Analyses of Immediate CCSI Residential Classroom Training Surveys

Overview

This memo summarizes findings from the immediate survey responses collected during the residential 2015 International Energy Conservation Code (IECC) trainings held in the spring of 2019. The trainings were held in person as part of the Code Compliance Support Initiative (CCSI). This memo provides early feedback to PAs, the EEAC, and implementers on how specific aspects of the trainings are being received. The findings also feed into the savings attribution process for Residential New Construction programs.

Attendees

Survey Respondents

One-hundred-forty-four attendees – 61 building code officials and 83 building professionals – filled out the paper survey forms after classroom trainings between February and May of 2019.

Responses

Quality of Trainings

The respondents provided positive feedback on the quality of the trainings. The feedback for the four areas examined improved over the 2018 residential trainings. On a scale of 1 to 6, mean ratings ranged from 5.4 for the slides and handouts to 5.6 for the presenter's skills and handling of participant questions. Almost all respondents (99%) indicated that they would recommend the training to others.

Usefulness of Topics

Attendees at the 2019 residential trainings considered most of the topics covered to be very useful. On a scale of 1 to 6, over three-quarters of respondents rated all of the most frequently covered topics as 5 or 6. Four topics – Manuals J and S, solar ready provisions, existing buildings, and mandatory provisions and permit requirements – received ratings of 5 or 6 from more than nine-tenths of respondents.

2018 vs 2019

Where comparisons with the 2018 training components are appropriate, the 2019 mean usefulness ratings are always higher. In the case of solar ready provisions and duct testing, the difference is statistically significant at the 90% level.

Additional Comments and Considerations

Attendees would like to see more contractors in the classrooms. Therefore, the CCSI should continue, and consider expanding, outreach to building and remodeling associations. Trainings may be piggybacked onto and promoted as part of scheduled gatherings.

MEMORANDUM

To: Massachusetts Program Administrators (PAs), Massachusetts Energy Efficiency Advisory Council (EEAC) Consultants

From: Betty Tolkin and Katherine Weber, NMR Group

Cc: Monica Nevius, NMR Group; Zack Tyler, NMR Group; Lynn Hoefgen, NMR Group; Allen Lee, Cadmus Group; Althea Koburger, Cadmus Group, Jerica Stacey, Cadmus Group

Date: August 9, 2019

Re: Analyses of Immediate Code Compliance Support Initiative Residential Classroom Training Surveys – February 13 through May 9, 2019 (MA19X04-B-CCSISVY) approved under TXC 63

BACKGROUND AND KEY FINDINGS

This memo summarizes findings from the immediate survey responses collected during the residential 2015 International Energy Conservation Code (IECC) trainings. The trainings were held in person from February through May of 2019 as part of the Code Compliance Support Initiative (CCSI). Key findings are below. Appendix A contains more detailed findings.

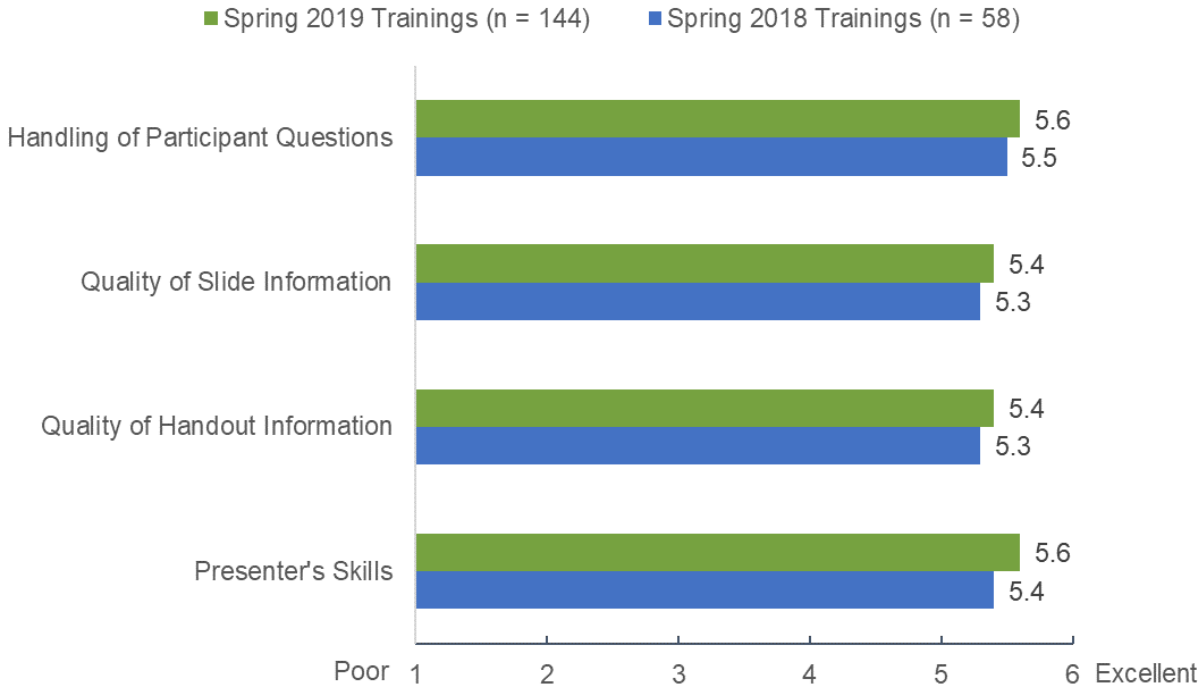
NMR collected and analyzed the immediate survey data after the questionnaires were redesigned to be more succinct in February of 2019. One-hundred-forty-four attendees – 61 building code officials and 83 building professionals[1] – filled out the paper survey forms after classroom trainings. Not everyone who turned in a survey form answered all the questions. NMR shows the number of respondents for each individual survey question in the tables throughout this memo.

