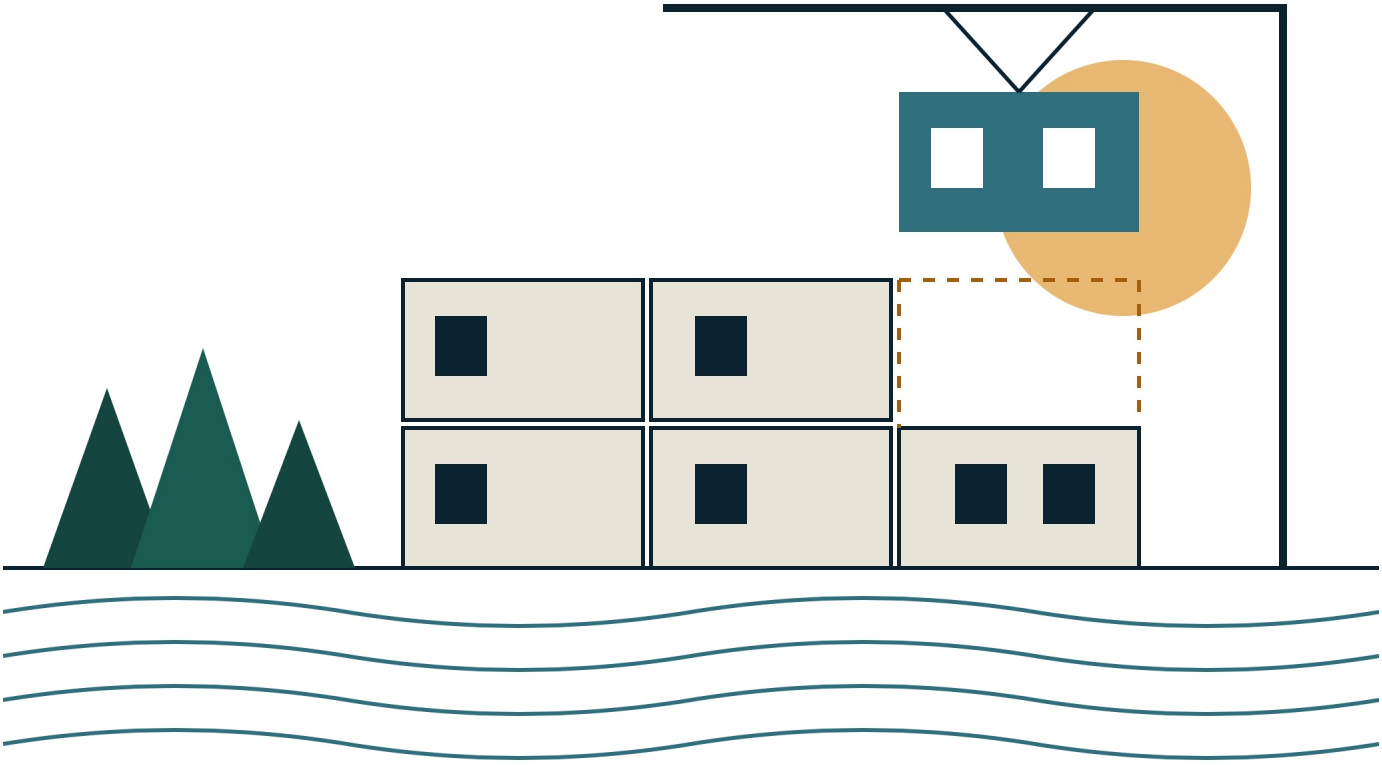


STUDY

Study on Maine's Building Codes and Off-Site Construction Program

PREPARED FOR

Maine Office of Community Affairs

PREPARED BY

International Code Council

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Iccsafe.org/expert-services

The **International Code Council** (ICC) is a nonprofit organization—driven by the engagement of its more than 70,000 members—dedicated to helping communities and the building industry provide safe, resilient, affordable, and sustainable construction through the development and use of model codes and standards used in design, construction, and compliance processes. Most U.S. states and communities, federal agencies, and many global markets choose the International Codes® (I-Codes®) to set the standards for regulating construction and major renovations, plumbing and sanitation, fire prevention, and energy conservation in the built environment.

ICC Expert Services delivers authoritative, end-to-end support to help jurisdictions and building safety professionals develop, adopt and apply building codes with confidence. Our global team of trusted advisors assists with every phase, from policy and landscape analysis and stakeholder outreach to custom code drafting, publication, tailored training, department evaluation, and implementation strategy. Our solutions leverage technology to reduce delays, improve compliance, and advance building safety, sustainability, and resilience worldwide.

Executive Summary

Similar to other states, the availability and affordability of housing in Maine is a challenge. Fortunately, the State has been proactive in identifying the challenge and potential solutions. The State has already taken steps in this direction through the recent establishment of the Maine Office of Community Affairs (MOCA), consolidating many building-related activities within a single entity. The state also recently adopted International Code Council (ICC)/Modular Building Institute (MBI) Standard 1200 to support consistency in the regulation of modular housing.

The State contracted with the International Code Council to examine opportunities to improve the State's code development process and how the state could further enhance its off-site construction program.

Findings and Recommendations

Purpose and policy opportunity. Maine has an opportunity to modernize how it adopts and coordinates building codes while expanding the role of off-site construction in meeting the State's housing needs. The current system assigns related codes and standards to multiple boards and agencies operating on different timelines. As a result, requirements can be out of date or internally inconsistent, creating avoidable work for state and local officials, designers, builders, manufacturers, and trades. The gap is especially visible in modular housing: state-certified modular homes are generally built to older requirements than comparable site-built homes, even when both are located in the same community.

Core finding. Maine's principal challenge is not the availability of appropriate model codes or regulatory tools; it is the absence of a dependable mechanism to keep interrelated requirements current and aligned. Most of the national model codes used by Maine follow a three-year publication cycle, making coordination feasible. A predictable statewide update schedule, supported by adequate staffing and clear accountability, would reduce conflicting requirements, simplify training and enforcement, and give the construction sector a stable basis for investment and planning.

Priority policy actions. The State should anchor model-code adoptions to a common update cycle and effective date, extend a currency requirement to the plumbing code, and require review of static references—particularly the withdrawn radon standard—during each MUBEC update. The state should study opportunities to update existing processes for the adoption and update of fire and life safety codes to support increased alignment with the MUBEC development process and outcomes. Other code adoptions (electrical, plumbing, boiler, elevator, and fuel gas) should be centralized within the Maine Office of

Community Affairs (MOCA) for efficiency in development and coordination of content. If the Legislature does not transfer adoption authority, MOCA should convene a standing interagency council to coordinate calendars, cross-code review, transition rules, communications, and training. One authoritative statewide resource identifying every code in effect would further improve transparency and implementation.

Housing and industrialized construction. Maine should apply the MUBEC consistently to site-built and off-site constructed buildings; expand the off-site construction program to multifamily and commercial buildings, panels, pods, and other closed-construction components; and adopt the full ICC/MBI standards suite. These changes would provide comparable safety and performance expectations regardless of construction method while reducing duplicative rulemaking and improving compatibility with neighboring states. Maine should also recognize manufacturers and third-party approval agencies already approved by states using ICC/MBI Standards 1200 and 1205, subject to Maine business and registration requirements. A statewide pre-approved plans program, supported by a consumer-facing portal and the existing modular approval system, could streamline housing approvals while preserving site-specific and local review.

Implementation considerations and expected results. Any cost-benefit requirement should be designed around its intended use, the update timetable, and the resources available. Maine should avoid a resource-intensive economic methodology unless it funds recurring analytical capacity and establishes assumptions in advance; a lighter, standardized, or proposal-based approach would better inform decisions without delaying adoption. For off-site construction, the existing factory quality-assurance and third-party inspection systems justify extending the in-factory trade licensure exemption to multifamily and commercial projects. Together, the recommended actions would create a more current, coordinated, and transparent regulatory framework, improve predictability for municipalities and the building industry, support broader manufacturer participation, and help Maine deliver housing more efficiently without reducing state or local oversight.

Table 1. Summary of Recommendations

Topic	Recommendation	Key action or purpose
Code timing and alignment	Anchor all model-code adoptions to a single update cycle with a common effective date.	Use a predictable statewide cycle, potentially with updates effective July 1, and allocate resources to meet the existing currency requirement.
Code timing and alignment	Extend the MUBEC-style currency requirement to plumbing.	Require adoption of the most recent or immediately previous plumbing code edition to create a reliable statutory clock.

Code governance	Consolidate plumbing, electrical, fuel gas, elevator and boiler code update processes within MOCA.	Move adoption of referenced codes and standards to the MUBEC Board to support timeliness and resource efficiency and minimize conflicts while refocusing existing boards on licensing.
Code governance—alternative	Establish a standing interagency code coordination council convened by MOCA.	If adoption authority is not centralized, coordinate calendars, cross-code reviews, transition rules, and stakeholder communications across responsible agencies.
Fire Code Study	Conduct a study to determine opportunities to align MUBEC and fire and life safety code updates and requirements.	Examine intersections between codes, differing application requirements, complexity of statutory sprinkler related requirements and potential efficiencies from greater alignment.
Code references	Modernize static references on the MUBEC cycle.	Where references do not have a required update clock—particularly the radon construction standard—every MUBEC update should include an assessment of whether such standards should be updated.
Communication and training	Consolidate communication and training around each code cycle.	Create one authoritative statewide "codes in effect" resource and provide coordinated update training across affected codes.
Pre-approved plans	Consider a Maine pre-approved plans program modeled after Vermont's 802 Homes program.	Streamline housing approvals through clear plan design, review, update, and local acceptance procedures, with potential for later expansion within New England.
Pre-approved plans and modular delivery	Leverage the modular program's existing pre-approval process and delivery system.	Develop or endorse a consumer-facing portal identifying approved manufacturers and previously reviewed plans, using the ICC Approval & Construction Accelerator as a potential model.
Reciprocity	Provide reciprocity to manufacturers and third-party approval agencies approved under ICC/MBI Standards 1200 and 1205.	Recognize equivalent verification completed by other states while retaining Maine-specific business and registration requirements.
Cost-benefit analysis	Establish a cost-benefit requirement that provides necessary information while balancing available resources to conduct such an analysis.	An informative approach with defined expectations on the level of detail required for each code change from the model codes will provide greater consistency and transparency while recognizing the limited capacity for resource intensive, in-depth analysis.
Off-site construction codes	Adopt MUBEC for off-site construction.	Set consistent statutory code requirements for site-built and off-site constructed buildings to provide comparable safety and avoid duplicate rulemaking. Ensure there is modular expertise on the MUBEC Board.

Off-site construction program scope	Expand the off-site construction program to commercial buildings, including multifamily buildings.	Broaden the existing program rather than create a separate one and rename it to reflect coverage beyond manufactured housing.
Off-site constructed components	Expand the program to include subassemblies, including panels and pods.	Cover all closed-construction[1] assemblies and subassemblies to support additional construction methods and clarify compliance responsibilities.
Off-site construction standards	Adopt ICC/MBI Standard 1205 alongside existing Standard 1200 adoption as the basis for the State's off-site construction regulations.	Align Maine with neighboring states, improve manufacturer efficiency, leverage existing training resources, and establish a basis for program updates and reciprocity.
In-factory licensure	Extend the in-factory licensure exemption to multifamily and commercial projects.	Existing quality-assurance controls meet the underlying objectives and current regulations require journeyman levels of work in the factory to be verified under the quality assurance process.

[1] Closed construction describes elements that are delivered to a job site where their compliance with code requirements are not easily discernible by local officials without damage to the element.

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Introduction

The State of Maine is considering improvements to its building code development process and its off-site construction program to align with current best practices and support the increased availability and affordability of housing in the state. The State has already taken steps in this direction through the recent establishment of the Maine Office of Community Affairs (MOCA), consolidating many building-related activities within a single entity—this includes the Manufactured Housing Program.[2] The state also recently adopted International Code Council (ICC)/Modular Building Institute (MBI) Standard 1200 to support consistency in the regulation of modular housing.

This study is intended to provide state officials and policymakers with information on opportunities to improve the State's code development process and how the state could further enhance its off-site construction program. The study focuses on the following areas:

- What approaches can be effective in ensuring building code updates are aligned with updates to other relevant codes, standards and statutes?
- What are the common cost-benefit approaches jurisdictions use in the consideration of code updates?
- How are building codes developed and adopted for off-site construction, particularly if there are any differences with site-built construction code requirements?
- What other opportunities or challenges exist to advancing the off-site construction program in the state?

Current Regulatory Approaches in Maine

MUBEC Updates

The Maine Uniform Building and Energy Code (MUBEC) is updated by the Maine Technical Building Codes and Standards Board (MUBEC Board or TBCSB). The MUBEC Board falls under the Division of Building Codes and Standards (DBCS) in the Maine Office of Community Affairs (MOCA).

[2] The Maine Manufactured Housing Program (formerly the Manufactured Housing Board) covers both manufactured housing as defined and regulated by the U.S. Department of Housing and Urban Development and modular housing in compliance with the state's residential building code.

The MUBEC is adopted by rule by the MUBEC Board, with administrative support from the DBCS, which moved from the State Fire Marshal's Office to MOCA on September 24, 2025.

Maine statute enumerates the codes and standards that constitute the MUBEC.[3] Those statutes require that the board review each new edition of every code or standard on that list and that each one, as adopted, be either the most recent edition or the edition immediately previous. Codes and standards requiring review and inclusion are:

- International Building Code (IBC) published by the International Code Council;
- International Existing Building Code (IEBC) published by the International Code Council;
- International Residential Code (IRC) published by the International Code Council;
- International Energy Conservation Code (IECC) published by the International Code Council;
- International Mechanical Code (IMC) published by the International Code Council;
- ASHRAE Standard 62.1 Ventilation for Acceptable Indoor Air Quality;
- ASHRAE Standard 62.2 Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings;
- ASHRAE Standard 90.1 Energy Standard for Buildings Except Low-Rise Residential Buildings; and
- Standard Practice for Radon Control Options for the Design and Construction of New Low-Rise Residential Buildings published by the American Society for Testing and Materials (ASTM).

The MUBEC Board's current review and update process does not include a defined cost benefit approach. Potential approaches that can be used in the future are reviewed and discussed below. Additionally, there are other building-related requirements that are captured in other codes and are under the purview of other departments for updates. Those requirements and opportunities to support alignment are also discussed in further sections of this study.

