Wisconsin Department of Safety and Professional Services
Division of Policy Development
4822 Madison Yards Way
PO Box 8366
Madison WI 53705-8366

Phone: 608-266-2112
Web: http://dsps.wi.gov
Email: dsps@wisconsin.gov

Tony Evers, Governor
Dan Hereth, Secretary

VIRTUAL\TELECONFERENCE
WISCONSIN ADVISORY COUNCIL ON BUILDING SUSTAINABILITY
Virtual, 4822 Madison Yards Way, Madison
Contact: Brad Wojciechowski (608) 266-2112
October 25, 2024

The following agenda describes the issues that the Council plans to consider at the meeting. At the time of the meeting, items may be removed from the agenda. Please consult the meeting minutes for a record of the actions of the Council.

AGENDA

9:00 A.M.

OPEN SESSION – CALL TO ORDER – ROLL CALL

A. Adoption of Agenda (1-2)

B. Approval of Minutes of July 19, 2024 (3)

C. Reminders: Conflicts of Interest, Scheduling Concerns

D. Introductions, Announcements and Recognition

E. Administrative Matters – Discussion and Consideration
1. Department, Staff and Council Updates
2. Council Members
   a. Austin, Benjamin V.
   b. Eber, Alan H.
   c. Hackel, Scott P.
   d. Herrmann, Monika S.
   e. Lipari, Megan C.
   f. Nergard, Missy A.
   g. Nino Torres, Victor G.
   h. O'Brien, Timothy M.
   i. Sayu, Francisco J.
   j. Swartz, Keith A.
   k. Weber, Christina Louise

F. Presentation: Darren Port, Slipstream – Discussion and Consideration (4-41)
Additional Materials
1. Overview of WI State Code Adoptions
2. Codes Workforce
3. WI Code Resources

G. Update on Code Council Meetings – Discussion and Consideration

H. Administrative Rule Matters – Discussion and Consideration

I. Legislation and Policy Matters – Discussion and Consideration

J. Discussion and Consideration of Items Added After Preparation of Agenda:
   1. Introductions, Announcements and Recognition
   2. Administrative Matters
   3. Election of Officers
   4. Education and Examination Matters
   5. Credentialing Matters
   6. Legislative and Policy Matters
   7. Administrative Rule Matters
   8. Council Liaison Training and Appointment of Mentors
   9. Informational Items

K. Public Comments

L. ADJOURNMENT

NEXT MEETING: DECEMBER 6, 2024

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MEETINGS AND HEARINGS ARE OPEN TO THE PUBLIC, AND MAY BE CANCELLED WITHOUT NOTICE.

Times listed for meeting items are approximate and depend on the length of discussion and voting. All meetings are held virtually unless otherwise indicated. In-person meetings are typically conducted at 4822 Madison Yards Way, Madison, Wisconsin, unless an alternative location is listed on the meeting notice. In order to confirm a meeting or to request a complete copy of the board's agenda, please visit the Department website at https:\\dsps.wi.gov. The board may also consider materials or items filed after the transmission of this notice. Times listed for the commencement of any agenda item may be changed by the board for the convenience of the parties. The person credentialed by the board has the right to demand that the meeting at which final action may be taken against the credential be held in open session. Requests for interpreters for the hard of hearing, or other accommodations, are considered upon request by contacting the Affirmative Action Officer or reach the Meeting Staff by calling 608-267-7213.

PROJECT PARTNERS

Wisconsin Advisory Council on Building Sustainability

October 25, 2024

THIS PROJECT is supported by the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy (EERE) under the Building Technologies Office—DE-FOA-0002813—Bipartisan Infrastructure Law Resilient and Efficient Codes Implementation.

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Climate + Clean Energy Solutions for everyone.

The knowledge, people, and resources to solve our biggest energy challenges.

Agenda

Project Overview

PNNL Wisconsin Code Analysis

Wisconsin Code Resources

Workforce for Code Officials

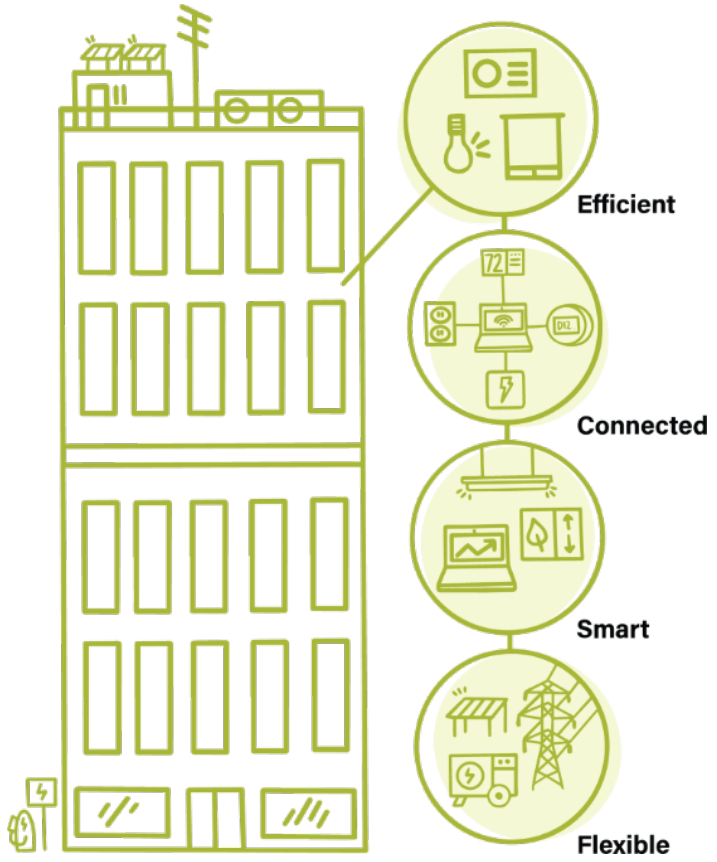
National Code Adoption

Department of Energy Grant

Resilient and Efficient Codes Implementation (RECI) Federal Funding
2024 – 2026

Background

Through Infrastructure Investment and Jobs Act (IIJA), $225M in funding has been appropriated to eligible entities to enable sustained cost-effective implementation of updated building energy codes



Project Partners

- Slipstream
- Clean Wisconsin
- Midwest Energy Efficiency Alliance
- Wisconsin Local Government Climate Coalition
- New Buildings Institute
- Wisconsin Department of Safety and Professional Services

Project Objectives

Building a Strong Foundation for Wisconsin Code Adoption, Compliance, and Local Support

Code Adoption Support

Engage stakeholders to understand challenges & opportunities around building codes.

Provide technical support for regular energy code updates.

Code Compliance Support

Conduct a comprehensive compliance baseline study.

Develop an energy code collaborative.

Develop a circuit rider program.

Local Government Support

Develop a holistic local government support program to assist municipalities.

