



November 28, 2023

Chairs Pierce and Gere, and Honorable Members of the Joint Select Committee on Housing;

My name is Tyler Norod. I am the Real Estate Development Director at Westbrook Development Corporation (WDC), the development arm of the Westbrook Housing Authority. Thank you for allowing me to discuss the pressing need for increased resources in the Elevator & Tramway Safety Program, a crucial component of housing development in Maine.

First, I would like to commend the committee for its ongoing efforts to address Maine's housing crisis. While major policy changes are vital, there are also smaller, achievable improvements that can help streamline housing creation. One such improvement is expanding the number of elevator inspectors in our state.

It is important to acknowledge the dedication and professionalism of Maine's current elevator inspectors. My testimony is not a critique of their hard work or professionalism. My interactions with individual inspectors has been nothing short of great. Instead, my goal is to shed light on the challenges our inspectors face due to being stretched thin. This situation creates uncertainty for contractors and housing developers regarding inspection scheduling, impacting the critical construction process needed for a certificate of occupancy.

Elevator inspections play a pivotal role in the construction timeline, often occurring at the very end of the process. However, development is most efficient when paired with predictability. Uncertainty and delays at this late stage in construction can result in significant financial consequences, such as substantial additional construction interest or late delivery penalties from low-income housing tax credit investors. Additionally, unnecessary delays hinder the timely turnover of homes for those in need.

To address this issue, I would ask the Committee to consider supporting a small, predictable fee—perhaps 1% of the elevator installation cost—to fund additional inspector staffing. This nominal amount would be manageable for development budgets without imposing additional burdens on Maine's taxpayers. Typically, the cost of installing an elevator in a 3-4 story residential apartment building ranges from \$150,000 to \$200,000. This proposed fee structure, proportional to project size and adjusting with

inflation, offers developers a manageable expense for quicker inspections. It also helps avoid unexpected carrying costs caused by delays, making the modest use of public funds a worthwhile investment in predictability and risk reduction.

In conclusion, I appreciate the hard work of our current elevator inspectors and advocate for additional resources to support their efforts. These adjustments will contribute to the realization of our state's housing production goals, ensuring the efficient, cost-effective, and timely creation of much-needed housing.

Thank you for your time and consideration.

Sincerely,

A handwritten signature in cursive script that reads "Tyler Norod".

Tyler Norod

Real Estate Development Director

Westbrook Development Corporation

ALLIEDCOOK CONSTRUCTION

November 27, 2023

Honorable Members of the Joint Select Committee on Housing;

Thank you for allowing me here today. My name is Matthew Cook. I am the president of AlliedCook Construction in Scarborough. We are a 65 year old commercial building contractor that constructs many types of projects including multi-family housing apartments. Our company has built hundreds of housing units in Maine. I am here today to offer my view on the process for getting elevators inspected in the normal course of construction projects – both new and renovations.

First off, it's important for me to state that with this testimony, I am not offering a critique of the good, hardworking people who are part of the Elevator & Tramway Safety Program. In the more that 25 year span of my career in construction, every one of my company's interactions with the people in the elevator inspector's office have been, professional, cordial, and productive.

As the construction industry in Maine has become increasingly busy, being able to provide accurate and reliable project schedules to building owners and housing developers has become more critical. As housing projects near completion, the people who will move into the new apartments begin to rely on our communicated project schedules to make significant life plans. They line up their movers, schedule time off from work, and make the numerous other plans required to move into a new home. Our schedule information has to be correct. Many factors contribute to the successful, on time completion of projects. One such factor is completion of the various inspections required for issuance of the Certificate of Occupancy (C of O) at the end of the project. For most multi-story buildings the C of O cannot be obtained without a certified elevator ready for use.

The current process for getting an elevator inspected in the State of Maine is that these inspections cannot be scheduled until the work is complete. Then upon request of inspection, a date is set, and the inspection occurs. The challenge we have as the contractor is that we do not know ahead of time if the inspection will occur two weeks or six weeks after the request has been made. As such, we cannot reliably provide accurate end of project scheduling for our clients or their tenants to plan around.

While we're here talking specifically about housing, it's worth noting that this inspection process impacts all construction types that include elevators. It is my belief and observation that a bottleneck in this process exists due to the limited number of inspectors available at the State level. It is my recommendation that additional resources be allocated to the Elevator and Tramway Safety Program as a means to reduce the uncertainty around scheduling inspections that exists within the current system.

Sincerely,
Matthew Cook, President



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Backyard ADUs
Build Smart. Build Small.



Agenda

1. Demand for ADUs
2. Our Construction Methodology
3. Current Barriers



Current ADU Demand



ADU interest based on Search data

Interest over time ⓘ



Interest CA started in 2019



New England is about 2.5 years behind





ADU specific searches up exponentially

Related queries 

Rising 



1 adu netflix

Breakout 

2 mortgage calculator

Breakout 

3 adu housing

+650% 

4 adu meaning

+550% 

5 accessory dwelling unit

+170% 

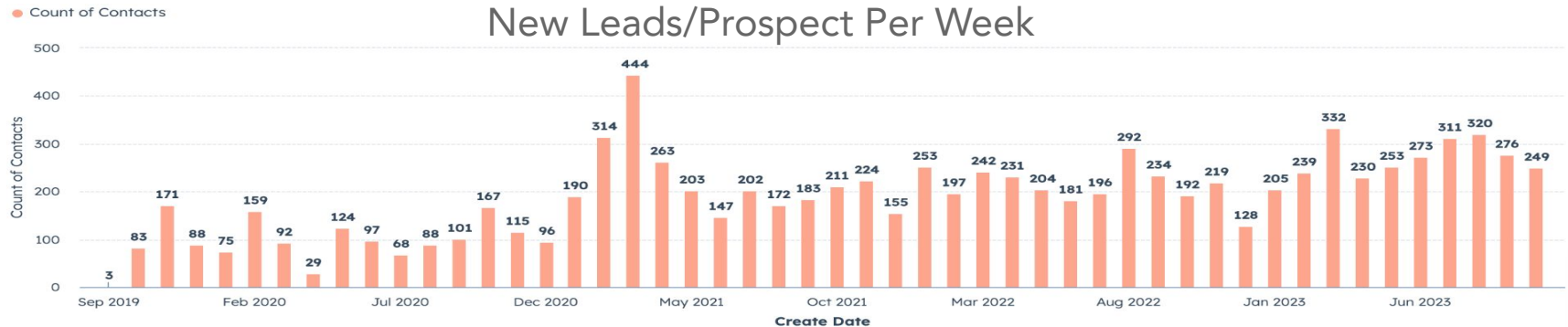


Interest in Backyard matches the regional trend.

● Users



● Count of Contacts

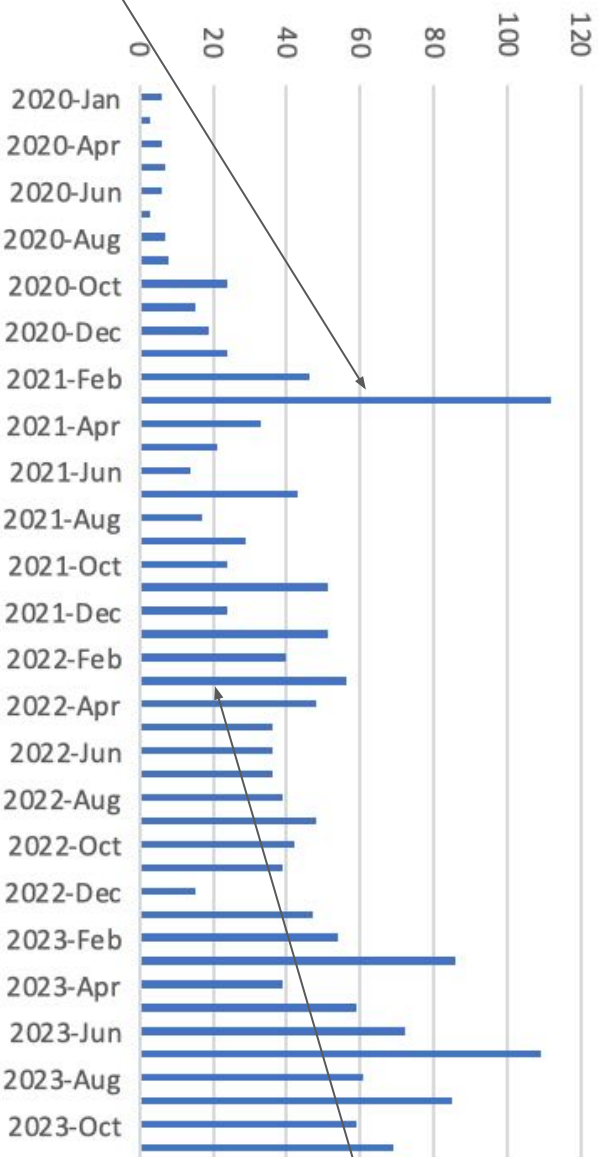




Interest in Maine is Growing.

Growth of Maine Prospects

Portland
ADU Event

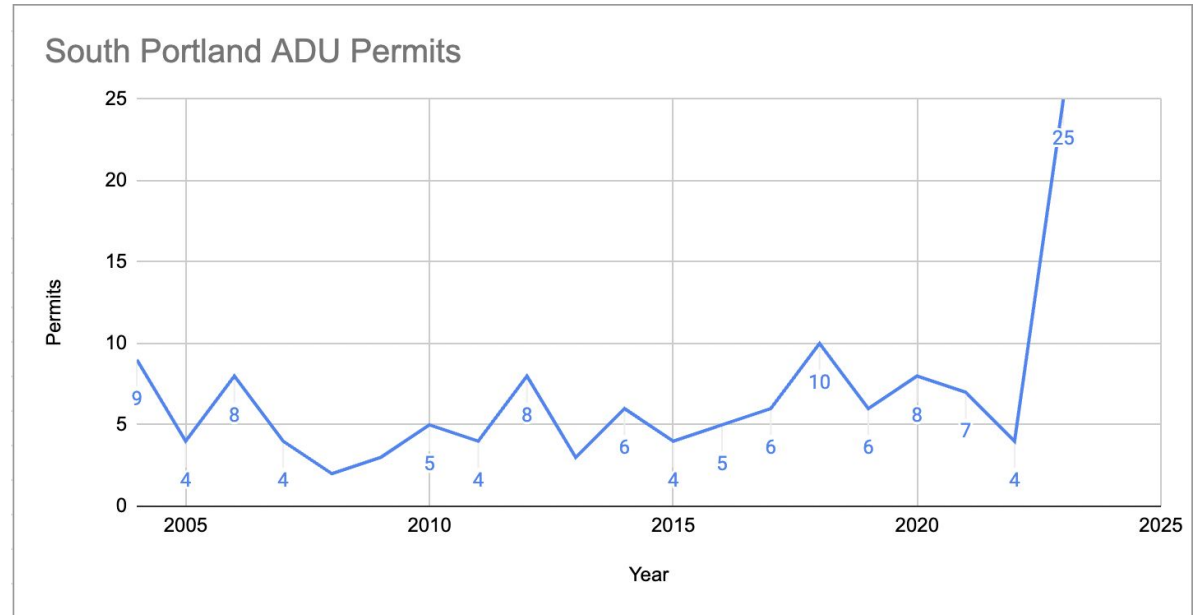


LD-2003



Municipalities that embrace ADUs, will see growth

Cautionary note:
Less than 50% of ADUs permitted in CA get built due to cost and lack of builders.