While statute requires regular updating of the code, practice has not kept pace with the requirement. The 2015 I-Codes (model codes produced and maintained by the International Code Council under their code development process) took effect in Maine in January 2018, and the next update — to the 2021 I-Codes with 2019 ASHRAE standards — did not take effect until April 7, 2025, skipping the 2018 edition entirely. With the 2024 I-Codes published and the 2027 editions arriving in late 2026, Maine will again be at the outer edge of statutory compliance.

[3] 10 M.R.S. §9722(6)(B)

Modular Housing Code Updates

Before the consolidation of code-related activities under MOCA, the implementation of modular housing requirements fell to the Maine Manufactured Housing Board within the Office of Professional and Occupational Regulation (OPOR). Code development and adoption by the Board was independent of the MUBEC adoption process and adopted via rule making. Like the MUBEC update process, no formal cost-benefit method is used.

The responsibilities of the Manufactured Housing Board have been transitioned to MOCA. LD 364 (SP 156), passed in 2026, requires that MOCA develop legislation necessary to transfer regulatory authority, review and modernize Maine's Manufactured Housing Act, and engage stakeholders to make recommendations to the Legislature. Until then, MOCA has assumed all existing functions previously held by the Manufactured Housing Board.

The current code requirements for state-certified modular homes are based on the 2015 IRC and some of the 2009 IECC, in contrast to the 2021 IRC and 2021 IECC contained within the MUBEC. Further, the state's manufactured housing program only applies to one- and two-family dwellings and townhomes in line with the scope of the IRC. Additional building types including commercial and multi-family buildings are not included within the program, leading to a disconnect where these building types are regulated at the local level and must follow the MUBEC. The program also does not cover off-site constructed elements that are at smaller scale than full volumetric modules—pods and closed panel systems are currently outside the scope of the program.

Tiny homes provide a unique case. Tiny homes on wheels are regulated under the State's motor vehicle rules and are built to American National Standards Institute (ANSI) Standard A 119.5 or NFPA Standard 1192 which are standards for recreational vehicles.[4] However, no state body inspects tiny homes to ensure compliance with the ANSI or NFPA standards, leading to uncertainty among builders and code enforcement officers (CEOs) about whether these homes are compliant with the standards. Tiny homes built on permanent foundations are covered within the MUBEC with Appendix AQ from the 2021 International Residential Code explicitly adopted. However, the state requirements for modular homes based on the 2015 IRC do not include specific requirements for tiny homes, so all residential code provisions apply. This creates four different pathways for dwellings under 400 square feet—as recreational vehicles if on wheels, MUBEC compliant structures if built on-site on a permanent foundation, modular homes if built off-site and placed on a permanent foundation, or HUD manufactured homes. Aligning MUBEC and modular codes would eliminate the discrepancies between tiny homes on permanent foundations and

[4] MRS 290A ss101 80-C, https://legislature.maine.gov/statutes/29-a/title29-asec101.html.

provide off-site manufacturers with access to tiny home specific requirements in the more recent code.

Timing and Alignment of Codes and Standards that Intersect with the MUBEC and Manufactured Housing Program

The MUBEC serves as the anchor code for most building-related requirements in the state. However, it does not operate in isolation. Electrical installations, internal plumbing, subsurface wastewater disposal, fire codes, fuel using equipment, boiler safety, elevators and factory-built housing are each governed by codes or rules adopted by separate bodies, under separate statutory authority, on separate timelines. Radon requirements are regulated by MOCA, but are based on ASTM standards specified by statute (including edition) that are outdated and have been withdrawn by ASTM.

This assessment documents the adoption cadence of each intersecting code, identifies the structural sources of misalignment, and offers recommendations for how Maine could coordinate updates to reduce potentially burdensome and repetitive development processes, training burden, and code conflicts. It reflects the regulatory landscape as of August 2026, including the September 2025 transfer of the Building Codes Division to MOCA.

Related Codes and Updating Procedures

Electrical Code

The Electricians' Examining Board within the Office of Professional and Occupational Regulation (OPOR) adopts the National Electrical Code (NEC) by reference in its Chapter 120 rule. The electrical code is the most consistently updated code in the state: the 2023 NEC became mandatory for installations commencing July 1, 2024, and the Board has already adopted the 2026 NEC with a July 1, 2026 effective date — an effective lag of under a year from publication by the National Fire Protection Association (NFPA), repeated every three years. The Board's licensing apparatus reinforces the cadence, since electricians must complete a 15-hour code update course with each new edition. The electrical code demonstrates that a Maine board can track a three-year national cycle routinely.

Provisions of the electrical code intersect with the MUBEC anywhere electrically powered equipment, controls, alarms, or infrastructure are required. This includes branch circuits, conductors, motors, controllers, disconnecting means, overcurrent protection, grounding,

and working clearances for HVAC, lighting, energy management, and other systems. Other important interfaces include electrical penetrations of air barriers and fire-resistance-rated assemblies; emergency and standby power for egress lighting, fire alarms, smoke control, elevators, and other life-safety systems; service and panel capacity for renewable energy systems, energy storage, and electric-vehicle charging.

Plumbing Code

The Plumbers' Examining Board (also within OPOR) adopts the International Association of Plumbing and Mechanical Officials (IAPMO) Uniform Plumbing Code (UPC) with Maine amendments. The current basis is the 2021 UPC, effective January 1, 2022, which ended a long stretch on a much older edition. The 2024 UPC has not been taken up. Lagging plumbing requirements are particularly consequential because the UPC interacts directly with the MUBEC's residential and mechanical provisions (fixtures, water heaters, venting, DWV interfaces) and with the subsurface wastewater rules at the building drain.

Because the plumbing code and MUBEC are reviewed and adopted by separate entities, the MUBEC Board must continually work to resolve conflicts between the two codes. If the two codes are on different cycles, such resolution may be complicated as changes to one code may necessitate changes to the other. Logistically, the code undergoing update is likely to bear the burden of accommodating the other code which may not result in the most technically effective, efficient or cost-effective outcome.

Fire Code

The Office of the State Fire Marshal (SFM) within the Department of Public Safety adopts Maine's fire safety codes under 25 M.R.S. §2452 (life safety and property protection). Unlike the MUBEC, plumbing and electrical codes, the fire code is adopted by the SFM by rule without the engagement of a technical board. The anchor documents are NFPA 101 (Life Safety Code) and NFPA 1 (Fire Code), currently adopted in their 2018 editions through SFM chapter rules amended November 27, 2019, alongside a large family of companion NFPA standards adopted at mixed vintages (for example, the 2016 edition of NFPA 13 for sprinkler systems and the 2019 editions of NFPA 80 and NFPA 241). The 2019 update replaced the 2009 editions of the life safety and fire codes — a nine-year jump that mirrors MUBEC's own episodic pattern — and with the 2021 and 2024 editions now published, Maine is again two editions behind, with 2027 editions arriving on NFPA's three-year cycle.

The fire codes are among the most consequential of MUBEC's neighbors because NFPA 101/NFPA 1 and the I-Codes regulate overlapping subject matter — egress, fire protection systems, and construction types. Further, the SFM codes are enforced statewide where construction permits are required, while MUBEC enforcement is limited to towns over

4,000 residents or where adopted voluntary by the municipality. The SFM's Chapter 20 rule already excludes specific NFPA 101 provisions expressly to avoid conflict with the MUBEC; that manual deconfliction must be redone whenever either side updates, and vintage mismatches multiply the work, since the 2021 I-Codes reference newer editions of NFPA standards than the SFM rules adopt.

While there are few statutory requirements that intersect with the technical provisions of the MUBEC, the SFM must account for statutory requirements surrounding fire sprinklers which then must be resolved during the code update process. This adds a layer of complexity to the update which could cause extended timelines or create incompatibilities with the update process used for the MUBEC. Further study of these differences is warranted before proposed changes to the status quo can be identified.

Oil, Solid Fuels, Propane and Natural Gas Equipment

Installation standards for fuel-burning equipment are adopted by the Maine Fuel Board within OPOR under 32 M.R.S. §18123(2), which covers both oil and solid fuel burning equipment and propane and natural gas equipment. Through its Chapter 6 rule, the Board incorporates the 2020 edition of NFPA 31 (oil-burning equipment), the 2021 edition of NFPA 54 (National Fuel Gas Code), NFPA 58 (Liquefied Petroleum Gas Code), NFPA 211 (chimneys and solid fuel appliances), and related standards, each with Maine amendments. The Board completed a comprehensive rules update adopted May 26, 2023, making it — after the electrical board — the most current of the trade-code adopters, though the 2024 editions of NFPA 54 and NFPA 58 have since been published. Chimney, fireplace, and vent rules are separately adopted by the SFM under 25 M.R.S. §2465 (Chapter 22, adopting the 2019 NFPA 211), a dual-jurisdiction arrangement that requires two agencies to stay synchronized on the same standard.

The sharpest interaction is with the modular program. MOCA Rules 08-004 Subchapter 2 references the 2011 edition of NFPA 31 and the 2012 edition of NFPA 54 — two to three editions behind the standards that every licensed Maine fuel technician must apply in the field under Fuel Board rules.[5] A factory-installed heating system in a state-certified modular home is thus certified to a materially older standard than the identical system installed on site, while the on-site connection work — performed by Fuel Board licensees outside the home's envelope — proceeds under the newer editions: two vintages of the same standard on a single appliance installation.

[5] https://www.maine.gov/sos/rulemaking/agency-rules/maine-office-community-affairs-rules

Boilers and Pressure Vessels

Boiler and pressure vessel standards are adopted under 32 M.R.S. §15103-A through the Boiler and Pressure Vessel Safety Program — administered by the director of OPOR rather than by a licensing board, following the Legislature's 2013 conversion of the former Board of Boilers and Pressure Vessels into a program. A recent comprehensive rulemaking replaced dated references and adopted the 2023 edition of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (excluding the nuclear sections), ASME B31.1-2022 for power piping, the 2023 National Board Inspection Code (with enforcement of Part 1, Installation, delayed for 36 months), and Controls and Safety Devices for Automatically Fired Boilers (CSD-1-2021) for boiler controls. Because rules under §15103-A are routine technical rules, the procedural cost of staying current is comparatively low; the challenge is cadence, since ASME and the National Board publish on two-year cycles — faster than any other code family Maine adopts.

Boiler and pressure vessel requirements intersect the MUBEC's mechanical provisions and matter most for commercial, institutional, and multifamily buildings. They are largely invisible to the current modular program, which is scoped to one- and two-family dwellings and townhouses — but any expansion of the off-site construction program into multifamily or commercial buildings, as discussed elsewhere in this study, would bring factory-installed pressure equipment within this program's jurisdiction and add another agency to the modular alignment picture.

Elevators

Elevator standards are adopted under 32 M.R.S. §15205-A through the Elevator and Tramway Safety Program — like the boiler program, administered by the OPOR director following conversion of the former Board of Elevator and Tramway Safety. The program's Chapter 511 rule currently adopts the 2013 edition of ASME A17.1 (Safety Code for Elevators and Escalators), with the 2011 edition of A17.3 governing pre-1984 installations and the 2014 edition of A18.1 for platform lifts. ASME publishes A17.1 on a three-year cycle, so the 2013 edition now sits four editions behind. Rulemaking is in progress to adopt the 2022 edition of A17.1 and 2023 editions of companion standards — which, when complete, will be another single-event catch-up spanning nearly a decade of technical change.

The elevator rules illustrate the cross-reference challenges borne by different code vintages adopted through separate processes: the 2021 IBC adopted under the MUBEC references a substantially newer edition of A17.1 than the 2013 edition currently in force under Chapter 511. Rulemaking is currently underway to update elevator requirements to reflect the same requirements as those contained in the MUBEC. However, unless

timelines for updates to the elevator standards align with MUBEC updates, the discrepancies are likely to recur. A conflict resolution process similar to that described below for conflicts between the MUBEC and fire codes could be used in this case, but avoiding the need for such resolution in the first place is ideal.

Like boilers, elevators sit outside the current one- and two-family modular scope but squarely inside any multifamily or commercial building expansion of the off-site construction program.

Subsurface Wastewater Disposal Rules

The Subsurface Wastewater Disposal Rules (10-144 CMR Ch. 241) are authored and adopted by the Maine Center for Disease Control and Prevention (CDC) within Maine's Department of Health and Human Services (DHHS). Unlike the other codes examined here, they are not based on a national model document, so there is no external publication cycle to track; updates are episodic and driven by accumulated need. However, if update timelines are extended the potential disconnects with other codes grow. The most recent comprehensive amendments took effect September 23, 2023 — adding riser requirements, seasonal-conversion provisions, and revised shoreland fill criteria — following a prior full version dating to the mid-2010s. The practical cadence is therefore on the order of eight to ten years, punctuated by targeted amendments.

Plumbing fixture counts, occupancy, bedrooms, and permitted uses affect the estimated design flow used to size septic tanks and disposal areas. Changes to existing buildings allowed under the plumbing or building code—such as adding fixtures, bedrooms, accessory dwelling units, or commercial uses—may trigger wastewater-system review or expansion. Coordination across requirements is necessary for such changes in existing buildings and for pipe sizing, slope, materials, clean outs and testing requirements where the wastewater and plumbing connect.

Because plumbing inspectors administer these rules alongside the UPC, edition changes on either side ripple into the other's training and enforcement.

Radon

Radon intersects the building code in two ways. First, the MUBEC itself incorporates ASTM E-1465, Standard Practice for Radon Control Options for the Design and Construction of New Low-Rise Residential Buildings, which became mandatory for new dwellings alongside ASHRAE 62.2 through 2019 legislative changes. Maine has carried the 2008 edition of that standard forward unchanged based on statutory requirements — including through the April 2025 MUBEC update — even though ASTM withdrew that standard in 2017. Alternatives include the IRC's radon appendix (Appendix BE in the 2024 IRC) and the

AARST/ANSI consensus standard, which the International Green Construction Code (IgCC) adopts.

Second, Maine CDC separately administers radon service-provider registration rules governing who may test and mitigate, with an exemption to the CDC testing and mitigation requirements for builders using radon-resistant new construction per the building code.

