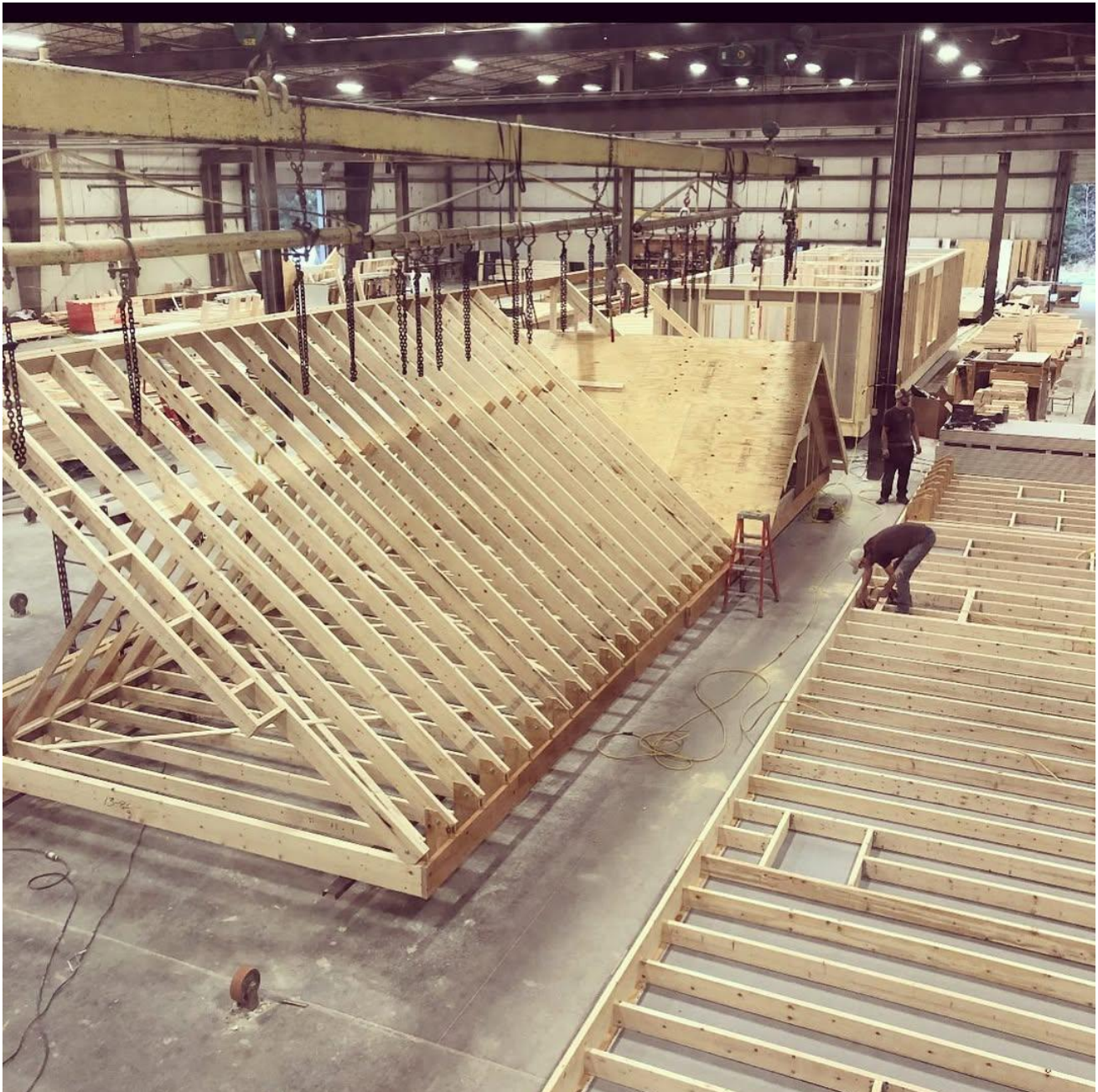


# Opportunities to Utilize Off-Site Construction to Meet Vermont's Housing, Workforce and Climate Goals

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# Executive Summary

To address rising construction costs, rents and home prices, Vermont needs to build more housing. Significantly expanding Vermont’s housing production will require fundamental changes in the residential construction process. Vermont has already taken the important step of reforming land use policy to make residential development more feasible by adopting S. 100 (2023), which increased minimum densities, and Act 181 (2024), which streamlined Act 250. To make further progress in boosting housing construction, Vermont should pair these land use reforms with innovations in construction methods to make the construction process more efficient. In particular, Vermont should consider expanding use of off-site construction to achieve the economies of scale that are difficult to achieve on-site in a rural state like Vermont.