Some survey questions were also asked in the spring of 2018, at the beginning of PSD's tenure as implementation contractor. We compare the 2018 responses to the 2019 responses, if applicable, and note where there are statistically significant differences.

- **The respondents provided positive feedback on the quality of the trainings. The feedback for the four areas examined improved over the 2018 residential trainings.** On a scale of 1 to 6, where 1 is poor and 6 is excellent, mean ratings ranged from 5.4 for the slides and handouts to 5.6 for the presenter's skills and handling of participant questions (Figure 1). Almost all respondents (99%) indicated they would recommend the training to others.

[1] Building professionals include builders, architects, contractors, equipment suppliers, energy analysts, and others.

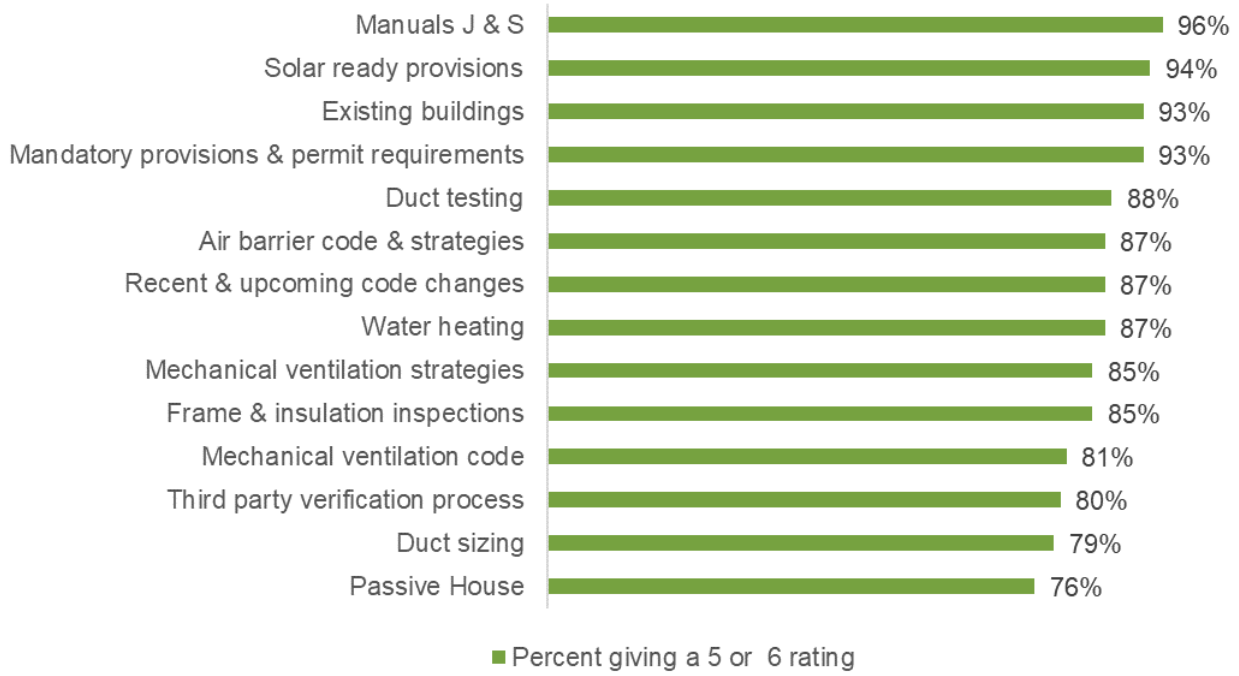
Figure 1: Mean Quality Ratings – Residential Trainings in 2018 and 2019



No significant differences between means.

