



Housing as Main Street Infrastructure

2026 Downtown & Historic Preservation Conference

Agenda

Panel Presentation (60 min)

Three related topics, 20 minutes each.

- 1. The Production Gap and Why it Matters to Main Street**
- 2. Stonecrop Meadows**
- 3. The 802 Homes Model**

Discussion (15 min)

Join in - we want to hear from you!

Part 1

The Production Gap and Why it Matters to Main Street

Speaker: Jacob Hemmerick, AICP — Senior Planning and Policy Manager, Vermont DHCD

Vermont's Vision



Compact Centers & Neighborhoods

To plan development so as to maintain the historic settlement pattern of compact village and urban centers.

For New Homes & Neighbors

These areas should be planned so as to accommodate a substantial majority of housing needed [...]

Surrounded by Farms, Forests & Open Space

24 V.S.A 4302 - Planning & Development Act Goals

A Vision for Vibrant Main Streets, Convenience & Affordability

Main Street success is not just a retail strategy — it is a housing strategy.

A new, old way: the 15-minute neighborhood

- Homes near daily destinations
- Homes near local businesses
- Homes with an option to walk, bike or ride
- Homes that make the most of infrastructure
- Homes for aging in community
- Homes in places many Vermonters want

According to the 2026 Vermonter Poll done by the University of Vermont, most Vermonters would prefer to live in places where they can walk, bike, or use transit to meet daily needs — compared to 41% who favor more auto-dependent settings.

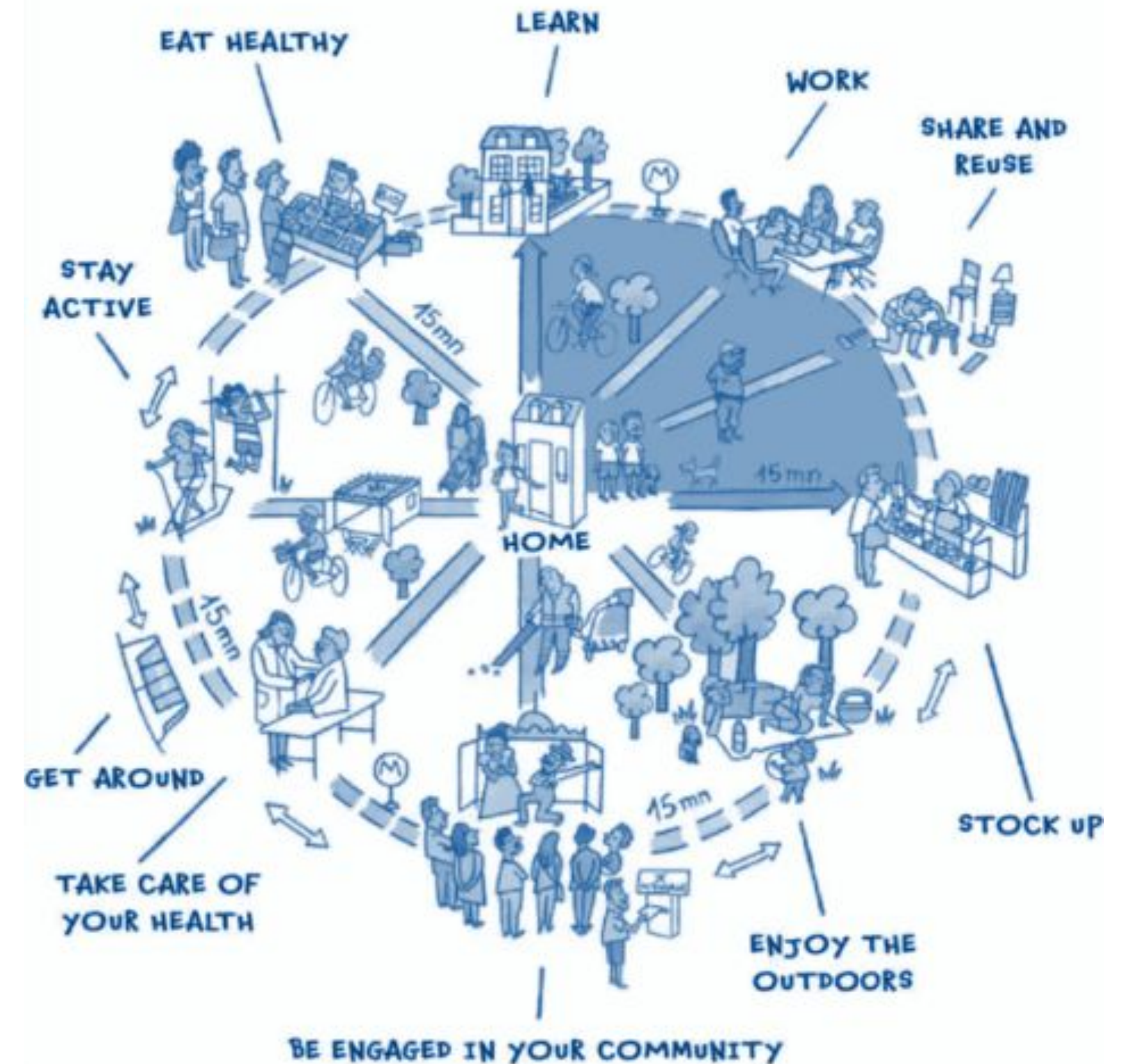


Image: Paris en Commun

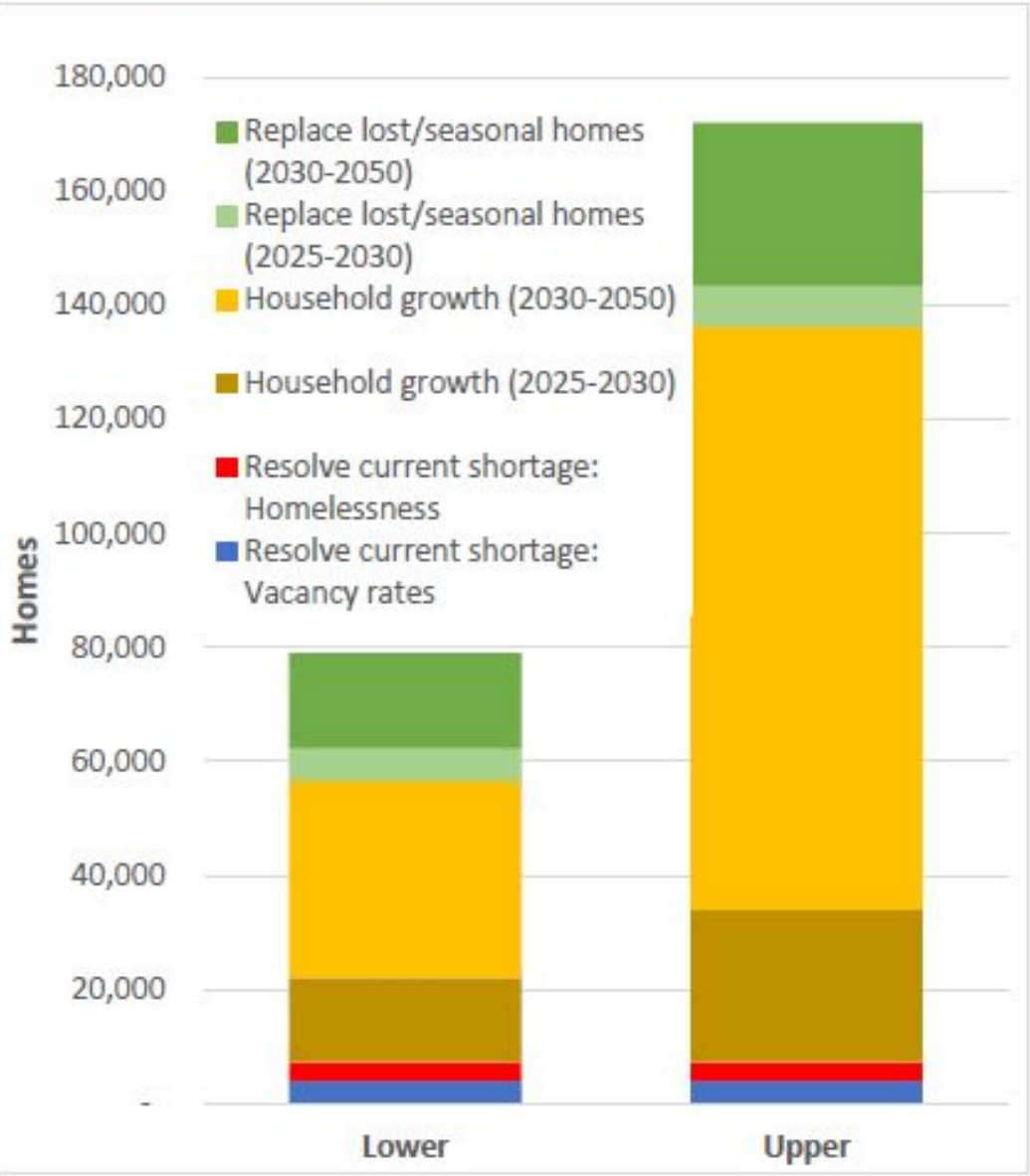
Vermont's Housing Needs

Vermont needs at least 27,867 homes by 2030 to address shortages.