Manufactured Housing Program Standards (Modular)

The Manufactured Housing Program (MHP) rules Chapter 110 sets construction standards by referencing specific editions of the ICC codes, and those references can be updated only through formal Board rulemaking. Current requirements include the 2015 IRC with extensive exceptions/local amendments (energy, mechanical, plumbing, and electrical chapters), 2017 NEC, 2015 UPC, 2011 NFPA 31 (oil burning), NFPA 54 (fuel gas), 2013 NFPA 211 (chimneys/solid fuel), NFRC 100-2010 (fenestration), 2016 DOE test method (10 CFR 430 App. N) for furnaces/boilers, and an energy waiver mechanism (REScheck compliance is pinned to the 2009 IECC). Nothing in the current structure causes the modular standards to update when MUBEC updates, and the 2025 Housing Production Innovation Working Group specifically flagged this as a constraint — an important one, given that recent statute requires modular homes meeting state certification standards to be allowed wherever single-family homes are allowed. When MUBEC moved to the 2021 codes in April 2025, the modular certification rules did not automatically move with it, further widening the gap between what site-built and factory-built homes must meet in the same municipality.

The current approach to code requirements for off-site construction in Maine in comparison to approaches used in other states and recommendations on how to align with best practices is further discussed below.

Table 2. Snapshot of Adoption of Related Statutes and Codes

Code / Rule	Adopting Body	Basis & Model Cycle	Current Edition in Maine	Effective Date	Observed Update Pattern
MUBEC (building, residential, existing building, energy, mechanical, swimming pool/spa)	MUBEC Board within MOCA	ICC I-Codes and ASHRAE standards; ICC publishes every 3 years	2021 I-Codes; 2019 ASHRAE 62.1, 62.2, and 90.1	April 7, 2025	Episodic. 2015 codes effective Jan. 2018; 2021 codes effective April 2025 (the 2018 edition was skipped). Roughly a 7-year gap between updates despite a statutory currency requirement.
Electrical code	Electricians' Examining Board (OPOR, Dept. of Professional & Financial Regulation)	NFPA 70 (NEC); NFPA publishes every 3 years	2026 NEC	July 1, 2026	Highly regular. Each new NEC edition adopted on a consistent 3-year cadence, effective roughly 9–10 months after NFPA publication.
Plumbing code	Plumbers' Examining Board (OPOR, Dept. of Professional & Financial Regulation)	IAPMO Uniform Plumbing Code; IAPMO publishes every 3 years	2021 UPC	January 1, 2022	Episodic. The 2021 UPC replaced a much older edition after a long interval; the 2024 UPC has been published but not adopted, and Maine is now one edition behind with 2027 forthcoming.
Fire safety codes (life safety and fire prevention)	Office of State Fire Marshal, Dept. of Public Safety (25 M.R.S. §2452)	NFPA 101, NFPA 1, and companion NFPA standards; NFPA publishes every 3 years	2018 NFPA 101 and NFPA 1; companion standards at mixed vintages (e.g., 2016 NFPA 13)	SFM chapter rules amended Nov. 27, 2019	Episodic. 2018 editions replaced the 2009 editions after a nine-year gap; the 2021 and 2024 editions are published but not adopted.
Oil, solid fuel, propane and natural gas equipment	Maine Fuel Board (OPOR) under 32 M.R.S. §18123(2); chimney and solid fuel rules also by SFM under 25 M.R.S. §2465	NFPA 31, 54, 58, 211 and related standards; NFPA publishes every 3 years	2020 NFPA 31; 2021 NFPA 54; related standards per Fuel Board Ch. 6	Comprehensive Fuel Board rules adopted May 26, 2023	Comparatively current after the 2023 update; 2024 NFPA 54/58 now published. MHB Ch. 110 still references 2011 NFPA 31 and 2012 NFPA 54.
Boiler and pressure vessel standards	Boiler and Pressure Vessel Safety Program (OPOR director) under 32 M.R.S. §15103-A	ASME BPVC, NBIC, CSD-1, B31.1; ASME and NBIC publish every 2 years	2023 ASME BPVC; 2023 NBIC; CSD-1-2021; B31.1-2022	Recent comprehensive rulemaking (NBIC Part 1 enforcement delayed 36 months)	The recent update replaced dated references; the biennial ASME/NBIC cycle will test ongoing currency.
Elevator standards	Elevator and Tramway Safety Program (OPOR director) under 32 M.R.S. §15205-A	ASME A17.1/CSA B44 and related standards; A17.1 publishes every 3 years	2013 A17.1; 2011 A17.3 (pre-1984 installations); 2014 A18.1	Ch. 511; rulemaking in progress to adopt 2022/2023 editions	Frozen for over a decade. The 2013 edition is four editions behind; the pending update is another multi-edition catch-up.
Subsurface wastewater	Maine CDC, Dept. of Health and Human Services	State-authored rule (no national model code)	2023 amended rules	September 23, 2023	Episodic and need-driven. Comprehensive amendments arrive at multi-year intervals (prior full

disposal rules (10-144 CMR Ch. 241)					version dated 2015) rather than on a fixed cycle.
Radon (construction standard and service-provider rules)	Construction standard adopted within MUBEC; radon professional registration by Maine CDC (DHHS)	ASTM E1465 radon control standard which has been withdrawn	ASTM E-1465-2008	Mandatory for new dwellings since the 2019 legislative changes; carried forward in the 2025 MUBEC update	Static. The 2008 edition has been retained through successive MUBEC updates even as national radon standards have advanced and the ASTM standard has been withdrawn.
Manufactured Housing Program modular code	Manufactured Housing Program within MOCA	Specific ICC editions referenced in MHP rules Ch. 110 for modular	2015 IRC, 2017 NEC, 2015 UPC, 2011 NFPA 31, NFPA 54, 2013 NFPA 211, NFRC 100-2010, 2016 DOE test method (10 CFR 430 App. N), REScheck compliance is pinned to the 2009 IECC	Varies by chapter	Lagging for modular. ICC editions in MHP rules update only through formal rulemaking and are not synchronized with MUBEC.

Sources: Maine Office of Community Affairs / State Fire Marshal MUBEC pages; OPOR Electricians' and Plumbers' Examining Board rules (Ch. 120, Ch. 4); Maine CDC Subsurface Wastewater Unit; MHB rules (02-385 CMR); 10 M.R.S. §9722; Housing Production Innovation Working Group report (2025).

Findings and Considerations

Three structural observations emerge. First, most of the model-code-based systems Maine relies on — ICC, NFPA, IAPMO — publish on the same three-year cycle, so alignment is achievable in principle (the exception being the ASME boiler and pressure vessel standards, which run on a two-year cycle). The code families examined above reinforce the pattern on both ends: the fire and elevator programs show the same episodic, multi-edition catch-ups as the MUBEC (2009-to-2018 fire codes; a pending 2013-to-2022 elevator update), while the Fuel Board's 2023 update and the boiler program's recent rulemaking demonstrate that comprehensive currency updates are administratively achievable. Second, the variation among Maine's adopting bodies is driven not by the model codes but by capacity, rulemaking priority, and the presence or absence of statutory requirements. Third, because the modular rule incorporates its own editions of the IRC, the NEC, the UPC, and the NFPA fuel and chimney standards, it inherits the extended timelines of the MUBEC board, the electrical board, and the plumbing board.

Maintaining Currency

The state has already established a precedent for code currency with the requirement to be on one of the two most recent editions of model codes. However, meeting the requirement has been challenging in the past. Extension of timing between code updates has implications for the state, its residents and the building industry. The model codes are updated on a three-year cycle to incorporate lessons from building performance, advances in materials and construction methods, updated hazard data, new safety research, and changes in referenced standards. When a jurisdiction falls behind in code updates, it freezes requirements at an earlier point in the evolution of building science while the risks facing buildings, the products used in construction, and the practices used by designers, builders, inspectors, and manufacturers continue to change.

Current codes provide three practical benefits. First, they improve public safety and resilience by incorporating more recent provisions for wind, flood, seismic, fire, energy, ventilation, accessibility, and other performance issues. Second, they reduce long-term costs by limiting avoidable damage, repair costs, utility costs, insurance exposure, and post-disaster disruption. National research developed by the Federal Emergency Management Agency (FEMA) and the National Institute of Building Sciences (NIBS) has consistently found that modern codes produce substantial avoided-loss benefits over time, making regular adoption one of the most cost-effective mitigation strategies available to state and local governments. Third, they improve predictability for the construction sector by giving designers, builders, manufacturers, code officials, and training providers a known cycle for planning, education, product approvals, and enforcement.

As illustrated above, gaps in updates increase the likelihood that related codes will point to different editions of the same referenced standard, creating conflicts that must be resolved locally and slow plan review. For off-site construction, dated code references can be especially burdensome because manufacturers that serve multiple states must either maintain a Maine-specific product line or avoid the market. Aligning code requirements on a predictable schedule would make it easier for municipal officials to administer the code, for manufacturers to design repeatable products for the Maine market, and for the state to coordinate changes across building, fire, plumbing, electrical, energy, radon, and mechanical requirements.

When the code is current, enforcement decisions are easier to explain, training materials are easier to standardize, and disputes over outdated references are reduced. Current codes also improve access to modern products and construction methods because manufacturers are more likely to design, test, list, and certify products to the editions most widely used across the country. For a state seeking to expand housing production, this helps avoid creating a small, outdated market that requires special designs, special approvals, or Maine-only exceptions.

The outcomes of delayed adoption processes land concretely on the factory-built housing sector Maine is counting on for housing production. A manufacturer certifying a modular home for Maine in 2026 builds to the 2015 IRC, the 2017 NEC, and the 2015 UPC, while the site-built home on the adjacent lot is designed to the 2021 IRC, the 2026 NEC, and the 2021 UPC — and both receive a certificate of occupancy from the same municipal office. The electrical gap is the sharpest illustration: three NEC editions separate the factory's wiring standard from the one every licensed Maine electrician works to in the field, spanning nearly a decade of expanded AFCI and GFCI protection, surge protection, and emergency disconnect requirements. For manufacturers — most of whom serve multiple states from a single plant — Maine's frozen references mean maintaining a dated, Maine-specific building system.

Addressing Conflicts

As indicated above, there are currently instances where provisions in codes or requirements adopted by other agencies conflict with requirements within the MUBEC. Resolution is determined under a structured framework outlined in Title 10, §9722 (D) and MUBEC Rules Chapter 2, Section 12 for conflicts between the MUBEC and fire safety codes and standards.[6] This framework includes:

[6] https://www.mainelegislature.org/legis/statutes/10/title10sec9722.html; https://www.maine.gov/sos/sites/maine.gov.sos/files/inline-files/003c002-2025-042-NSC.docx

- Notification and Request: The MUBEC Board notifies the agency with jurisdiction over the conflicting code or standard and requests the submission of proposed solutions.
- Review and Alternative Approaches: The MUBEC Board evaluates the proposed solutions and considers new or alternative approaches to reconcile the discrepancy between MUBEC and the conflicting requirement.
- Stringency and Industry Standards Evaluation: If a conflicting requirement is found to be less stringent than industry standards, the current provision of MUBEC remains in effect.
- Health, Safety, and Financial Impact: If the conflicting external code provides a higher level of health, safety, and welfare, the MUBEC Board weighs that increased safety benefit against the financial impact of the improved provision.
- Publication Requirement: The MUBEC Board must officially publish the resolution of the code conflict within 30 days of its adoption.

While having an established procedure is important to assure conflicts are resolved when they arise, it is more efficient and less disruptive to the industry to resolve potential conflicts during the development process before the code is published and starting to be implemented in the field. Increased coordination during the adoption processes (particularly if some codes are centralized under MOCA) should lessen the need to invoke such procedures.

Recommendations

➢ *Anchor all model-code adoptions to a single update cycle with a common effective date*

Because ICC, NFPA, and IAPMO all publish on three-year cycles, Maine can establish one statewide code-change window. The existing requirement to be on one of the latest two editions could be maintained to allow sufficient time for development and training, but resources must be allocated to ensure such timelines can be met. To provide predictability, the State may wish to set a more formalized update timeline. For example, within a defined period (one year to 18 months) following each model-code publication year, boards conduct review and rulemaking; adopted updates then take effect on a single, predictable statewide date — July 1 is the natural candidate, since the Electricians' Examining Board already uses it. Under this structure the 2027 I-Codes, 2027 UPC, and (already-adopted) 2026 NEC would converge on a July 2028 effective date, and every subsequent cycle would repeat automatically. The electrical board's cadence could be treated as the template; a goal could be to bring MHB, MUBEC, and plumbing up to its tempo.

- *Extend the MUBEC-style currency requirement to plumbing*

The statutory requirement that MUBEC be no more than one edition behind (10 M.R.S. §9722(6)(B)) is the strongest forcing mechanism in Maine law, even if compliance has been imperfect. No equivalent applies to the plumbing code updates. A modest legislative change or regulatory commitment extending the same "most recent or immediately previous edition" requirement to the plumbing code adoption would provide the same statutory clock and would give stakeholders a predictable basis for planning.

- *Centralize plumbing, electrical, boiler, elevator and fuel gas code update processes within MOCA*

Move adoption of plumbing, electrical, boiler, elevator, and fuel gas standards/codes to the MUBEC Board. This would assure that responsibilities fall to a single entity that has a combination of technical expertise in code adoption, is able to correlate provisions across codes, can leverage efficiencies in processes, can align (and be accountable for) adoption timelines, and leverages a transparent process that includes stakeholder input and engagement. Adoption processes for key codes (building, energy, plumbing, and electrical) would be consistent, improving transparency, stakeholder participation and coordination. This move would require legislative action to transfer regulatory authority and resources to MOCA and to (re)define the roles of the existing boards to focus on licensing. Maine has in-state precedent for this approach for radon—MOCA sets code-related requirements while the state CDC regulates provider registrations. If the topics covered by the MUBEC Board expand (e.g., plumbing, electrical, fuel gas, modular), the Board's makeup should be re-evaluated to assure that it has the necessary expertise.

In the alternative, the State may elect the below approach which may offer less disruption in the near-term but also leaves opportunity for continued disconnects (however, given the recent changes through establishment of MUBEC and the focus on housing legislation now could be an ideal time to effect more far-reaching change).

- *Establish a standing interagency code coordination council convened by MOCA*

  The September 2025 consolidation of the Building Codes Division into MOCA creates, for the first time, a natural convening home. A standing council — the Technical Building Codes and Standards Board, Electricians' and Plumbers' Examining Boards, Maine CDC (wastewater and radon programs), OPOR, and the State Fire Marshal — should meet on a fixed schedule keyed to the model-code publication calendar. Its working products would be a rolling adoption calendar published to all stakeholders, a pre-rulemaking

crosswalk review that surfaces cross-code conflicts (plumbing/wastewater interfaces, IRC/UPC overlaps, energy/ventilation/radon interactions) before each board finalizes amendments, and coordinated transition rules. This costs little, requires no statutory change to begin, and is where alignment failures are most cheaply caught.