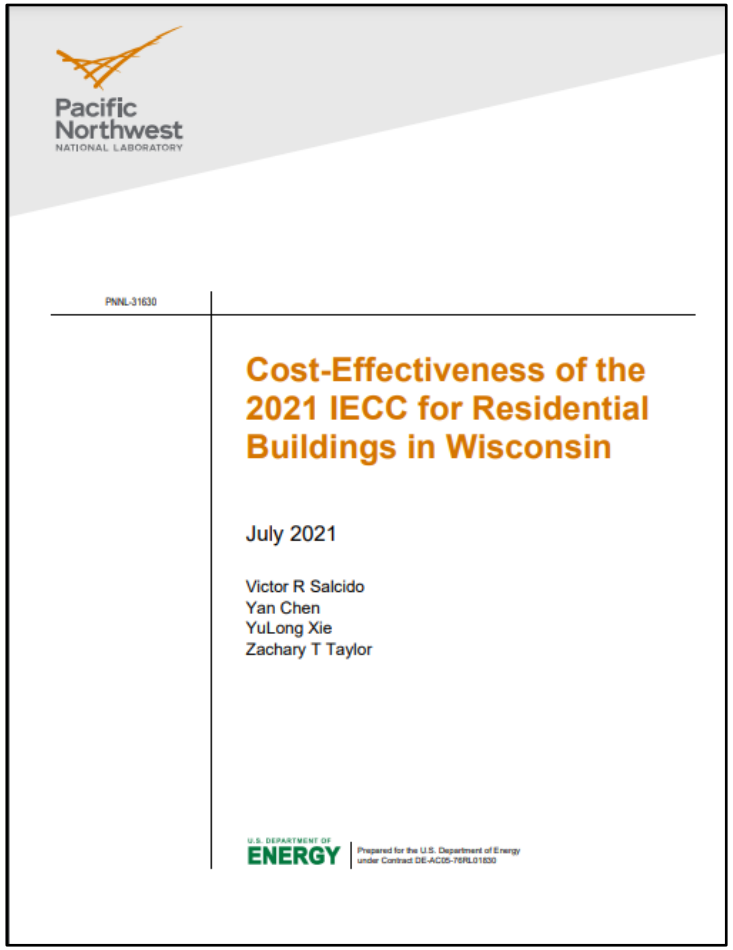
Technical Assistance to CBS

- The project team will coordinate with the Council to address the concerns and issues raised during stakeholder engagement process
- Analyze potential codes updates for energy and costs savings in coordination with existing research and analysis completed by DOE.
- We can work directly with and request assistance from Pacific Northwest National Laboratory (PNNL)

PNNL Wisconsin Residential Code Analysis

PNNL WI Residential Code Analysis

- PNNL 2021 Analysis compared UDC to 2021
- 2021 IECC and 2024 IECC to the current WI UDC
- Economic Parameters
- Analysis Factors
- Expected Late Nov / Early Dec



DOE's Residential Cost-Effectiveness Methodology

The DOE methodology contains two primary assessments:

- Energy savings
- Cost-effectiveness

Energy consumption is modeled using the DOE EnergyPlus™ software for both single-family and multifamily buildings based on an established suite of residential prototypes.

Table 1. Single-Family Prototype Assumptions

Parameter	Assumption
Conditioned floor area	2,376 ft^2 (plus 1,188 ft^2 of conditioned basement, where applicable)
Footprint and height	30-ft-by-40 ft, two-story, 8.5-ft-high ceilings
Area above unconditioned space	1,188 ft^2
Area below roof/ceilings	1,188 ft^2
Perimeter length	140 ft
Gross exterior wall area	2,380 ft^2
Window area (relative to conditioned floor area)	Fifteen percent equally distributed to the four cardinal directions (or as required to evaluate glazing-specific code changes)
Door area	42 ft^2
Internal gains	86,761 Btu/day
Heating systems	Natural gas furnace, heat pump, electric furnace, or oil-fired furnace
Cooling system	Central electric air conditioning
Water heating	Same as fuel used for space heating, or as required to evaluate domestic hot water-specific code changes

DOE's Residential Cost-Effectiveness Methodology

DOE evaluates residential energy codes based on three measures of cost-effectiveness:

- **Life-Cycle Cost*:** Full accounting over a 30-year period of the cost savings, considering energy savings, the initial investment financed through increased mortgage costs, tax impacts, and residual values of energy efficiency measures.

- **Cash Flow:** Net annual cost outlay (difference between annual energy cost savings and increased annual costs for mortgage payments, etc.).

- **Simple Payback:** Number of years required for energy cost savings to exceed the incremental first costs of a new code.

- **Life-cycle cost is the primary measure by which DOE assesses the cost-effectiveness of residential energy codes*

Wisconsin 2021 Economic Parameters

PNNL Study Parameter	2021 Analysis
Mortgage Interest rate (fixed rate)	3%
Loan Fees	1% of mortgage amount
Loan Term	30 years
Down Payment	12% of mortgage amount
Nominal Discount Rate (equal to mortgage rate)	3%
Inflation rate	1.40%
Marginal Federal income tax	12%
Marginal State income tax	6.27%
State property tax	1.76%

State of WI Impact

2021 IECC compared to WI UDC (Eq 2009 IECC)

Homeowner

- Life Cycle Savings: $12,411(average across both climate zones)
- Annual energy savings in year one: $651 (state average)
- Net annual cash flow savings (year one): $362 (average factoring downpayment, taxes, interest)
- Years to Positive Cash Flow: Starts at 2 (depending on building size, climate zone)
- Simple Pay Back (years): 6.6 - 7.6 based on climate zone

PNNL: Cost-Effectiveness of the 2021 IECC for Residential Buildings in Wisconsin www.energycodes.gov/sites/default/files/2021-07/WisconsinResidentialCostEffectiveness_2021_0.pdf

Wisconsin 2024 Economic Parameters

PNNL Study Parameter	2021 Analysis	NEW 2024 Analysis *First-Time Buyer*	NEW 2024 Analysis *Average Income Buyer*
Mortgage Interest rate (fixed rate)	3%	5.00%	5.00%
Loan Fees	1% of mortgage amount	0.90%	0.90%
Loan Term	30 years	30 years	30 years
Down Payment	12% of mortgage amount	8%	15%
Nominal Discount Rate (equal to mortgage rate)	3%	5.00%	5.00%
Inflation rate	1.40%	2.20%	2.20%
Marginal Federal income tax	12%	22%	22%
Marginal State income tax	6.27%	5.30%	5.30%
State property tax	1.76%	1.61%	1.61%

Wisconsin Code Resources

Wisconsin Code Resources

Current Resources:

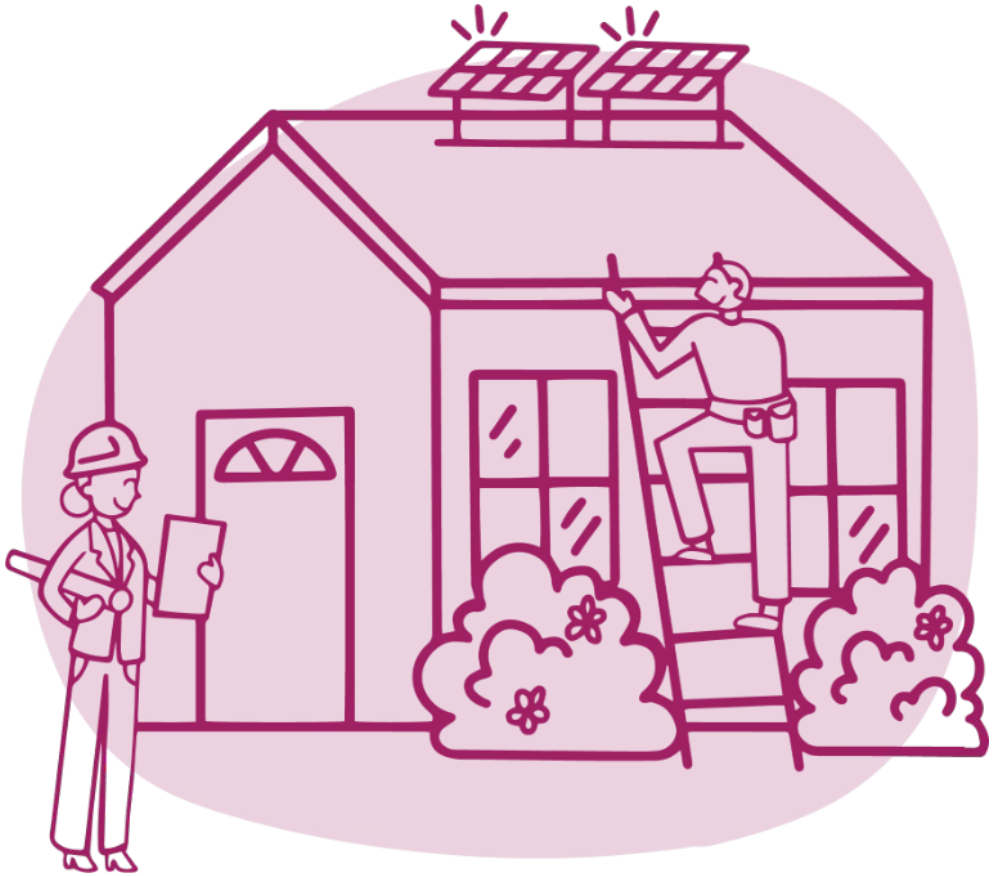
- 2021 Key Changes Overview
- WI Code adoption process (abridged/graphic)

Coming Soon:

- 2024 changes overview
- Wisconsin Code Adoption Process (Narrative)
- ZERH WI

Slipstream Code Website

www.slipstreaminc.org/codes



Wisconsin Rule Making/Code Adoption Process

Below is a step-by-step guide to the Wisconsin Rulemaking /Code Adoption process. Interested stakeholders are encouraged to participate in code council meetings and public hearings. Links to code council meeting schedules and agendas can be found on page 2.

SCOPE STATEMENT

- The Department of Safety and Professional Services (DSPS) identifies the need for a new state code and begins the code adoption process by drafting a preliminary scope statement.
- The respective residential or commercial Code Council discusses, possibly modifies, and votes on the Scope Statement.
- The Department Secretary approves the scope statement, which is then sent to the governor for approval.
- Upon the governor's approval, the statement is published in the state Administrative Register for at least ten days, and a public hearing regarding the Scope Statement is scheduled before the next code council meeting.
- If no changes are made due to the hearing, the Department Secretary signs off on the final Scope Statement, and the 30-month code adoption process begins. If there are changes to the Scope Statement, the process above starts again.

DRAFTING NEW RULE (CODE)

- The Code Council begins drafting the new rule/code (12–24+ months).
- Code Councils meet monthly, both in person and virtually. The committee chair may allow discussion during meetings with non-committee stakeholders. Public comment is permitted during the council meeting in the "Public Comments" section.
- Council and Department Secretary approve the draft rule.

ECONOMIC IMPACT ANALYSIS

- DSPS Prepares an Economic Impact Analysis (economic effect of the code adoption) and publishes the Economic Analysis in the Administrative Register.
- DSPS submits rule draft and economic analysis to the Legislature Clearinghouse for review (20 days).
- DSPS schedules and conducts a public hearing to discuss the Clearinghouse's comments. As advised by the code council, DSPS staff, public comment, and the Clearinghouse, DSPS incorporates changes into the final rule draft.

FINAL RULE DRAFT AND ADOPTION ORDER

- DSPS presents the Final Rule Draft to the council and Department Secretary for approval.
- DSPS submits Final Rule Draft to Governor for approval (30–60 day review).
- DSPS submits the Final Rule Draft to the Legislature for review (30-day review). If there is no objection from the Legislature, DSPS drafts an Adoption Order.
- The Adoption Order is sent to the Code council and Department Secretary for approval.
- The Adoption Order is published in the Administrative Register.
- The Rule/Code becomes effective the 1st day of the month after publication in the Administrative Register.

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STATE AND CODE COUNCIL WEBSITES

Wisconsin Administrative Register
http://docs.legis.wisconsin.gov/code/register

Commercial Build Code Council (CBCC)
https://dsps.wi.gov/Pages/BoardsCouncils/CommercialBuilding/Default.aspx

Department of Safety and Professional Services (DSPS)
https://dsps.wi.gov/pages/Home.aspx

Uniform Dwelling Code Council (UDCC)
https://dsps.wi.gov/Pages/BoardsCouncils/UniformDwelling/Default.aspx

Wisconsin Advisory Council on Building Sustainability (CBS)
https://dsps.wi.gov/Pages/BoardsCouncils/Sustainability/Default.aspx

COMING SOON...

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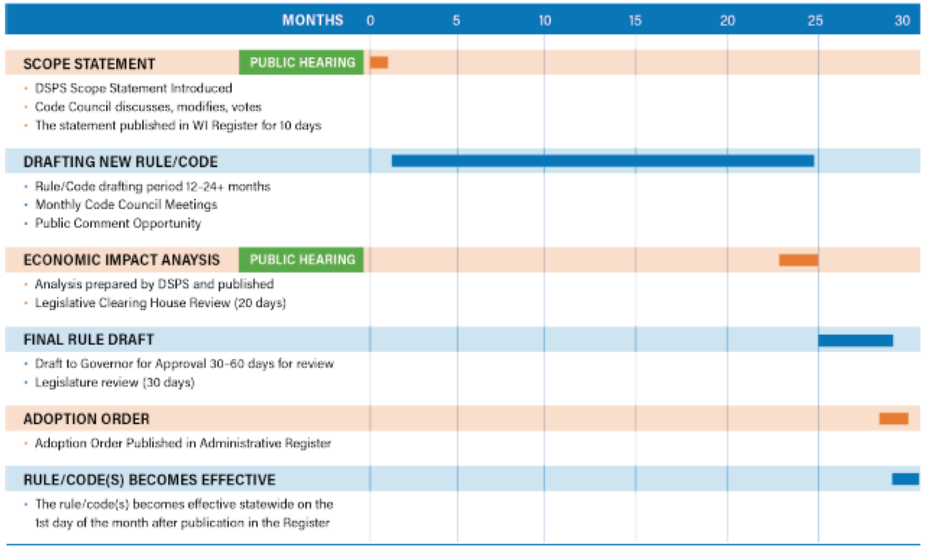
Code Resources Website
www.slipstreaminc.org

FOR MORE INFORMATION
Contact Darren Port at
dport@slipstreaminc.org

WI DSPS Rule/Code Adoption Process

The Wisconsin rulemaking/code adoption process takes approximately 24–30 months from the introduction of the scope statement to code adoption.



