrate that the overall findings remain consistent and representative of the broader survey region, even when accounting for New Jersey's higher level of participation.

Recruitment Challenges

The survey highlighted the pressing need for proactive recruitment strategies to attract younger generations. Over 250 responses underscored the importance of competitive compensation and benefits as crucial factors for recruitment. Inadequate pay and benefits, as well as a general lack of awareness about the code enforcement profession, remain significant barriers to entry. Many respondents pointed to the need for clearer career pathways and structured outreach programs to raise awareness and attract new talent.

The survey also identified opportunities to recruit from sources such as vocational schools, high schools, union halls, and even professions like firefighting, where existing skills and flexible schedules may align well with the needs of code enforcement. Expanding outreach at career fairs and developing recruitment partnerships with educational institutions could help address the generational gap while bringing fresh perspectives and skills into the workforce. Establishing more structured programs in educational institutions—such as trade schools, colleges, and high school workshops—could help raise awareness about the career opportunities available in code enforcement. These programs should emphasize the impact of code enforcement on community safety and sustainability, highlighting the potential for career growth and stability.

Serving Underserved Communities and DEI

Thirty percent of survey respondents worked in jurisdictions that included underserved populations, while 42 percent indicated that their jurisdictions did not, and 28 percent were unsure. These findings suggest that jurisdictions differ in how they define and approach code enforcement across various communities. The number of respondents unsure about whether they serve these populations may indicate differences in how jurisdictions track or prioritize enforcement efforts. This variation could influence how policies are implemented, the level of enforcement focus in different areas, and the types of challenges faced by jurisdictions.

While 60 percent of survey respondents' workplaces have implemented DEI programs, 40 percent reported no such initiatives. Notably, 27 percent of respondents perceived DEI as a low priority or a non-issue. Even in workplaces with DEI initiatives, respondents noted that they often lacked depth or specific measurable goals. These responses indicate that perspectives on workplace initiatives vary across jurisdictions. While some workplaces have formal programs in place, their effectiveness and scope differ. The responses also suggest that priorities related to workforce policies and internal initiatives are not uniform across jurisdictions.

Training Programs, Gaps, and Support Needed

The survey showed a reliance on existing training programs, such as those provided by the ICC, which was used by 351 respondents. Familiarity with energy codes was a challenge for many respondents, with only 15 percent reporting a comprehensive understanding of the IECC and ASHRAE 90.1 standards. Specifically, 35 percent of respondents indicated that they know a little about the IECC and/or ASHRAE 90.1, while 46 percent have a fair understanding. This highlights significant gaps in knowledge that may impact the effective implementation of energy codes, emphasizing the need for enhanced training programs focused on these

key model codes. Expanding access to comprehensive, practical training on IECC and ASHRAE 90.1 could help bridge these gaps and ensure that code officials are better prepared to implement energy codes effectively.

The respondents also demonstrated a strong agreement that further support is needed for certification for new code officials in key model codes, including the IECC. Enhanced certification support could include more structured study programs, access to preparatory materials and financial assistance for examination fees and covering the time they need to spend preparing for and taking the exam.

There is a clear demand for specialized training that aligns with the complexities of advanced building standards, particularly energy codes, and evolving building practices. The need for specialized training in energy efficiency emerged as a key theme, with 71 percent of respondents expressing the need for focused training in energy codes and energy-efficient practices. As adoption rates of energy-efficient measures such as heat pumps, solar energy, and electric vehicle charging stations varied widely, it is crucial to equip code officials with the skills needed to effectively support and inspect these technologies. The increasing prevalence of these technologies further underscores the importance of targeted training in energy efficiency.

Survey respondents also highlighted the need for integrating real-world scenarios into training. Job shadowing can further enhance the preparedness of code officials. Specialized training programs tailored toward practical, hands-on skills for energy-efficient measures will help bridge this gap and support the effective implementation of energy efficiency measures. Code officials also cited a lack of education and training for contractors, designers, and the general public as a barrier to better compliance. Training programs that demonstrate how to integrate energy efficiency cost-effectively in different types of projects could also help promote wider adoption and better compliance.