- *Study opportunities for increased alignment and coordination between MUBEC and fire codes and standards*

As identified above, there are significant overlaps between topics addressed within the MUBEC and state fire and life safety codes. Fire codes also have the unique challenge of addressing fire sprinkler requirements set in statute within the code update process. Application of the MUBEC and state fire codes also vary across the state. While there are likely opportunities to align code update timelines and update processes and reduce the potential for conflicts within the codes, such an analysis is outside the scope of this research. Therefore, the state should conduct a study engaging key stakeholders including representatives from MUBEC and the state fire marshal's office, members of the fire service, local building officials, and others to determine the best approach for alignment and coordination.

- *Modernize static references on the MUBEC cycle*

References with no external clock should be checked as to their currency and if new editions are available, their potential update should be considered as a mandatory agenda item in every MUBEC update. The clearest case is the radon construction standard.

- *Consolidate communication and training around each cycle*

Whatever the adoption mechanics, the state controls how changes land in the field. A single authoritative "codes in effect in Maine" webpage maintained by MOCA — listing every code, edition, adopting body, and effective date in one table — would replace the current practice of assembling this picture from a half-dozen agency sites.

Training is critical to ensure that intended results of updates are achieved, but require sufficient resources to implement. Joint update training delivered once per cycle across all changed codes, would replace fragmented per-board offerings. The Electricians' Examining Board's licensee update-course model offers a proven template that could be extended to plumbing licensees on the same rhythm. Unlike training targeted at specific trades with licensure requirements or associated inspectors and plan reviewers, general MUBEC training must reach broader audiences (CEOs, builders, third-party inspectors), so MOCA

must have adequate resources to develop and deliver (or contract for the development and delivery) of training that reaches these audiences.

Regional Pre-Approved Plans/Reciprocity Opportunities

Pre-approved building plans have been identified as an opportunity to increase the number of housing units by making the approvals process more efficient. To date, pre-approved plans have largely been implemented at the locality level. This recognizes the local nature of enforcement and the likelihood of code requirements to vary from location to location (even if on the same code, hazard conditions may dictate different requirements). Some states are exploring statewide solutions. This section examines the potential for a statewide approach in Maine, a regional effort to align with activities in Vermont and elsewhere, and opportunities for reciprocity in off-site construction.

Pre-approved plans can be provided to builders and potential homebuyers by two means—jurisdiction commissioned designs that are provided free of charge to users or pre-vetted designs that are offered by builders or designers for a fee. In both cases, the designs need to be reviewed and approved by an authoritative entity (for example, the state or an approved third-party agency) and they must be updated following each code update.

Statewide Pre-approvals

To help smooth the approval of housing in the state, Maine may wish to consider developing a pre-approved plans program. Since permitting and enforcement happens at the local level, jurisdictions would either need to be legislated to accept the plans as pre-approved or voluntarily opt-in to the program. For an effective state program, the designs must either be sufficiently robust to cover all variations in code requirements across the state (which could mean over design in many places, impacting construction costs) or be limited to specific portions of the state (which would mean the need for more available plans).

Specific variations in code requirements across the state impacting the potential development of pre-approved plans include:

- The state has two climate zones (6A and 7) with only Aroostook County in climate zone 7
- The state has three design wind speeds (most of the state is 110 with 115 along the coast and 105 to the north)
- The states has six different ground snow load requirements plus one region requiring site-specific case studies

- The state has two different seismic design categories

Because code enforcement is not required in smaller jurisdictions, the availability of pre-approved plans may increase the number of homes designed to MUBEC in those jurisdictions.

The program could parallel Vermont's 802 Homes program currently in development where 10 ready to build designs would be available. The plans are expected to include designs for accessory dwelling units, cottages, duplexes, townhouses and four unit multifamily. The designs will be available for free and designed to use both site built and off-site construction. Municipalities opt into the system and establish a local pre-approval or streamlined-review pathway. A particular site can still require review for zoning, setbacks, utilities, water and wastewater, flood hazards, access, foundations, snow and wind conditions, and other site-specific requirements.

Given the different code requirements for site-built and off-site construction in Maine, providing the same plans that could be used for both would require careful design. If site-built and off-site requirements are the same, this challenge disappears. However, if the state is interested in supporting use of off-site construction under such a program the designs should consider off-site approaches early and not assume site-built approaches can easily translate to factory-built structures.

Regional Pre-Approved Plans

Given the effort in Vermont, there may be opportunities to create a regionally appropriate set of pre-approved plans. Like in a statewide program, numerous factors need to be considered including the potential variations in code requirements. Additional considerations include who reviews and approves the plans, who maintains the database, and who pays for creating and updating plans. Also, states update their building codes on different timelines, so mechanisms need to be in place to monitor when previously approved plans are no longer valid because a code has changed.

In establishing a regional set of pre-approved plans there are a few important considerations: are the state codes substantially equivalent, are the design requirements (hazard resistance and climate zones) similar, and is the process for pre-approval trustworthy. For the northeast, the code editions currently adopted across the region are captured in Table 3.

Table 3. Current adopted codes in northeast states

State	Adopted codes
Maine	2021 I-Codes, 2021 UPC, 2026 NEC, 2018 NFPA 101
New Hampshire	2024 I-Codes, 2024 NFPA 1, 2024 NFPA 101, 2023 NEC
Vermont	No statewide residential code, 2021 IBC, 2023 NEC, 2024 IPC, 2021 NFPA 1, 2021 NFPA 101
Massachusetts	2021 I-Codes, 2026 NEC
Rhode Island	2021 I-Codes, 2024 IECC, 2021 NFPA 101, 2023 NEC
Connecticut	2021 I-Codes, 2020 NEC
New York	2024 I-Codes, 2023 NEC
New Jersey	2024 I-Codes, 2024 National Standard Plumbing Code (NSPC), 2023 NEC
Pennsylvania	2021 I-Codes, 2020 NEC
Delaware	2021 IPC, 2024 IECC, 2021 NEC, 2021 NFPA 101, 2024 NFPA 1, no other statewide codes
Maryland	2021 I-Codes, 2021 NEC, 2024 NFPA 1, 2024 NFPA 101
Virginia	2021 I-Codes, 2020 NEC

Regarding common hazard resistance requirements and climate zones:

- Climate zones in the northeast range from zone 4 through zone 7 with Maine, Vermont, and New Hampshire mostly in climate zone 6 with smaller areas of New York and Pennsylvania in zone 6 as well.
- Design wind speeds are generally consistent across the region with the exception of coastal areas where speeds are higher.
- Ground snow loads vary significantly across the region with large portions of Maine, New Hampshire and Vermont requiring site-specific case studies. Where snow loads are provided, these three states are on the upper end of the spectrum.
- Seismic design categories are pretty consistent across Maine, New Hampshire, Vermont, Massachusetts, Connecticut, Rhode Island and portions of New York and New Jersey with the majority in category B with pockets of category C.

Off-Site Construction Reciprocity

In addition to replicability and efficiency through pre-approved plans that meet state building code requirements, off-site construction offers opportunities to easily allow the use of units manufactured in other states. Maine already allows reciprocity for states where standards and enforcement are determined to meet Maine's objectives and the states enter into a formal agreement.[7] However, it is unclear if such arrangements currently exist.

There are efficiencies to be gained through reciprocity of units of neighboring states including expanding the number of potential manufacturers that can deliver to Maine, optimizing state resources by not needing to review manufacturers, plans and units already reviewed by other states, and limiting the amount of retooling required by manufacturers to deliver units to more locations.

Supporting reciprocity in off-site construction hinges on acceptance of the verification process and/or the code requirements the unit was built to. For verification, two potential approaches exist: mutual alignment of verification processes or independent review of the programs from each potential reciprocal state. Within the mutual alignment approach, New England states already have a head start based on adoption of the ICC/MBI standards 1200 and 1205 in New Hampshire and Rhode Island and ICC/MBI Standard 1200 in Maine. Additional adoptions of the standards by states in the region could facilitate expanded opportunities. Opting in to the Interstate Industrialized Buildings Compact could be another option although New Jersey is the only member in the northeast following Rhode Island's withdrawal and its subsequent adoption of the ICC/MBI Standards.[8]

As discussed above, reciprocity based on meeting equivalent code requirements may be difficult given the variations in adopted codes, hazard requirements and climate zones. Updating the modular code to align with the MUBEC would open up opportunities in states that are on similar editions of the code. New Hampshire may present the greatest opportunity for reciprocity if the Maine modular code is updated to the 2024 I-Codes (they have adopted ICC/MBI standards 1200 and 1205 and share similar hazards and climate zones).

Outside of alignment with common standards, some states allow reciprocity on a state-by-state basis. Like Maine, Montana has taken the approach of allowing reciprocity of units approved in another state where Montana has entered into a reciprocity agreement at the state level.[9] Wisconsin allows the use of units manufactured in Minnesota. Such an

[7] https://legislature.maine.gov/legis/statutes/10/title10sec9048.html
[8] Current states within the compact are Minnesota, New Jersey and North Dakota.
[9] Administrative Rules of Montana, Title 24 Labor and Industry, Chapter 24.301 Building Codes, Subchapter 24.301.12 Requirements for Recreational Vehicles and Factory Built Buildings, Section 34.301.1235

approach does require review of the other state's policies and procedures and entering into mutual agreements.

Findings and Considerations

There appears to be significant variation in both adopted codes and specific climactic- and hazard-related requirements across all states in the northeast. Vermont and New Hampshire appear to face similar risk profiles and share climate zones with Maine. However, the adopted codes in these three states vary in edition (or existence), so in-depth analysis would be required to determine if plans approved in one state could be significantly equivalent to requirements in another.

In the absence of this analysis and establishing the infrastructure to make a regional pre-approval process work, Maine could consider establishing pre-approved plans for the state. This would entail procuring the plans, validating their compliance with code requirements, and getting buy-in from local jurisdictions to accept the pre-approval.

The state could take the pre-approval idea further by leveraging the existing off-site construction approvals process to identify plans that have already been reviewed for compliance and manufacturers that have been approved to manufacture against those plans. ICC has taken this approach with the Approval & Construction Accelerator which could be adapted for Maine. The Accelerator provides a ready-built web platform that allows potential homebuyers to discover home models that have already been approved for their location under the requirements of the statewide modular program and then connects them with the manufacturers that can deliver the project.

As noted above, the codes from other states in the region may not be sufficiently equivalent to allow for reciprocity based on code requirements. However, the state could recognize equivalency in the off-site construction verification process based on compliance with common standards. If a manufacturer or third-party agency has been approved in New Hampshire or Rhode Island under ICC/MBI Standards 1200 and 1205 then they could be approved in Maine with minimal additional steps (meeting any business licensing requirements, paying registration fees, etc.). This could expand the pool of manufacturers interested in delivering to Maine with no compromise of the verification process.

Reciprocity (MT Admin Rules 24.301.1235). https://rules.mt.gov/browse/collections/aec52c46-128e-4279-9068-8af5d5432d74/policies/d6f7378a-ffbc-48da-ada1-313beb0379b0.

Recommendations

- *Consider the establishment of a pre-approved plans program for the state of Maine modeled after the Vermont 802 program*

A pre-approved plans program could help streamline approvals processes and increase the number of housing units delivered in the state. Such a program could be a precursor to a regional program if states and code requirements could be aligned. The program would require clear rules on how plans are designed, submitted and approved and by whom, how they are updated, and buy-in from local officials responsible for permitting and code enforcement.

- *Leverage the existing pre-approval process and built in delivery system of the state's modular program to provide the benefits of pre-approved plans with little additional investment*

A state developed or endorsed portal that is consumer facing with approved off-site construction manufacturers and their previously submitted plans could make off-site construction more approachable. ICC's Approval & Construction Accelerator could serve as a model.

- *Provide reciprocity to manufacturers and third-party approval agencies that have been approved by states under requirements in the ICC/MBI 1200 and 1205 standards*

The ICC/MBI Standards provide consistent requirements for manufacturers and third-party approval agencies and a methodology for state approval based on meeting those requirements. If another state has already validated and approved these entities against the full requirements of the standard it may not be necessary for Maine to re-conduct such a process. Currently five states approve third-parties and manufacturers under the ICC/MBI 1200 and 1205 standards (including Virginia, New Hampshire and Rhode Island in the Northeast).

Cost-Benefit Approaches

As noted above, the state of Maine does not currently have a formal approach to cost-benefit considerations during the update of the MUBEC (or the modular building code). This study examines some of the more common approaches used by states, the approach ICC uses in development of the model codes, and approaches used by federal agencies.

Specific details on the approaches are captured in the provided table (Appendix A), but key characteristics are discussed here.

This review revealed three main economic approaches and one technical approach. Nine states (RI, FL, WA, MI, CA, TX, PA, NC, OR) are examined in more detail to provide illustrative examples of each approach. Different approaches may be used between the energy code adoption process and other code adoptions.

1. Substantive Economic - statute makes cost-effectiveness a legal precondition to adoption
2. Procedural/Analytical - analysis or a concurrence process must occur before adoption but no numeric pass/fail
3. Informative Disclosure - analysis documents impacts but cannot block or be used to challenge adoption
4. Technical Stringency - equivalent-or-better efficiency finding rather than an economic one

Each of the various states' approaches to cost benefit analysis come with varying levels of effort and cost. They are also influenced by statutory required code update timelines. The party responsible for producing the analysis also varies by the approach used which could be a state agency, the responsible board, or the stakeholder proposing the change.

Substantive Economic

The substantive economic approach requires cost effectiveness be demonstrated before a code or provision can be adopted. This approach is used in California and Michigan within the energy code adoption process and will be used by ICC for development of the 2030 IECC.

California

California's approach for energy code analysis is arguably the most sophisticated methodology. Cost/benefit ratios are developed internally by California Energy Commission (CEC) staff and by utility funded Codes and Standards Enhancement (CASE) teams at the individual measure level based on incremental costs and include replacement and maintenance costs, life-cycle energy (valued hourly), long-term systems cost, grid costs, and societal costs. The analysis is conducted during the consideration of amendments. The analysis is for the "economic life of the building" per the statute with a 30-year life-cycle used for residential requirements and 15 years for some non-residential measures. The results of the benefit/cost ratio (BCR) must exceed 1.0 (discounted life-cycle energy value/incremental cost) to be considered as part of a code update per statute.