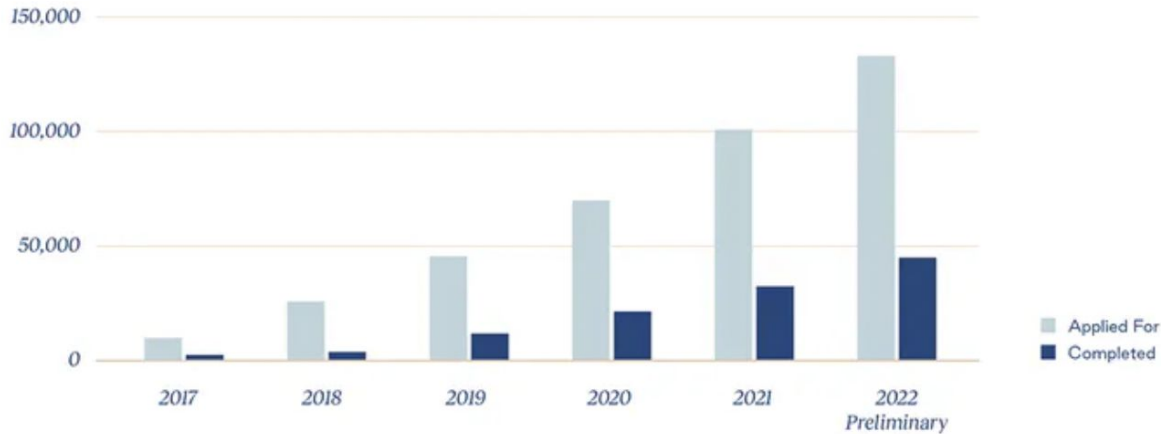




CA is the future (with the right policies)

ADU Permits and Completed ADUs

ALL OF CALIFORNIA, CUMULATIVE

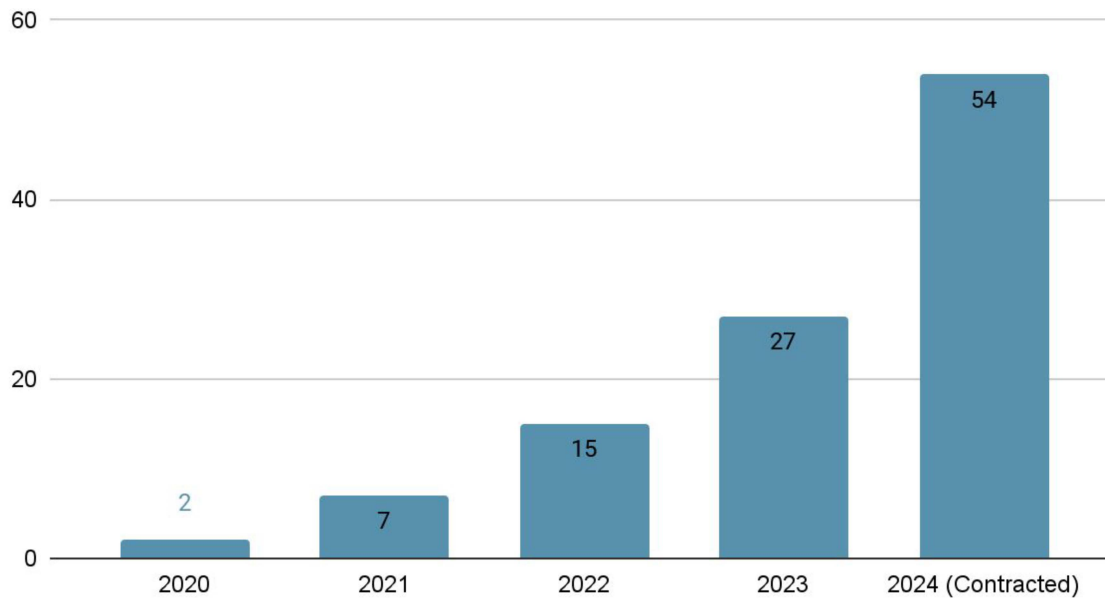


CA:
100,000 permits, for
39,000,000 people in
2021.



BADU's New England Builds

Total Builds By Year





Our Construction Methodology



A House in 10 Active Weeks

(~24w from Contract)

Site work started

Backfill &
Rough
Grade

Occupancy

Foundation
Built

Utilities
Stubbed

Electrical/Plumbing
& HVAC Connected

Interior/Exterior
Finishing

Week

1

2

3

4

5

6

7

8

9

10

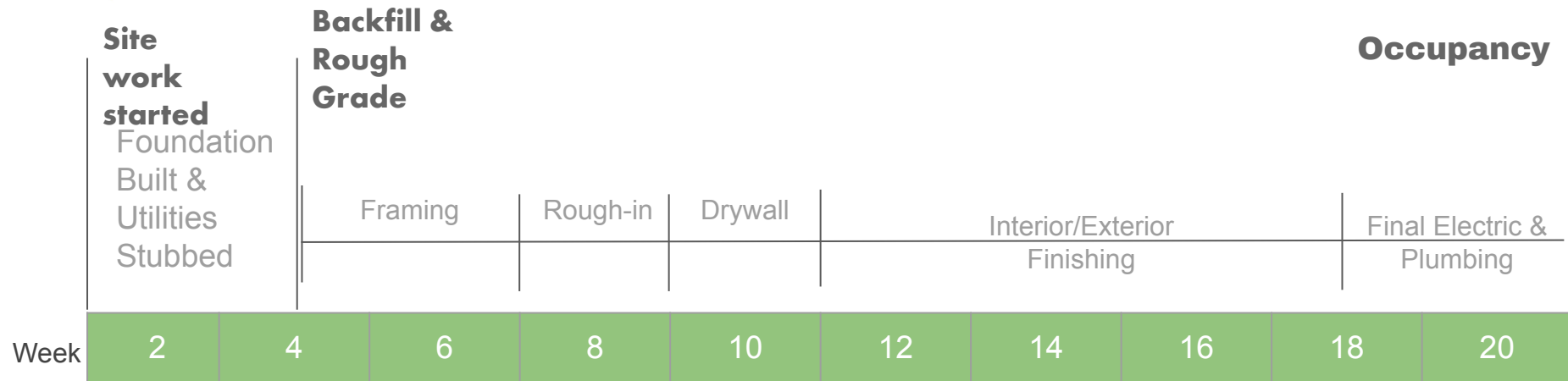
Factory Builds 90%
Complete Home
(4 weeks)

Home installed in ~8 hours

**90% Complete
Home Delivered**



Site Built in 20 Active Weeks



Site-Built requires 200% more on-site inspections which creates additional variables and time
 (In Portland each inspection schedules 1-3 weeks out)

Building on-site is weather dependent, where modular only requires 1 clear day to set and waterproof the shell.



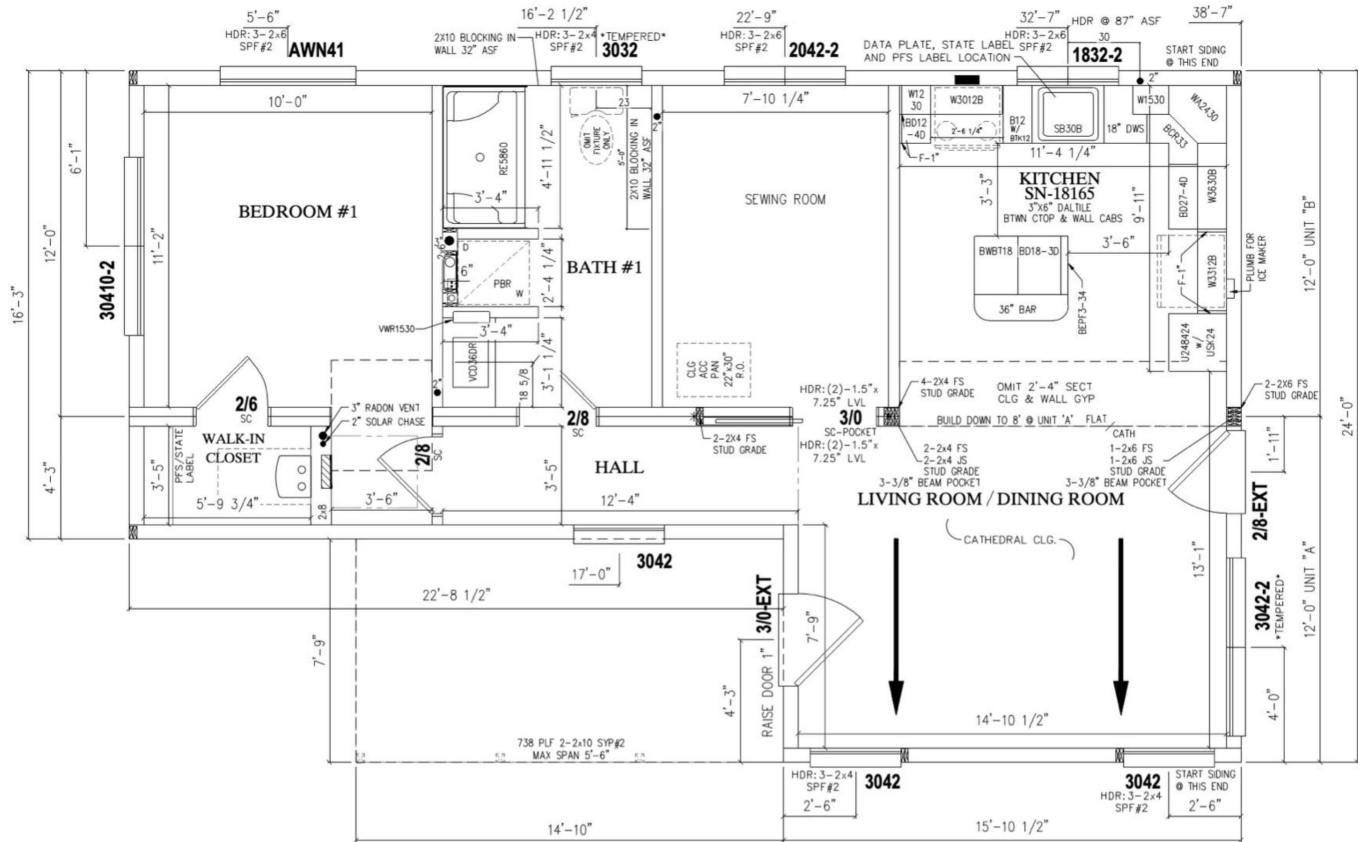
Blending Factory and Field

Building in a factory is not a solution in and of itself.

It is crucial to design dwellings that best utilize the benefits of offsite construction with onsite constraints and client desires.