Total additional home targets, 2025-2030 and 2025-2050

Region	2025-2030		2025-2050	
	Lower	Upper	Lower	Upper
Addison County	1,325	2,020	4,103	8,088
Bennington County	1,310	2,069	4,483	8,836
Central Vermont	2,300	3,658	8,045	15,856
Chittenden County	6,849	10,117	15,783	47,407
Lamoille County	1,286	1,874	3,359	6,621
Mount Ascutney (Southwest)	1,080	1,680	3,750	7,391
Northeastern Vermont	2,539	3,957	9,014	17,768
Northwestern Vermont	1,938	3,074	6,755	13,315
Rutland Regional	2,438	3,842	8,100	15,965
Two Rivers Ottauquechee	2,183	3,440	7,692	15,162
Windham Regional	2,285	3,511	7,933	15,635
Vermont	27,867	41,185	79,018	172,044
2025-2030: "Lower" assume VT year-round households increase at the 2016-2019 average annual rate of 1.02%. "Higher" assume the 2019-2022 rate of 1.77%.				
2025-2050: "Lower" based on population projection. "Higher" assume VT year-round households increase at the long-term annual average rate of 1.4%.				
All targets include additional projected year-round households PLUS homes needed to normalize vacancy rates, eliminate homelessness, replace destroyed homes, and provide a margin to address Vermont's 15% seasonal home rate.				

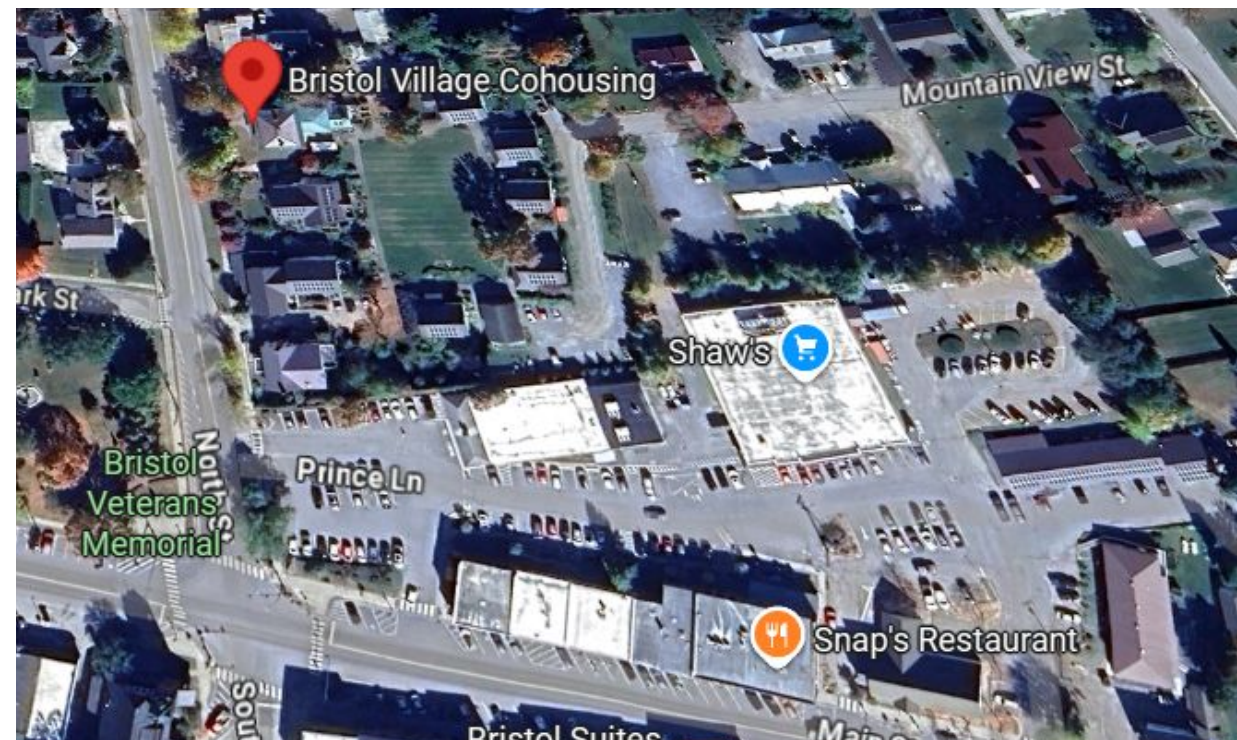
Housing needs (target components)



Vermont's Housing Needs

The type and location of homes matters.

- **Vermonters need homes sized for their budget and household.**
 - **Vermont's households are mostly older and smaller.**
 - **Vermont's total households are growing.**
-
- **Regulations can limit the homes Vermonters need;**
 - **In the places they need them.**
 - **Alongside other market conditions, like labor, materials, and lending**



Vermont's Housing Gap & The Missing Middle

Missing middle homes provide choices that were once commonplace in and around downtowns and villages.



Single-Family Homes
on Large Lots



Large, Multi-Unit,
“Podium Construction”

Missing Middle Homes are not new to Vermont!

- Pre-1940s zoning supported increased densities and integrated land uses
- Pre-auto development supported walkable, compact neighborhoods with multiple home types
- Multi-family homes were the norm and took different forms
- Compatible with single family homes

Missing Middle Homes Development Approaches

Smart Growth Aligned to Existing Infrastructure: Gentle Infill & Incremental Development

Gentle Infill

Infill compatible with existing surroundings to achieve community design goals. Many times, this type of new development goes largely unseen due to its location within or behind an existing structure.



Incremental Development

Small-scale development that is primarily undertaken by developers who live in the community they are operating in. This term includes both housing and commercial development types. Can also be a development strategy.