Although 88 percent of respondents reported receiving support for continuous learning, there remains a minority who felt underserved by existing opportunities. Specifically, 12 percent indicated the need for more frequent, accessible, and financially supported training opportunities. They also emphasized the importance of having municipalities clearly mandate training and offer financial backing, such as paid time off for professional development. Increasing structural support for ongoing education, such as flexible schedules that allow for training without overwhelming workloads, could significantly enhance job satisfaction and professional growth. Respondents also stressed the importance of peer-to-peer knowledge sharing and third-party training options, which could offer more specialized and varied learning opportunities.

Navigating Code Enforcement in Renovations and Retrofits

The survey highlighted a trend towards renovations over new construction, with 54 percent of code officials indicating that more permits are being issued for renovations of existing buildings than new buildings in their jurisdiction. Code officials highlighted challenges to code enforcement, particularly around retrofitting older structures to meet current codes that may be more stringent than when these buildings were originally constructed.

Retrofitting requires balancing compliance with the preservation of historical elements and working

within the limitations of existing structures. Survey respondents cited challenges in major renovations, such as knowledge gaps and training deficiencies among contractors and building professionals, as well as coordination difficulties with other professionals involved in renovation projects. These challenges are exacerbated by the lack of qualified inspectors and insufficient education around code updates. To address these challenges, training programs should emphasize skills specifically geared towards handling renovation projects, focusing on the nuances of integrating new standards into older buildings while maintaining safety and efficiency. Moreover, ongoing standardized training, improved coordination among design and enforcement professionals, and clearer permit guidelines could alleviate many of these burdens and help streamline the renovation process.

Challenges and Misunderstandings in Code Enforcement

Significant challenges during the enforcement process include knowledge gaps, misinterpretation of codes, and communication barriers between code officials, designers, and contractors. The survey data suggests that both code officials and design professionals struggle to stay updated on changes in building codes, leading to inconsistent interpretations and non-compliant designs.

Improving communication channels and fostering collaboration among stakeholders could mitigate these issues. Creating forums or workshops that bring together code officials, designers, and contractors could facilitate better mutual understanding and lead to more consistent enforcement. Additionally, providing resources such as standardized plan submission checklists could improve the completeness and accuracy of submissions, therefore streamlining the enforcement process.

The survey responses also highlighted common misconceptions held by property owners and design professionals about code compliance. Misunderstandings regarding what compliance entails often result in friction during the enforcement process. Public information campaigns that emphasize the importance of code enforcement—such as its role in ensuring safety, energy efficiency, and long-term cost savings—could help foster a more supportive community perception and reduce resistance to enforcement efforts.

Workforce Succession Planning and Retirements

The survey underscores a wave of retirements within the code enforcement profession, highlighting the urgency of workforce succession planning. Nearly 39 percent of respondents expect to retire between 2024 and 2029, with an additional 18 percent retiring between 2030 and 2034. This significant retirement rate necessitates preparing a new generation of professionals to fill these roles. Structured mentorship programs could be instrumental in facilitating the transfer of knowledge from experienced officials to new recruits, preserving institutional knowledge and ensuring a seamless transition.

Staffing shortages and workload challenges were also identified as prevalent issues, which are expected to worsen as retirements increase. Addressing these gaps will require effective succession planning, including mentorship opportunities and comprehensive training for incoming staff. Emphasizing the retention of

current professionals through support for professional development, manageable workloads, and attractive compensation could also help mitigate the anticipated staffing crisis.

Conclusion

The survey results reveal a profession at a pivotal moment, navigating both significant challenges and promising opportunities for growth. The impending retirements of experienced code enforcement officers, coupled with existing staffing shortages, require urgent action to attract, train, and retain a new generation of professionals. By enhancing training programs—particularly those focused on energy efficiency and modern code requirements, and improving compensation packages, the code enforcement profession can build a skilled and resilient workforce.