- **All training attendees indicated that an average of just over one-half of the permits they drew, or that were drawn in their jurisdictions, were for retrofit projects, and close to three out of five of these retrofits contained an energy component and thus impacted energy usage.**. Building code officials provided similar responses to the rest of the trainees.
- **Attendees at the 2019 residential trainings considered most of the topics covered to be very useful.** On a scale of 1 to 6, where 1 is not at all useful and 6 is extremely useful, over three-quarters of respondents rated all of the most frequently covered topics as 5 or 6 (Figure 2). Four topics – Manuals J and S, solar ready provisions, existing buildings, and mandatory provisions and permit requirements – received ratings of 5 or 6 from more than nine-tenths of respondents.

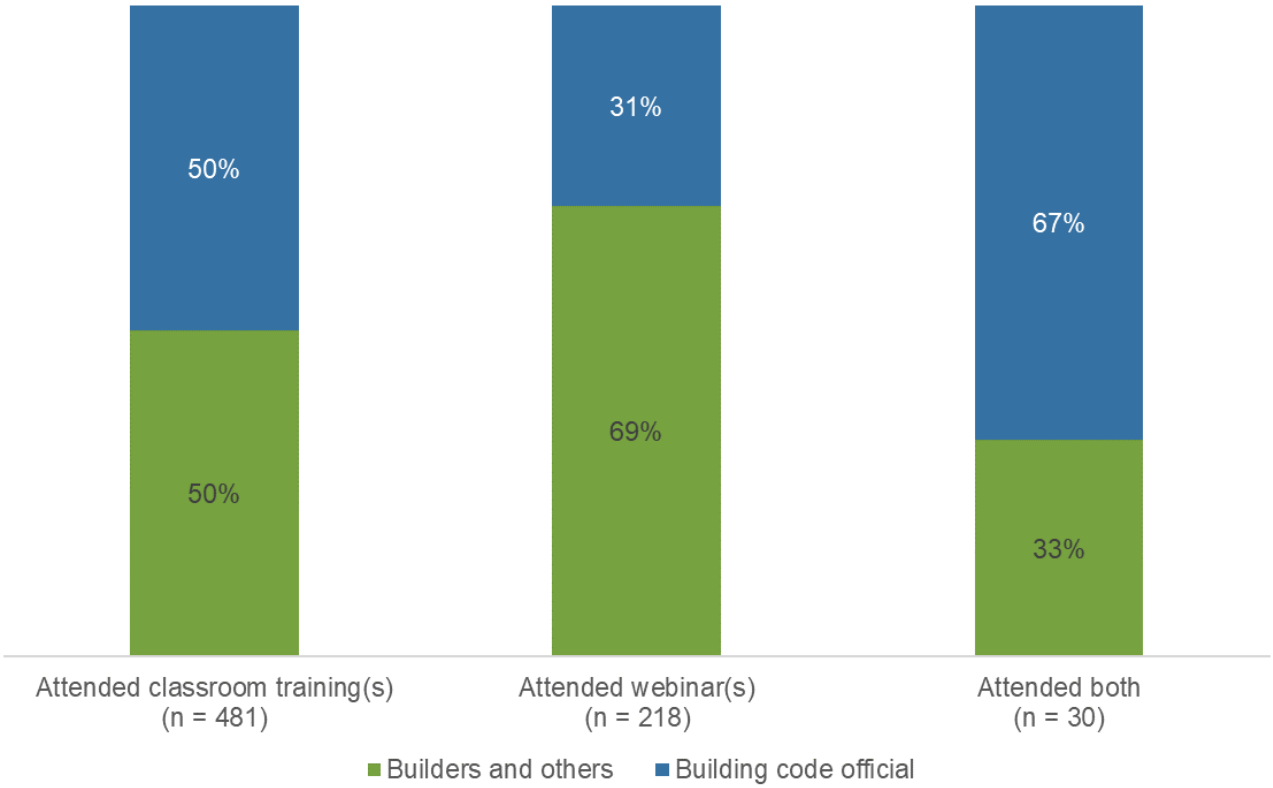
Figure 2: Usefulness of Residential Training Components in 2019
Base: training components that received at least 20 ratings



- **Where comparisons with the 2018 training components are appropriate, the 2019 mean usefulness ratings are always higher.** In the case of solar ready provisions and duct testing, the difference is statistically significant at the 90% level.