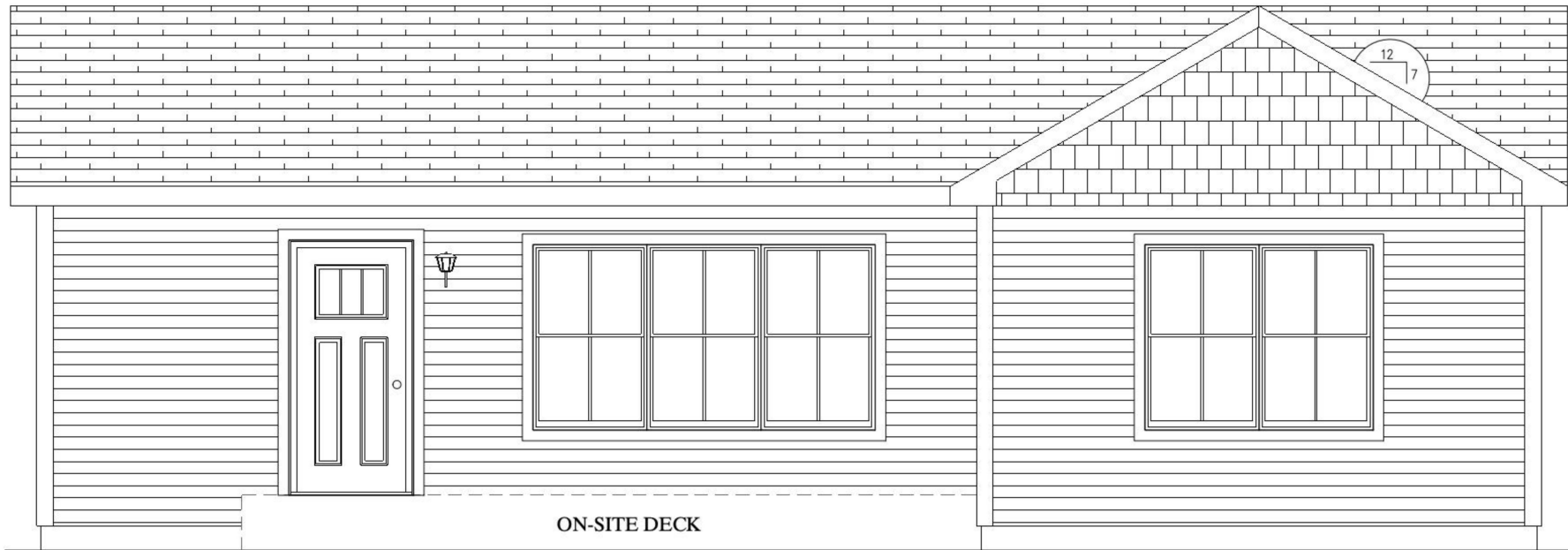
If offsite building does not significantly decrease onsite labor hours it does not make sense.



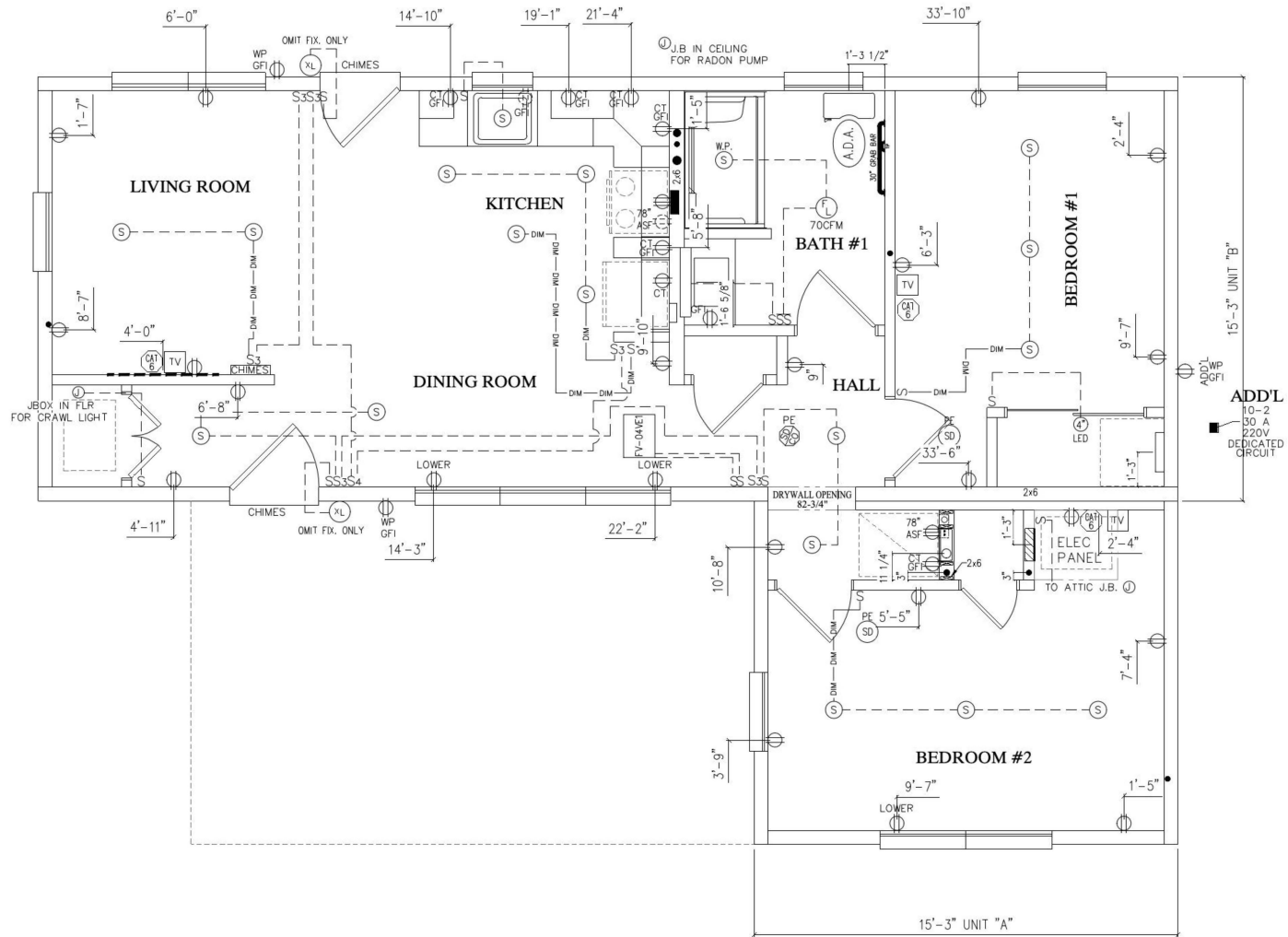


PORCH OVERHANG, TREATED FRAMING W/5/4 TREK DECKING & 4X4 TREATED POSTS SUPPLIED BY MANUFACTURER. RAILINGS FOR PORCH TO BE SUPPLIED AND INSTALLED ON-SITE BY BUILDER.

PORCH POST MUST MEET FOLLOWING REQUIREMENTS LBS. OF UPLIFT FORCE PER POST 952 RESISTANCE TO LBS. OF GRAVITY LOAD PER POST 4059 AND SUPPORT FOR POSTS TO MEET REQUIREMENTS SUPPLIED AND INSTALLED ON-SITE BY OTHERS.