This Project is supported by the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy (EERE) under the Building Technologies Office—DE-FOA-0002813—Bipartisan Infrastructure Law Resilient and Efficient Codes Implementation

2021 Model Energy Code Key Changes and the Wisconsin Uniform Dwelling Code

This document provides an overview of the key provisions of the 2021 International Energy Conservation Code (2021 IECC). It highlights key differences between the current Wisconsin Uniform Dwelling Code (UDC), which was adopted by Wisconsin in December 2015 (effective January 1, 2026). The Wisconsin UDC is equivalent to the 2009 International Energy Conservation Code, with Wisconsin-specific amendments.

The International Code Council published the 2021 IECC in January 2021. The energy code is updated every three years. The 2024 IECC is currently available for adoption. An overview of fundamental 2024 changes will soon be available at www.slipstreaminc.org

STATEWIDE ENERGY SAVINGS AND EMISSION REDUCTION

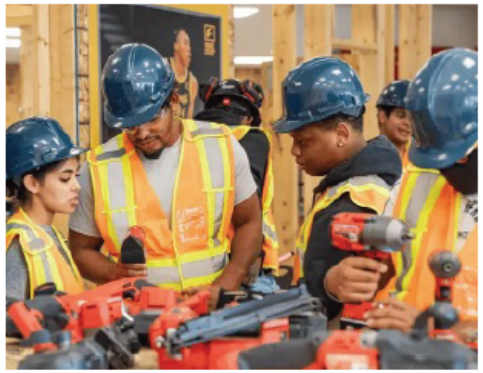
The 2021 International Energy Conservation Code (IECC) model code is approximately 30% more energy efficient and delivers 36% energy cost savings compared to the 2009 IECC model code. Compared to the Wisconsin Uniform Dwelling Code (UDC), based on the 2009 IECC with amendments, the 2021 IECC, when adopted and implemented, is estimated to have the following Statewide impact for Wisconsin:

ENERGY and EMISSIONS		
Statewide Impact	First Year	30 Year Cumulative
Energy Cost Savings $	$1,831,000	$592,300,000
CO_2 emission reduction, Metric Tons	12,510	5,742,000

HOME BUYER SAVINGS

The 2021 IECC could provide[1]:

- An average life cycle (30 year) savings of $12,411.
- Net annual average home energy savings in the first year of $632.
- First-year average energy cost savings (percent) 21.6%.
- Simple payback average of 7.3 years.



WORKFORCE

In addition to saving energy and utility costs, the 2021 IECC is expected to increase the demand for construction and energy professionals, particularly Energy Raters to conduct energy and code diagnostic testing.

DOE estimates that adopting the 2021 IECC compared to the 2009 IECC may result in approximately 400 jobs within its first year of adoption and nearly 10,000 jobs over 30 years for Wisconsin.[2]

[1]Cost-Effectiveness of the 2021 IECC for Residential Buildings in Wisconsin, July 2021, https://www.energycodes.gov/sites/default/files/2021-07/WisconsinResidentialCostEffectiveness_2021_0.pdf

[2]Ibid

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2021 Model Energy Code Key Changes

- The resource provides an overview of the fundamental changes to the 2021 IECC.
- Highlights differences between the 2021 IECC and the current WI UDC.
  - WI Economics / Workforce
  - Climate Zone Changes
  - Compliance Paths
  - Alternative Efficiency Options (AEO)
  - Appendixes

2021 IECC RESIDENTIAL CHANGES

The following information is intended to overview key 2021 IECC residential changes. It is a parts code. The full 2021 IECC residential provisions can be viewed here: 2021 IECC. This document is not intended for code compliance.

2021 Climate Zone and Compliance Pathways

CLIMATE ZONES

2021 IECC Climate Zone (CZ) for Wisconsin is 5A/6A (see additional information in *Figure 1*)

COMPLIANCE PATHWAYS

- 2021 Pathways: Prescriptive, Performance, Simulated Performance Alternative, ERI.
- The 2021 IECC removes the terms "prescriptive" and "mandatory" in provision labels.
- The code has been restructured so that each compliance path has its section, and the mandatory provisions for each are identified.

2021 Prescriptive Path

The prescriptive path lists minimum requirements for building components, such as insulation, windows, lighting, and HVAC systems. It requires each building component to meet a minimum energy savings value. Compliance is demonstrated through a checklist approach. The Prescriptive Path is the least flexible. However, trade-offs (UA trade-offs) are possible and offer some flexibility in complying with the Prescriptive Path.

AIR LEAKAGE REQUIREMENTS

- All new homes are required to be blower door tested.
- Baseline for envelope leakage ≤3.0 ACH50 (2009 IECC ≤ 7ACH)
- For the Performance and ERI paths, envelope leakage to ≤5.0 ACH50 losses accounted for w/ Backstop

continued on page 3

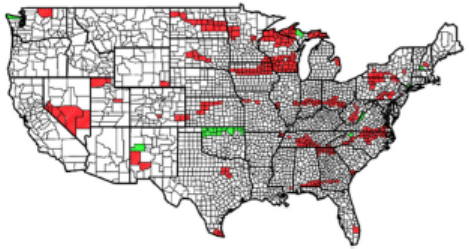
Figure 1: **2021 IECC Climate Zone Changes**

Climate zones (CZ) are significant to the IECC as they prescribe many building envelope energy efficiency measures that a building must include. Climate zones are defined at the county level based on temperature, humidity, and rainfall.

In 2020 the climate zone map changed and was significant 2021 IECC change, the first change in nearly 20 years. Based on research from weather data over a 25-year period, about 10 percent of counties nationally were assigned a new climate zone. In most cases, the shift was to a warmer (lower) climate zone.

Counties moving to warmer zones (requirements generally get less stringent)

Counties moving to colder zones (requirements generally get more stringent)



State	Fraction of New Floor Area in State Reclassified to a New Climate Zone (percent)
Wisconsin	82.68
North Carolina	
North Dakota	
Tennessee	
Indiana	
Ohio	
Texas	
Wyoming	
Pennsylvania	
Virginia	

Table 2 Top ten counties with the most floor space (ft2) reclassified into new climate zones

County, State	Shift in Climate Zone	Floor Area, ft² ('000s)	Fraction of Floor Space in State from County (percent)
Dallas, TX	Down (3A to 2A)	109769	14.12
Palm Beach, FL	Down (2A to 1A)	69206	7.77
Tarrant, TX	Down (3A to 2A)	65159	8.38
Franklin, OH	Down (5A to 4A)	47549	18.01
Marion, IN	Down (5A to 4A)	34518	17.51
Wake, NC	Down (4A to 3A)	33504	14.03
Davidson, TN	Down (4A to 3A)	28054	15.93
Milwaukee, WI	Down (6A to 5A)	27292	21.26
Dane, WI	Down (6A to 5A)	24081	18.76
Hidalgo, TX	Down (2A to 1A)	19596	2.52

These changes highly impact Wisconsin. 82.68 percent of the state's floor area was reclassified, the highest percentage in the country, and Milwaukee and Dane Counties are among the top ten counties nationally reclassified. In the 2009 IECC, Wisconsin was CZ6/7; in the 2021 IECC, Wisconsin is in warmer CZ 5A/6A.[5]

2021 Model Energy Code Key Changes and the Wisconsin Uniform Dwelling Code

2021 Prescriptive Path—*continued*

AIR LEAKAGE REQUIREMENTS—*continued*

- Small units (<1500 sq. ft.) may be tested to ≤0.30 cfm/sq. ft.
- Additional Efficiency Options (AOE) measured air leakage rate ≤3.0 ACH50 plus HRV/ERV.
- No sampling allowed.