Infill Opportunities Are Main Street Opportunities

Opportunities for infill, missing middle housing in almost every community

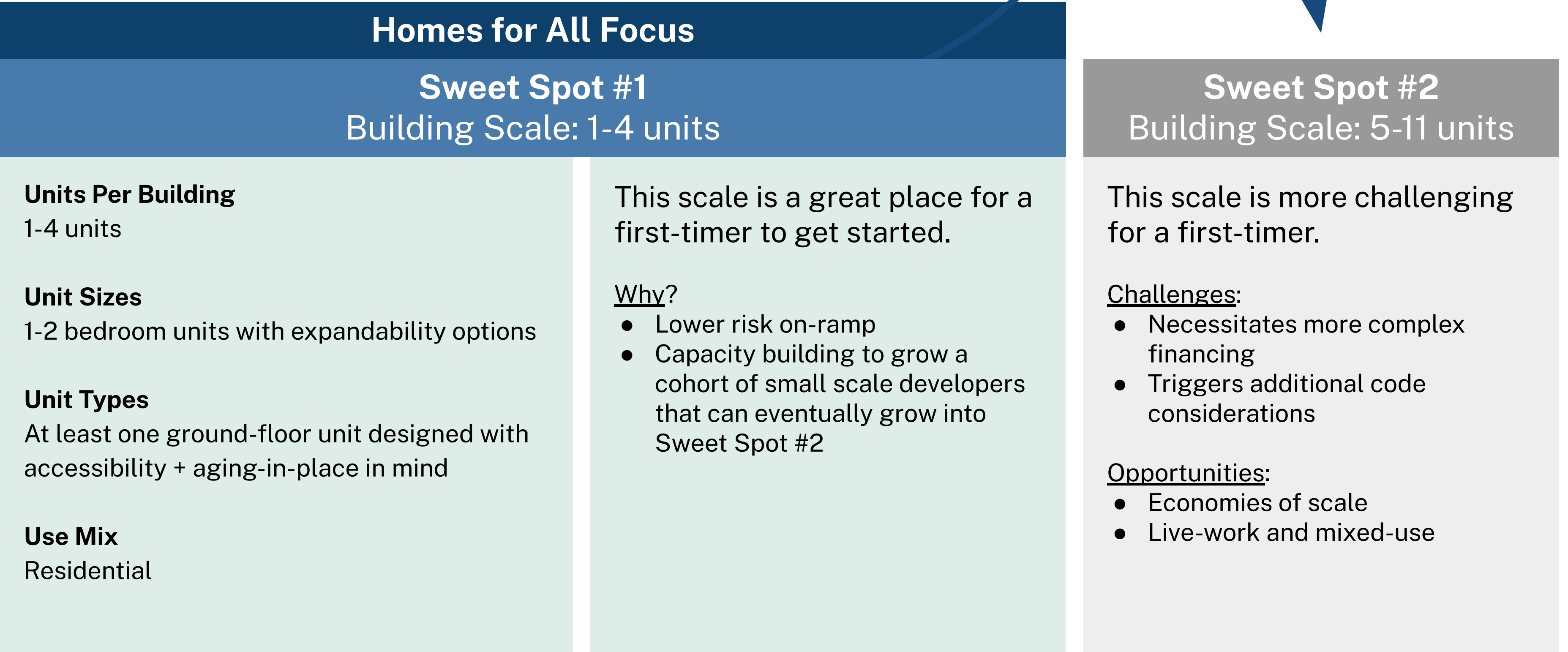


Infill Home in Vermont



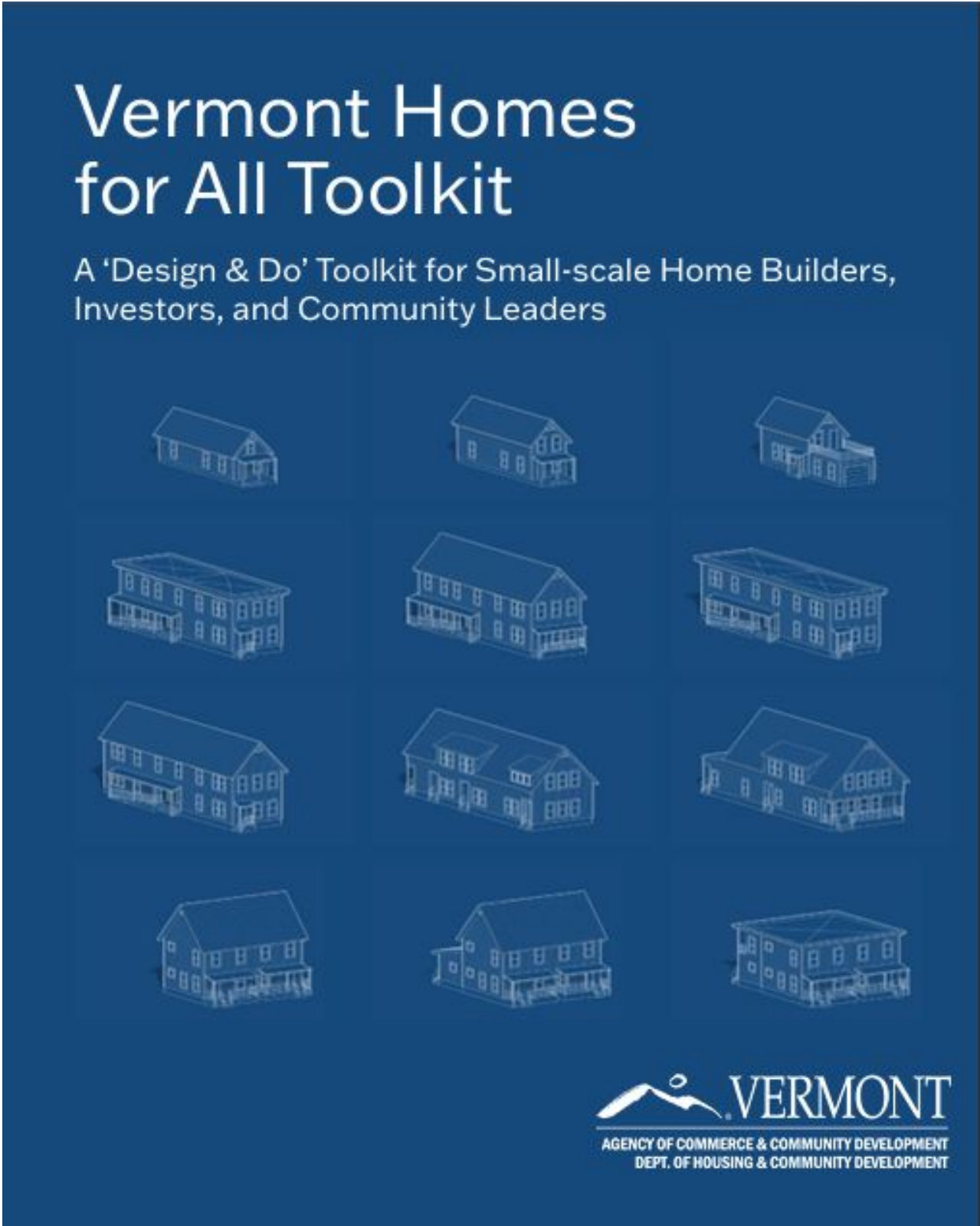
Missing Middle Fits in Vermont Neighborhoods

Homes for All focuses on the 1-4 unit building “development sweet spot”



The Homes for All Toolkit

A beginner’s introduction to building the homes Vermont needs.



Contents

Introduction

Part 1. Builders’ Workbook

- 1.1 Your Role in Small-Scale Development
- 1.2 Identifying Development-Ready Sites
- 1.3 Building Your Team
- 1.4 Business & Financial Frameworks
- 1.5 Feasibility Methodology
- 1.6 Design
- 1.7 Permitting & Construction
- 1.8 Implementation & Management

Part 2. Home Design Guide

- 2.1 Overview of Design Approach
- 2.2 Overview of Home Typologies
- 2.3 Age-in-Place
- 2.4 Narrow Lot
- 2.5 Village
- 2.6 Side-by-Side
- 2.7 “Telescoping Home” Aggregation Pattern

Part 3. Community Infill Design

- 3.1 Infill Parcel Selection Method & Criteria
- 3.2 Arlington Case Study
- 3.3 Bellows Falls Case Study
- 3.4 Middlesex Case Study
- 3.5 Rutland City Case Study
- 3.6 Vergennes Case Study

Appendices

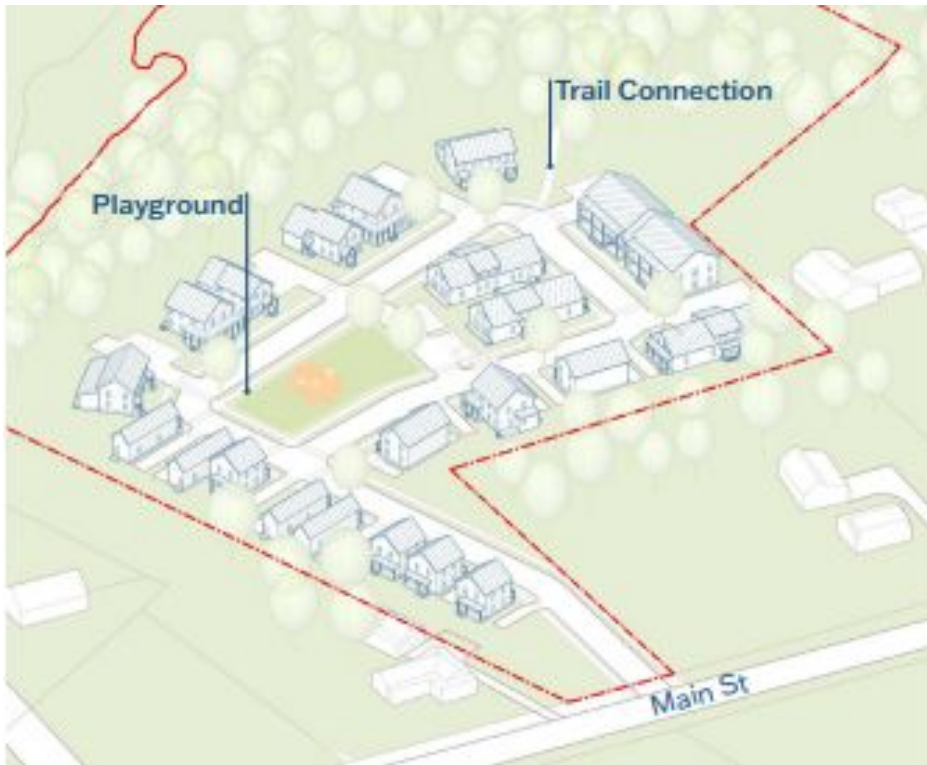
- Terms & Concepts Glossary
- Acronyms Glossary
- Sample Pro Forms



Infill Opportunities, Small and Large

While Homes for All encourages emerging developers to start small, **large infill opportunities in walkable areas, supported by infrastructure exist across VT.**

How do we unlock their potential?



Part 2

Stonecrop Meadows - Public Private Partnership in Housing Development

Speaker: Andy Miller — Summit Properties



Stonecrop Meadows

Up to 184 Homes

- Smart-growth
- Energy-efficient
- Truly mixed-income
- Only proposed new neighborhood outside of Chittenden County
- Unprecedented State and Federal support
- True community partnership
- Preservation of wetlands / greenspace