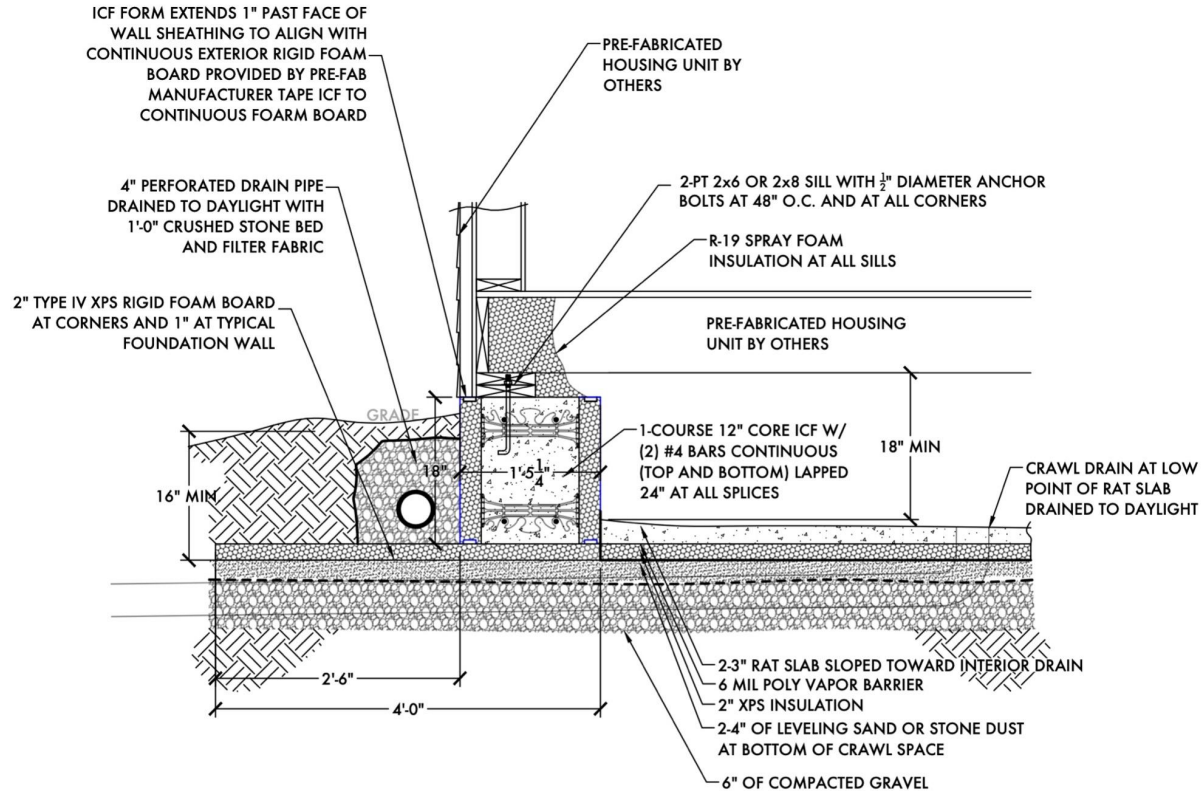


ON-SITE DECK





A Revived, Prescriptive foundation





A Revived, Prescriptive foundation

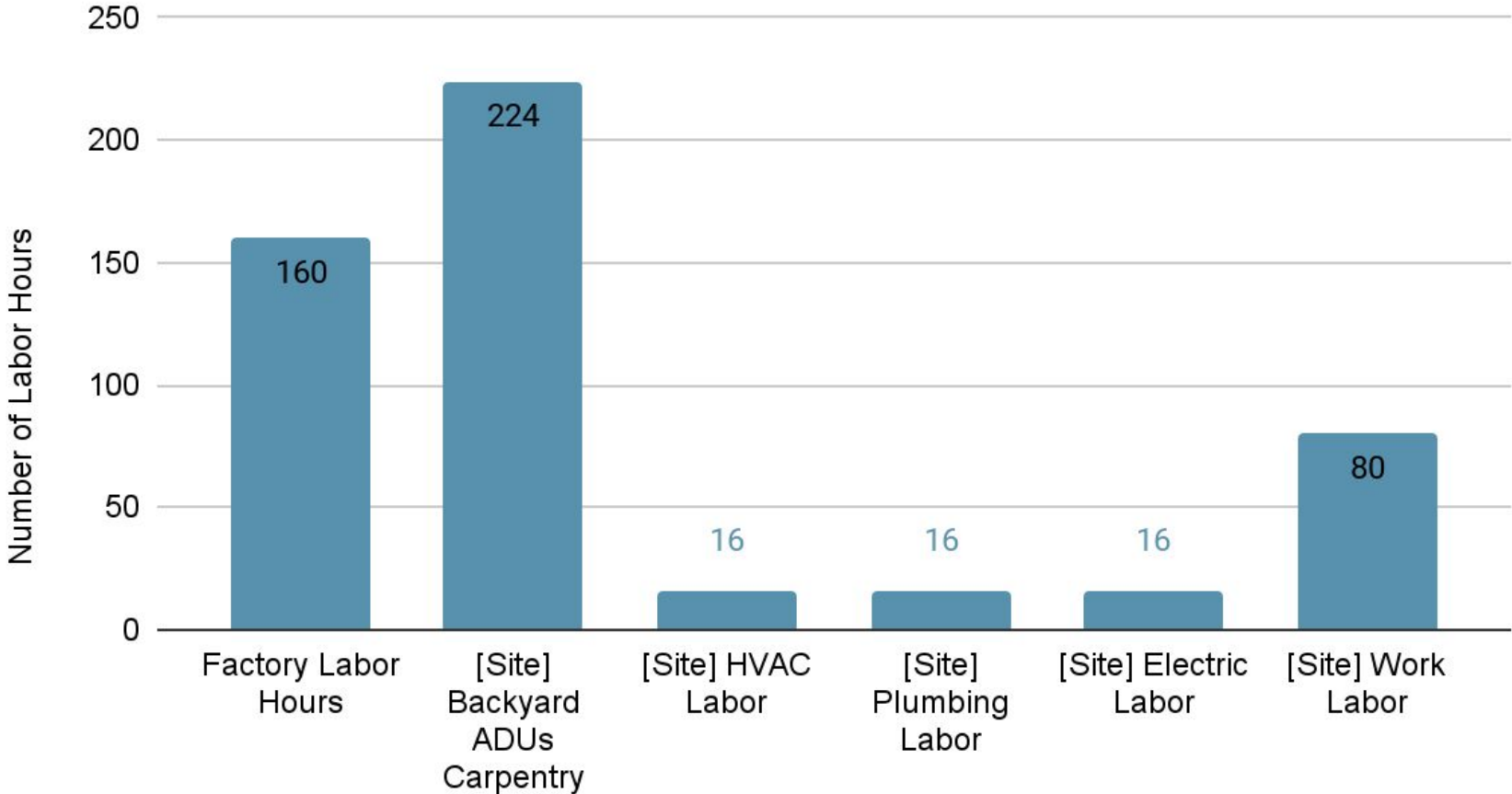
- Saves Foundation Cost
- Saves Concrete
- Saves Excavation Labor time
- Reduces uncertainty (single pour, 2 consecutive days of work)
- Reduces conditioned volume saving Lifetime energy costs



Stick-Built and Modular Have Similar Cost

Costs are comparable between offsite and onsite right now at least in new england, but modular presents an opportunity to better utilize a dwindling construction workforce.

Modular Built ADU Labor Breakdown (512 Hours Total)



Modular ADU Hours (512 Total)

[Site] Work Labor

15.6%

[Site] Electric Labor

3.1%

[Site] Plumbing Labor

3.1%

[Site] HVAC Labor

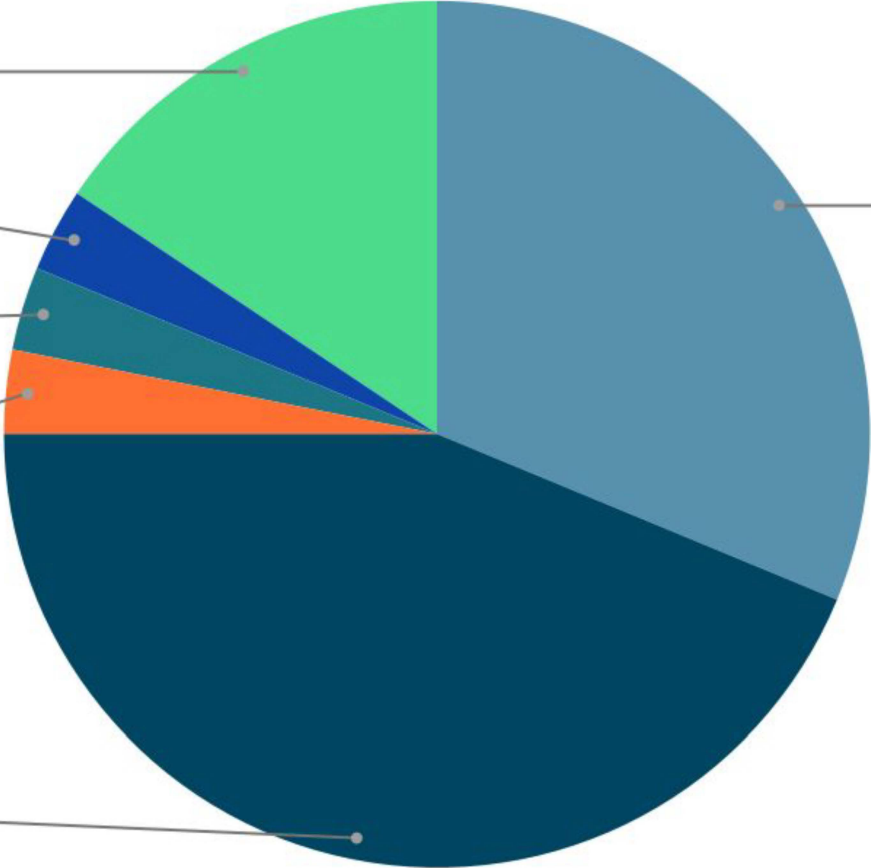
3.1%

[Site] Backyard ADUs

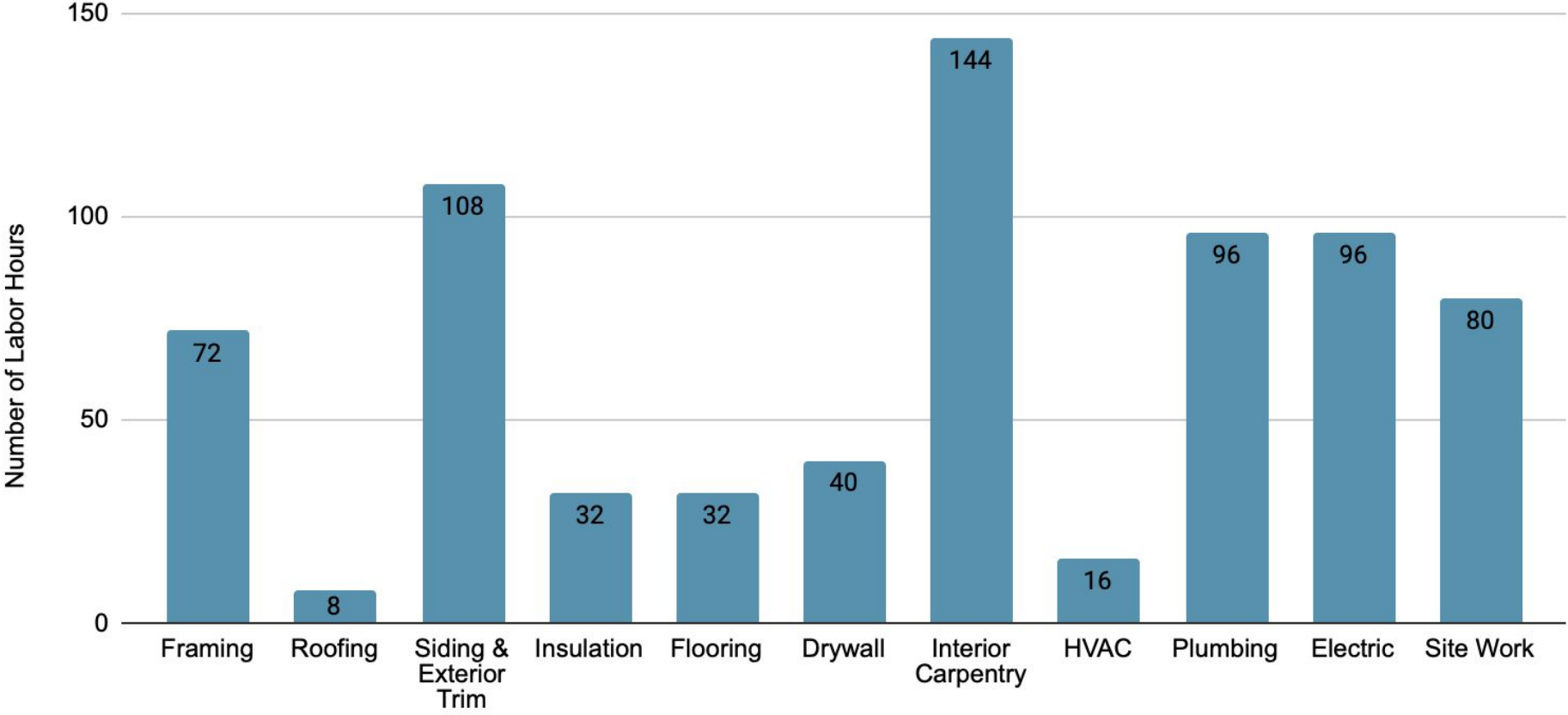
43.8%

Factory Labor Hours

31.3%



Site-Built ADU Labor Breakdown (724 Hours Total)



Site-Built ADU Hours (724 Total)