MECHANICAL SYSTEMS

- Clarification on duct location and duct insulation requirements.
- Removed exception for duct testing in conditioned spaces.
- New mechanical ventilation system testing requirements.
- Mechanical ventilation is required for all buildings.

ELECTRICAL POWER AND LIGHTING SYSTEMS

- ≥70 lumens/watt (100 percent of permeant lighting)
- New interior and exterior lighting requirements
  - Maximum leakage limit for all systems: ≤8.0 cfm/sq.ft.
- Supply and return ducts not entirely in the building thermal envelope must be insulated to not less than R-6.

DUCT TESTING REQUIREMENTS

- 2021: Requirement to test ducts. There is no exception for ducts/air handler inside conditioned space
- Testing per ANSI/RESNET/ICC 380 or ASTM E1554
- Maximum leakage allowable for systems located inside conditioned space AND maximum trade-off for duct leakage is ≤8.0 cfm/100 sq.ft.
- Prescriptive requirement and baseline for performance path trade-offs is ≤4.0 cfm/100 sq.ft. or ≤3.0 cfm/100 sq.ft. If an air handler is not installed.
- No sampling allowed.

Mini Split Heat Pumps and Heat Pump Water Heaters are highly energy-efficient, readily available technologies that meet code requirements and save building occupants energy and utility costs.

2021 Prescriptive Path—*continued*

TRADE-OFF BACKSTOPS*

- Sets envelope backstop to 2009 IECC
- Envelope Air Leakage
  - ≤3.0 ACH 50
  - Small units (<1500 sq. ft.) ≤0.30 cfm/sq.ft. enclosure area
- Duct Tightness
  - Maximum leakage limit for all systems: ≤8.0 cfm/sq.ft.
- Supply and return ducts not entirely in the building thermal envelope must be insulated to not less than R-6.

*Energy code trade-off backstops, also known as "hard limits" or "trade-off limits," are requirements that limit how much a building's envelope can be traded off for better-performing mechanical systems. The objective is to improve the building's overall performance by guaranteeing that the envelope meets a minimum level of performance.[3]

[3] https://codes.iccsafe.org/content/THPOTIRC2021P1/chapter-11-re-energy-efficiency

2009 IECC, WI UDC, 2021 IECC, 2024 IECC

Residential R-Values and Fenestration								
CODE	Climate Zone	Glazed Fenestration SHGC	Ceiling	Wood Frame Wall	Floor	Basement Wall	Slab R-Value and Depth	Crawl Space
2009	6A	NR	49	20 or 13+5	30	15/19	10, 4ft	10/13
	7		49	21	38	15/19	10, 4ft	10/13
WI UDC	6A	NR	49	21	30	15/19	10/20	15/19
	7		49	19+5	38	15/19	10/20	15/19
2021	5A	0.4	60	30 or 20+5 or 0+20	30	15 or 19 or 13+5	10, 4ft	15/19 or 13&5
	6A	NR	60		30		10, 4ft	
2024	5A	NR	49	30 or 20+5 or 0+20	30 or 19+7.5 or 20	15 or 19 or 13+5	*See 2024 Slab*	15 or 19 or 13&5
	6A		49					

Residential U-Factor					
CODE	Climate Zone	Fenestration	Basement Wall	Crawl Space Wall	Slab
2009	6A	0.35	0.050	0.065	0.033
	7	0.35	0.050	0.065	0.028
WI UDC*	6A	0.30	0.045	0.045	0.033
	7	0.30	0.045	0.045	0.033
2021	5A	0.30	0.050	0.055	0.033
	6A	0.30	0.050	0.055	0.033
2024	5A	0.28	0.050	0.055	*See 2024 Slab*
	6A	0.28	0.050	0.055	

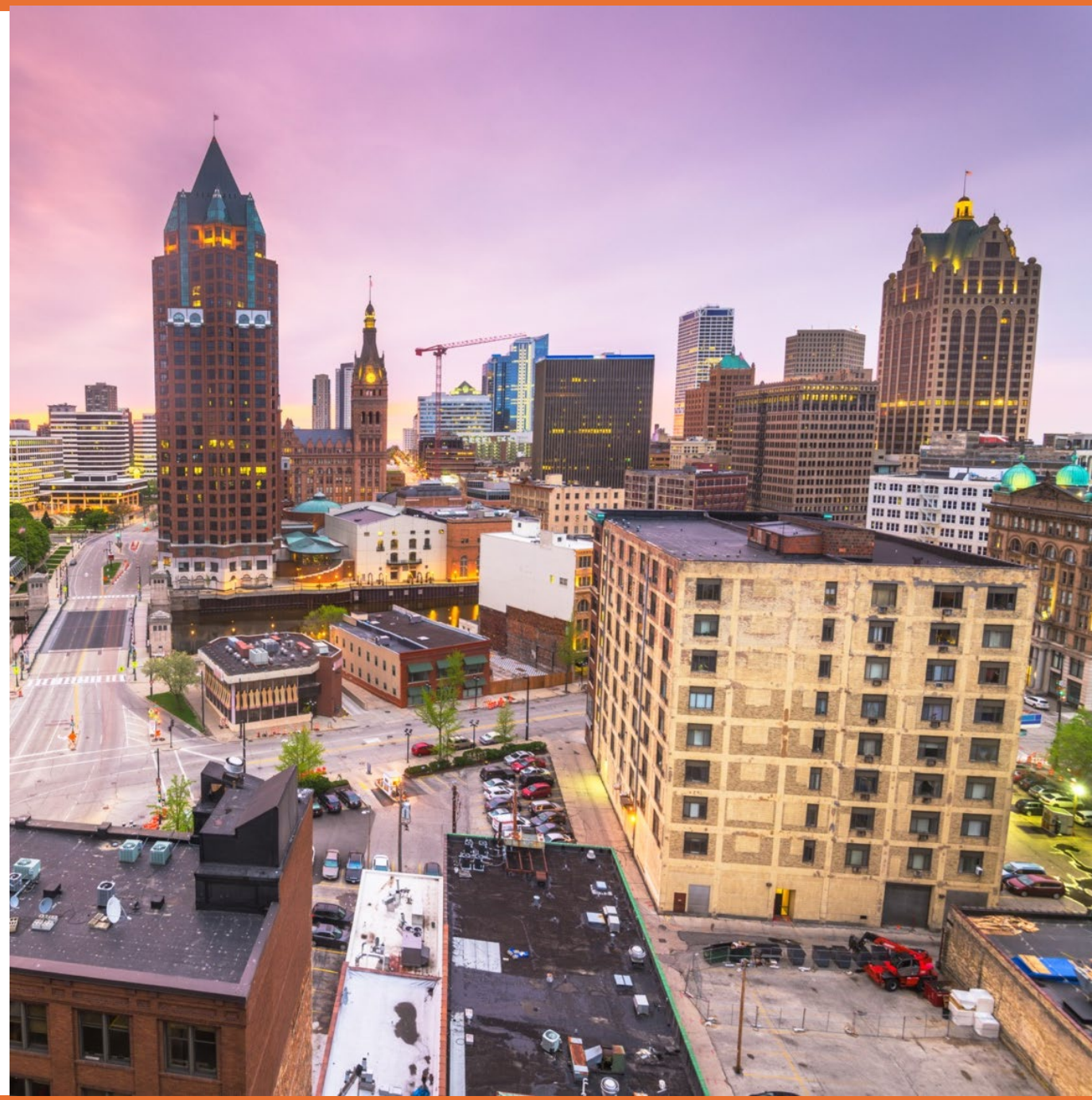
2024 Slab		
	Climate Zone	R-Value & Depth
Unheated Slab	5A	10, 3ft
	6A	10, 4ft
Heated Slab	5A	10, 3ft & R-5 full slab
	6A	10, 4ft & R-5 full slab