California's approach is very resource intensive with dozens of measures analyzed each cycle. It leverages both internal and external funding—CEC runs the rulemaking and sets the metrics while the utility/ratepayer funded CASE teams largely conduct the analysis. California does require a code update every three years. California is able to achieve this depth of analysis with a fixed adoption cycle through its investment in the process.

All California codes also need to satisfy a nine-point criteria before the California Building Standards Commission (CBSC) can approve the changes. Criteria five covers reasonableness of cost while other criteria cover regulatory alignment, public interest, consistency and clarity. Level of effort to satisfy these criteria is relatively low. Because no specific threshold must be met, this requirement would be classified as a procedural approach rather than the substantive economic approach required for the energy code.

Michigan

In Michigan, the statute requires cost effectiveness as a pre-condition for adoption. The analysis must consider benefits and costs over a seven-year period with additional guardrails to assure that qualified buyers are not priced out and that mortgage principle, interest, taxes and insurance (PITI) plus utilities do not result in a monthly cost increase. The analysis is conducted by the state Bureau of Construction Codes during the code development process, but relies heavily on state level analysis conducted by the U.S. Department of Energy's Pacific Northwest National Laboratory (PNNL). It should be noted that Michigan is currently involved in litigation filed by homebuilders based on how the costs and benefits are considered over the seven-year period.

Michigan requires little internal effort as the analysis is largely based on reports provided by DOE/PNNL. However, homebuilders and energy efficiency advocates often prepare their own analysis, putting costs on stakeholders. The state is required to adopt a new code every three years, but the contested rulemaking has put a temporary pause on updates. Unlike California, a cost-effectiveness requirement without investment or a clear methodology can produce lag.

International Energy Conservation Code (2030 edition onward)

The ICC Board of Directors has established a new format for the International Energy Conservation Code (IECC) beginning with the 2030 edition. The code will be split into a base IECC (primarily focused on energy efficiency measures) and an IECC Stretch (providing additional resilience, sustainability and grid interactivity requirements).[10] With this change, the ICC Board of Directors with insight from Dodge Construction Network has

[10] The IECC Stretch was previously called the IECC Expanded or IECCX.

established cost benefit analysis requirements. Under the requirements, the combination of incremental component costs, maintenance costs and energy savings must be less than zero over the pre-defined payback period. Payback periods are defined based on industry averages for the particular building type. For baseline energy code requirements, payback periods are set at 12 years for one- and two-family dwellings and townhouses, 7 years for multifamily buildings, and 10 years for other commercial buildings. The IECC Stretch sets payback periods at 30 years. To be considered for inclusion in the 2030 code, individual proposals must pay back within the defined payback period. PNNL has previously provided analytical support during the development process for prior editions of the IECC, but ongoing levels of support during the development are unclear. DOE is required to perform analysis on energy savings within 18 months of publication of a new edition of the IECC.

Cost benefit analysis is required upfront with each code change proposal, so it is embedded within the process, mitigating potential delays. Conducting the analysis falls to code change proponents so organizational resources required are limited. The level of analysis required is more substantial than that required for other International Codes.

Procedural/Analytical

Approaches in North Carolina, Pennsylvania and Washington serve as procedural or analytical gates where a specific benefit/cost outcome is not required, but a specific action must be taken as part of the adoption process.

North Carolina

North Carolina requires a fiscal note produced or approved by the Office of State Budget and Management (OSBM) when a proposed change to the prior edition of the code has a substantial economic impact—defined as over $1 million aggregate impact over five years or over an $80 increase in cost per housing unit. If resources exist, the fiscal note should be produced by the state's code council, otherwise the OSBM can assist. The code council may not rely solely on the proponent's analysis. Final action is delayed until at least 60 days after the fiscal note. This allows time for legislative disapproval if desired.

Typically, each update cycle includes at least one analysis when the trigger is hit ($1 million impact in aggregate or $80 increase). The analysis is prepared internally, but a contractor may be used. North Carolina has a six-year code development process, so analysis is spread out over that timeline, reducing the burden.

Pennsylvania

In Pennsylvania, every new or changed provision from the prior code requires reporting of health, safety and welfare impacts; economic and financial impacts; and technical

feasibility. The 19-member Review and Advisory Council (RAC) (made up of industry representatives, code officials, and local government officials) develops the required analysis with support from technical committees during the code development process. Following completion of the analysis, updated provisions from the model code are deemed accepted unless two-thirds of the RAC members vote to disapprove.

Pennsylvania's level of effort for analysis is low, but the overall review process requires considerable effort. The RAC undertakes a multi-year review process with regional hearings and technical committee reviews before producing the final rule. Costs are primarily borne by the RAC members who are volunteers and departmental staff time. The review process is triggered by publication of the I-Codes (within 21 months), but there is no adoption timeline required.

Washington

Washington State's Building Code Council (SBCC) publishes preliminary and final cost-benefit analysis for significant legislative rules across all adopted codes. The energy code carries additional economic analysis requirements. The agency must determine that the probable benefits exceed the probable costs (quantitative and qualitative). Energy measures must be technically feasible, commercially available, and the lowest overall cost to the owner/occupant consistent with the state's statutory target for buildings to achieve a 70% reduction in energy use from a 2006 baseline by 2031. The analysis is prepared by the SBCC with contractor support—PNNL supported recent residential energy code analysis. The SBCC uses 50 years as the timeline for determining whether measures are cost effective. This provides an extended timeline where benefits of efficiency measures can be weighed against upfront costs.

Washington's level of effort is relatively high requiring both preliminary and final cost benefit analysis for each code cycle with multiple variables considered. The cost is borne internally by the SBCC, but contractors are typically hired. PNNL conducted recent analysis for the energy code under DOE's technical assistance program. Washington must review codes every three years and has been able to meet these timelines due to investment in the analysis to meet statutory requirements.

Informative Disclosure

Florida, Rhode Island, and Oregon include requirements that analysis includes cost-benefit information but specific action due to the analysis is not required. The process used for development of the I-Codes could also be considered an informative disclosure.

Florida

Florida requires inclusion of a fiscal impact statement (FIS) documenting costs and benefits with each code change proposal. Proposals without such a statement are rejected by staff. The statute explicitly states that the FIS may not be used as the basis for challenging an amendment to the code. The FIS is prepared by the amendment proponent, but reviewed for sufficiency by the Florida Building Commission staff and for substance by technical advisory committees. Inputs considered include impacts on local government enforcement costs; cost of compliance to property/building owners; cost to industry; and benefits, but no prescribed monetization method is provided.

The level of effort with each proposed amendment is relatively low, but in aggregate requiring an FIS with each proposal requires high throughput. Staff time is limited to determining sufficiency and actual analysis is externalized to stakeholders. Analysis has a broad spectrum, does not slow down the process, and is distributed across stakeholders rather than borne by the state.

Florida uses the prior edition of the Florida code as the basis for an update (instead of the new model code edition) requiring each new provision in the model codes to be proposed for inclusion in the next edition. Thus, each new provision is examined before adoption, allowing for individual analysis.

Rhode Island

Rhode Island considers all code adoptions administrative procedures act (APA) rulemakings and therefore subject to formal regulatory cost/benefit analysis. The analysis is conducted by the Building Codes Standards Commission (BCSC) with consultant support. The Office of Regulatory Reform (ORR) within the Office of Management and Budget (OMB) in the state reviews and clears the analysis before filing, but no numeric pass/fail requirement needs to be met. The analysis includes statewide incremental construction costs; the net present value of costs; qualitative safety, health, resiliency benefits; and ORR guidance calls for societal perspectives including monetized life-safety.

Consideration under the APA is a middle ground where analysis is conducted once per code update cycle covering all significant changes. Cost is considered quantitatively while benefits are qualitative. The analysis is conducted by the BCSC based on ORR guidance and review.

Oregon

Oregon requires proposals for the energy code and reach code to contain a cost analysis on forms developed by the Building Codes Division (BCD) which include assumptions set

by BCD each code cycle. The analysis is considered by the technical boards and BCD during deliberations, but no numeric pass/fail requirement is set. The incremental cost of the proposal including for alterations, repairs and change of occupancy are included. Establishing the criteria upfront when the update process commences limits opportunity for disputes.

The Oregon approach represents a low to medium level of effort with upfront effort to establish the modeling assumptions and then individual proposal analysis left to proponents. The state does not have an automatic update requirement, but the approach helps assure that once initiated, disputes over the content of the cost-benefit analysis are limited.

International Codes (Non-energy)

The International Codes (I-Codes) are developed under Council Policy 28 (CP-28) which sets out requirements for consideration of cost. Under CP-28, the proponent of each code change proposal must indicate the proposal's estimated immediate cost impacts or that the proposal is editorial or clarifying and has no impact on the cost of construction. Supporting information must be provided. Life-cycle cost impacts may be provided for all I-Codes but is required for the International Energy Conservation Code. Proposals that do not include cost impact information are considered incomplete and are not processed.

Like in Florida, overall level of effort is low with analysis requirements falling to code change proponents and staff responsible for verifying existence, not substance. Cost impact information is provided based on proposed updates from the prior edition of the model code.

Technical Stringency

Texas

Texas adopts a statewide energy code and uses a technical stringency gate requiring a finding of equivalent or better efficiency rather than an economic one. The state may only adopt a new code following written findings that the new code yields equivalent or better energy efficiency and air quality. The Energy Systems Laboratory at Texas A&M University is statutorily designated to conduct the analysis. While the analysis is required for each update to the code, there is no timeline specified for updates and the resultant new code is the floor for municipal adoptions.

The Texas approach means the scope of analysis is relatively small with no economic analysis required. Setting the university as the statutory reviewer sets costs outside of the

codes office, allows for persistence in expertise and likely limits disputes. The state does not have a mandatory update timeline, so the impact on timing is unclear.

Additional Cost Benefit Analysis Approaches

In addition to cost benefit analysis required by states as part of their code adoption processes and the process used by ICC in the model code development process as described above, several federal agencies conduct cost benefit analysis.

U.S. Department of Energy, Pacific Northwest National Laboratory

PNNL has developed a cost-benefit analysis methodology it uses to support analysis of energy codes at both the national and state levels.[11] For residential energy code analysis the PNNL methodology focuses on a 30-year life-cycle cost (LCC) savings basis (aligned with the typical mortgage) with secondary results provided on consumer cash flow and simple payback. The commercial energy code analysis also looks at life-cycle cost net savings (net present value of savings) and simple payback, but adds the savings-to-investment ratio. The commercial analysis also uses a 30-year study period.

Per PNNL, "Evaluating cost-effectiveness requires three primary steps: 1) evaluating the energy and energy cost savings of code changes, 2) evaluating the incremental and replacement costs related to the changes, and 3) determining the cost-effectiveness of energy code changes based on those costs and savings over time. The DOE methodology estimates the energy impact by simulating the effects of the code change(s) on typical new commercial buildings, assuming both old and new code provisions are implemented fully and correctly. The methodology does not estimate rates of code adoption or compliance. Cost-effectiveness is defined primarily in terms of LCC evaluation, although the DOE methodology includes several metrics intended to assist states considering adoption of new codes."[12]

PNNL maintains significant analytical capacity to conduct energy code analysis. This investment allows for timely results following each update to the model codes and provision of technical assistance to states undertaking adoptions. DOE has recently removed much of the prior PNNL analysis from its website and it is unclear on the continued availability of DOE/PNNL's technical support and analysis.

[11] The U.S. Department of Energy has issued a request for information (RFI) on the current methodology indicating a potential forthcoming update.
[12] https://www.energycodes.gov/sites/default/files/2021-07/commercial_methodology.pdf

Federal Emergency Management Agency

The Federal Emergency Management Agency (FEMA) uses two cost effectiveness approaches. FEMA requires specific projects use the Benefit Cost Analysis Toolkit to determine cost-effectiveness by comparing a baseline structure versus the higher standard. For national and state level analysis the Building Codes Save: A Nationwide Study of Loss Prevention provides a methodology. The methodology leverages FEMA's HAZUS software tool to model structures built to modern standards versus historical code requirements.

For individual project benefit cost analysis, the costs fall to proponents, but FEMA provides tools to assist including thresholds where analysis is not required or waivers for certain types of projects. For the national level analysis, FEMA used an outside contractor to conduct the underlying analysis. Expertise using HAZUS is needed for this approach.

Findings and Considerations

The practical effect of a cost-benefit requirement depends heavily on whether it is paired with an enforceable update requirement. A rigorous analysis requirement can coexist with a designated update cycle when the state funds recurring analytic capacity and defines the methodology in advance, as California and Washington demonstrate. By contrast, a substantive requirement without sufficient resources, clear assumptions, or dispute-resolution rules can become the reason updates stall, even where the law nominally requires regular adoption.

Where the analysis is lighter, required earlier in the process, or assigned to proponents, the timing risk is lower. Florida and the non-energy I-Code process use disclosure requirements that screen proposals without creating a separate adoption barrier. North Carolina reduces timing pressure by spreading the fiscal-note process across a six-year residential code cycle. Oregon and Texas illustrate the opposite situation: analysis requirements may be manageable, but in the absence of a fixed update clock, they do not independently keep the code current.

For cost-benefit analysis of energy code requirements, many states have relied on the U.S. Department of Energy (DOE) and its Pacific Northwest National Laboratory (PNNL). DOE is required to complete its analysis of the energy savings associated with an updated model energy code within 18 months of publication of the model. Historically, DOE/PNNL have conducted analysis on the energy savings and cost-benefit associated with each individual state updating to the latest model code. While the deadline for DOE's model code analysis is set at 18 months from publication, there have been instances where analysis was released well in advance of the deadline.

In the past, DOE/PNNL have also provided technical assistance directly to states undertaking an update process to conduct analysis on state-specific amendments to the model codes. However, DOE/PNNL's long-term plan for providing such analysis is in question, so the State should consider an approach that could leverage PNNL expertise if available, but also consider using other resources. Additionally, while PNNL may be able to expedite analysis based on a state request for assistance, the statutory timeline may compress Maine's ability to review codes in a timely manner. Assuming continuation of PNNL assistance, Maine would likely need to update energy codes every three years to assure PNNL analysis is available to maintain the current requirement to be within two editions of the model codes.

For Maine, the choice is therefore not simply whether to require cost-benefit analysis, but how to match the level of rigor to the update requirement, the desire for consistent and transparent information and available resources. If Maine intends to maintain a regular MUBEC cycle, any new analysis requirement should be either funded as a recurring state function, standardized around pre-set assumptions, or embedded early in the proposal process so that analysis informs the update without becoming a new source of delay.