Site Work
11.0%

Electric
13.3%

Plumbing
13.3%

HVAC
2.2%

Interior Carpentry
19.9%

Framing
9.9%

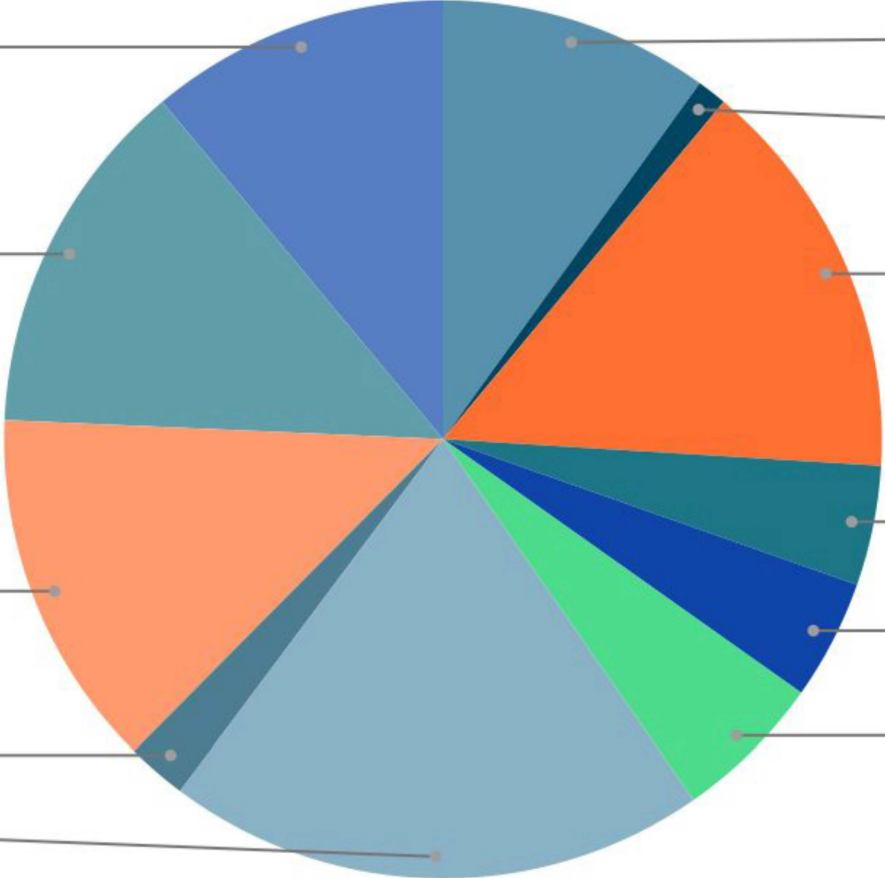
Roofing
1.1%

Siding & Exterior Trim
14.9%

Insulation
4.4%

Flooring
4.4%

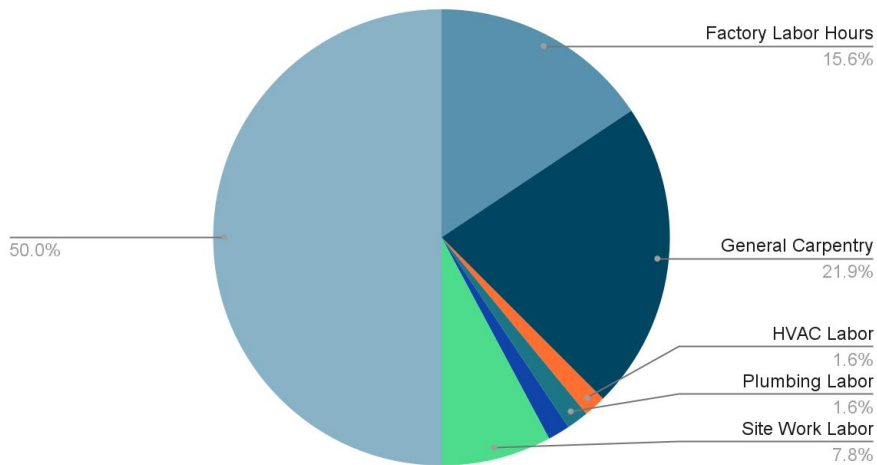
Drywall
5.5%





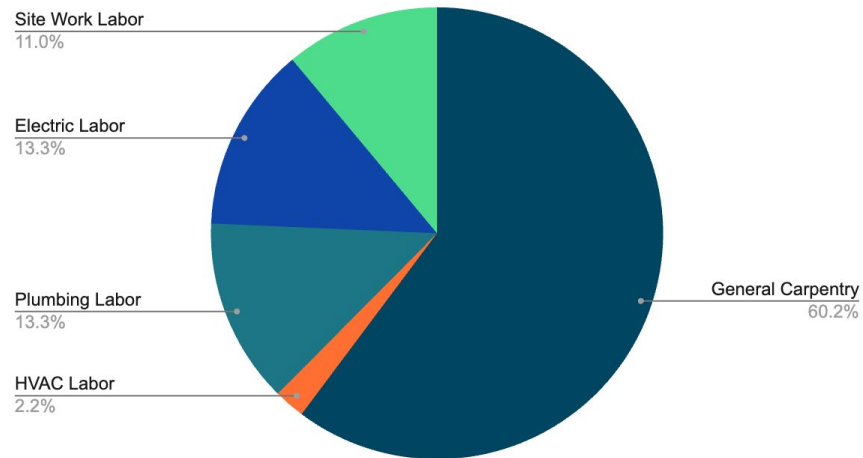
Doing More With Less (People and Material)

Modular Labor Distribution



Total Hours 512
(30% reduction)

Site Built Labor Allocation

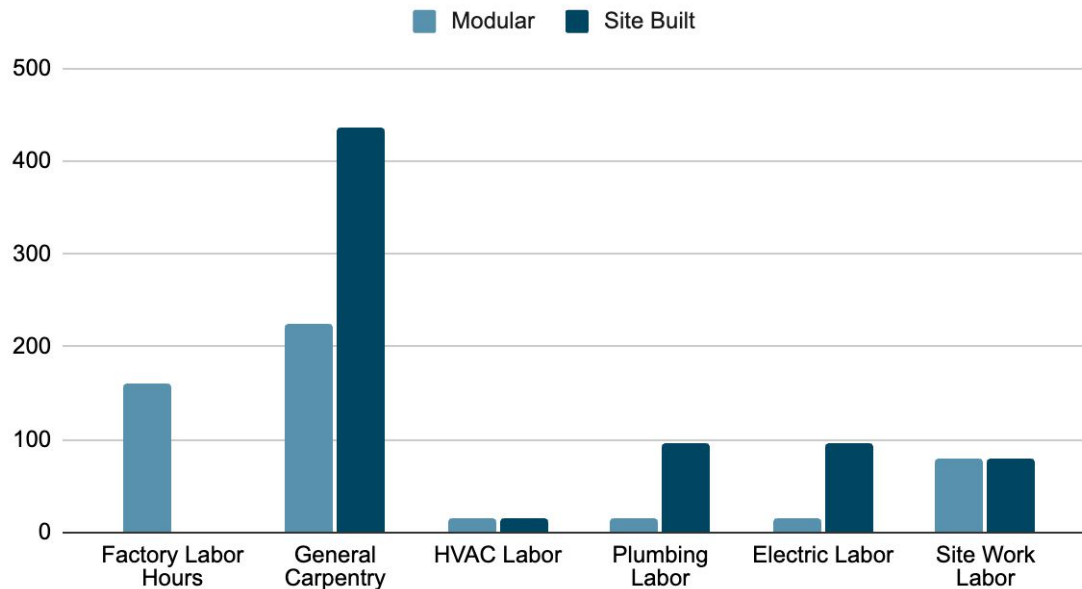


Total Hours 724



Comparing Labor Allocations

Modular and Site Built





Current Barriers



Costs Have Become a Barrier

Cost are up over 40% since 2019

Tailwinds

- ADUs for Elderly Parents are financed with a home sale
- 40% of homes are owned mortgage free (retirees make up the majority of these)
- In Southern Maine, an ADU is still cheaper than an existing house or condo

Headwinds

- Interest rates for financed ADUs
- Bank DTI ratios make ADUs non-financeable in most market without borrower income contributions
- A newly constructed ~850SF ADU will cost more than an existing standalone house in many areas
- Lower income households are less likely to have paid their mortgages and/or have lower value homes to contribute to ADU construction cost



Cost Example

2020 Scarborough ADU
740 SF, 2 bedrooms

Summer 2019: \$175,000
Now: \$260,000

+47% (\$85,000) 😞





Financing Blocks ADUs as Rentals

Assumptions	
Construction Cost	\$250,000.00
Construction Cost FOR ADU	\$250,000.00
Mortgage Rate	7.5%
Down Payment	20%
Mortgage Amount	\$200,000.00
Mortgage Period	360
Mortgage payment	\$1,398.43
Incremental House Insurance	\$400.00
Charged Monthly Rent	\$2,100.00

Rental P&L		
	Monthly	Annual
Rent Roll	\$2,100.00	\$25,200.00
<i>Vacancy</i>	3.00%	3.00%
Effective Rent	\$2,099.97	\$25,199.97
Rent accepted by Conventional Loans (80%)	\$1,680.00	\$20,160.00
Expenses		
<i>Incremental Taxes</i>	\$281.25	\$3,375.00
<i>Insurance</i>	\$33.33	\$400.00
<i>Management</i>		
<i>*self managed</i>		
<i>Maintenance/Reserve</i>		
<i>*5%</i>	\$105.00	\$1,260.00
Total Cost	\$419.58	\$5,035.00
Net Operating Income	\$1,680.39	\$20,164.64
Debt Payment	\$1,398.43	\$16,781.15
Cash Flow (post mortgage)	\$281.96	\$3,383.49

FORECASTED RETURN ON TOTAL PROJECT COST	
Cap Rate	
*this is the yield if construction was financed with cash and no debt was used	8%
Payback period on cash invested (years)	14.8
Payback period of full cost assuming no mortgage (years)	12.40
Cash on Cash Yield	6.77%
Debt Coverage (100% rent)	
*1.2 minimum for multi-family financing	1.20
Debt Coverage (80% rent)	
*1.2 minimum for multi-family financing	1.00

These ratios create a situation where average homeowners and investors are "OUT"

ADUs are good investments on paper in high rent areas, but they are not conventionally bank financeable as rentals to non-experience real estate owners



Sprinklers

Maine is leading New England (and possible the nation) in sprinkler requirements.

Sprinklers increase the likelihood of survival in a house fire from 50% to 97% BUT house fires are extremely unlikely especially in new homes.

Probability of a 1 or 2 Family Home Burning Each year: .0015%

In that context keep in mind:

- Sprinklers can easily add 15-20k to an ADU
- There are only ~28 Licensed installers in Maine
- People moving into an ADU are overwhelming moving from a house with fewer fire safety precautions AND the safer ADU is unlikely to get built if sprinklers are required

Causes of Fires	
Cause	Total
Appliances	6
Cooking	13
Electrical malfunction	40
Equipment malfunction	5
Heating	33
Natural	1
Open flame	5
Other equipment	1
Other heat	9
Other unintentional/Careless	11
Playing with heat source	1
Smoking	23
Under investigation	1258
(blank)	
Grand Total	1406

Arc Fault Breakers reduce electrical-related fires by 50%

Minisplits eliminate the source of these fires

**We acknowledge Sprinklers have other benefits like reducing firefighter injuries



DPW Utility Requirements

- Separate water service: +\$10,000 – 15,000
- Separate sewer service: +\$10,000 – 15,000

Unfortunately, we don't have good data on how this improves public safety, infrastructure or reduces DPWs operating cost.

However, it does prevent ADU's from being build due to complexity, hiring additional specialty subcontractors, and increased cost.



Fragmented enforcement of building code

Illustrating the state of Code Enforcement:

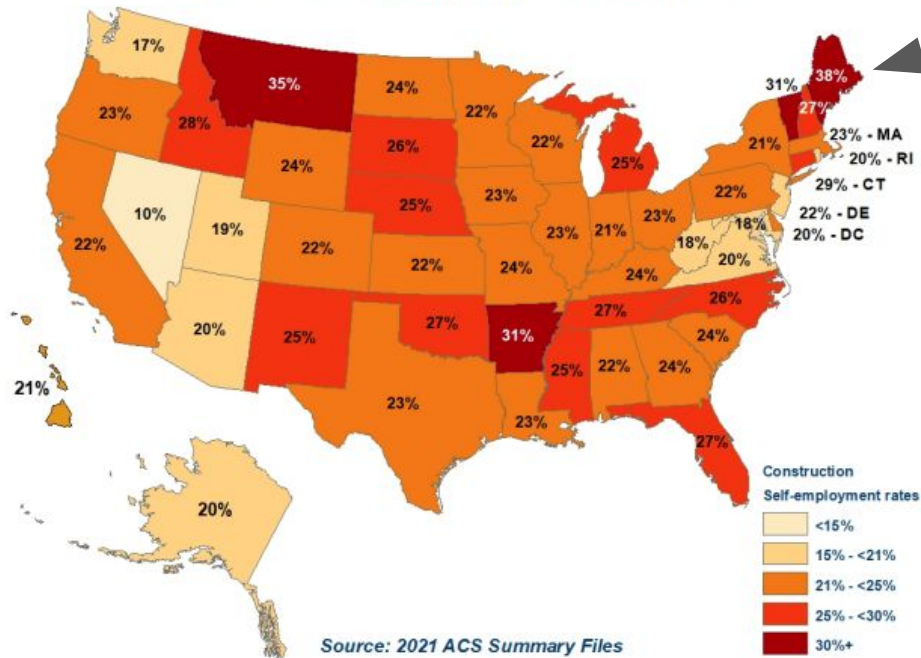
- Portland and South Portland enforce nearly the same building code completely differently
- Boothbay doesn't have a building code
- Winthrop hires a contracted CEO
- Carrabassett Valley only has a plumbing code

The result is small town specific contractors that are unable to scale operations and gain the skills to build homes.