Compliance Paths					
CODE	Perscriptive	Performance	UA	ERI	WI Efficient Equipment
2009	X	X	X		
WI UDC	X	X	X		X
2021	X	X	X	X	
2024	X	X	X	X	

Climate Zones	
CODE	Climate Zone
2009	6A
	7
WI UDC	6A
	7
2021	5A
	6A
2024	5A
	6A

2024 Slab		
	Climate Zone	F-FACTOR
Unheated Slab	5A	0.51
	6A	0.48
Heated Slab	5A	0.66
	6A	0.66

Workforce Development for Code Officials



Key Barriers to Building the Energy Codes Workforce

Aging workforce and declining interest

The current workforce is shrinking as older professionals retire, with fewer young people entering the field.

Complexity of evolving energy codes

Need for ongoing education and training increases

Limited access to recruitment and training

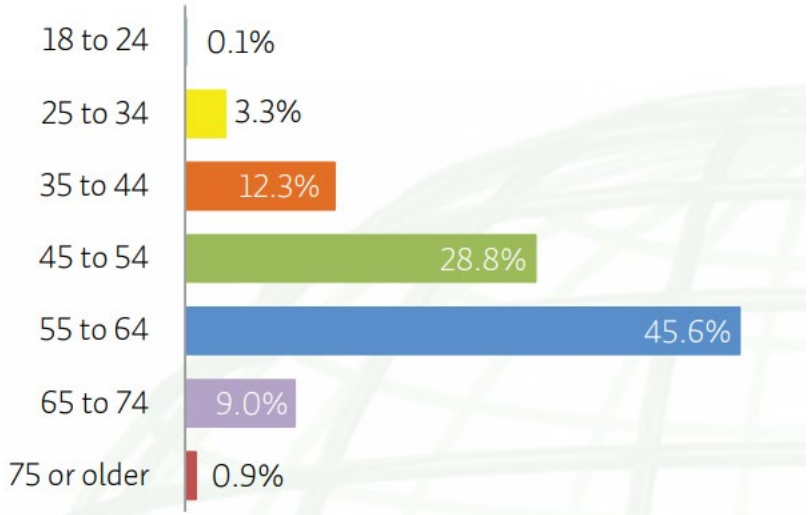
Increasing need to include underrepresented groups and make training more accessible

Insufficient funding for code official positions

More difficult to recruit and retain code officials

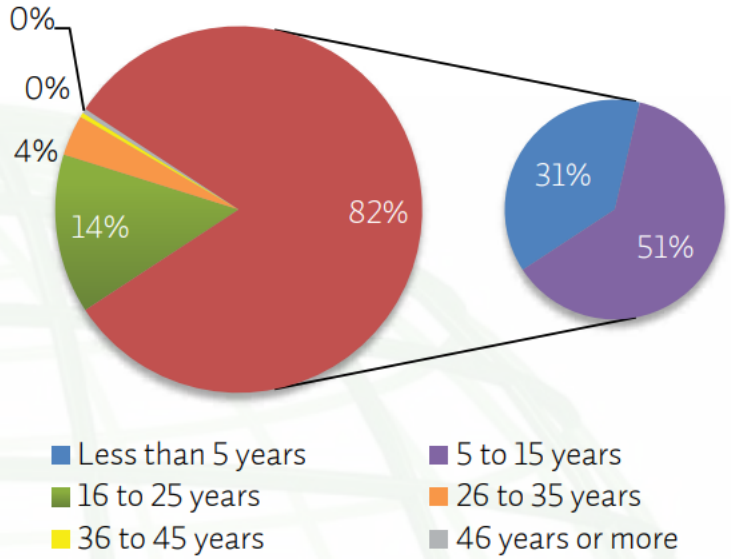
Challenges of an Aging Code Official Workforce

Figure 1: Age of Respondents



(Figure 1) International Code Council (ICC) Survey form **2014**: 85 percent of the respondents are currently over the age of 45

Figure 2: Plans to Leave the Building Regulatory Profession



(Figure 2) Ten years ago, more than 80 percent of the existing code professional workforce was planning on retiring over the subsequent 15 years. 30 percent in the next five years

Full Report: https://media.iccsafe.org/docs/ICC-NBIS-Future-Of-Code-Officials.pdf

Key Barriers to Building the Energy Codes Workforce

Aging workforce and declining interest

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Increasing need to include underrepresented groups and make training more accessible

Insufficient funding for code official positions

More difficult to recruit and retain code officials

Wisconsin Workforce Codes and Energy

Code Training:
DSPS
University of Wisconsin Madison
Private Organizations i.e. ROCKETCERT
Northeast WI Technical College
Wisconsin Code Officials Alliance (WCOA)
Wisconsin Housing Alliance
City/Municipal
Community Colleges/Universities

Energy: weatherization, solar, equipment installation, sustainability,
ZERH, modular construction.
Wisconsin Energy Workforce Consortium
Wisconsin Job Center
Slipstream
WI Focus on Energy
City of Milwaukee
Community Colleges/Universities


UWM REPORT
NEWS FROM THE UNIVERSITY OF WISCONSIN-MILWAUKEE

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UWM awarded $975,000 to expand its expertise in clean-energy workforce development

By Laura Otto | February 2, 2024 | Science & Technology | Engineering


TAMMY BALDWIN
United States Senator for WISCONSIN

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08.09.2024

Senator Baldwin Delivers Over $8 Million to Grow Wisconsin's Clean Energy Workforce

Infrastructure funding will train workers for family-supporting careers in clean energy sector

New Program through the WI RECI project!

Wisconsin Energy Code Technical Advisor

- Serves as a technical resource to work with code officials, contractors, sub-contractors, and design professionals.
- Travels the state to provide tailored assistance and advice, educational materials, and virtual and in-person trainings on energy code issues.
- Responds to inquiries via a technical support hotline
- Support for both commercial and residential buildings

Code Workforce Development Initiatives in Other States

Career development day (Texas)

Energy Auditor Pre-Apprentice Program (Massachusetts)

Free Online Energy Codes Trainings (Illinois, Michigan)

Low/No Cost Energy Codes Curriculum and On-the-Job Toolkits (Nationally Applicable)

Sustainable Homes Professional Trainings for Latinx Contractors (Oregon)

Attracting the Next Generation of Building Codes Professionals

Building Officials Association of Texas
Annual Career Development Days

- Annual full-day workshop aimed to engage high school and college students on careers in the building codes industry
- Mentoring and networking sessions with industry leaders
- Educational activities and on-site building walk-throughs with local code officials