Table 4. Matrix of Update Requirements and Analysis Requirements

Update requirement	Light or early analysis	Heavy or substantive analysis
Strong or fixed update requirement	**Best for predictable cadence.** The update clock keeps the code current while light, proponent-driven, or front-loaded analysis limits delay. Examples include Florida and the non-energy I-Code development process.	**Works only with funded capacity.** Rigorous review can coexist with a fixed cycle when methodology, staffing, and contractor support are built into each cycle. Examples include California energy code updates and Washington's recurring review process.
Weak or no fixed update requirement	**Low burden but limited forcing effect.** Analysis may improve individual decisions, but it does not by itself keep codes current. Examples include Oregon's standardized cost-analysis forms and Texas's bounded technical review.	**Highest risk of drift.** Heavy analysis without a firm adoption clock can become a reason not to proceed, especially if assumptions are contested or resources are limited. Maine should avoid this combination unless it also funds recurring analytic capacity and sets an enforceable schedule.

Recommendations

- *The State should implement an "informative disclosure" cost-benefit analysis approach that provides consistency and transparency during the development process, leverages limited available resources and aligns with update frequency requirements.*

Many options exist for conducting cost benefit analysis associated with code updates. Based on the requirement to be within two code cycles and the limited availability of staff and financial resources, an "informative disclosure" cost-benefit analysis may be most appropriate. Such an approach assures that a consistent process exists to provide the MUBEC Board and other stakeholders with information to support decision making without dictating a specific outcome. Any updates between editions of the model codes should be deemed to meet the cost-benefit requirements as they have been vetted during the model code development process unless identified by members of the MUBEC Board for further analysis. Any proposed amendments during the MUBEC Board's update process should be accompanied by analysis on the amendment's cost effectiveness (to be provided by the proponent based on requirements and parameters decided by the MUBEC Board or MOCA).

For energy code cost-benefit analysis, leveraging DOE/PNNL technical assistance and analysis would be the most cost-effective approach, but consistent availability of such support is in question. Private sector consultants or non-profit organizations can conduct similar analysis but comes at a cost. Some stakeholders may be willing to help fund use of such outside support. The State should define a methodology to be used for energy code cost-benefit analysis (which could be based on the current methodology used by PNNL).[13] If PNNL support is available that could be the preferred provider for such an analysis. Otherwise, the state could issue an RFP for private sector support.

Off-site Construction Programs Across the U.S.

Off-site construction (also known as pre-fabricated buildings, factory-built construction, industrialized construction, modular construction) has been identified as an important strategy in addressing the availability and affordability of housing and other industry and society challenges including a shrinking construction workforce, supply chain uncertainties, and resource use. Off-site construction is typically defined by two key

[13] Note that DOE has indicated it is re-examining its analysis methodology and has issued an RFI in support of that re-examination. While the existing DOE/PNNL methodology has been generally accepted by stakeholders, the acceptance of any new methodology is uncertain.

components: a significant proportion of the fabrication happens in a factory or other facility outside of the final job site and what arrives at the job site cannot be easily inspected without undoing what is done in the factory (also called closed construction).

Maine has adopted ICC/MBI Standard 1200 which includes the following definition for off-site construction, “A modular building, modular component or panelized system that is designed and constructed in compliance with this standard and is wholly or in substantial part fabricated or assembled in manufacturing plants for installation—or assembly and installation—on a separate building site and has been manufactured in such a manner that all parts or processes cannot be inspected at the installation site without disassembly, damage to, or destruction thereof.”

Across the U.S., 40 states regulate off-site construction at the state level (see Figure 1). However, each program operates differently with respect to the allowance of the use of approved third-party agencies for plan review and/or inspections, inclusion of closed panels and pods, and whether their jurisdiction applies to just commercial or residential structures. The remaining states leave the entire approvals process to local jurisdictions. A snapshot of requirements in the Northeast are captured in Table 5 below with all 50 states provided in Appendix B.

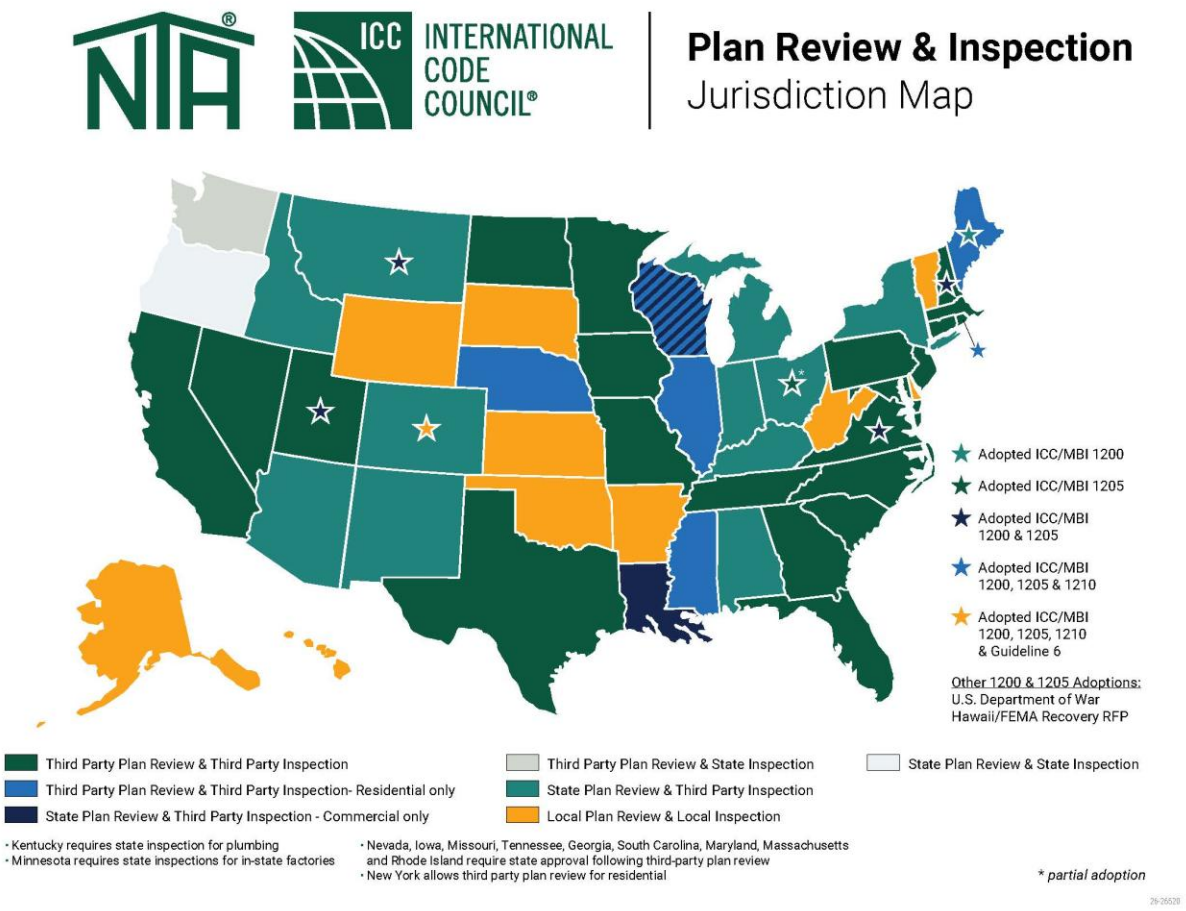


Figure 1. State Off-Site Construction Program Requirements

Like Maine, Mississippi and Nebraska only include residential buildings within its program. Illinois only covers residential buildings but includes multifamily structures within its definition of residential buildings. Louisiana only covers commercial buildings in its program at the state level, leaving single family and townhomes to local jurisdictions. In some states that cover both residential and commercial buildings the programs operate separately but are structured similarly and with similar rules (Pennsylvania is one such example). This separation appears to be a function of when and how the industrialized buildings programs were established rather than for administrative efficiency.

Table 5. Northeastern States Industrialized Building Program Characteristics

State	State Program	Residential / Commercial	Closed Panels	Pods	Plan Review	Inspection	ICC/MBI Stds. Adopted	Code Requirements	In-Factory Licensure	Notes
Connecticut	Yes	Both	Yes	Yes	Third-Party	Third-Party		Same as state, 2021 I-Codes	No – general manufacturing exemption	CT State Building Code, Sec 111.7, R110.7
Delaware	No									
Maine	Yes	Residential	No	No	Third-Party	Third-Party	1200	2015 IRC for modular housing; 2021 IRC site-built	Partial – for 3+ dwelling units, even outside ME	02 ME Code Rules 385-110-2-10
Maryland	Yes	Both	Yes	Yes	Third-Party*	Third-Party		Same as state, 2021 I-Codes	Yes - licensed trades required for in-state factories	COMAR 09.12.52
Massachusetts	Yes	Both	Yes	Yes	Third-Party*	Third-Party		Same as state, 2021 I-Codes	No – not required in plant	780 CMR Chapter 110.R3
New Hampshire	Yes	Both	Yes	Yes	Third-Party	Third-Party	1200, 1205	Same as state, 2021 I-Codes, 2018 IECC	Partial – electrical exempt, plumbing not exempt	RSA 205-C
New Jersey	Yes	Both	Yes	Yes	Third-Party	Third-Party		Same as state, 2021 I-Codes, 2024 IRC	Partial – electrical exempt, plumbing under master supervision	Member of the IIBC; NJAC 5:23-4A
New York	Yes	Both	Yes	Yes	State commercial, Third-party residential	Third-Party		Same as state, 2024 I-Codes	No – no statewide journeyman or master trade licensing	19 NYCRR Part 1209
Pennsylvania	Yes	Both	Yes	Yes	Third-Party	Third-Party		Same as state, 2021 I-Codes	No – no statewide journeyman/master trade licensing	PA P.L. 286, No. 70
Rhode Island	Yes	Both	Yes	Yes	Third-Party	Third-Party	1200, 1205, 1210	Same as state, 2024 I-Codes, 2021 IECC	Yes - licensed trades required for in-state factories, manufacturing exemption	R.I. Gen. Laws 23-27.3-101.0

									does not apply to wiring	
Vermont	No									
Virginia	Yes	Both	Yes	Yes	Third-Party	Third-Party	1200, 1205	Same as state, 2021 I-Codes	Yes - licensed trades required for in-state factories	13VAC5-91-260

* Note: State approval required on third-party reviewed plans.

Uniformity of Code Requirements

In the vast majority of states, the code that applies to off-site construction is the building code adopted by the state. The state code is often referenced by name or section number either within the enabling statute for the off-site construction program or in the rules established by the program.

For example, Louisiana includes the requirement in statute, "A. Industrialized buildings constructed after January 1, 2007, shall meet or exceed the requirements of the building code and the requirements of the state fire marshal in accordance with R.S. 40:1574 through 1593."[14] New Hampshire makes the connection in the definitions within its statutes, requiring modular buildings and building components comply with the modular building code and the state fire code, defining the modular building code as, "the state building code as defined and adopted in RSA 155-A."[15] South Carolina's modular regulations state, "(1) The design and fabrication of modular buildings shall comply with the requirements of the building codes as listed in Chapter 9, Title 6, of the South Carolina Code of Laws, 1976 as amended."[16]

Where there is a disconnect between the state code (if one exists) and the off-site construction requirements, there are generally nuances within how codes are adopted in the state that help explain the discrepancy. For example, Illinois and Arizona do not have state-wide codes, but the off-site construction program adopts one to support consistency and efficiency. In Texas, the state sets minimum requirements for what codes jurisdictions must adopt if they elect to do so. The state off-site program adopts newer codes than the

[14] Louisiana Laws Revised Statutes, Title 40 – Public Health and Safety, Chapter 8 – Building Regulations, Part IV-D. Industrialized Buildings, Section 40.1730.56. Standards. https://www.legis.la.gov/legis/Law.aspx?d=452811
[15] New Hampshire Revised Statutes, Title XVII – Housing and Redevelopment, Chapter 205-C – Modular Building Standards, Section 205-C:1 – Definitions. https://gc.nh.gov/rsa/html/XVII/205-C/205-C-1.htm. New Hampshire Revised Statutes, Title XVII – Housing and Redevelopment, Chapter 205-C – Modular Building Standards, Section 205-C:2 – Modular Building Standard. https://gc.nh.gov/rsa/html/XVII/205-C/205-C-2.htm.
[16] South Carolina Code of State Regulations, Chapter 8 – Building Codes Council, Article 6 – Modular Buildings Construction, Section 8-604 – Adoption of Model Codes. https://www.scstatehouse.gov/coderegs/Chapter%208.pdf

minimum state code as many of the state's larger jurisdictions are on newer codes than the state minimum. In Nevada, the code adopted at the state level covers state-owned and funded buildings while codes are developed regionally and adopted locally. Nebraska adopts a code for modular housing units through its Public Service Commission independently of the state's code adoption which is done by the state legislature.

Inconsistencies between code requirements for site-built and off-site construction results in several potential challenges:

- Residents are provided a different level of safety, efficiency and resilience depending on the construction method used.
- Different requirements may apply on the same job site where both site-built and off-site elements are used, causing potential confusion for builders, trades, and code officials.
- Code updates need to be considered in two separate forums resulting in inefficient use of state and stakeholder resources.

Concerns have been raised that increasing the code requirements for modular construction may impact the competitiveness of off-site constructed housing. These concerns have largely centered on potential increased costs to comply with the updated code and that the unique process of factory-built structures may make compliance difficult. As evidenced above, most states do not make a distinction in code requirements between site-built and off-site constructed structures—when a code updates it updates for everyone and changes must be incorporated into future construction. Maine has already established the importance of new buildings being constructed to an up-to-date building code.

There is no evidence that code updates disproportionately impact modular construction. In many cases, modular construction may be better equipped to cost effectively implement updated requirements as off-site construction is typically based on an engineered systems approach where plans and processes can be optimized and replicated across multiple projects. This engineered approach also supports use of performance-based compliance where prescriptive-based requirements may be difficult to apply in a manufacturing context.

Every other state in the northeast with a modular building program already requires modular buildings to meet the 2021 or newer I-Codes. This includes in Pennsylvania, where over 85 percent of off-site constructed homes in Maine are manufactured.

Rather than holding back an entire code update which provides opportunities to capture new technologies and practices and lessons learned from research and failure analysis,

individual code changes that could disproportionately impact off-site construction should be addressed during the code update process. Having a modular representative on the MUBEC Board would help assure these issues are identified and solutions considered. A more formalized cost-benefit analysis process would also inform these decisions.