- **There were 729 unique attendees at the residential classroom and webinar CCSI 2015 IECC trainings between August 29, 2018 and June 5, 2019. Most individuals (481) attended only classroom trainings; 218 individuals attended only webinars. Only 30 individuals attended both classroom trainings and webinars.** Classroom trainings had about an equal number of building code official and building professional attendees, while webinar trainings had more building professional attendees (Figure 3). While the immediate surveys analyzed in this memo covered only the classroom trainings, the follow-up web surveys cover both classroom and webinar trainings. The follow-up web surveys are being conducted in 2019 with a report on the findings due at the end of the year.

Figure 3: Unique Training Attendees



- **The training attendees would like to see more contractors in the classrooms. Therefore, the CCSI should continue, and consider expanding, outreach to building and remodeling associations. Trainings may be piggybacked onto and promoted as part of scheduled gatherings.** While relatively few respondents (30 out of 144) offered additional comments, they most often cited the need for more contractors to attend the trainings. Other suggestions included seating attendees at tables for better note-taking, dialogue, and comfort; providing more real world examples; and including better graphics.

NMR provided summaries of the findings from the immediate residential training surveys to the sponsors and the EEAC every other month in 2014, three times in 2015, twice in 2016, twice in 2017, and once in 2018. NMR designed these interim deliverables to provide early feedback to PAs, the EEAC, and implementers on how specific aspects of the trainings are being received. The findings also feed into the savings attribution process for Residential New Construction programs. A listing of the previously provided residential and commercial immediate survey memos can be found in Appendix B.

Appendix A Detailed Findings

A.1 Classroom Trainings

NMR analyzed immediate survey data from the following residential classroom trainings:

- Effective, Efficient, and Code Compliant HVAC and DHW/Ventilation for Tight Homes. Presented on February 13, 2019, in Eastham, MA, in association with Cape Associates, Inc.
- Are You Ready for Solar-Ready? Presented on February 26, 2019, in Worcester, MA, in association with the Home Builders and Remodelers Association.
- Ventilation for Tight Homes. Presented on March 13, 2019, in Taunton, MA, in association with the Southeastern Massachusetts Building Officials Association (SEMBOA).
- Are You Ready for Solar-Ready?/Understanding the 9th Edition Stretch Code. Presented on March 20, 2019, in Eastham, MA, in association with Cape Associates, Inc.
- Ventilation for Tight Homes/2018 IECC Sneak Peak. Presented on May 9, 2019, in Taunton, MA, in association with SEMBOA.

These trainings had 360 attendees in total; thus, the 144 filled out surveys represent a response rate of 40%. This relatively low rate is due to the two large sessions on Ventilation for Tight Homes presented at the conclusions of SEMBOA gatherings. These sessions had 185 attendees in total, but only 33 completed survey forms; a response rate of 18%. If these two sessions are excluded, the response rate for the remaining six sessions rises to 63%.

A.2 Usefulness and Quality

- The surveys asked respondents to rate the usefulness of 19 components of the trainings on a scale of 1 to 6, where 1 is not at all useful and 6 is extremely useful. The 2019 usefulness ratings were quite high. Respondents gave all components mean ratings of at least 5 (Table 1 and Table 2). Note that the number of respondents varies quite a bit among the training topics examined; this is due to different topics being covered at the different trainings studied.
- NMR could not directly compare most of the 2019 trainings to 2018 components. The 2019 trainings studied were generally longer and more detailed than those in 2018, so the immediate surveys had different wording, based on the training agendas. Where comparisons were appropriate, the 2019 mean usefulness ratings are always higher. In the case of solar ready provisions and duct testing, the difference is statistically significant at the 90% level.
- The training attendees most often indicated that some of the training components were new to them (Table 3 and Table 4).