Impact of fragmented enforcement of building code

Construction Self-Employment Rates, 2021



Source: 2021 ACS Summary Files

High levels of self employment are a symptom of being unable to scale a business OR other businesses unable to create good, lasting jobs

NE has uniquely disbursed and has varying enforcement of building and zoning code that create an environment that is difficult to scale a residential construction company.



Our Ideas



Idea's from the trenches

- Deferred loan program with reasonable qualifiers & efficient applications
 - Homeowners do not need grants and deferred loan make funding go further
- Open up the Rural Rental program to Homeowners
 - This would create hundreds of ADUs overnight and put real money in the pockets of Mainers that need it most.
- Regional building authorities
 - Many municipalities may give up building code enforcement and fight to keep Zoning.

Modular Housing Industry Challenges In Maine

Workforce

- Factory labor
 - Aging workforce and lack of semi-skilled labor
 - Attracting younger workforce
 - Regional transportation
 - Mentorship and apprenticeship programs
- Regulations driven by special interests create exorbitant final prices
 - Builders can not purchase modular homes without a Maine Modular Dealer License
 - Most builders take the path of least resistance utilizing less efficient onsite construction
 - Framing subcontractors cannot set a modular home without a Maine Modular Set Crew License.
 - The state has a severe shortage of set crews due to licensure requirements and the absence of straightforward guidelines and training resources to achieve licensure

Modular Housing Industry Challenges In Maine

General Struggles

- HUD code VS IRC
- Offsite construction is lumped together with HUD and treated differently than onsite
 - Financing
 - Appraisals
- The misconception of what modular construction is



Onsite VS Modular



Modular Housing Industry Challenges In Maine

How Can the Legislature Effect Change?

- Address the licensing issues
- Eliminate the challenges holding back factory-built housing
 - Require lenders and appraisers to treat all housing built under the IRC the same
 - HUD Code or IRC Code
 - Factory-built is a misnomer that should have no consideration
 - Why do GCs need a license to build modular, but not site-built?
 - Individuals will gravitate toward the path of least resistance. It is the government's job to incent or guide toward methods and materials that benefit the community.
- Provide consumers incentives to adopt factory-built housing

Good morning, Chairs Pierce and Gere and committee members.

I am Sarah Sturtevant of New Gloucester Maine; 2022/23 Shaw Innovation Fellow working on availability of affordable workforce housing in Maine; a graduate student in public policy analysis at the Muskie School at USM; and, a member of the Governors working group on ADUs.

I'm honored and humbled to speak to you on how Maine can repair its broken market for market-based construction of affordable housing. You have many experts on your committee. I offer this set of data and analysis – in the hope that together, we can walk through some of the causes of our current conundrum and why action of a particular sort is so important right now. My focus is on how to reduce costs and what role the committee and modular construction can play in restarting market-based affordable construction. Much of this may sound familiar. The possible Committee action recommendations may be new.

The first question is ***“how can Maine build 38,500 affordable homes when the Market is broken for new construction?”***

Just to set the stage – on page 2 – there are a couple of key underlying concepts. To add 38,500 affordable homes, requires new construction since vacancy rates are so low. And yet virtually zero new Market-based units are added, at an affordable level, because the private builders can not afford to charge half what the home costs to build. I'll walk us through those modeled numbers in a minute. Underlying these excessive costs – and they are truly excessive as measured against national data – we have a median age of construction workers of 47 years old. This is exacerbated by the fact that we failed to sufficiently attract and train the millennial demographic (the largest group since baby boomers). We also continue to add building codes of all types. This is a double whammy of increased complexity with fewer young workers in the pipeline. The result of high complexity with too few workers, has resulted in high levels of specialization. Specialization is inefficient because it leads to excessive overhead; profits and scheduling delays. And finally – with part of the solution to build “smaller” we need to realize that the mathematical shortcut of square-footage metrics, is problematic for small homes.

On page 3 – we see my simplified model for why the market is broken. My attempt in showing this model is to estimate a complex set of dynamics – to be directionally correct. Any of these numbers can be argued to be slightly different – however the dynamics and order of magnitude are pretty consistent. The 3-person household (HH) in Kennebec County needs to find housing that costs roughly \$200,000. This is looking at it as if that HH was a home-owner. The math is even worse if building market-based apartments for rent. Rental returns are worse because the landlord has extra service-cost expenses; cannot plan on 100% occupancy/timely payment of rent AND still has the same construction costs of roughly \$400,000 per housing unit. In short, it costs more than 2x to build – what is an “affordable” level. I've provided the NAHB data in the appendix that shows both the square footage costs for Maine vs. nationally; and nationally the breakout of categories of cost for site-built housing.

Why does it cost so much? There are many reasons, among them three stand out: First here are *1000s of codes*. I've shown you a picture of the stack of code manuals from Rumford Maine. All these codes add complexity to the process. Also, we have a skilled labor shortage. Nearly 20 years ago, when the

peak of the echo boomers/millennials reached HS age, we elected to remove industrial arts from the local High Schools. This meant that many students had zero exposure to building. Centralizing “vocational ed” into 27 career and technical education centers, or CTE’s, had a negative impact on demand for construction-related programs. Together with the notion that everyone should go to college, *we effectively missed training the largest demographic since the baby boomers*. The result of 1000s of codes and not enough labor is *intense specialization*. On average there are 24 sub-contractors per new home constructed. That is *24 sets of overhead, scheduling delays and profit margins*. These three things are each getting worse, not better, on their own. Public policy is needed to right the market.

Can’t modular construction solve the problem? How much can small + modular homes save in construction costs towards bridging the cost gaps? How small is “small”? Page 5 shows you how the two things combined (small + modular) can save quite a bit depending on size.

On the salmon-colored column on the left, we are showing the home size in square feet. Next to it is the factory cost per home – and the far-right column shows the finished cost.

The first thing to recognize is that only the 400 square foot home would be affordable to our median 3-person family in Kennebec County coming in at a cost of \$171K vs. \$206K which is affordable to this theoretical household. The 500 square foot home is slightly over their budget. And once the size gets to 1000 square feet it is firmly outside of affordable levels in Maine.

The second thing to understand is the actual cost of adding 100 square feet is not just the cost difference at the factory door. The difference between a 400 square foot 1 bedroom home and a 500 square foot 1 bedroom home is ~\$15,000 more at the door of the factory (left arrows). However, by the time the home is installed on site – the installation plus soft costs increase the home’s costs by ~\$42-43,000 (right column and arrows). The compounding of costs, which lever higher with each additional specialist, has a very negative affect on affordability. For perspective, a \$43K increase is 20% of what my 3-person Kennebec County household can afford in total – just to upsize a home by 100 square feet more.

I picked 100 square feet as an example, specifically because Section 8 requires 100 square feet of closet space. The HUD building codes and requirements are excessive within the current construction cost environment. The good news is that private builders aren’t required to build to HUD/S8 rules. Which means that the private market can build smaller homes for sale vs. the size which subsidized multi-family units are required to be. Ironically, the rules developed to ensure that Section 8 apartments are high quality are so out of date relative to construction costs that they ensure that no new ones get built by the market.

Standardized, small, and modular can get closer to “affordable” levels on 400-500 square feet. Once the size reaches 1000+ square feet – the costs are out of reach for affordability even with modular processes in Maine.

Why aren’t modular savings higher you might ask? It would be normal to resist the “new reality” that 400-500 square feet is the right size to be “affordable” – while 1000+ is not currently possible. Maine does not achieve the national savings between Modular and Site-Built. This is Harvard’s JCHS data. For a 16’ wide ~1200 square foot home, nationally there is a 65% savings vs. site-built of the same size. For a 32’ wide 1500 square foot modular home, the savings are about 40%. And even for a larger home with a garage and porches (high level of site work), the savings is 27%. **Maine only achieves about a 5-10%**

savings between modular and site built for those size homes. The home size has to shrink to accommodate much higher costs, in order to be affordable in Maine. Or put another way, if Maine achieved the national savings from modular, Maine could provide a larger home for the median family of 3.

Why doesn't Maine achieve the national level of modular savings? The lack of modular savings is not because of the cost at the factory door in Maine (i.e., KBS). *The costs at the factory door are similar in Maine to relative to other places* (PA, AZ, CO). The reason for Maine not realizing the national-level of cost savings of modular construction is that there is scarcity pricing of the site work. For example, Maine's Manufactured Housing Board licenses installation companies (set crews). By KBS' estimate there are 9 active licensed set crews in Maine right now – across all 16 counties.

Tasking the Manufactured Housing Board with developing new curriculums that recognize and augment site-built construction experience is critically important. Likewise, that Board could be asked (required?) to set explicit targets for additional set crews (e.g., 10 licensed set crews in each county – or 160 in the state – by year-end 2024). The Board only meets quarterly and licensing requires individual board approval. Moving towards a standard provisional license once the mandatory training program is completed, followed by quarterly board review, might also be beneficial. Lack of licensed installers is a big part of the cost problem, but it's not the only problem. Every other skilled trade is also in short supply.

How many more people will need to be trained by Maine institutions to build 38,500 homes currently and 84,000 by 2030? Page 7 shows the size of the labor force currently and is taken from a report published by Maine's DECD in 2023 to understand the size/scope of Maine's construction industry. To double the number of permits, we need to more than double our workforce – I estimate about **40,000 new workers will need to be trained** in order to accommodate additional retirements. 8,084 workers are listed as "residential construction", however, the larger number of 30-31K workers listed as contractors are those specialists I mentioned earlier, that work for on all sorts of projects including infrastructure, commercial and residential. Combined they represent 38,854 workers. Given that half of our construction workforce is over 47 years old, and that training takes time, planning for additional retirements seems prudent. I encourage DECD together with CTE/MCCS to create their own estimate of training needs. Training targets could include traditional students in the 27 CTEs – but that small number of high school students will be insufficient. New programs at existing Community Colleges, with outreach to non-traditional students, combined with workforce development are collectively needed. **Maine needs to train a small army of workers**, and therefore **training innovation and efficiency** in building Maine's building workforce are essential. Requesting Maine's Community College System and CTEs work together with DECD to develop a plan, including key performance indicators to achieve that plan, in order to address the training shortfalls of the last 20 years is critically important.

How can Maine reduce the construction costs for market-based affordable housing? What specifically can the Joint Select Committee do?