Furthermore, one hypothesis on why off-site construction has not scaled despite the efficiencies gained is that homebuyers assume off-site construction is of lower quality (most often tied to visuals of mobile homes before implementation of the HUD manufactured housing code). However, in the case of Maine this disconnect is true—off-site constructed homes may be built to a less stringent standard than site-built.

Closed Panels and Pods

In the majority of states with state-wide programs (37 out of 40), closed panels and pods (bathroom, kitchen, headwalls, etc.) are included within the programs. In many cases, panels or pods are not called out in the enabling legislation explicitly, but rather the program includes sub-assemblies, modular components, building components, closed construction or a similar term that specifies a level below the full building scale.

Arguably, with the adoption of ICC/MBI Standard 1200, closed panels and pods are now within the State program's scope as modular components ("A subassembly, subsystem or combination of elements, including panelized systems, building shells or bathroom pods, for use as a part of a modular building that is not structurally independent, but is a part of structural, plumbing, mechanical, electrical, fire protection or other systems affecting life safety."). However, without adoption of the companion ICC/MBI Standard 1205 there is no enforcement mechanism for such systems.[17]

Explicitly expanding the program by adopting ICC/MBI Standard 1205 and including language that goes beyond "modular homes" to include assemblies, sub-assemblies or components would provide clarity and bring consistency, unlocking additional avenues for efficient construction.

[17] The adoption of the ICC/MBI Standard 1205 is under consideration by the MUBEC Board based on guidance from the State Attorney General that it is in the authority of the Board to do so.

Sample Program: Pennsylvania's Industrialized Buildings Program

Pennsylvania runs a centralized, state-level certification system for factory-built housing and, more recently, non-residential buildings. It is one of the longer-running and more complete programs of its kind. While the state has not adopted the ICC/MBI Standards, the program rules largely mirror the requirements contained in the standards.

Legal basis. The program is established under the Industrialized Housing Act (Act 70 of 1972) and is administered by the Department of Community and Economic Development (DCED), with regulations at 12 Pa. Code Chapter 145. Its purpose is to establish uniform state standards and procedures for identifying and certifying industrialized buildings and components for use in Pennsylvania communities.

Core mechanism. Buildings and components must be manufactured from approved plans and specifications under a compliance assurance program. DCED issues each approved manufacturer a Notice of Approval, which signifies approval of the manufacturer's building systems documentation and compliance assurance program and authorizes it to attach insignias of certification. A DCED approved third-party agency reviews regulated projects, and local jurisdictions typically ask for a copy of the manufacturer's current Notice of Approval.

Commercial expansion. A 2009 amendment extended the Act to commercial modular buildings. Regulations took effect February 22, 2023, and treat commercial modular buildings the same as industrialized housing. DCED states that all industrialized commercial buildings and components must be certified under the program to be placed in Pennsylvania.

Code currency. DCED adopted the 2021 I-Codes effective June 1, 2026.

Exclusions. The Act does not cover institutional buildings, HUD-code manufactured homes, residential buildings of 400 sq. ft. or less (unless DCED approves otherwise), or relocated structures not originally installed under the Act and lacking the insignia.

Licensure Requirements

Requirements for licensure of in-factory trades follow three general patterns: trades are not licensed at the state level and therefore not in the factory, exemptions are in place based on the existing robust quality assurance processes in the factory, or trades or supervisors must be licensed. In most cases state licensure requirements only apply to work conducted within the state, so licensure requirements in the factory only apply to factories

within the state, not to homes that are imported from other states. Oregon reaches out of state via a tri-state agreement with Idaho and Washington and Montana's Attorney General has determined that plumbing requirements are based on final unit location rather than factory location. In Maine, licensure is currently required for multi-family and commercial off-site projects manufactured both in-state and out-of-state.

For site-built construction, ongoing governmental oversight of the construction process is not possible, so a combination of periodic inspections and licensure of trades help bring confidence to the project's compliance with code requirements. For off-site construction, a continuous quality assurance process is in place coupled with third-party or state inspections at pre-defined intervals, serving as the compliance verification. The robust in-factory quality assurance process is intended to replace the need for licensed trades while allowing workers to be used more efficiently in the manufacturing process.[18]

In determining whether licensure requirements should be extended into the factory, the state should consider the impact on the potential delivery of housing units to the state. Currently, the vast majority of off-site constructed units are coming from factories outside the state. Requiring Maine licensed trades in factories outside the state would severely limit the number of factories willing to deliver to the state. The number of Maine licensed tradespeople outside the state is likely small, so factories would either need to attract workers from Maine to their factory or support licensure of their existing labor (which again is not set up in traditional labor categories). The level of effort and expense to employ and track Maine licensed trades is likely greater than the potential upside of delivering units to Maine—particularly when neighboring states do not have similar requirements.

Maine's Manufactured Housing Program rules already require that all workmanship in the factory be up to the standards of journeyman (not necessarily performed by journeyman, but resulting in the same level of workmanship as a journeyman would deliver) which puts requirements on the manufacturer and third-party approval agency to ensure they are met. The combination of an ongoing quality assurance process, monitoring by state-approved third-party agencies, and ultimate oversight by the state for both the manufacturer and the third-party provides the structure needed to assure the quality of in-factory work.

No Statewide Licensure

Twelve states do not have statewide licensure requirements and thus do not apply requirements in the factory. These states are Arizona, California, Florida, Indiana,

[18] Factories often manufacture through the use of stations that are defined by the sequence of the manufacturing process rather than by individual trades. Workers perform tasks at their station (which may be a combination of tasks that would cut across traditional trades).

Mississippi, Missouri, Nevada, New York, Ohio, Pennsylvania, South Carolina, and Tennessee.

Statutory Exemptions

Additional states have statutory exemptions for plumbers, electricians or both based on the existence of a robust quality assurance process in the factory. Connecticut, Iowa, North Dakota, and Georgia exempt both plumbing and electrical licensing in the factory. Texas, Wisconsin, New Hampshire, New Jersey, Nebraska, and Minnesota apply manufacturer exemptions for electrical work. Plumbing is exempted in Colorado. Nebraska does not have state-level plumbing licensure. Idaho exempts factories building for out-of-state only. Rhode Island's manufacturing exemption expressly excludes wiring (thus essentially requiring licensed electricians in the factory).

Currently in Maine, modular projects that fall under the statewide program (namely 1- and 2-family dwellings and townhouses) are exempt from in-factory licensing requirements. With the lack of similar coverage for commercial and multifamily projects, Maine requires licensed trades within these factories. If Maine extends the statewide program to include larger projects, the associated quality assurance procedures would mitigate the need for in-factory licensure of trades.

Licensed In-Factory Trades or Supervisors

Twelve states require both electrical and plumbing work in the factory be conducted by licensed tradespeople. This applies only to factories within the state. New Jersey requires plumbing be conducted under a licensed supervisor, but individual workers do not need to be licensed.

Standardization

Recognizing the diversity of regulatory approaches for off-site construction and the impact such variations have on the efficiency of factories, ICC, with the Modular Building Institute (MBI), undertook the development of standards to support greater consistency. The ICC/MBI 1200 suite of standards are American National Standards developed through a consensus-based process. The standards capture best practices from state programs across the U.S. and internationally.

The standards are:

- ICC/MBI Standard 1200-2021: Standard for Off-Site Construction: Planning, Design, Fabrication, and Assembly. Standard 1200 provides requirements for designers, manufacturers, transporters and assemblers to assure that off-site construction

components are produced under a quality assurance/quality control process and that they can demonstrate compliance with building code requirements.

- ICC/MBI Standard 1205-2021: Standard for Off-Site Construction: Inspection and Regulatory Compliance. Standard 1205 addresses the compliance verification process including permitting, in-plant and on-site final inspections, third party inspections, the role of Industrialized Building Departments, state modular programs and the AHJ.
- ICC/MBI Standard 1210-2023: Standard for Mechanical, Electrical, Plumbing Systems, Energy Efficiency and Water Conservation in Off-site Construction. Standard 1210 covers specific requirements for mechanical, electrical and plumbing (MEP) systems within off-site constructed elements including preparing such systems for transportation and on-site assembly.

Standards 1200 and 1205 cover the core components of a statewide off-site construction program, similar to the requirements under MOCA Rules 08-004 Chapter 1. The standards are largely consistent with existing Maine requirements but provide greater specificity on the requirements of third-party agencies. As with all codes or standards adoptions, the State may adapt the requirements to meet their own priorities or practices.

As of September 2026, eight states and the U.S. Department of Defense have adopted one or more of the standards. The standards are most effective when adopted at a regional level, providing a common process for factories serving the region. Without the consistency provided by the standards, manufacturers need to adjust their quality assurance processes based on the state specific requirements for where the unit is going. Adoption of the standards also provides a common basis for reciprocity. If states have adopted the same standards the evaluation of equivalency becomes less burdensome.

In the Northeast, the standards are currently adopted in Virginia (1200 and 1205), Rhode Island (1200, 1205 and 1210), New Hampshire (1200 and 1205) and Maine (1200).

Recommendations

➢ *Adopt the state building code (MUBEC) for off-site construction*

The state should keep code requirements for site-built and off-site constructed buildings consistent to provide comparable levels of safety to all residents, support code official training and verification, and avoid confusion by manufacturers. This requirement should be set in statute rather than in rulemaking to assure there is no gap in application and to avoid the need for a new rulemaking with each code update. A modular manufacturer representative should be added to the MUBEC Board to assure specific modular considerations are addressed.

- *Expand the off-site construction program to include commercial buildings (including multifamily buildings)*

Expand the state's off-site construction program to include commercial buildings allowing the capture of multi-family buildings which is important to housing affordability and brings consistency and clarity for other commercial buildings for manufacturers and code officials. This report recommends expanding existing authority rather than establishing a new program to allow consistency, efficiency in rulemakings and execution. This would require expanding the scope of the existing program beyond housing, causing the existing name to no longer be accurate. Changing the name of the program to be broader would have the added benefit of eliminating confusion on the coverage of the program beyond manufactured housing that complies with the HUD code. Potential options include industrialized buildings or pre-fabricated buildings program.

- *Expand the program to include sub-assemblies (panels and pods)*

Expand the types of off-site construction under the state program to include all elements of closed construction including assemblies and sub-assemblies (including panels and pods) to enhance opportunities for additional approaches to housing, reduce confusion for manufacturers and code officials, and apply requirements consistently based on construction process.

- *Adopt ICC/MBI Standard 1205 to support enforceability of the previously adopted ICC/MBI Standard 1200 and for regional consistency and capture of best practices*

In line with neighboring states including New Hampshire and Rhode Island, Maine should adopt the suite of ICC/MBI Standards for off-site construction. This provides multiple benefits including enhancing efficiency for both in-state and out-of-state manufacturers, ability to leverage pre-existing training resources, capture of national best practices, and a recognized basis for any ongoing updates to program rules.

- *Extend the in-factory licensure exemption to multifamily and commercial projects based on results provided by existing quality assurance requirements*

By its nature as a manufacturing process, off-site construction staffing does not follow traditional delineation of trades. The manufacturing process and existing state program rules establish robust quality assurance processes that set requirements for the quality of work, code compliance, and methods for monitoring continued achievement of that quality and compliance. Given the existing quality assurance processes in the factory, requiring licensed trades is unlikely to produce additional benefit, but risks limiting the factories willing to develop and deliver off-site fabricated units to the state.

Conclusion

Maine has a timely opportunity to modernize its building code and off-site construction framework in ways that support safety, predictability, and housing delivery. Aligning code updates on a regular cycle, clarifying governance, and establishing a defined cost-benefit approach that matches available resources would reduce conflicts and improve implementation. At the same time, for the off-site construction program, applying MUBEC as its code requirements, expanding the program's scope, adopting the full ICC/MBI standards suite, and improving reciprocity and pre-approval pathways could make Maine more accessible to manufacturers and innovative construction methods. Taken together, these actions would create a more coordinated, current, and efficient regulatory system while preserving appropriate state and local oversight.

Appendix A: Cost-Benefit Analysis Approaches Table

Jurisdiction / model	Classification	Scope and requirement	Analysis approach	Who performs / pays	Update requirement / analysis timing effect
California	Substantive economic gate for energy code; procedural gate for non-energy building standards	Title 24 energy standards are updated every three years. Non-energy building standards also proceed through the California Building Standards Commission and must satisfy the statutory approval criteria applicable to all building standards.	Energy measures must be cost-effective over the economic life of the building, with a benefit-cost ratio of at least 1.0 based on lifecycle energy value compared with incremental cost. Non-energy code changes are reviewed against broader CBSC criteria, including need, authority, clarity, consistency, and reasonableness of cost, but without a numeric cost-effectiveness pass/fail threshold.	California Energy Commission staff run the rulemaking and set metrics; utility-funded CASE teams perform much of the measure-level analysis.	Three-year update requirement plus high analytic rigor. California keeps pace because the state and utility-funded CASE process provide recurring capacity; non-energy CBSC review is a lower-burden procedural overlay.
Michigan	Substantive economic gate	Michigan construction codes; energy code is the main cost-effectiveness issue. Statute generally aligns updates with the model-code cycle, except for the IRC.	The director must find energy updates cost-effective, considering benefits and costs over a seven-year period and affordability guardrails.	LARA Bureau of Construction Codes relies heavily on DOE/PNNL reports; stakeholders often submit competing analyses.	Required update cycle plus substantive gate. Low direct state analysis cost is offset by high dispute risk; without clear methodology and capacity, the gate can become the source of delay.
IECC development	Substantive economic gate	IECC development beginning with the 2030 edition; three-year model-code cycle.	Code change proposals must include cost impact information. Base requirements use defined payback periods by building type; stretch provisions use a longer payback period.	Analysis burden falls primarily on code change proponents, with potential DOE/PNNL support.	Medium effort. Because analysis is required up front during development, it is less likely to delay state adoption timelines.
North Carolina	Procedural economic gate	State Building Code; residential code on a six-year comprehensive revision cycle. Fiscal-note triggers include substantial economic impact and residential cost increases.	Fiscal note is required when thresholds are triggered. Final action is delayed until after the fiscal note process, but there is no numeric pass/fail cost-effectiveness test.	Office of State Budget and Management prepares or approves fiscal notes; code councils may use internal resources or contractors.	Conditional, medium effort when triggered. Cost control is achieved partly through the longer six-year cadence.