\$140m Total Development Cost



Natural Foods Co-Op & Shaw's
0.5 Mile | 10-Minute Walk



Middlebury Recreation Park
0.6 Mile | 11-Minute Walk



Middlebury Town Green
0.7 Mile | 15-Minute Walk



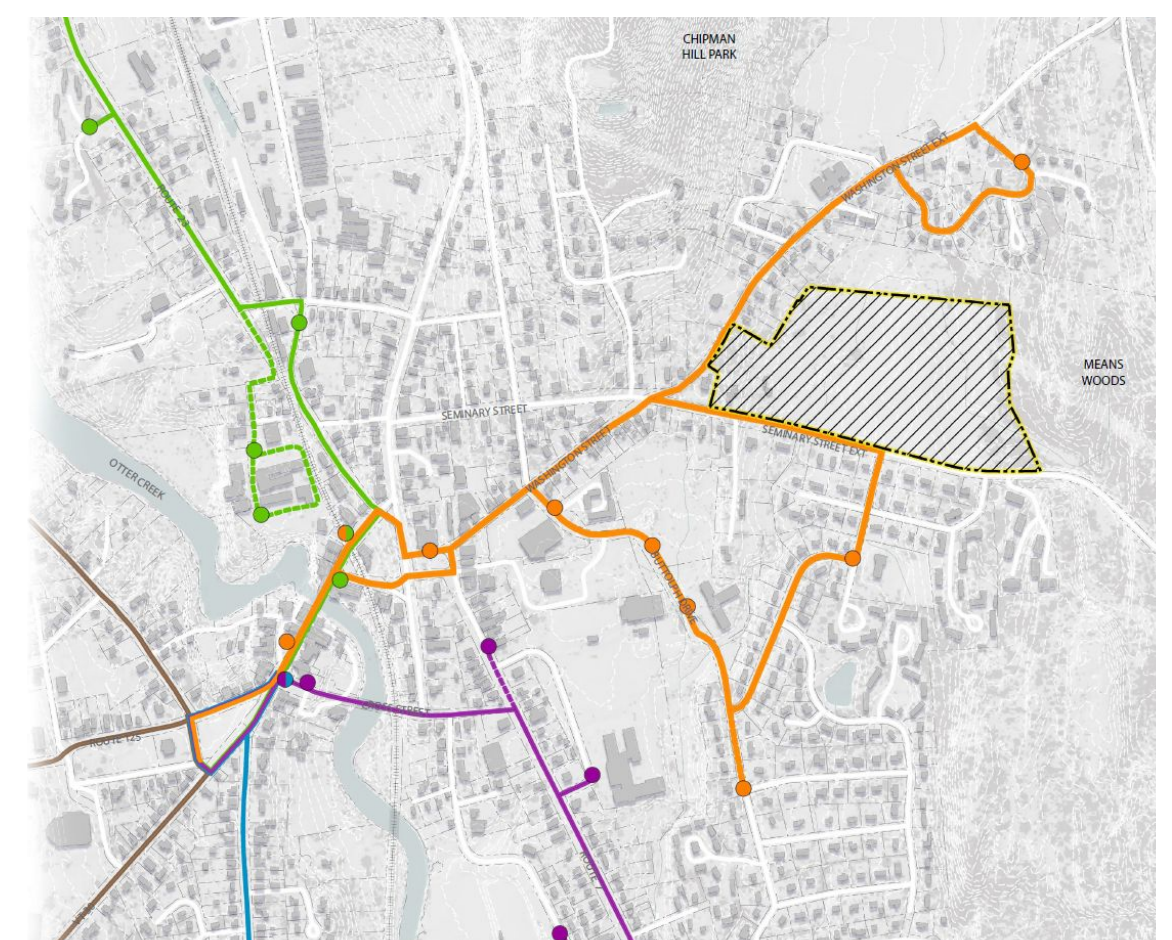
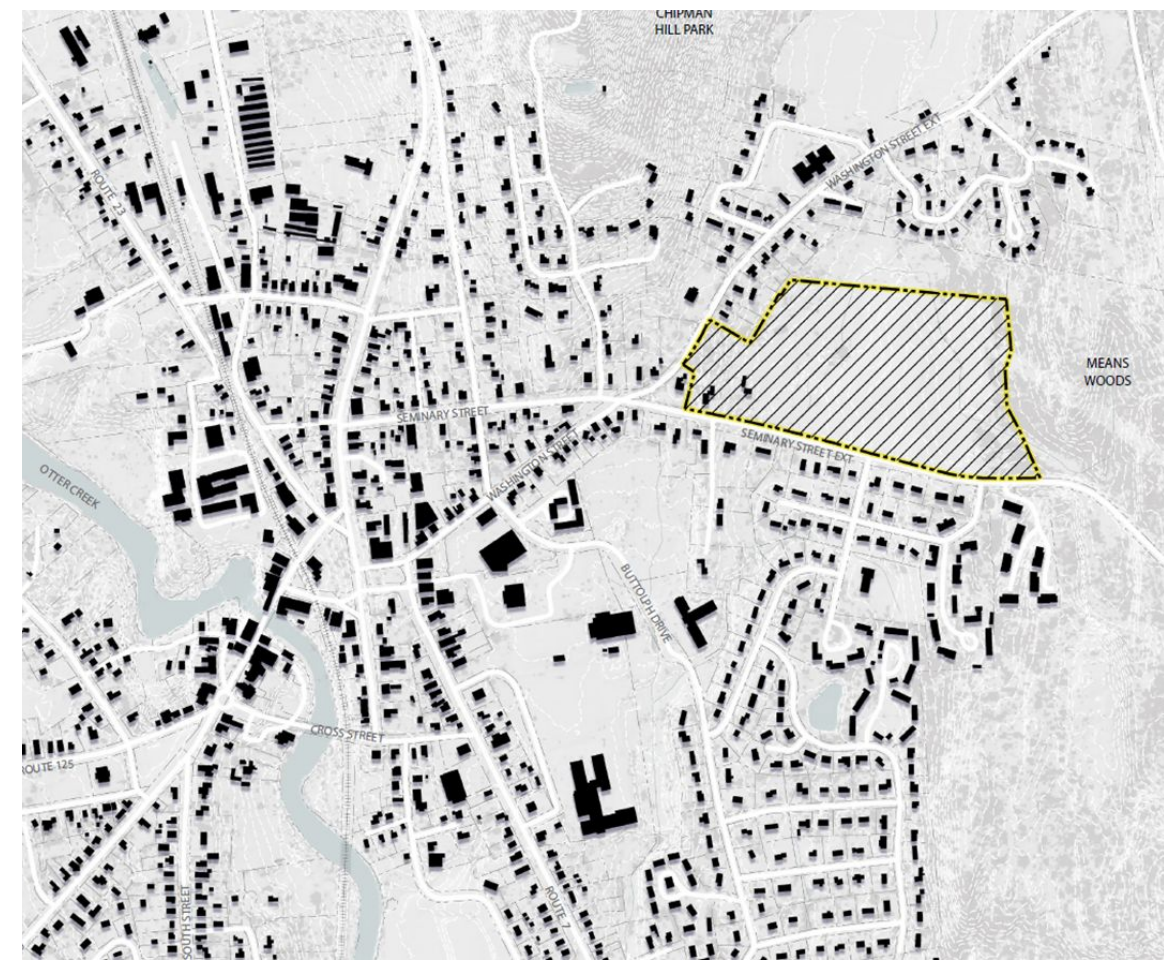
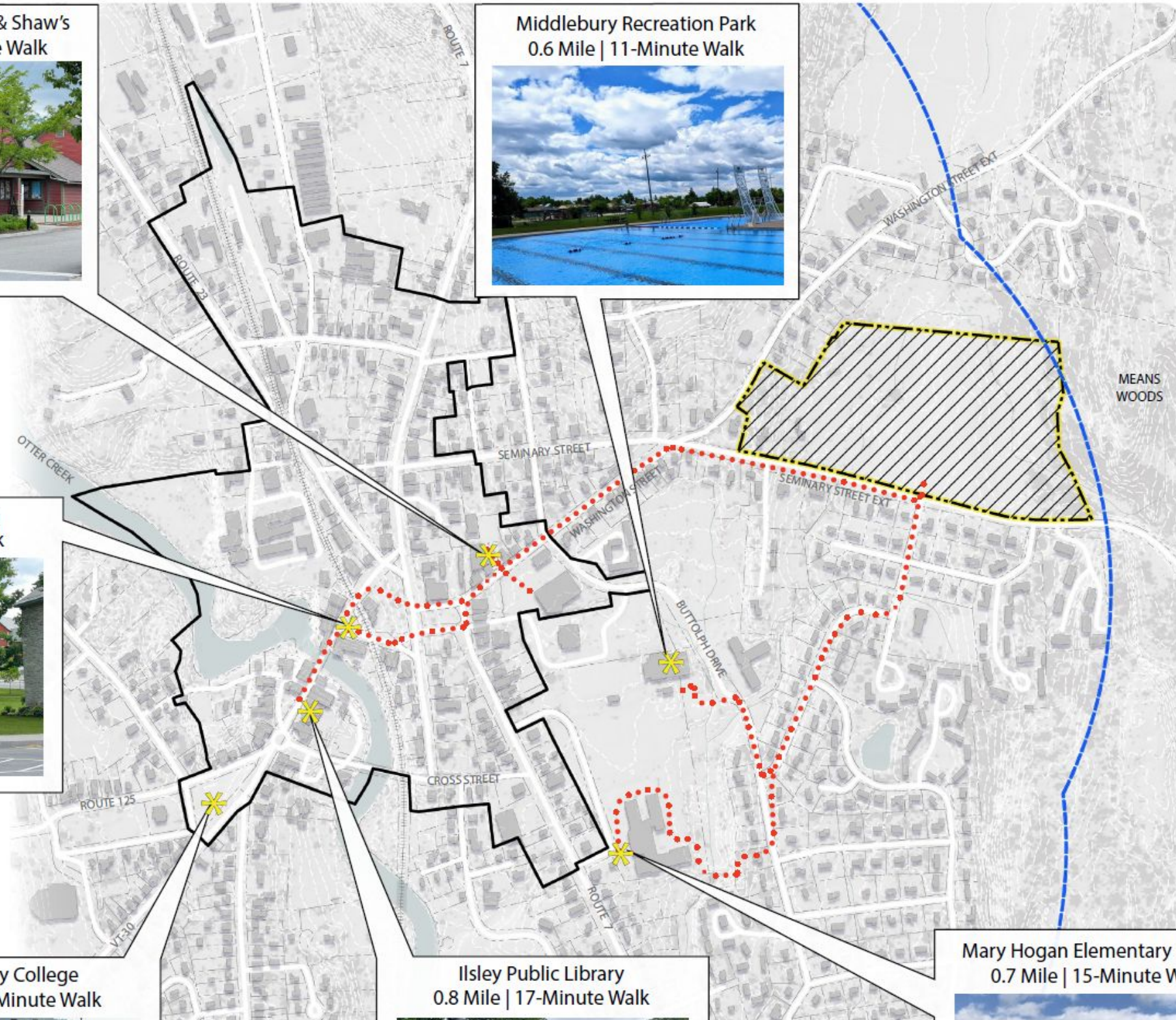
Middlebury College
0.9 Mile | 19-Minute Walk



Ilsley Public Library
0.8 Mile | 17-Minute Walk



Mary Hogan Elementary School
0.7 Mile | 15-Minute Walk



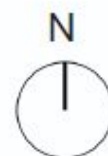
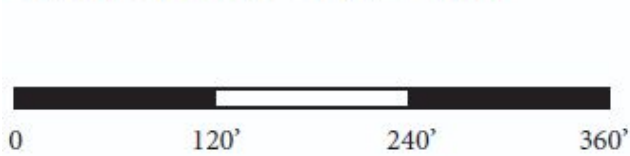
Core Village

	Rental	For Sale	Total
Affordable	22	6	28
Workforce	6	31	37
Market	7	8	15
	35	45	80

80 Total Homes

\$53M Total Development Cost





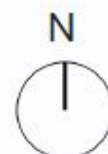
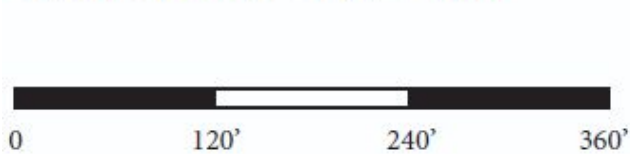
Affordable Rental

35 Rental Apartments

- 7 Market-Rate
- 28 Affordable @ < 80% of AMI

Build and absorb over 2 years





Middle-Income For Sale

37 For-Sale Homes

Example 2-bed townhome

- Construction Cost: **\$550k**
- Purchase Price: **\$350k**
- Subsidy: **\$200k**

LOT 3

CENTRAL
GREEN

STORMWATER
PARK

POTENTIAL
CONNECTION
TO THE TAM

COMMUNITY
GREEN

SEMINARY STREET EXT.