Table 1: Usefulness Ratings for Building Envelope Training Components

Training Component	Number of Respondents			Rating of Usefulness for Residential Trainings in 2019 (percent)*						Mean Ratings for 2019 Trainings			Spring 2018 Trainings	
	All	Code Off.	Build/ Prof.	6 – Extr. Useful	5	4	3	2	1 – Not at all Useful	All	Code Off.	Build Prof.	No. of Resp	Mean
Air barrier code & strategies	47	26	21	47%	40%	14%	0	0	0	5.3	5.2	5.4	n/a	n/a
Air sealing	19	19	0	9	7	1	2	0	0	5.2	5.2	n/a	n/a	n/a
Building envelope requirements	19	19	0	10	5	4	0	0	0	5.3	5.3	n/a	n/a	n/a
Compliance pathways	19	19	0	8	2	3	1	0	0	5.2	5.2	n/a	60	4.9
Existing buildings	29	2	27	38%	55%	3%	3%	0	0	5.3	5	5.3	n/a	n/a
Frame & insulation inspections	47	26	21	49%	36%	13%	0	2%	0	5.3	5.1	5.5	n/a	n/a
Third party verification process	29	2	27	45%	35%	15%	5%	0	0	5.1	4.6	5.2	59	5.1
Mandatory provisions & permit requirements	29	2	27	38%	55%	3%	3%	0	0	5.3	5	5.3	n/a	n/a
Passive house	29	2	27	38%	38%	10%	10%	0	3%	4.9	5	4.9	n/a	n/a
Recent & upcoming code changes	32	20	12	59%	28%	6%	6%	0	0	5.4	5.5	5.2	n/a	n/a
Renewable energy offsets	13	1	12	6	6	1	0	0	0	5.4	5	5.4	n/a	n/a
Solar ready provisions	32	1	31	56%	38%	3%	3%	0	0	5.5**	6	5.5	60	5.0**

*The number of responses is shown where the sample size is less than 20.
**Means are significantly different at the 90% confidence level.

Table 2. Usefulness Ratings for Ventilation Training Components

Training Component	Number of Respondents			Rating of Usefulness for Residential Trainings in 2019 (percent)*						Mean Ratings for 2019 Trainings			Spring 2018 Trainings	
	All	Code Off.	Build/Prof.	6 – Extr. Useful	5	4	3	2	1 – Not at all Useful	All	Code Off.	BuildProf.	No. of Resp	Mean
Buried ducts	19	19	0	11	6	1	1	0	0	5.4	5.4	na		
Duct sizing	24	6	18	50%	29%	17%	4%	0	0	5.2	5.3	5.2	60	5.0**
Duct testing	40	6	34	66%	22%	9%	3%	0	0	5.5**	5.6	5.4		
Manuals J & S	24	6	18	48%	48%	4%	0	0	0	5.4	5.2	5.5	n/a	n/a
Mechanical ventilation code	82	45	37	47%	34%	13%	6%	0	0	5.2	5.1	5.2	60	5.1
Mechanical ventilation strategies	47	26	21	40%	45%	15%	0	0	0	5.3	5.2	5.3		
Water heating	23	6	17	48%	39%	9%	4%	0	0	5.3	5.3	5.3	n/a	n/a

*The number of responses is shown where the sample size is less than 20.
**Means are significantly different at the 90% confidence level.

Table 3. Whether the Building Envelope Training Components Were New

Training Component	All				Code Officials				Building Professionals				Spring of 2018			
	*n**	All or Most	Some	None	*n**	All or Most	Some	None	*n**	All or Most	Some	None	*n*	All or Most	Some	None
Air barrier code & strategies	47	9%	87%	4%	30	0	100%	0	17	4	11	2	na	na	na	na
Air sealing	12	3	7	2	12	3	7	2	0	0	0	0	na	na	na	na
Building envelope requirements	12	4	6	2	12	4	6	2	0	0	0	0	na	na	na	na
Compliance pathways	22	0	100%	0	22	0	100%	0	0	0	0	0	na	na	na	na
Existing buildings	17	4	13	0	2	1	1	0	15	3	12	0	na	na	na	na
Frame & insulation inspections	41	5%	85%	10%	22	9%	77%	14%	19	0	18	1	na	na	na	na
Third party verification process	29	0	100%	0	2	0	2	0	27	0	100%	0	38	13%	76%	11%
Mandatory provisions & permit requirements	17	5	10	2	2	1	1	0	15	4	9	2	na	na	na	na
Passive house	17	6	10	1	2	1	1	0	15	5	9	1	na	na	na	na
Recent & upcoming code changes	20	35%	55%	10%	13	5	6	2	7	2	5	0	na	na	na	na
Renewable energy offsets	8	1	7	0	1	1	0	0	7	0	7	0	na	na	na	na
Solar ready provisions	20	35%	65%	0	1	0	1	0	19	7	12	0	40	40%	58%	2%

*The number of responses is shown where the sample size is less than 20.