State and local governments, with support from the federal government, and in collaboration with professional organizations and industry stakeholders, should prioritize strategic investments in professional development, mentorship programs, and targeted recruitment efforts are essential for overcoming the identified gaps. A proactive approach to workforce development will not only strengthen the code enforcement profession but will also play a critical role in ensuring the safety, efficiency, and sustainability of our built environment in the years to come.

Appendix

This appendix addresses concerns about the potential influence of New Jersey's disproportionately high response rate on the overall findings of the code enforcement survey. By analyzing the ordinal-level qualitative data and the quantitative data both with and without New Jersey's responses, this section demonstrates that the overall results are consistent and representative of the broader Northeast region.

Optional open-ended questions were excluded from this analysis due to their qualitative nature and the time required for separate evaluation. As such, this appendix focuses solely on the multiple-choice survey questions where it was only possible to select one response. As a result, only questions 3, 4, 6-8, 10, 12-15, 17, 21-25, 27, and 29 were analyzed.

Method

A statistical analysis was conducted to compare the responses from New Jersey with those from all other states in the NEEP region. For each question, a t-test was run to determine whether the New Jersey group of responses and the non-New Jersey group of responses were statistically significantly different. The null hypothesis for each analysis was that there was no difference between groups and the alternative hypothesis was that there was a difference between groups. An alpha value of five percent was used for each comparison. An F-test was used to determine if the variances of the independent groups of responses were statistically the same or different. For the F-test, the null hypothesis was that their variances were the same and the alternative hypothesis was that the variances were different.

Findings

For most survey questions, the responses from New Jersey and the broader Northeast region were generally consistent. Key topics, such as the presence of Diversity, Equity, and Inclusion (DEI) initiatives, serving underserved communities, and support for professional development, showed no statistical differences.

The New Jersey responses and the non-New Jersey responses to Question 3, 4, 7, 8, 13, 14, 15, 17 are not statistically different from one another.

The New Jersey responses and the non-New Jersey responses to Question 6, 10, 12, 21-25, 27, 29 are statistically different from one another.

Some Differences in Perceptions

Several areas showed statistically significant differences between the groups, reflecting variations in regional experiences and perspectives:

• **Barriers to Entry**: Training: Non-New Jersey respondents were more likely to view inadequate training as a barrier, with 62.50 percent agreeing or strongly agreeing, compared to 47.15 percent in New Jersey. Similarly, unstructured training was considered a bigger challenge outside New Jersey (53.95

percent vs. 44.90 percent). These findings highlight potential differences in training availability or structure across regions.

- Attracting New Professionals: A clear career path was slightly more important to non-New Jersey respondents (88.15 percent vs. 81.89 percent). Non-New Jersey respondents also placed more emphasis on the need for better outreach and recruitment (83.55 percent vs. 79.59 percent). These variations highlight small differences in how recruitment challenges are perceived across the region.
- Recruitment Channels: Preferences for recruitment strategies varied slightly. Outreach to colleges and universities was more supported by non-New Jersey respondents (69.07 percent vs. 64.89 percent).
 Trade schools remained popular across both groups, with slightly higher support in New Jersey.
- Workforce Trends: Retirement timelines differed notably. A larger share of New Jersey respondents expected to retire by 2029 (38.93 percent) compared to those outside New Jersey (23.73 percent). This suggests a more immediate workforce gap in New Jersey.
- Adoption of Energy-Efficient Measures: For questions regarding energy-efficient measures like heat pumps, solar energy, and EV charging infrastructure, there were some statistical differences between groups. Slightly higher adoption rates were observed outside New Jersey for some measures, which could reflect regional variations in building practices or policy initiatives.