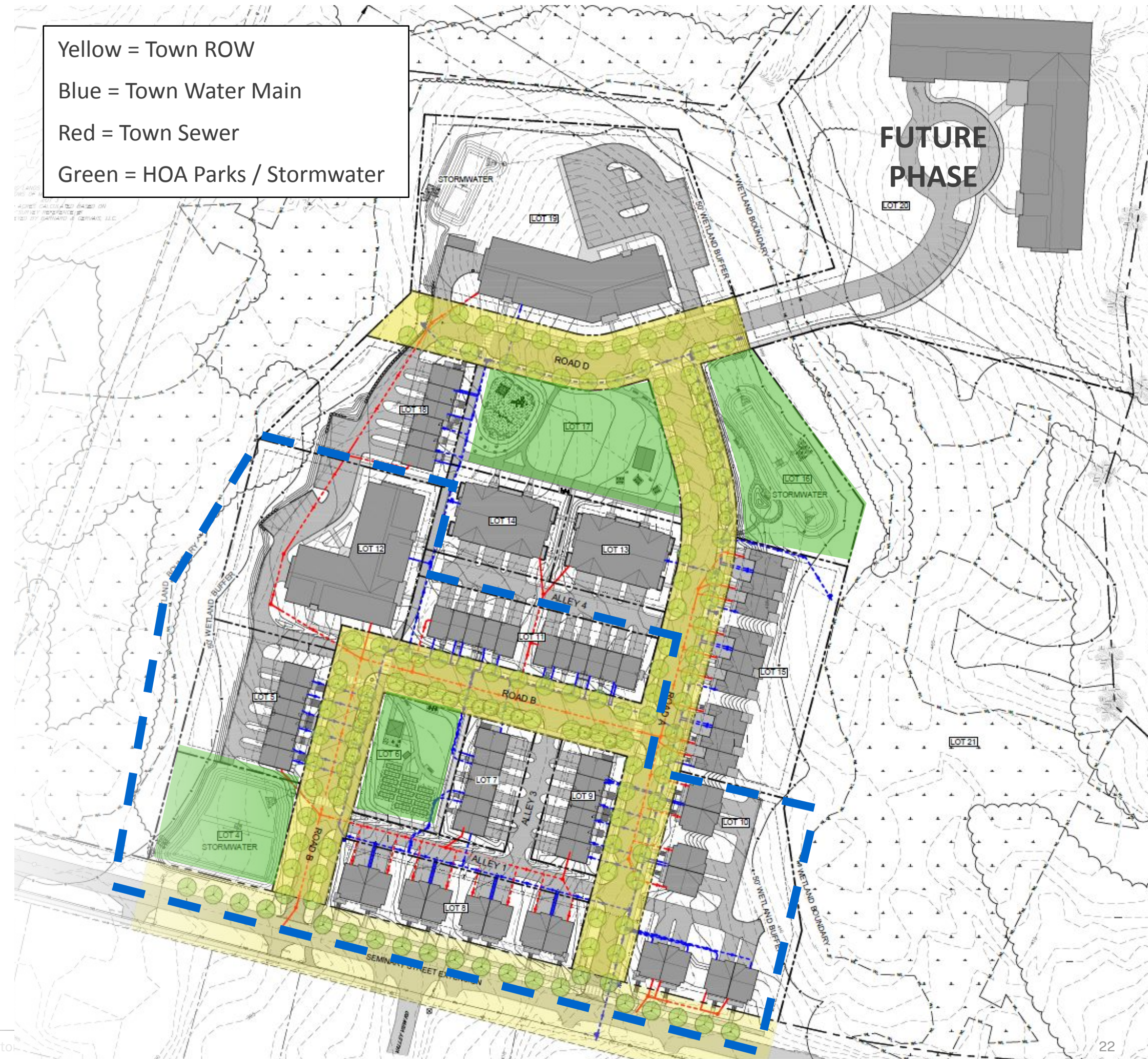


Stonecrop Meadows

Infrastructure Partnership

Supports 184 Homes

- Town Played Pivotal Role in Infrastructure Development
 - Direct Funding: \$239K
 - Applicant for Subsidy Funds: \$1.9M
 - Owner of Roads and Infrastructure
 - Flexible Bonding Requirements
 - Flexible Permitting
- College Filled the Gap (CHIP?)



Stonecrop Meadows

Keys to Success

- Secured Low-Cost Land
- Established Mixed-Income Vision Early
- Established as Neighborhood Development Area (NDA)
- Revised Zoning for Density/Flexibility
- Town Agreed to Take Over Infrastructure
- Maximized Infrastructure Subsidy
- Maximized Housing Subsidy
- Multi-Phased Delivery
- Modular Construction
- AND
- College Closed the Gap (CHIP?)

Full Buy-In From Town, Employers, and Community

Part 3

The 802 Homes Model

Speakers:

- Zoë Mueller, AICP — Associate Principal, Utile Architecture + Planning
- Jeff Dube, PLA — Community Planning and Project Manager, Vermont DHCD

Policy & Program Alignment

2013

Neighborhood Development Area Designation

Established place-based incentives to support walkable residential development surrounding village centers and downtowns.

2023

HOME Act Legislation (Act 47)

Legislation promoting small-scale infill on lots serviced by existing infrastructure:

- Allows more homes on smaller lots (5+ units per acre on lots served by water and sewer)
- Allows 2-unit buildings anywhere that single-detached homes are allowed, and up to 4-unit buildings in areas served by water and sewer.
- Reduces min. parking requirements for some newly constructed homes.

Community Partnership for Neighborhood Development

Pre-development grants for projects providing a mix of housing types, styles, tenure, and sizes.

Housing Funders Roundtable

Bimonthly meetings with housing developers providing unified guidance from state funders and regulators.

2025

Act 69: CHIP & VT Infrastructure Sustainability Fund

Legislation enables municipalities to finance essential infrastructure (like water, sewer, roads, and stormwater systems) that supports new housing development.

Allows towns and cities to:

- Access long-term financing without raising local property taxes
- Capture a portion of new property tax revenues from future development
- Invest in public improvements that directly support the creation of homes.

2022-2024

Bylaw Modernization Grants

Funding to support municipalities updating their land use, development, and zoning bylaws.

2024

Evaluating and Modernizing Vermont’s State Designation Programs

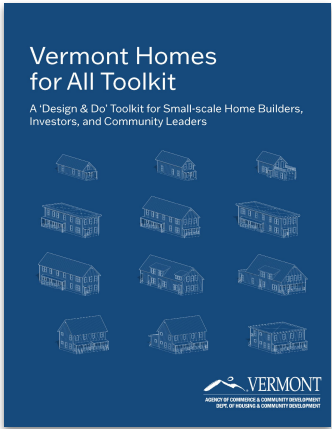
Recommendations to modernize Vermont’s five smart growth Designation 2050 Programs, which provide financial support and permitting advantages to facilitate housing production and compact development in over 250 Vermont communities.

Act 181

Modernizes Vermont’s planning framework by aligning Act 250, regional plans, and local land use regulations to support housing development and economic opportunity in areas designated for growth.

Vermont Homes for All Toolkit

Resources to support small-scale infill development and missing middle homes.



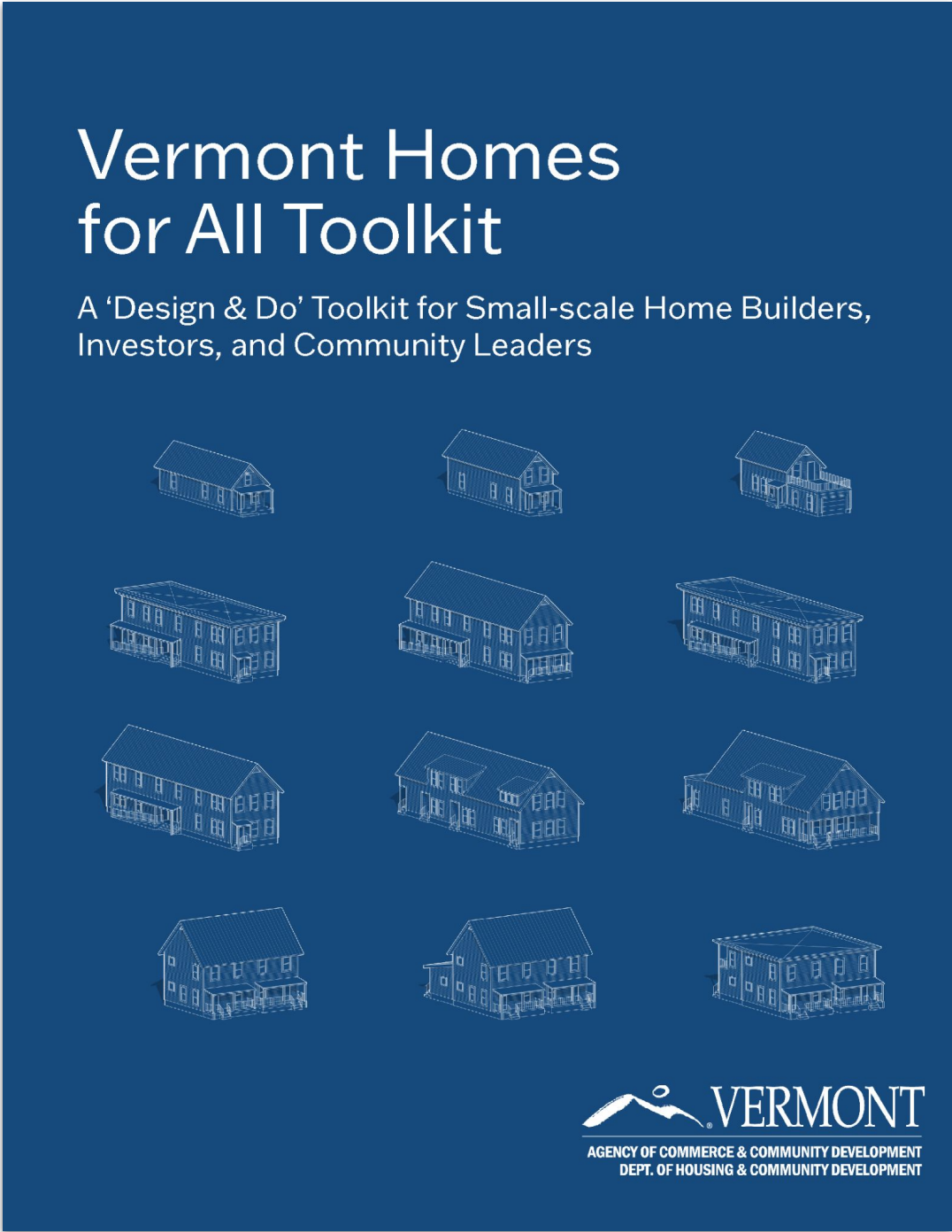
2025-2026

Homes for All Training Cohort & 802 Homes Pre-Approved Designs

Subsequent phases of Homes for All initiative.