Table 4. Whether the Ventilation Training Components Were New

Training Component	All				Code Officials				Building Professionals				Spring of 2018			
	*n**	All or Most	Some	None	*n**	All or Most	Some	None	*n**	All or Most	Some	None	*n*	All or Most	Some	None
Buried ducts	12	3	6	3	12	3	6	3	0	0	0	0				
Duct sizing	16	6	9	1	5	2	2	1	11	4	7	0	39	13%	72%	15%
Duct testing	35	9%	89%	3%	6	0	6	0	29	10%	86%	3%				
Manuals J & S	25	0	100%	0	6	0	6	0	19	0	19	0	na	na	na	na
Mechanical ventilation code	74	8%	88%	4%	43	7%	88%	5%	31	10%	87%	3%	39	13%	77%	10%
Mechanical ventilation strategies	32	22%	56%	22%	17	3	11	3	15	4	7	4				
Water heating	17	5	10	2	5	2	3	0	12	3	7	2	na	na	na	na

*The number of responses is shown where the sample size is less than 20.

- Respondents also gave high ratings to the quality of the presentations (Table 5), with mean ratings ranging from 5.3 to 5.7 on a scale of 1 to 6, where 1 is poor and 6 is excellent. Respondents gave the highest ratings to the presenter's skills and handling of participant questions. Almost all respondents said they would recommend the training to others.
- The 2019 training quality ratings were all higher than the 2018 ratings. However, none of the differences were statistically significant at the 90% level.

Table 5: Quality of Trainings

(Mean ratings on a scale of 1 to 6)

General Category	2/13	2/26	3/13	3/20
n	*44*	*16*	*20*	*29*
Presenter's skills	5.7	5.6	5.6	5.6
Quality of handout information	5.3	5.3	5.4	5.4
Quality of slide information	5.4	5.4	5.4	5.4
Handling of participant questions	5.5	5.6	5.5	5.5
*n**	*41*	*16*	*16*	*29*
Percent recommending training to others	100%	94%	100%	100%

General Category	5/9	Spring 2019 Trainings	Spring 2018 Trainings
n	35	144	58
Presenter's skills	5.7	5.6	5.4
Quality of handout information	5.4	5.4	5.3
Quality of slide information	5.4	5.4	5.3
Handling of participant questions	5.7	5.6	5.5
*n**	32	134	58
Percent recommending training to others	100%	99%	97%

* This question had a different number of respondents than the other questions.

A.3 Most Important New Information and other Qualitative Data

- Since many building code officials and building professionals attended different trainings, the components they found most important are different. Almost one-half of building professionals found the solar ready provisions to be the most important new information provided by the trainings (Table 6). While the Massachusetts building energy code is still based on the 2015 IECC, the solar ready provision (i.e., the requirement that a section of the roof or building overhang in new homes is designated and reserved for the future installation of a solar photovoltaic or solar thermal system) went into effect at the beginning of 2018. Building code officials noted information on ventilation requirements, air and vapor barriers, and possible upcoming code changes as the most important information provided.

Table 6: Most Important New Information Provided by the Trainings

(Percent; multiple response)

General Category	Building Code Officials	Building Professionals	All Trainees
n	*30*	*46*	*76*
Solar ready requirements	0%	48%	29%
Ventilation requirements	20%	2%	11%
Proposed code amendments	17%	7%	11%
Ventilation strategies	13%	9%	11%
Air and vapor barriers	17%	2%	8%
Work on existing buildings	0%	11%	7%
Ductwork testing	10%	1%	5%
Everything	7%	4%	5%
Buried Ducts	7%	0%	3%
Differential pressure on HVAC systems	3%	2%	3%
Performance ratings	0%	4%	3%
Permit requirements	3%	2%	3%
Air sealing	0%	2%	1%
Insulation requirements	0%	2%	1%
Inspection techniques	3%	0%	1%
Code details	3%	0%	1%
Safety requirements	3%	0%	1%
Different perspectives on building issues	0%	2%	1%

- Building code officials most often said the trainings provided them with information useful for code enforcement, and that they would use the information during their plan reviews and building inspections and relay it to builders and contractors. Building professionals most often said they would use the information during the construction process to make projects code compliant (Table 7). For the first time, these immediate surveys asked respondents to note if they would *not* be using the information from the training, and why.

- Only two respondents do not expect to use this information: one because it is not relevant to their position and one due to retirement.