Pennsylvania	Procedural economic gate	Uniform Construction Code. Review must begin within 21 months after publication of new I-Codes.	Each new or changed provision is reviewed for health, safety and welfare impact, economic and financial impact, and technical feasibility. Adoption depends on Review and Advisory Council procedures and vote thresholds.	Review and Advisory Council, technical advisory committees, Department of Labor and Industry staff, and IRRC review; substantial stakeholder time.	Low analytic effort but high process effort. The default adoption rule and vote threshold are more important than the analysis methodology.
Washington	Procedural economic gate	All state codes, including building, residential, fire, mechanical, plumbing, and energy. State reviews new codes every three years.	Preliminary and final cost-benefit analyses are prepared for significant rules. Energy provisions also must satisfy technical feasibility, commercial availability, and lowest overall cost considerations consistent with statutory energy goals.	State Building Code Council with contractor and PNNL support; state funds contracted analysis.	Three-year review requirement plus recurring procedural analysis. Washington meets the cycle by funding contractor and technical support sufficient to clear the analysis requirement each cycle.
Florida	Informative disclosure	Florida Building Code and local amendments; three-year update cycle.	Every proposed amendment must include a fiscal impact statement documenting costs and benefits. The statement cannot be used as the basis for challenging an amendment.	Amendment proponents prepare and pay for the fiscal impact statement; commission staff check sufficiency and advisory committees review substance.	Low effort per amendment but high aggregate throughput. Because analysis is non-challengeable, it does not slow the cycle.
Rhode Island	Informative disclosure	Full I-Code family, NEC, and fire codes. Energy code adoption is subject to a statutory timing requirement.	Code adoptions are APA rulemakings requiring regulatory and cost-benefit analysis. Benefits are often treated qualitatively; no numeric pass/fail threshold applies.	Building code agencies prepare the analysis, sometimes with consultant support; Office of Regulatory Reform reviews.	Medium effort, usually once per cycle. Analysis supports disclosure and justification rather than blocking adoption.
Oregon	Informative disclosure	Oregon specialty codes, energy provisions, and optional reach code. No fixed statutory update clock.	Energy proposals must include cost analysis on division-approved forms using uniform statewide assumptions. Economic practicability can be considered, but there is no numeric pass/fail test.	Proposal proponents prepare analyses; Building Codes Division standardizes assumptions and advisory boards review.	Low-to-medium effort. Pre-set assumptions reduce disputes, but timing depends on agency priorities because there is no update requirement.
I-Codes development, non-energy	Informative disclosure	All I-Codes except the IECC; three-year model-code cycle.	Every code change proposal must include a cost impact statement unless it is editorial or clarifying. No numeric pass/fail threshold applies.	Code change proponents bear the cost; ICC staff check completeness and	Low per proposal but high aggregate volume. Requiring analysis during

				committees consider substance during the development process.	development avoids delaying later adoption.
Texas	Technical stringency gate	State energy code only; other building codes are primarily local. No fixed update requirement.	No economic cost-benefit analysis is required. A newer energy code may be adopted only if written findings show equivalent or better energy efficiency and air quality.	Energy Systems Laboratory at Texas A&M serves as the statutory technical analyst; SECO adopts.	Low-to-medium, bounded workload. The technical referee model controls analysis cost but does not by itself drive cadence.
Federal benchmark: DOE/PNNL	Other benchmark	National model-code baseline analyses for IECC and ASHRAE 90.1; DOE determinations occur after model-code publication.	Lifecycle cost is the primary metric, typically using a 30-year analysis period for residential and commercial analyses. Simple payback is reported but is not the decision metric.	PNNL performs analysis for DOE. States often rely on these reports at no direct cost.	High federal analytic effort. Useful to states with limited analytic budgets, though availability and timing depend on federal priorities.
Federal review: FEMA	Other benchmark	Building code, residential code, WUI code;	Cost benefit analysis required for project submissions, default values/waivers for some projects; HAZUS-based comparison for national/state analysis.	Project analysis conducted by project proposer; FEMA and contractor conducted national/state analysis	Project analysis medium effort depending on extent of project, can use default or waived values. National/state analysis high federal analytic analysis.
Generic state APA overlay	Background requirement	Applies to codes adopted by rule in many states.	Fiscal or economic impact statements may be required for significant rules, but these are usually informative rather than substantive pass/fail tests.	Adopting agency staff prepare documentation, often with review by a central budget or regulatory-review office.	Low effort. Even states without code-specific cost-benefit statutes often prepare some economic documentation through general rulemaking requirements.

Appendix B: State Off-Site Construction Programs Table

State	State Program	Residential / Commercial	Closed Panels	Pods	Plan Review	Inspection	ICC/MBI Stds. Adopted	Code Requirements	In-Factory Licensure	Notes
Alabama	Yes	Both	Yes	Yes	State	Third-Party		Same as State, 2021 I-Codes	No – applies to contracting, not manufacturing	Alabama Manufactured Housing Commission Administrative Code, Chapter 535-X-11: Regulations for Manufactured Buildings
Alaska	No									
Arizona	Yes	Both	Commercial only		State	Third-Party		Adopts codes, state is home rule, 2018 I-Codes	No – no statewide journeyman or master trade licensing	Arizona Administrative Code, 4 AAC 34
Arkansas	No									
California	Yes	Both	Yes	Yes	Third-Party	Third-Party		Same as state (25 CCR 4049.50), homegrown code	No – no state journeyman licensing	California Code of Regulations 25-1-3
Colorado	Yes	Both	Yes	Yes	State	Third-Party	1200, 1205, 1210, G6	Adopts code (pending regional options), state is home rule, 2024 I-Codes	Partial – plumbing exempt, electrical not exempt	8 CCR 1302-14
Connecticut	Yes	Both	Yes	Yes	Third-Party	Third-Party		Same as state, 2021 I-Codes	No – general manufacturing exemption	CT State Building Code, Sec 111.7, R110.7
Delaware	No									

Florida	Yes	Both	Yes	Yes	Third-Party	Third-Party		Same as state, 2024 I-Codes	No – applies to contracting, not manufacturing	Florida Statutes XXXIII-553.355
Georgia	Yes	Both	Yes	Yes	Third-Party*	Third-Party		Same as state, 2024 I-Codes, 2015 IECC	No – exempt (manufacturer-employee exemption on employer premises)	GCRR 110-2
Hawaii	No									
Idaho	Yes	Both	Yes	Yes	State	Third-Party		Same as state, 2018 I-Codes	Yes – licensed trades required for in-state factories delivering in ID	Idaho Statutes 39:43
Illinois	Yes	Residential including multi-family	Residential Only	Residential Only	Third-Party	Third-Party		No state code, but modular code statewide, 2018 I-Codes	Partial – licensed plumbers for in-state factories, no state electrical licensure	Illinois Administrative Code 77-1-q-880
Indiana	Yes	Both	Yes	Yes	State	Third-Party		Same as state, 2012 I-Codes, 2018 IECC	No – no statewide journeyman or master trade licensing	Indiana Administrative Code 675 IAC 15
Iowa	Yes	Both	Yes	Yes	Third-Party*	Third-Party		Same as state, 2024 I-Codes, 2012 IECC	No – exempt (manufacturer-employee exemption)	Iowa Administrative Rule 481-321.610 (103A)
Kansas	No									
Kentucky	Yes	Both	Yes	Yes	State	Third-Party (except plumbing)		Same as state, 2015 I-Codes, 2012 IECC	Yes - licensed trades required for in-state factories	KAR 815.007.130
Louisiana	Yes	Commercial	Commercial only	Commercial only	State[19]	Third-Party		Same as state, 2021 I-Codes	Partial – licensed plumbers for in-state factories,	Louisiana Revised Statutes 40:1730.56

[19] Statute allows third-party, but does not appear to be done in practice.

									no state electrical licensure	
Maine	Yes	Residential	No	No	Third-Party	Third-Party	1200	2015 IRC for modular housing; 2021 IRC site-built	Partial – for 3+ dwelling units, even outside ME	02 ME Code Rules 385-110-2-10
Maryland	Yes	Both	Yes	Yes	Third-Party*	Third-Party		Same as state, 2021 I-Codes	Yes - licensed trades required for in-state factories	COMAR 09.12.52
Massachusetts	Yes	Both	Yes	Yes	Third-Party*	Third-Party		Same as state, 2021 I-Codes	No – not required in plant	780 CMR Chapter 110.R3
Michigan	Yes	Both	Yes	Yes	State	Third-Party (outside MI)		Same as state, 2021 I-Codes, 2015 IRC	Yes - licensed trades required for in-state factories	1972 PA 230, Section 19 (MCL 125.1519)
Minnesota	Yes	Both	Yes	Yes	Third-Party (outside MN)	Third-Party (outside MN)		Same as state, 2018 I-Codes	Partial – electrical licensure required, plumbing exempt	Member of the IIBC, Minnesota Rules Chapter 1360.1200
Mississippi	Yes	Residential	Residential Only	Residential Only	Third-Party	Third-Party		Same as state, 2018 I-Codes	No – no statewide journeyman or master trade licensing	Mississippi Code 75-49-1; 19 Miss. Admin Code, Part 7, Chapter 5
Missouri	Yes	Both	No	No	Third-Party*	Third-Party		Public Service Commission adopts independently, 2021 I-Codes	No – no statewide journeyman/master trade licensing	Chapter 700.010-700.692 Revised Statutes of Missouri
Montana	Yes	Both	Yes	Yes	State	Third-Party	1200, 1205	Same as state, 2021 I-Codes	Yes – plumbing tied to unit placement, may apply outside state (AG opinion), electrical license required	MCA Title 50, Chapter 60, Part 4; ARM 24.301.1201

Nebraska	Yes	Residential	No	No	Third-Party	Third-Party		Adopted separately by PSC, currently 2015 I-Codes while state is on 2018 I-Codes	No – exempt for electrical, no state plumbing licensure	Title 291, Chapter 13
Nevada	Yes	Both	Yes	Yes	Third-party*	Third-Party		Adopts independently, on 2012 I-Codes while state is on 2024 I-Codes	No – contractor-level licensing only	NRS 461.170, NAC 461
New Hampshire	Yes	Both	Yes	Yes	Third-Party	Third-Party	1200, 1205	Same as state, 2021 I-Codes, 2018 IECC	Partial – electrical exempt, plumbing not exempt	RSA 205-C
New Jersey	Yes	Both	Yes	Yes	Third-Party	Third-Party		Same as state, 2021 I-Codes, 2024 IRC	Partial – electrical exempt, plumbing under master supervision	Member of the IIBC; NJAC 5:23-4A
New Mexico	Yes	Both	Yes	Yes	State	Third-Party		Same as state, 2021 I-Codes	Yes - licensed trades required for in-state factories	NMAC 14.6.7
New York	Yes	Both	Yes	Yes	State Commercial, Third-party residential	Third-Party		Same as state, 2024 I-Codes	No – no statewide journeyman or master trade licensing	19 NYCRR Part 1209
North Carolina	Yes	Both	Yes	Yes	Third-Party	Third-Party		Same as state, but state sets additional modular appearance minimums, 2015 I-Codes	No – state licenses contractors, not individuals	NC State Building Code, Volume VIII – Modular Construction Regulations

								(update to 2021 I-Codes pending legislative action)		
North Dakota	Yes	Both	Yes	Yes	Third-Party	Third-Party		Same as state (although local amendments also apply), 2021 I-Codes	Yes - licensed trades required for in-state factories	Member of the IIBC; NDCC Chapter 54-21.3-03(7)
Ohio	Yes	Both	Yes, Exempts closed structural panels without building services and insulated spandrel panels	Yes	State	Third-Party	1205 (partial)	Same as state, 2021 I-Codes, 2018 IRC	No – state licenses contractors, not individuals	Industrialized Unit Rules, Administrative Code 4101:10-1-01
Oklahoma	No									
Oregon	Yes	Both	Yes	Yes	State	State		Same as state, 2024 I-Codes, 2021 IRC	Yes - licensed trades required for in-state factories delivering in OR and ID, WA factories	ORS 455.705; OAR 918.674
Pennsylvania	Yes	Both	Yes	Yes	Third-Party	Third-Party		Same as state, 2021 I-Codes	No – no statewide journeyman/master trade licensing	PA P.L. 286, No. 70
Rhode Island	Yes	Both	Yes	Yes	Third-Party*	Third-Party	1200, 1205, 1210	Same as state, 2024 I-Codes, 2021 IECC	Yes - licensed trades required for in-state factories, manufacturing exemption does not apply to wiring	R.I. Gen. Laws 23-27.3-101.0

South Carolina	Yes	Both	Yes	Yes	Third-Party*	Third-Party		Same as state, 2021 I-Codes, 2009 IECC	No – contractor-level licensing only	S.C. Code Regs. 8-604
South Dakota	No									
Tennessee	Yes	Both	Yes	Yes	Third-Party*	Third-Party		Same as state, 2021 I-Codes, 2018 IRC	No – contractor-level licensing only	TN Code Annotated 68-126-301; TN Modular Building Rules Chapter 0780-2-13
Texas	Yes	Both	Yes	Yes	Third-Party	Third-Party		Program adopts newer codes (2021 I-Codes) than state (2012 I-Codes) although many municipalities are above state baseline	Partial - electrical exempt, plumbing not exempt	TAC Chapter 70.100; Texas Local Government Code 214.212
Utah	Yes	Both	Yes	Yes	Third-Party	Third-Party	1200, 1205	Same as state, 2024 I-Codes, 2021 IRC & IECC	Yes - licensed trades required for in-state factories	Utah Code 15A-1-3
Vermont	No									
Virginia	Yes	Both	Yes	Yes	Third-Party	Third-Party	1200, 1205	Same as state, 2021 I-Codes	Yes - licensed trades required for in-state factories	13VAC5-91-260
Washington	Yes	Both	Yes	Yes	Third-Party	State		Same as state, 2021 I-Codes	Yes - licensed trades required for in-state factories	WAC 296-150F-0600
West Virginia	No									
Wisconsin	Yes	Both	Both	Both	Third-Party residential, State for commercial	Third-Party		Same as state, 2021 I-Codes, homegrown residential	Partial - electrical exempt, plumbing not exempt	Reciprocity with Minnesota allowing industrialized/modular buildings manufactured in Minnesota with IIBC certification labels to be sited in Wisconsin. WAC SPS 320-V
Wyoming	No									

* Note: State approval required on third-party reviewed plans