Homes For All Project Phases



Phase 1: Engagement & Design (Toolkit)

Actions: Homes for All Toolkit, Builders' Workbook, Infill Case Studies
Status: Completed (Utile)



Phase 2: Training Curriculum & Cohort

Actions: 101-Level Training; Individualized Technical Assistance; CoP
Status: Intake is Live; First Workshop on Feb 21 in Montpelier (IncDev)



Phase 3: Pre-Approved Design Access (802 Homes)

Actions: Construction-Ready Pre-Approved Designs
Status: Started Nov 2025, Public Workshops Today! (Utile)

802 Homes Catalog

Free Home Designs with Streamlined Permitting

Purpose

Put community-tested home designs with streamlined permitting in the hands of small-scale developers to accelerate the timeline from site selection to move-in day.

Goals

- 1. Reduce development costs
- 2. Streamline permitting and development review process
- 3. Bridge the gap between capabilities of local builders and off-site construction technology
- 4. Empower small-scale developers with the tools to create missing middle homes
- 5. Cultivate local support for MMH

Outcomes

10 construction-ready, pre-approved housing plan sets + Development-Ready Community Resources

Each set of plans will be designed for both traditional on-site construction, as well as modern, off-site building methods (modular, pod, or panelized systems).



The CASTLETON

No. 227 Not Cut or Fitted.

Honor Bilt

\$1,989⁰⁰

At the price quoted we will furnish all the material to build this eight-room house. Price does not include cement, brick or plaster.

First Floor Four nicely arranged rooms on this floor, well lighted, and with plenty of room for furniture.

Second Floor Four bedrooms, bathroom and linen closet on this floor.

Height of Ceilings The basement has concrete floor and is 7 feet from floor to ceiling; second floor, 8 feet 6 inches from floor to ceiling.

We furnish our best "Quality Guaranteed" mill work, shown on pages 118 and 119. Interior doors are five-cross panel, with trim and flooring to match, all yellow pine, in beautiful grain and color.

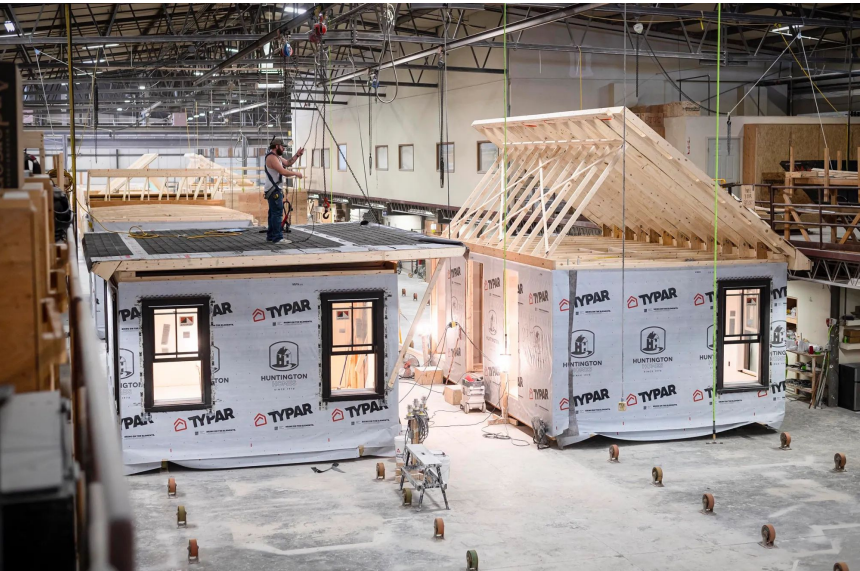
Paint for three coats outside, your choice of color. Varnish and wood filler for interior finish. Chicago Design hardware, see page 120.

Built on a concrete block foundation, excavated under the entire house.

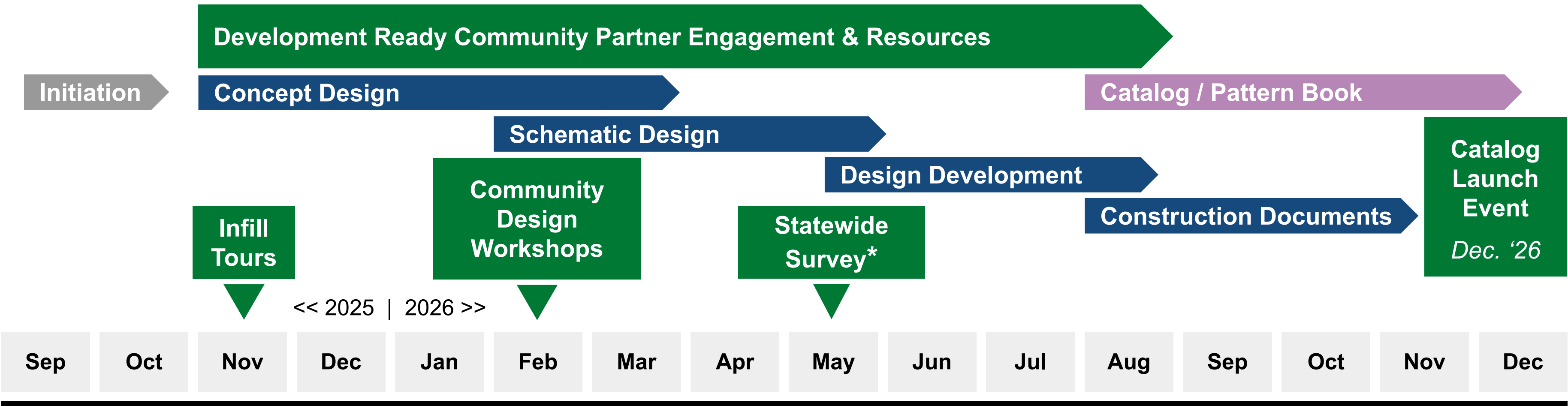
Our Guarantee Protects You—Order Your House From This Book. Price Includes Plans and Specifications. For prices of Plumbing, Heating, Wiring, Electric Fixtures and Shades see page 115.

OPTIONS

Wood Siding on second story, \$70.00 extra.
Sheet Plaster and Plaster Finish to take the place of wood lath, \$195.00 extra. See page 114.
Oriental Asphalt Shingles, instead of wood shingles, \$22.00 extra.
Fire-Chief Shingle Roll Roofing, Red or Sea Green in color, instead of wood shingles, \$6.00 less.
Floors, Trim, Doors, etc., for living room, dining room, hall, den and stairs, furnished in clear red oak for \$142.00 extra.
Clear Maple Flooring furnished for kitchen, pantry and bathroom, instead of yellow pine, no extra charge.
Storm Doors and Windows, \$88.00 extra.
Screen Doors and Windows, black wire, \$60.00 extra; galvanized wire, \$63.00 extra.
If Mantel is not wanted, \$53.00 less.
Should be built on a lot about 35 feet wide.