Table 7: How Attendees Expect to Use the Information Provided by the Trainings

(Percent; multiple response)

General Category	Building Code Officials	Building Professionals	All Trainees
n	*25*	*57*	*82*
For everyday work	4%	33%	21%
To enforce or comply with the energy code	16%	12%	13%
When filing or reviewing building permits	16%	10%	12%
During inspections or planning for inspections	20%	4%	9%
To educate and advise builders and subcontractors	12%	7%	9%
During work on existing buildings	0%	9%	6%
To reduce air leakage	0%	7%	5%
For marketing	0%	7%	5%
To oversee HVAC subcontractors more closely	0%	7%	5%
To know what to look for from architects	16%	0%	5%
To educate customers and the public	4%	5%	5%
To comply with changes to the energy code	0%	4%	2%
To recommend more energy-efficient windows	0%	2%	1%
For a better understanding of HERS ratings	4%	0%	1%
For project management	0%	2%	1%
Not using because not applicable to work	0%	2%	1%
Not using because retired	0%	2%	1%

- When the survey asked for additional comments and suggestions, two-fifths of respondents who answered this question simply noted that the presentations were great and one-sixth said the instructor did a good job. Comments and suggestions for improving the trainings most often called for getting more contractors to attend, including more graphics and real-world examples; lengthening the trainings; and using a round table for better note-taking, dialogue, and comfort (Table 8).

Table 8: Additional Comments and Suggestions to Improve Trainings

(Multiple response; number of responses)

General Category	Building Code Officials	Building Professionals
N	*13*	*17*
Great presentation	6	6
Instructor did a good job	3	2
Training provided a lot of new information	2	1
Have more HVAC contractors attend the trainings	2	0
Have more contractors attend the trainings	1	1
Consider seating attendees at tables for better note-taking, dialogue, and comfort	0	2
Training provided good information that respondent will use to convince superiors to follow code	0	2
Provide more graphics	1	0
Include more real world examples	1	0
Good presentation on air and vapor barriers	0	1
Good presentation on ventilation	0	1
Consider longer classes to better cover the material	0	1
Include more interaction with attendees to keep their interest	0	1
Handouts were hard to read	0	1
Some pictures and information on fiberglass insulation were confusing	0	1
Provide more incentives	0	1
Provide more commercial information (respondent probably not aware of commercial trainings)	0	1

A.4 PROJECT TYPES AND LOCATIONS

- More than one-half of the respondents' work involves retrofits to existing buildings. Close to three out of five retrofits contained an energy component and thus impacted energy usage. (Table 9).
- Note that the questions asked for the portion of energy-related retrofit work are shown as a percent of a percent. Based on this, for all attendees, 31% of all work would be for energy-related retrofits (0.57 times 0.55). Building code officials provided similar responses to trainees in all types of occupations.

Table 9: Proportion of Retrofit Work

(Percent)

Percentage of all Work	All Trainees		Building Code Officials Only	
	Retrofit Portion	Portion of Energy-related Retrofit Work	Retrofit Portion	Portion of Energy-related Retrofit Work
N	*132*	*128*	*50*	*48*
0% to 20%	19%	13%	4%	6%
21% to 40%	8%	16%	8%	13%
41% to 60%	19%	23%	28%	33%
61% to 80%	38%	19%	50%	33%
81% to 100%	16%	30%	10%	15%
Mean	55%	57%	61%	57%

- Survey respondents who work on projects under the base 2015 IECC code indicated that, on average, close to one-half of projects use the prescriptive compliance path. About one-third of projects use the UA trade-off with ResCheck and less than one-fifth use an energy model-based performance path (Table 10).

Table 10: Compliance Path for Projects Under 2015 IECC

(Mean percentage)

Compliance Path	Building Code Officials	Building Professionals	All Trainees
N	*26*	*62*	*88*
Prescriptive	47%	42%	44%
UA trade-off (ResCheck)	29%	36%	34%
Performance (energy model based)	24%	22%	23%

- Survey respondents who attended these trainings work in cities and towns across Massachusetts.[2] Building professionals most often cited Cape Cod municipalities. This is to be expected given the location of two of the five training dates (on 2/13 and 3/20) (Table 11).
- Of the 82 locations listed in Table 11, 58 use the stretch code and 24 use the code based on the 2015 IECC. Of the 115 respondents who indicated working in specific locations, 106 (92%) work in at least one stretch code location.

[2] Attendees could list up to three municipalities on the survey forms.