Image source: https://boatx.org/?s=career+development+day

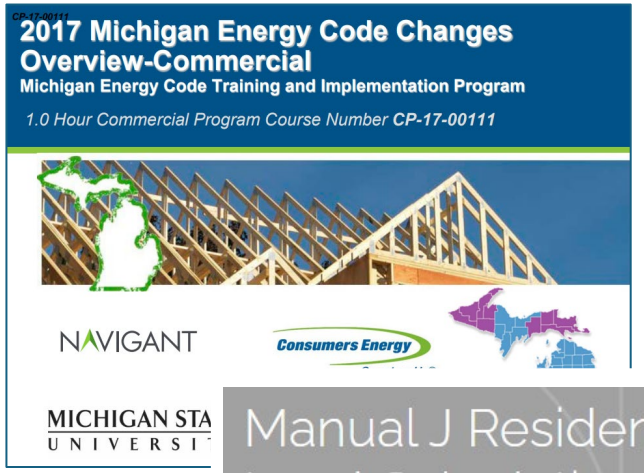
(Pre)-Apprenticeship and Career Entry Programs

Energy Auditor Pre-Apprentice Program (Roxbury Community College and Everblue, Boston MA)

- Equips students with foundational skills in energy efficiency, building science, and home performance through hands-on and theoretical training, providing a pathway to advanced certifications and full apprenticeships.
- Grant-funded program allows students to participate at no cost
- No prior experience required – individuals from diverse backgrounds and with limited education or credentials welcomed.
- Support services including resume help, interview prep, flexible schedules, various learning formats (in-person, webinars, online), and transportation and childcare.

Image source: https://www.rcc.mass.edu/_main_pdf/workforce-dev/Roxbury-Energy-Auditor-Training_9.19.24.pdf

Improving Educational Access through Free Online Energy Codes Trainings

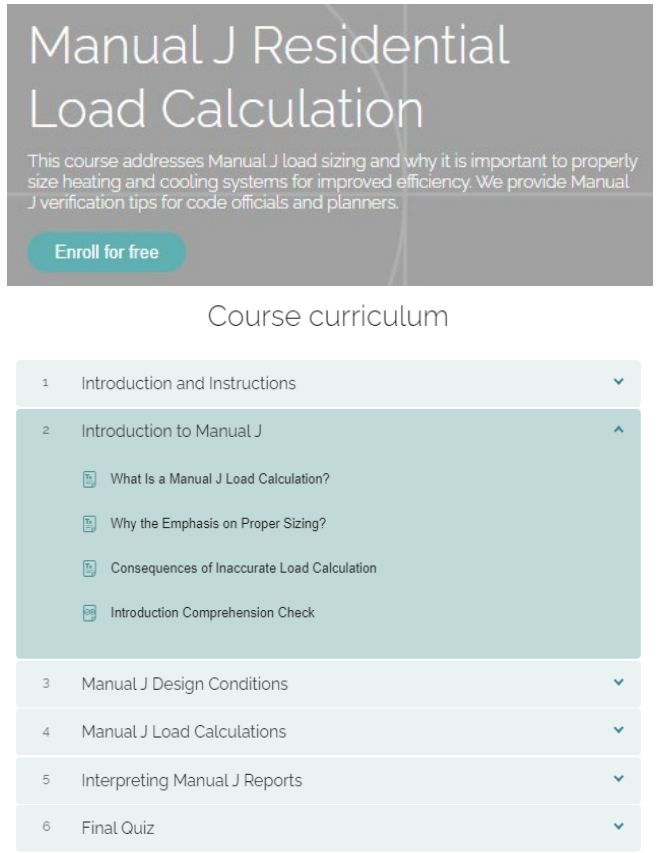


- Helps to reduce time and administrative costs needed to support code trainings and provide practitioners with continuing education credits

- Online platforms provide flexible access to trainings, allowing users to participate anytime and from any location

[Michigan Uniform Energy Code Training and Implementation Program](#) **(Michigan State University)**

[Energy Code Online Training](#) **(SEDAC, University of Illinois)**



Top image: https://www.canr.msu.edu/spdc/uploads/files/energycodes/MICommercialEnergyCode-1-HR_WCAG2.0_120117.pdf
Bottom image: https://sedac-energycode-training.thinkific.com/courses/manual-j

Low/No Cost Energy Codes Training Resources

Building Energy Education | fundamentals

SEDAC & State Energy Offices of IL, HI, NV

- Curriculum and instructor resources geared towards community colleges and building energy code training providers.
- Aims to increase participant knowledge of advanced design/construction practices and increase awareness of employment opportunities in code official professions.
- Flexible modality- Worksheets, activities, videos, lesson plan options suitable for virtual and in-person classrooms
- DOE funded- free and available to all

Code Official Digitization and Efficiency Support

International Code Council (ICC)

- Federally funded project through DOE RECI award (2024 – 2027)
- Goal to provide a digitization roadmap and toolkit to modernize building code implementation by transitioning to electronic code administration and enforcement
- Toolkit include trainings, digital tools, and other resources aimed to support resource-constrained municipalities

Left image source: https://smartenergy.illinois.edu/bee_fundamentals/
Right image source: https://www.iccsafe.org/advocacy/c-o-d-e-s/

Expanding Building Energy Efficiency Careers to Underrepresented Groups

Earth Advantage Sustainable Homes Professional (SHP) Training Program for LatinoBuilt Members

- Residential green building training and mentorship program specifically for Latinx contractors and non-native English speakers.
- *"Historically, technical training in the energy-efficiency industry has not catered to Latinx people even though Latinx contractors make up a significant portion of the industry. This type of training has also not historically been led by Latinx people or made available in Spanish."*

Image source: https://betterbuildingssolutioncenter.energy.gov/sites/default/files/attachments/BBWA_EarthAdvantage_CaseStudy.pdf