802 Homes Project Schedule

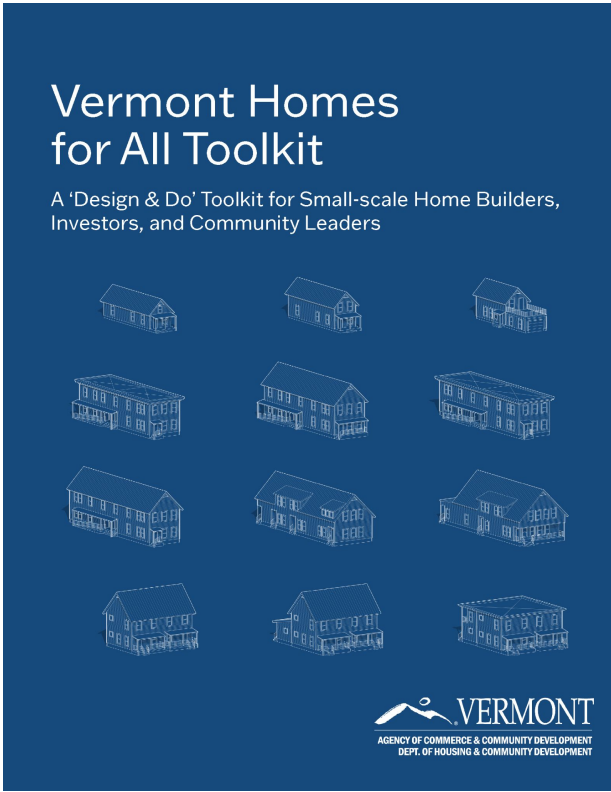


**WE ARE
HERE**

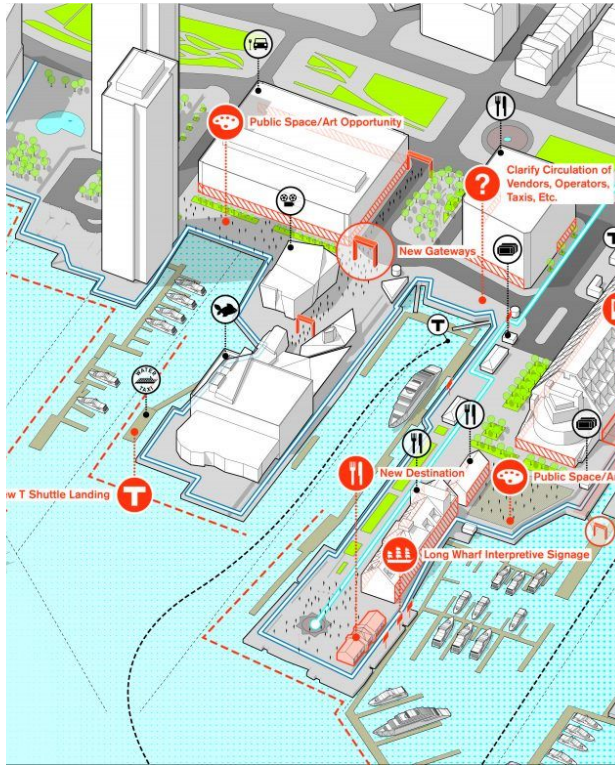
***Statewide Survey is Live Through 6/19!**



This project is full spectrum. It brings together macro and micro



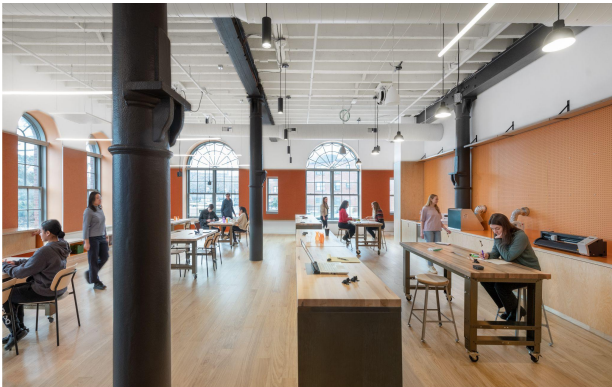
Vermont Homes for All Toolkit, Vermont Statewide



Downtown Boston Waterfront Plan



Top: Jamaica Plain Branch Library Addition & Renovation, Bottom: Belmont Day School Barn



Top: Kendall Square Workspace, Bottom: The Possible Project



Top: 7 East Springfield Street, Bottom: 9 Burney Street



Top: Hyde Blakemore Home Ownership (Urban Edge), Bottom: Front Street Phase 1 (Portland Housing Authority)

Policy & Planning

Zoning, Comprehensive Plans, District & Corridor Plans, Campus Plans, Housing Typology Based Policy and Strategy

Urban Design

Public Realm Design, Test-Fitting & Feasibility Studies, District & Corridor Urban Design Frameworks, Development Framework Plans

Institutional, Cultural & Civic

Campus Planning, Renovations & Additions, Ground-Up New Construction, Pavilions and Public Realm Design

Innovation Spaces & Labs

Campus Planning, Renovations & Additions, Ground-Up New Construction, Interiors

Multifamily Residential

Missing Middle, Urban Infill, Towers, Suburban and Rural Infill and Cluster Development

Affordable Housing

Mixed Income and 100% Affordable, Adaptive Reuse and Ground Up New Construction

This kind of work requires diverse expertise and close collaboration



Utile office locations

Who is on the consultant team?

Policy, Planning &
Economic Feasibility



Offsite
Construction



Structural
Engineering



Building Code



Rooted in Vermont Vernacular

Each of our home designs is based on one or more examples found in Vermont communities. Here are a sampling of some of the buildings that inspired our home designs.



Railroad Flat



Foursquare



Back-to-Back



Side-By-Side



Paired Starter Home



Triple Decker



Village 4



Narrow Lot



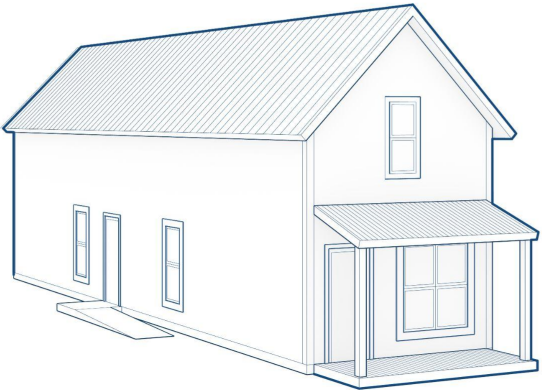
Stackable



Rowhomes

802 Homes Catalog Designs

Want to see more details?
Take the Statewide Survey.
It is live through 6/19!
Spread the word.



Railroad Flat

Single Unit

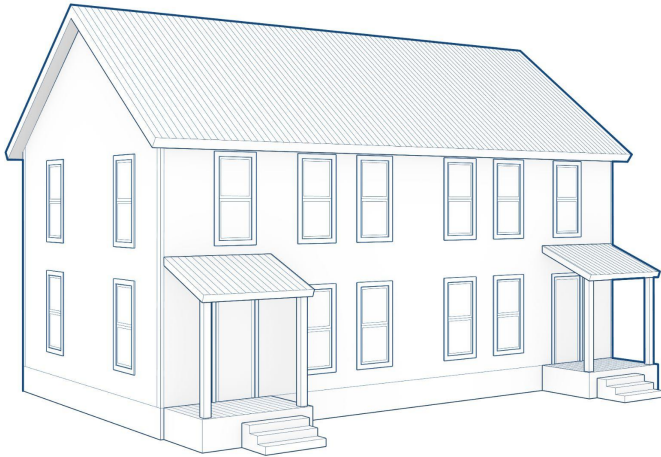


Foursquare



Back-to-Back

Two Units



Side-By-Side



Paired Starter Home



Triple Decker

Two Units

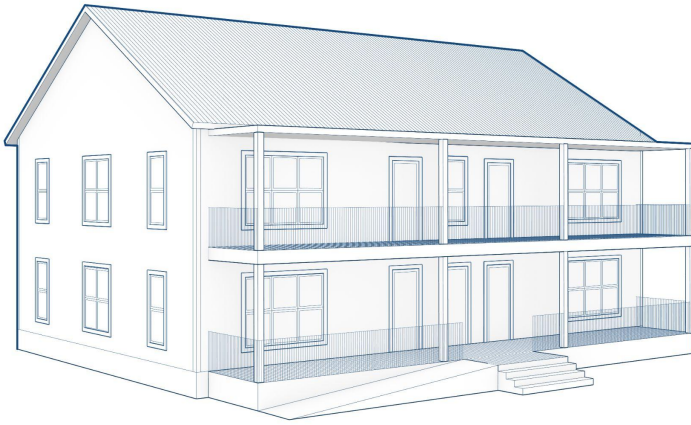


Village 4

Four Units



Narrow Lot



Stackable

Four or More Units



Rowhomes

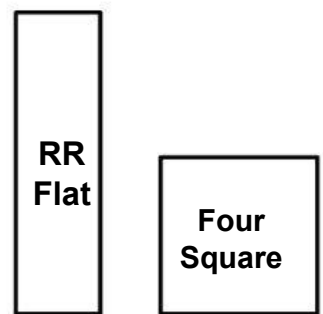
Universal Design & Accessible Units

Core goal: Create small-scale, well-designed homes that allow people to remain in their communities while living in spaces that are safer, more manageable, and better aligned with their needs over time.

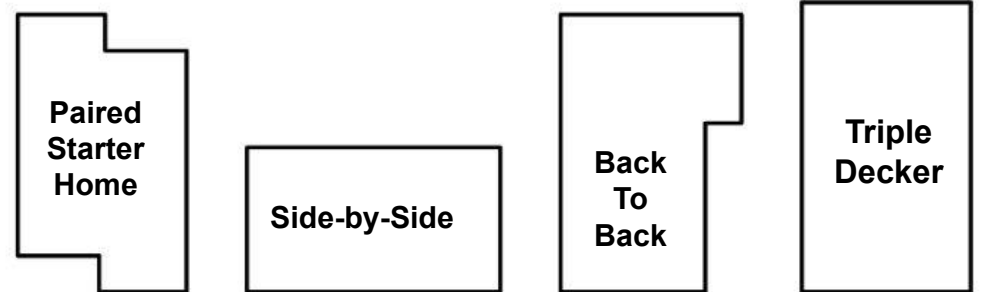
What does this mean in terms of specific design features?