Table 11: Cities and Towns Represented in the February through May 2019 Trainings

(Number of responses; multiple response; * indicates stretch code location)

City or Town	Code Officials	Building Prof.	Total	City or Town	Code Officials	Building Prof.	Total
Abington*	1		1	Marlborough*	1		1
Acushnet*	1		1	Mashpee*	3	2	5
Ashland*	1		1	Mattapoisett	1		1
Attleboro	2		2	Medway*		1	1
Auburn*	1	3	4	Milford		1	1
Barre*	1		1	Monterey*	1		1
Barnstable	2	4	6	Natick*		1	1
Becket*	1		1	New Bedford*		1	1
Berkley		1	1	Newton*		1	1
Bellingham		1	1	Northborough*	1		1
Billerica*		2	2	Northbridge*		2	2
Blandford*	1		1	Orleans*		10	10
Boston*	2	4	6	Paxton		2	2
Bourne	1	1	2	Plymouth	1	4	5
Brewster*		6	6	Provincetown*	1	16	17
Brookfield		2	2	Quincy*		2	2
Carlton	1		1	Rehoboth	2		2
Carver*	1		1	Rochester*	2		2
Charlton*		2	2	Russell	1		1
Chatham*	1	6	7	Sandwich	1	2	3
Dennis*	4	3	7	Shrewsbury*		1	1
Douglas*		3	3	Somerville*	3		3
Duxbury*	1		1	Southbridge*	1		1
Eastham	1	17	18	Spencer*		2	2
Edgartown	1		1	Springfield*		2	2
Falmouth	1	2	3	Sterling		1	1
Framingham*	2		2	Sutton*		2	2

City or Town	Code Officials	Building Prof.	Total	City or Town	Code Officials	Building Prof.	Total
Franklin*		1	1	Taunton		1	1
Great Barrington*	2		2	Tewksbury*		2	2
Harwich*	3	6	9	Truro*		14	14
Hingham*		1	1	Uxbridge*		5	5
Holden		2	2	Wales	1		1
Holliston*	1		1	Wellfleet*	1	20	21
Hopedale		1	1	West Boylston*		1	1
Hyannis		1	1	West Tisbury*	4		4
Hyannisport	1	1	2	Westfield*	1		1
Kingston*	1		1	Westwood*	1		1
Leicester*		2	2	Wilmington		2	2
Leominster*		1	1	Winchedon*	1		1
Lexington*		1	1	Worcester*	1	4	5
Marion*	1		1	Yarmouth*	3	6	9

A.5 UNIQUE ATTENDEES – ALL RESIDENTIAL TRAININGS OVER PAST YEAR

- NMR calculated the number of unique trainees for all residential 2015 IECC classroom trainings and webinars from August 29, 2018 through June 5, 2019, using trainee enrollment data and completed immediate surveys. As Table 12 shows, 481 individuals attended only residential classroom trainings, 218 attended only residential webinars, and 30 individuals attended both residential classroom trainings and webinars.
- Close to one-half of unique attendees were code officials; the trainings have also had sizable numbers of builders and architects in attendance.
- Building code officials were more likely to attend classroom trainings, while building professionals were more likely to attend webinars. A relatively small number of individuals attended both types of trainings.
- While the immediate surveys analyzed in this memo covered only the classroom trainings, the follow-up web surveys cover both classroom and webinar trainings. The follow-up web surveys are being conducted in 2019 with a report on the findings due at the end of the year.

Table 12: Numbers of Unique Training Attendees – 8/29/2018 to 6/05/2019

(Number of attendees)

Position	Attended Classroom Training(s)	Attended Webinar(s)	Attended Both	Total Unique Attendees
Architect or engineer	37	47	1	85
Builder	133	16	5	154
Building code official	240	67	20	327
Building owner	0	4	0	4
Energy professional	13	38	4	55
Government official	1	11	0	12
Non-profit	0	13	0	13
Other	31	10	0	41
Retired	7	0	0	7
Subcontractor (insulation, HVAC, plumbing, etc.)	12	0	0	12
Position not known*	7	12	0	19
Total unique training attendees	481	218	30	729

*Includes individuals who did not indicate their position on the registration form.

Appendix B

Table 13: Previous Immediate Survey Memos

Date	Residential Immediate Surveys	Commercial Immediate Surveys
2012 IECC Trainings		
10/31/14	X	
12/29/14		X
3/13/15	X	
4/30/15		X
7/10/15	X	
7/31/15		X
12/23/15	X	
12/30/15		X
9/26/16	X	
12/5/16		X
2015 IECC Trainings		
12/21/16 (final on 1/9/17)	X	
12/30/16 (final on 1/24/17)		X
5/30/17 (final on 6/13/17)	X	
6/14/17 (final on 6/28/17)		X
1/26/18 (final on 3/6/18)	X	
2/5/18 (final on 3/6/18)		X
6/1/18 (final on 7/9/18)	X	
11/9/18 (final on 1/4/19)		X
7/5/19	X	