Off-site construction involves the production of housing in factories, rather than on-site. The main forms of off-site construction are **manufactured housing** – in which homes are produced in factories that conform to the national HUD Code and contain a chassis – **volumetric modular** (or just modular for short), in which three-dimensional “boxes” are constructed offsite and joined onsite, and **panelized construction**, in which two-dimensional wall, floor or ceiling panels are constructed offsite and then incorporated into a building onsite. Some off-site manufacturers produce **kit homes** comprised of pre-assembled panels and other **pre-cut** parts.

There are three volumetric modular factories in New England that produce residential housing. One is in Vermont, and a second is in nearby Claremont, NH. There are also volumetric modular plants in Maine and Quebec capable of delivering homes to Vermont. A number of additional Vermont facilities produce panels or kits that can be assembled onsite to produce Accessory Dwelling Units or other structures. A survey and interviews with these manufacturers indicate that manufacturers are generally optimistic about the future of off-site construction in the region. The research also identified challenges and opportunities associated with expanding the use of off-site construction in Vermont. One challenge is the cyclical nature of the housing market, which makes it risky for manufacturers to expand their operations. An opportunity is the possibility to achieve greater economies of scale through bulk purchases of large numbers of homes using a standardized design. One interviewee also discussed the potential to restart operations at a former manufactured housing facility in Fair Haven to increase the state’s off-site construction capacity.

The increased use of off-site construction in Vermont could produce a number of benefits:

- **Cost Savings:** Off-site construction helps to shorten project timelines, allowing projects to generate sales or rental revenue more quickly than site-built housing. Further cost savings could be achieved from the bulk purchase of a large volume of modular or manufactured homes utilizing a simple, repeatable design, which allow design and engineering costs to be shared across homes and production lines to be optimized to achieve economies of scale.
- **Workforce development.** Starting or expanding off-site construction facilities in Vermont could lead to the creation of well-paying year-round jobs in Vermont. These jobs would make it easier to recruit and retain skilled workers.

- **Mitigate Labor Shortages:** Because housing is produced on an assembly line, workers in off-site construction facilities do not need the same level of physical strength or specialized skills as traditional construction workers, broadening the potential labor pool.
- **Higher volume and pace of building:** Through efficient assembly lines, off-site homes can be built faster and with fewer workers than site-built housing, allowing more homes to be produced in less time. The ability to produce homes quickly makes **off-site construction a good source of housing to help victims of natural disasters.**
- **Statewide Climate Goals:** Off-site construction can advance the state’s climate goals by utilizing energy-efficient home designs and by reducing waste in the construction process through precision manufacturing.
- **Standardize design and building standards:** Off-site construction could be used to create homes that are compliant with state and local codes (both form and function) with most quality inspections taking place centrally, reducing the need for intensive on-the-ground regulatory inspection. This could both reduce costs and speed up the overall development timeline.

This report reviews a range of policy options for facilitating the increased use of off-site construction in Vermont, including bulk purchases and guarantees, financial assistance for starting or expanding off-site production facilities in Vermont, adoption of a statewide building code and pre-approval for specific designs. Should Vermont wish to move forward with increasing the use of off-site construction, the report recommends consideration of these next steps:

<b>Potential Next Steps</b>	
1. Review and confirm the state’s policy objectives and priorities.	7. Facilitate restarting the Fair Haven plant and support the expansion of other existing Vermont manufacturers.
2. Develop a plan for using bulk purchases of homes produced through off-site construction to achieve lower construction costs for single-family and missing middle housing types.	8. Consider providing business planning support in the form of small grants and technical assistance to existing Vermont businesses seeking to develop or expand offsite construction businesses.
3. Develop a plan for using offsite construction to achieve lower multifamily construction costs.	9. Consider adopting a state-wide building code for offsite construction and procedures for factory-level inspections and pre-approved designs.
4. Consider issuing a formal Request for Information to get input from potential manufacturers about how best to achieve cost savings through a bulk purchase program.	10. Create a Northern New England working group that reaches across state lines and considers a regional market and shared approach.
5. Allocate funding to support bulk purchases.	
6. Implement prioritization and incentives for using off site construction within existing funding programs.	