The findings confirm that while some differences in responses were observed between New Jersey and other states, they may reflect slight regional variations in experiences and priorities. These differences do not affect the overall conclusions, which remain consistent and broadly applicable across the Northeast. This appendix provides additional transparency and reinforces confidence in the data's representativeness.

SURVEY RESULTS – Comparison of Responses with and without New Jersey

3. Diversity, Equity, and Inclusion (DEI):

Answer to Survey Question 3: Are there DEI initiatives in your workplace?







4. Serving Underserved Communities:

Answer to Survey Question 4: Does your jurisdiction include disproportionately underserved communities?



6. Perceived Barriers to Entry in the Code Enforcement Profession:

Answer to Survey Question 6: The following may be considered barriers to entering the code enforcement profession. How much do you agree?





Continued: Answer to Survey Question 6: Perceived Barriers to Entry in the Code Enforcement Profession















7. Attracting New Professionals to Code Enforcement:

Answer to Survey Question 7: On what level do you agree the items below would draw more people to the code enforcement profession?













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Continued: Answer to Survey Question 7: Attracting New Professionals to Code Enforcement





8. Outreach and Recruitment Channels:

Answer to Survey Question 8 - Outreach and recruitment for the code enforcement professionals should be focused on the following:







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Continued: Answer to Survey Question 8: Outreach and Recruitment Channels



10. Initial Training and Certification Requirements:

Answer to Survey Question 10: How should the training process for new code enforcement officers unfold, and what areas should be covered in the initial training?

12. Additional Training Needs for New Code Officers:

Answer to Survey Question 12: New code enforcement officers tend to need additional training or support for certifications listed below?

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Continued: Answer to Survey Question 12: Additional Training Needs for New Code Officers

13. Need for Practical Hands-On Training:

Answer to Survey Question 13: It would be beneficial for code enforcement officers to have access to code enforcement training structures similar to fire fighter training structures (mock homes and buildings).

14. Need for Specialized Program in Energy Codes and Efficiency:

Answer to Survey Question 14 - Do you see a need for more specialized programs in areas such as the energy code and energy efficiency within code enforcement?

15. Support for Continuous Learning and Professional Development:

Answer to Survey Question 15: Do you receive support in ongoing professional development and continuous learning?

17. Trends in Building Permits: Renovations vs. New Construction:

Answer to Survey Question 17 - In the jurisdiction you enforce, do there tend to be more permits for renovations of existing buildings or new construction?

21. Adoption of Energy-Efficient Measures:

Answer to Survey Question 21: What proportion of buildings in your jurisdiction use heat pumps?

Rate from 1 through 10 with 1 being very few use heat pumps and 10 being most use heat pumps.

Answer to Survey Question 22 - What proportion of buildings in your jurisdiction use solar energy?

Rate from 1 through 10 with 1 being very few use solar energy and 10 being most use solar energy.

Answer to Survey Question 23: What proportion of buildings in your jurisdiction use EV charging stations?

Rate from 1 through 10 with 1 being very few use EV charging stations and 10 being most use EV charging stations.

Answer to Survey Question 24: What proportion of buildings in your jurisdiction are electric ready?

Rate from 1 through 10 with 1 being very few are electric ready and 10 being most are electric ready.

Answer to Survey Question 25: What proportion of buildings in your jurisdiction do not use fossil fuels?

Rate from 1 through 10 with 1 being all use fossil fuels and 10 being very few use fossil fuels.

23. Familiarity with Energy Codes:

Answer to Survey Question 27: What is your level of understanding of the International Energy Conservation Code and/or ASHRAE 90.1?

25. Retirement Trends:

Answer to Survey Question 29: What year do you expect to retire?

References

International Code Council and National Institute of Building Sciences. 2014. *The Future of Code Officials: Results and Recommendations from a Demographic Survey*. <u>https://media.iccsafe.org/docs/ICC-NBIS-Future-Of-Code-Officials.pdf</u>.