In conclusions, there is no single magic bullet. LD 2003's growth zones are one positive step forward. Page 8 summarizes three types of other options which are critically important I think:

Training & Licensing - especially licensing additional modular installation companies

- **Require the Manufactured Housing Board (MHB) to develop training programs that recognize and augment site-based construction experience, consider provisional licensing while waiting for quarterly board approval and set explicit MHB targets for licensing installers of modular housing.** e.g., *10 licensed, active, set crews in each county by year-end 2024 vs. 9 in the entire state currently*
- **Require the Board of Real Estate Appraisers (under the State of Maine Professional and Financial Regulation) to create alternative valuation guidance** for newer housing types (ADUs; townhouses; small modular homes). Guidance that is less reliant on square footage metrics and non-existent “comps”.
- **Require the CTE/MCCS to work together with DECD to: 1. create a plan (how many trained workers of each specialty are needed), 2. Develop efficient certification programs to achieve that training; 3. Conduct outreach to attract workers of all ages and backgrounds, and 4. set and achieve, training targets** – both in target number of people to be trained and skills/certifications programs offered. For example, there is a wait list for electrician programs at the Augusta CTE. What? Why?
- **Hold our public institutions accountable, with key performance indicators that they help develop, is an important next step in repairing Maine’s broken market for affordable home construction.**

Streamline building requirements, codes and approval processes

- **Clarify the role of local code enforcement** for modular construction already inspected in the factory. “Zoning in code enforcement clothing” and a certain level of territorialism are still issues which undermine cost-effective, modular, construction. Modular construction meets MUBEC and is inspected in the plant. Mobile Homes meet HUD codes which supersede local codes. Additional training and clarification of local code enforcement’s roles would be beneficial.
- **Educate the public** on what an affordable market-based home looks like to reduce NIMBYism. e.g., most people love the look of a good porch. Especially those already housed who don’t feel the pain as directly. However, a porch is a “nice to have” feature not an essential one. Why should someone who is struggling to find decent housing, pay a high interest rate for 30 years, for something that could be added later?
- **Scrutinize every new proposal for additional building codes.** Request new code proposals provide not just the explicit code cost – but the fully loaded cost (difference between 15k for another 100 feet of square footage – vs. \$43k in final costs) in any benefit: cost analysis.

Financing via MaineHousing.org

- **Sweeten first time buyer programs (downpayment grant and buy-down of IR) for essential workers including construction workers.**
- **Renew funding for Maine Affordable Homeownership program** and increase the “forgivable loan” amounts to better reflect the cost of construction.

Thank you for your consideration.

Repairing Maine's broken market for affordable, market-based, home construction

Sarah J. Sturtevant

28 November 2023

Testimony to Maine Joint Select Committee on Housing

Construction Realities in Maine

- Given low vacancy rates; **new housing supply is by definition newly built**
- Virtually zero market-based (non subsidized) affordable housing is built in Maine because builders **can not afford to build a \$400K home and sell it for affordable rates of ~\$200K**
- Maine construction costs vs. national costs; **oldest state* = expensive state**
- 1000s of codes + failure to train = **excessive specialization and scarcity pricing**
- Cost quotes at the modular factory door can be misleading. It costs **~\$100,000 to permanently connect** a modular home to a foundation w. driveway and utilities
- **Square footage appraisal metrics are detrimental to small home valuations;** All the expensive bits are included but with a smaller denominator. (e.g. base load costs of \$100,000/400 square feet = \$250/square foot while \$100,000/4000 square feet = \$25/square foot)

* Is the Construction Workforce Older than Other Industries? NAHB 6/6/2023 Maine and VT are oldest at median construction worker age of 47

Maine's builders can not build a home for \$400K and sell that home at "an affordable \$200K"

**What median household can afford
3 person, Kennebec County**

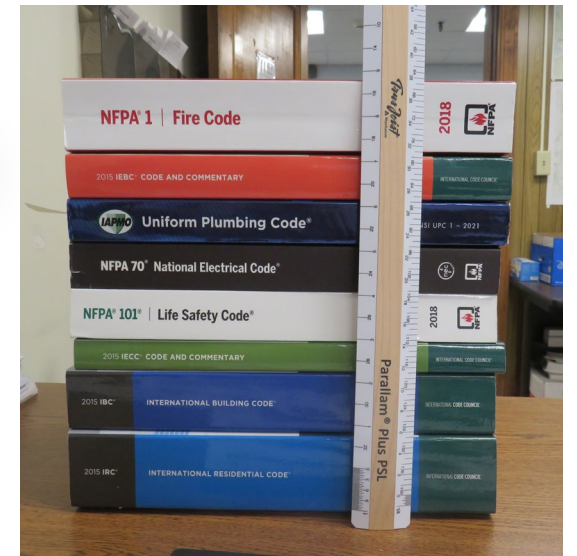
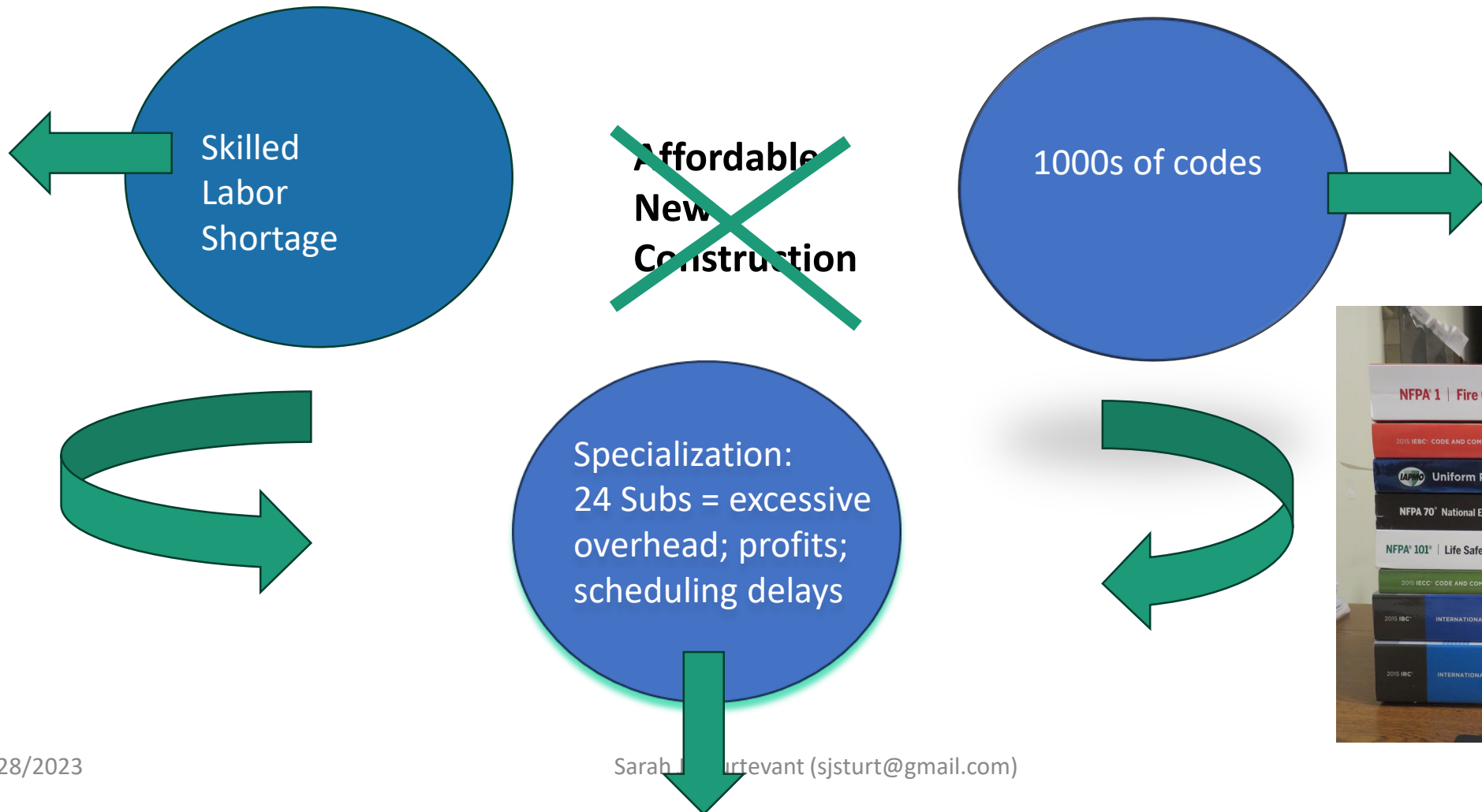
Category	3 person HH in Kennebec County
Income (100% AMI)	\$70,200
30% to housing =affordable monthly housing costs	\$1,755/month
P&I to be affordable	\$1,289/month
Loan Amount (assumes 3% down)	\$200,000
Property Tax	\$383/month
Property Insurance (Augusta Average)	\$83/month
Total Home Value that is "affordable"	\$206,000

**Construction Costs:
Small Home on Small Lot in Maine**

Category	\$ cost for 1200 square foot home on ¼ acre lot
Construction labor + materials	\$262,800 <small>\$219/square foot; source NAHB</small>
Land (subdivided w. road + utilities available at site)	\$15,000
Construction Financing	\$15,000
Soft Costs	\$112,500
Total	\$405,300

Why does it cost so much to build new homes?

Many reasons exist – three are interwoven



Can Small+Modular reduce costs? It Depends!



For small modular homes; scarcity pricing for “set crews” + preparing lots for utilities/roads = high site costs

Size (in square feet)	Factory \$ cost	Factory Costs as % of total	Site Costs (% of total)	Soft Costs (% of total)	Total Cost
400	\$60,000	0.35	0.3	0.35	\$171,429
500	\$75,000	0.35	0.35	0.3	\$214,286
700	\$105,000	0.4	0.35	0.25	\$262,500
1000	\$150,000	0.4	0.35	0.25	\$375,000



How much does +100' of space actually cost?
 +\$15K at factory = +\$42.8K when Levered up
 By all the other Subsequent costs

Professional services
 + financing costs
 = high soft costs



Source: sjs estimates based on Interviews with modular manufacturers Realtors and modular installers

Despite nationally consistent factory-pricing in Maine;
Maine does not achieve the national savings
between site-built and modular;

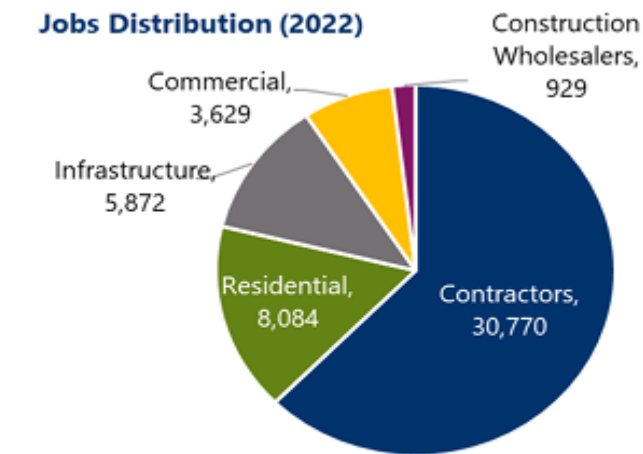
- Too few licensed installers (only 9 active set crews);
- Higher labor costs for trades and
- Cold-weather requirements
 - Foundation
 - Roof
 - Utility depths

Source: Harvard JCHS
Comparison of the Costs of Manufactured and Site-Built Housing
JULY 2023 | CHRISTOPHER HERBERT, CHADWICK REED, JAMES SHEN

Q: How many more skilled workers does Maine need to roughly double its building permits*

(* permit increase of +91% recommended in Maine Housing Production Goals report)

A: We need ~40,000 new workers to be trained – i.e. more than double the workforce in order to allow for retirements (construction workers average age 47; est. combines residential + contractors shared by all types of construction)



Source: Lightcast

Construction Industry Report
State of Maine DECD 6/2023

What can be done to reduce construction costs?