Additional Resources for Energy Codes Workforce Development

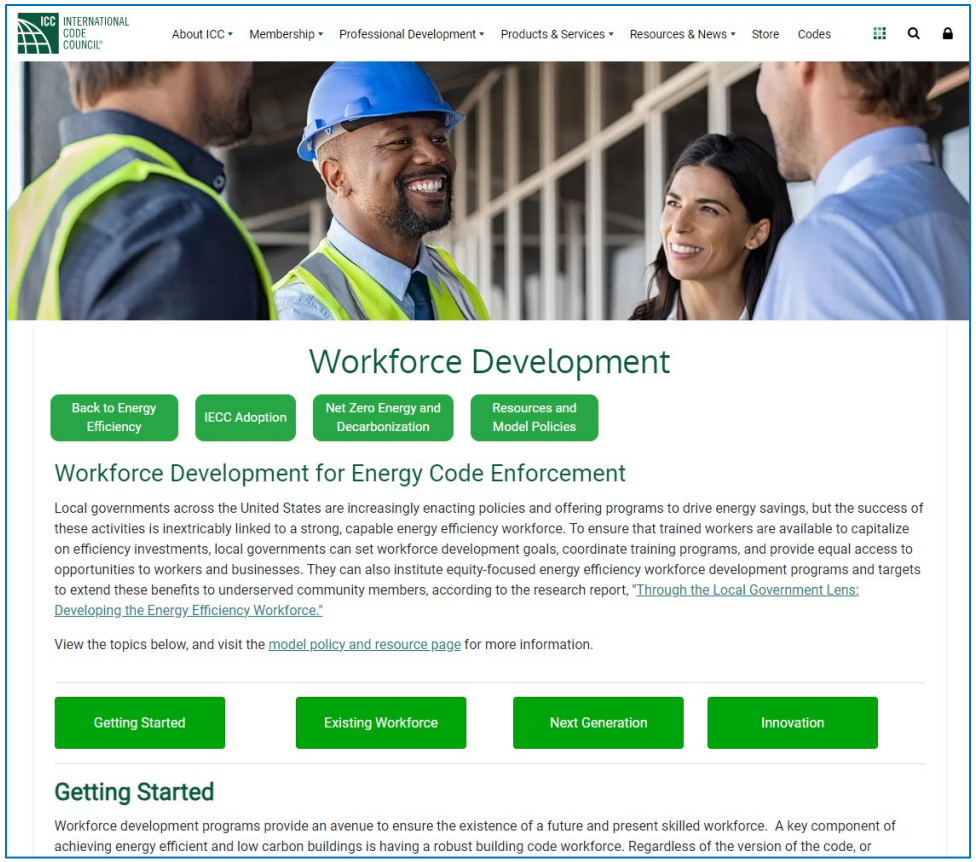


Image source: https://www.iccsafe.org/advocacy/energy-code-workforce-development/

- NASEO report (2023): Opportunities for Equity-Focused Building Energy Code Activities
- ICC report (2014): The Future of Code Officials- Results and Recommendations from a Demographic Survey
- ICC webpage: Workforce Development for Energy Code Enforcement
- DOE Building Energy Codes Program (BECP) webinar (2023): Strategies to Equitably Expand the Energy Codes Workforce
    - DOE BECP offers webinars regularly on the third Thursday of every month
    - *Upcoming webinar: Resources and Best Practices for Growing the Green Building Workforce – Thursday Nov 21, 2024 from 12-1:30pm CT*

Workforce Barriers and Code Enforcement

Trends and Tools for Compliance

Training Resources

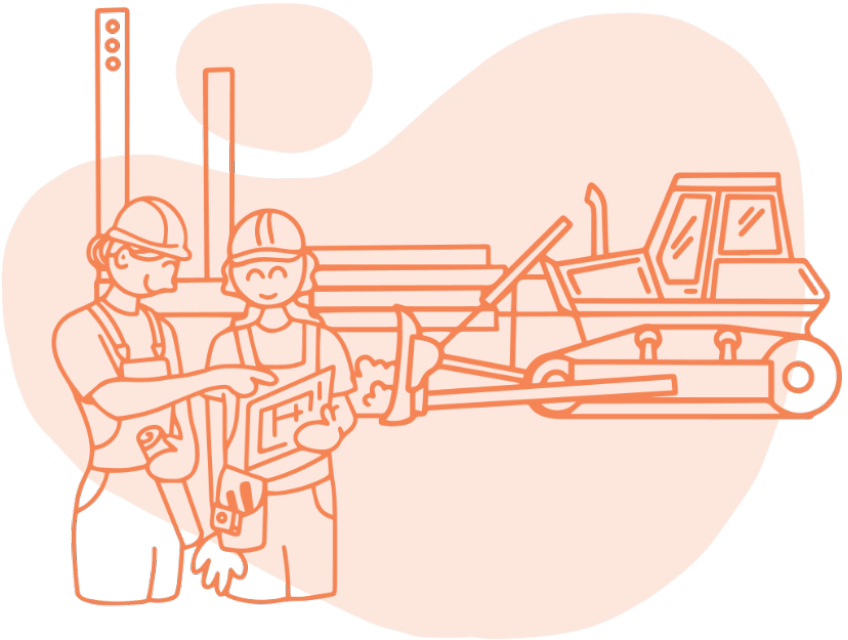
- Potential Curriculum Partnership with Community Colleges
- Blend of industry marketing/outreach and training events
- Multimedia messaging combined with on-site training

Direct Technical Assistance for Code Officials

- WI Energy Code Technical Advisor

Code Enforcement Tools

- E-Permitting
- Electronic Plan Review
- Remote Virtual Inspections (geo-tagged photographs, drones)
- Third-party plan review and inspections
- Tablets and apps in partnership with home energy raters

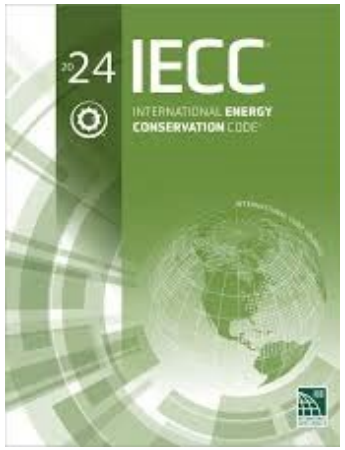


National Energy Code Adoption

National Residential Energy Code Adoption

States that made significant adoption code cycle jumps from the 2009 IECC.

2009 – 2015 IECC: ME
2009 – 2018 IECC: OK, NE, TN, NH, PA
2009 – 2021 IECC: LA, MT



However, 50% of the adoptions have weakening amendments that set the code equivalency back one or more cycles (see tracking matrix)

Current energy code adoptions in various stages (start action to completed rulemaking); this list does not include all states.

2021 IECC: MI, DE, DC, ME, PA
2024 IECC: OH, MN, FL, WA, NY, NJ, MA, MD, CT, RI

https://shop.iccsafe.org/2021-iecc-flashcards.html

National Code Adoption

State	From	Adoption	Percent Weakening	Equivalent	Reviewing	In process of Adoption
South Central						
OK	2009	**2018**	**-29.7**	**2009**	2021/2024	
TX		2015	na	2015	2024	
Mid West						
WI		2009	-1.8	2009	2021/2024	
IL		2021	-0.5	2021	2024	
MI		**2015**	**-8.2**	**2009**		2021
OH		**2018**	**-11.3**	**2009**		2024
MN		**2012**	**-2.9**	**2009**		2024
NE	2009	2018	0	2018		
South						
LA	2009	2021	-6.6	2018		
TN	2009	2018	-21.3	2009		
FL		2021	-1.7	2021		2024
Northwest						
MT	2009	2021	-11	2009		
WA		Custom		2021		2024

	Indicates states that made two or more code adoption cycle jumps
	Percent of weakening and equivalent code
2009	Weakened Equivalent Code

National Code Adoption

State	From	Adoption	Percent Weakening	Equivalent	In process of Adoption	Anticipated Amendments
Northeast						
CT	2018	2021	0	2021	2024	Admin
DE		2018	0	2018	2021	Unamended
DC		2015		2018	2021	Strengthening
ME	2009	2015	0	2015	2021	Admin
MD	2018	2021	-1.80	2018	2024	
MA	2018	2021	5.90	2021	2024	Strengthening
NJ	2018	2021	0	2021	2024	Unamended
NH	2009	2018	0	2018		
NY	2015	2018	0	2018	2024	Strengthening
PA	2009	2018	-0.6	2018	2021	
RI		2018	-14.6	2009	2024	Unamended
VT		2021	15.7	2021		Strengthening
WV		2018	-6.1	2009		

	Indicates states that made two or more code adoption cycle jumps
	Percent of weakening and equivalent code
2009	Weakened Equivalent Code
2021	Strengthened Code

Thank you!

Darren Port

dport@slipstreaminc.org

Sarah Wells

swells@slipstreaminc.org

WWW.slipstreaminc.org/codes