Hold state entities accountable by setting explicit goals:

- **Require the Manufactured Housing Board to develop training programs, consider provisional licenses prior to quarterly meetings and set targets for licensing installers of modular housing.** e.g. 10 licensed, active, set crews in each county by year-end 2024 vs. 9 in the entire state currently
- **Require the Board of Real Estate Appraisers (under the State of Maine Professional and Financial Regulation) to create alternative valuation guidance for newer housing types** (ADUs; townhouses; small modular homes). Guidance that is less reliant on square footage metrics and non-existent “comps”
- **Require the CTE/MCCS to work together with DECD to develop, and achieve, training targets** – both in target number of people to be trained and skills/certifications.
- **Hold state public institutions accountable** for their role in creating, and repairing, Maine’s housing crisis, by having them **develop and track, key performance indicators**

Reduce Soft-Costs

- **Clarify the role of local code enforcement** for modular construction already inspected in the factory. “Zoning in code enforcement clothing” delays projects and adds costs.
- **Educate the public** on what an affordable market-based home looks like to reduce NIMBYism. e.g. a porch to an unhoused person is a “nice to have” feature not an essential one. While the housed view it as an aesthetic essential. Educating the public on construction costs has to stop being such a taboo. Why should someone who is struggling to find decent housing, pay a high interest rate for 30 years, for something that could be added later?

Financing via MaineHousing.org

- **Sweeten first time buyer programs (downpayment grant and buy-down of IR) and consider a program for essential workers, including construction workers.**
- **Renew funding for Maine Affordable Homeownership program** and increase the forgivable loan amounts to reflect current costs

APPENDIX:

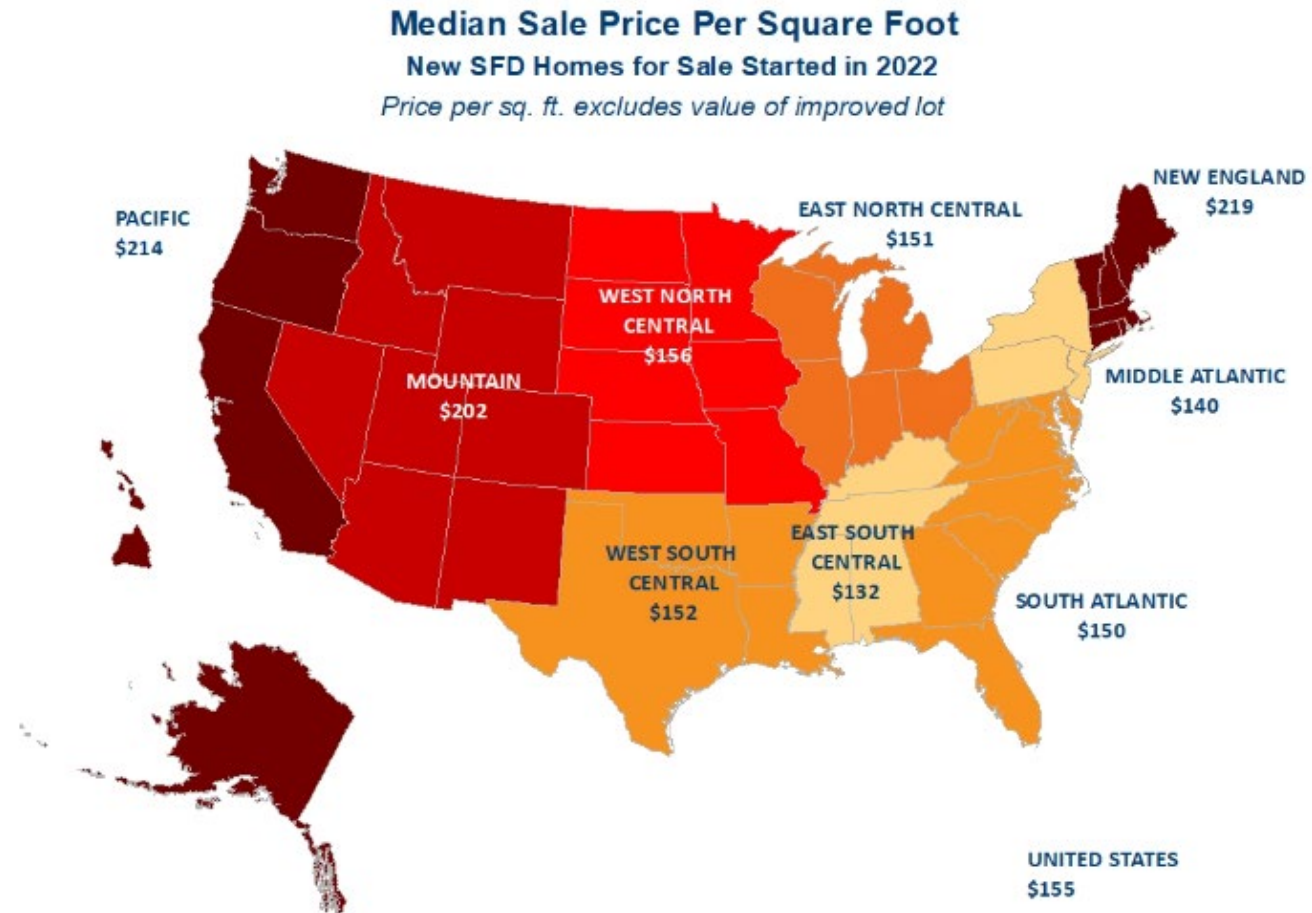
National NAHB
numbers = ~\$400K
in construction costs

Maine's construction costs
seem very similar to
NAHB national numbers for
A similar sized house
(~2500 square feet)

Table 1. SINGLE-FAMILY PRICE AND COST BREAKDOWNS		
2022 National Results		
	Average Lot Size:	17,218
	Average Finished Area:	2,561
I. Sale Price Breakdown	Average	Share of Price
A. Finished Lot Cost (including financing cost)	\$114,622	17.8%
B. Total Construction Cost	\$392,241	60.8%
C. Financing Cost	\$12,192	1.9%
D. Overhead and General Expenses	\$32,979	5.1%
E. Marketing Cost	\$4,268	0.7%
F. Sales Commission	\$23,080	3.6%
G. Profit	\$65,369	10.1%
Total Sales Price	\$644,750	100.0%
II. Construction Cost Breakdown	Average	Share of Construction Cost
I. Site Work (sum of A to E)	\$29,193	7.4%
A. Building Permit Fees	\$8,292	2.1%
B. Impact Fee	\$5,208	1.3%
C. Water & Sewer Fees Inspections	\$5,800	1.5%
D. Architecture, Engineering	\$4,724	1.2%
E. Other	\$5,169	1.3%
II. Foundations (sum of F to G)	\$43,086	11.0%
F. Excavation, Foundation, Concrete, Retaining walls, and Backfill	\$39,731	10.1%
G. Other	\$3,355	0.9%
III. Framing (sum of H to L)	\$80,280	20.5%
H. Framing (including roof)	\$60,831	15.5%
I. Trusses (if not included above)	\$11,479	2.9%
J. Sheathing (if not included above)	\$5,383	1.4%
K. General Metal, Steel	\$1,168	0.3%
L. Other	\$1,419	0.4%
IV. Exterior Finishes (sum of M to P)	\$46,108	11.8%
M. Exterior Wall Finish	\$19,746	5.0%
N. Roofing	\$11,496	2.9%
O. Windows and Doors (including garage door)	\$13,158	3.4%
P. Other	\$1,709	0.4%
V. Major Systems Rough-ins (sum of Q to T)	\$70,149	17.9%
Q. Plumbing (except fixtures)	\$22,706	5.8%
R. Electrical (except fixtures)	\$23,892	6.1%
S. HVAC	\$21,845	5.6%
T. Other	\$1,707	0.4%
VI. Interior Finishes (sum of U to AE)	\$94,300	24.0%
U. Insulation	\$6,530	1.7%
V. Drywall	\$13,184	3.4%
W. Interior Trims, Doors, and Mirrors	\$12,727	3.2%
X. Painting	\$8,793	2.2%
Y. Lighting	\$4,502	1.1%
Z. Cabinets, Countertops	\$17,775	4.5%
AA. Appliances	\$6,263	1.6%
AB. Flooring	\$13,019	3.3%
AC. Plumbing Fixtures	\$5,166	1.3%
AD. Fireplace	\$1,608	0.4%
AE. Other	\$4,733	1.2%
VII. Final Steps (sum of AF to AJ)	\$23,065	5.9%
AF. Landscaping	\$9,123	2.3%
AG. Outdoor Structures (deck, patio, porches)	\$2,178	0.6%
AH. Driveway	\$8,775	2.2%
AI. Clean Up	\$2,280	0.6%
AJ. Other	\$709	0.2%
VIII. Other	\$6,059	1.5%
Total	\$392,241	100.0%

Construction Costs in Maine are among the highest in the Nation

NB: this is not adjusting for house size (i.e. small homes have higher cost per square foot)



Source: 2022 Survey of Construction, NAHB Estimates

1000s of codes has made housing construction extremely complex

QUALITY STANDARDS AND PROCEDURES MANUAL
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7. Construction Loan Closing Sign-off

From MaineHousing.org 5/2021;
42 pages of guidelines
To just reference the various codes



Q: Aren't multi-family rental apartments less expensive than single family homes?

A: Not necessarily; Extra Building Codes + Extra Services + Occupancy risks -> offset slight cost benefit in land use

Multi-Family/For Rent

Additional Codes: e.g.

- ADA compliance
- Emergency exits
- Fire Codes & Sprinklers
- Section-8 size/amenity requirements (e.g. 100 square feet of closet space min.)
- Service costs and <100% occupancy lower net returns (i.e. market based affordable rentals don't "pencil")

Single Family/Ownership

- Can be built in higher density and smaller than historically done (i.e. town-homes)
- Firewalls less expensive than Multi-Family fire code requirements
- Smaller footprint possible vs. S-8
- Self Service is lowest cost (big savings to mow your lawn, plow your own driveway, unclog your own toilet)

Can't the government subsidize the difference between construction costs and affordability?
It could... It would take 100% of the state budget for 17 years, just for the current shortfall

Loss per home	\$	199,300
Number of homes needed		38,500
total subsidies required	\$	7,673,050,000
2023 State Budget	\$	445,000,000
number of years of 100% of state budget to housing subsidies to cover for existing shortfall	\$	17.24

Q: How can we build houses that cost half of current costs?

Can a \$200,000 new home even be built in Maine?

A: Methods:

- Small i.e. 400-700 square feet
- Modular, w.
 - Low roof pitch;
 - No full foundation (piers or frost wall)
 - No porches, dormers, garages
 - Shared walls (row house/townhouse)
- Free land
- Municipality bears cost of soil/environmental testing
- Streamlined approvals
- Updated appraisal options to ease bank financing
- Speed (reducing risks and developer financing costs)
- **MORE SET CREWS + Training next gen of Builders**
- **Holding State Govt. Institutions accountable; CTEs(Career and Technical Education High School); MCCS (Maine Community College Systems); MHB (Manufactured Housing Board – licensing entity for modular construction); and, Board of Appraisers**