- Ensure homes can be easily entered and navigated by people of all ages and abilities (e.g., first-floor living options, wider doorways and hallways, accessible bathrooms, open plans with easy sightlines)
- Allow guests with mobility challenges to comfortably enter and use key spaces (e.g., bedrooms, common areas, and a kitchen and bathroom on the ground floor)
- Support flexible living arrangements over time, including layouts that can accommodate caregivers or allow for multigenerational use
- Incorporate adaptable features — such as pre-framed openings to connect units or accommodate additions — to respond to changing household needs with minimal renovation
- Be usable by the widest range of people, without the need for later modification — flexible, adaptable, and inclusive by design rather than retrofit

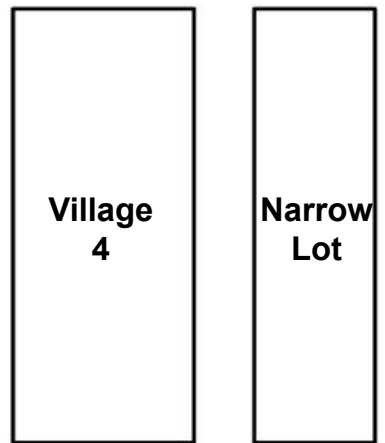
Single Family



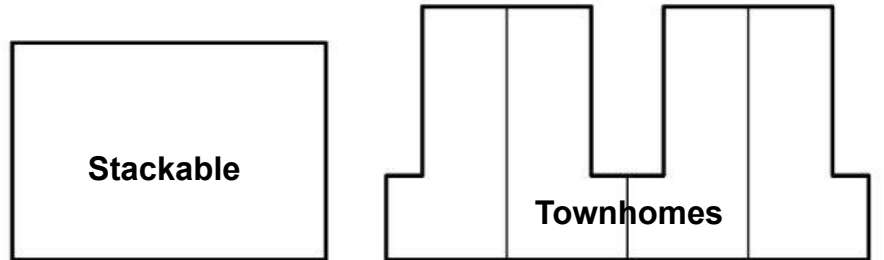
Two Family



Four Family



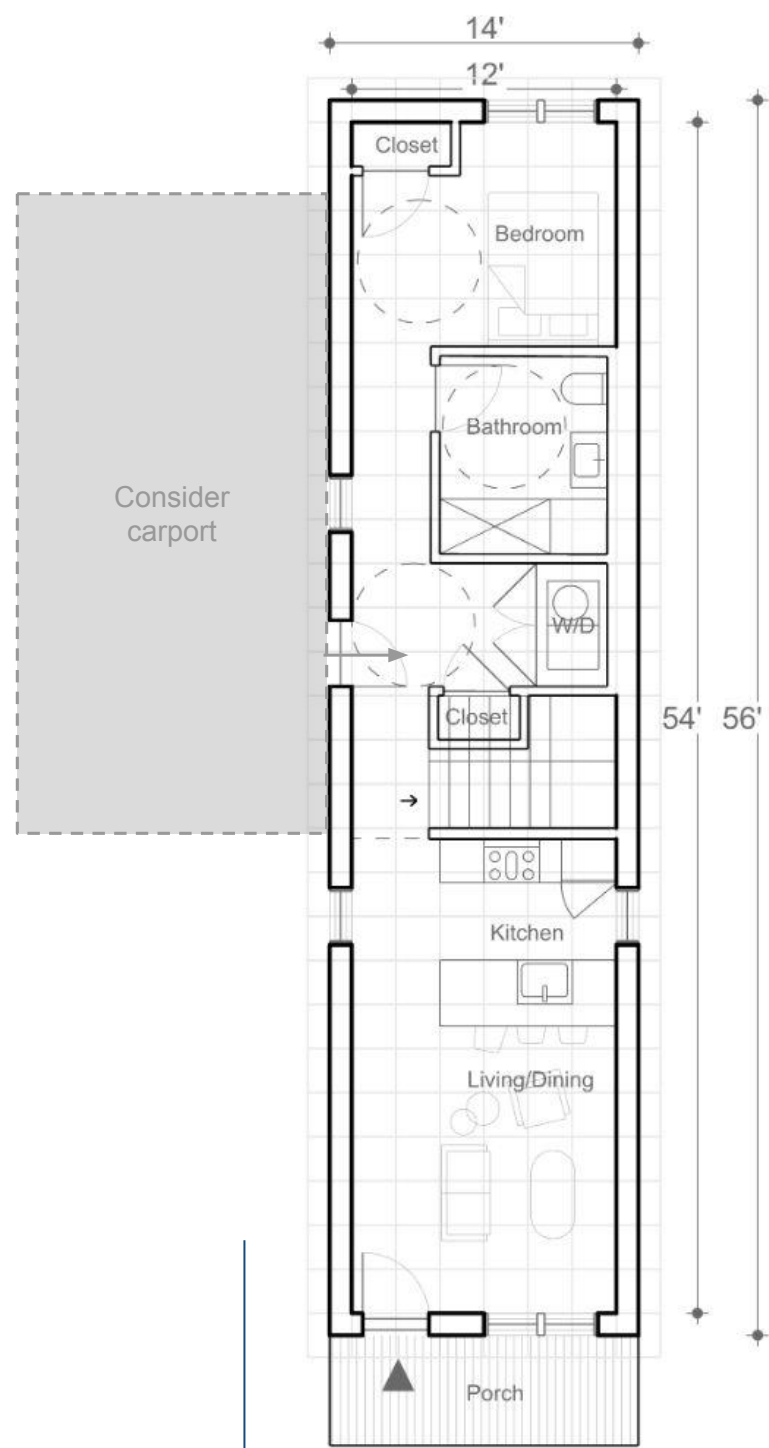
Four-Six Family



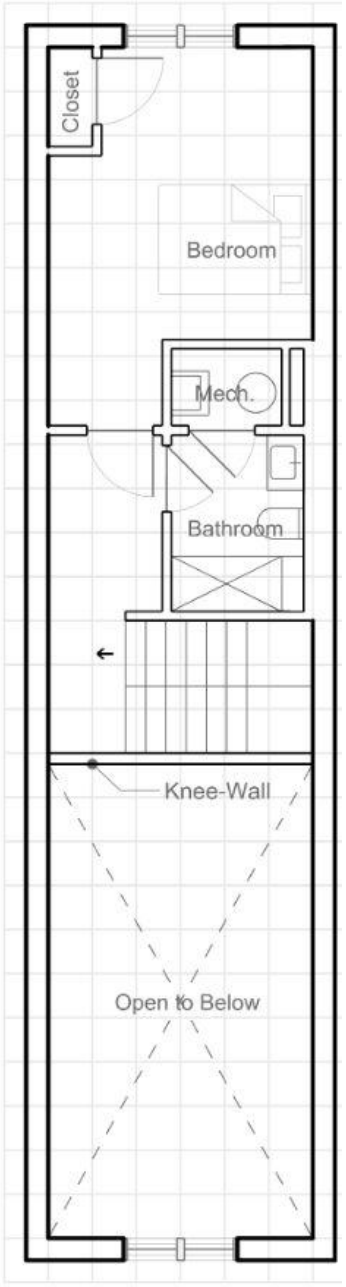
Visitable Units

Accessible Units

Floor 1



Floor 2



Example Accessible Unit: Railroad Flat (Narrow ADU)

- Fully accessible flat
- Second bedroom for caretakers / family
- Slender dimensions for seniors “downsizing” on their own lots

802 Homes + Off-Site Construction

10 Home Designs, Each Designed Two Ways

The designs will be calibrated to **multiple construction methods to support the diversity of our local builders and varying site constraints.**

Platform Framing (On-Site)

Traditional method used to build homes on-site, often referred to as “stick built”, can work with panelized / Pods construction



Panelized (Off-Site)

2D, most commonly used for exterior wall panels, can be finished to variable degrees (pre-insulated, or finished)



Pods (Off-Site)

Mid-scale 3D, Bathrooms, Kitchens, Laundry rooms, can be used with panelized systems or a stick built base



Volumetric (Off-Site)

Room-scale 3D, full room size volumes, in some cases electrical and plumbing work can be done in the factory rather than on site



OR

Most Flexible, Least Efficient



Least Flexible, Most Efficient

Benefits of Off-Site Built Housing?

Speed to Market, Reduced Risk, Cost Savings, Labor Efficiencies, Consistent Quality and Less Waste, Scalability...

*Builder: Preferred Building Systems
Claremont, NH*

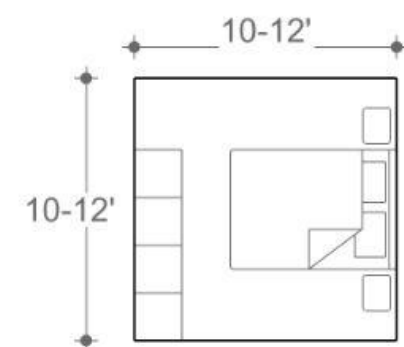
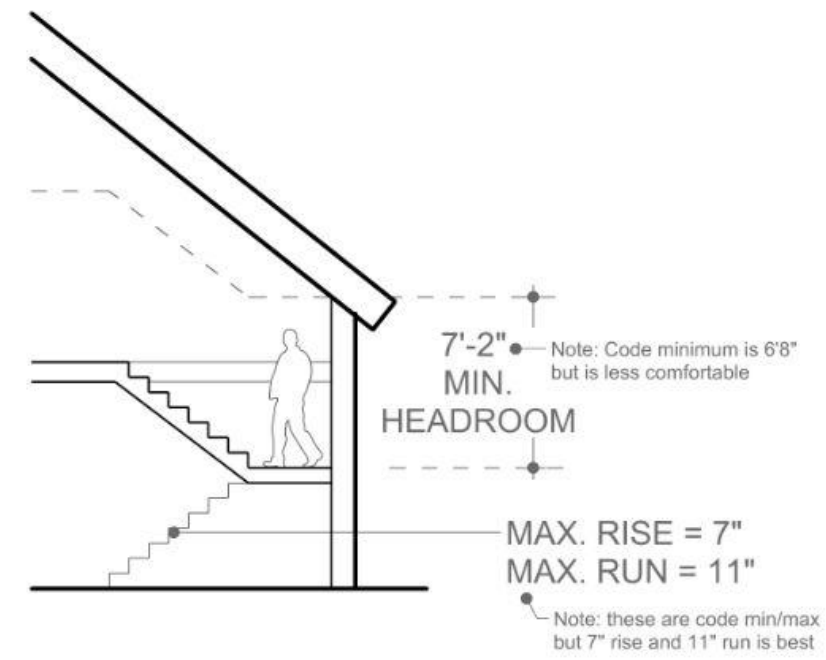
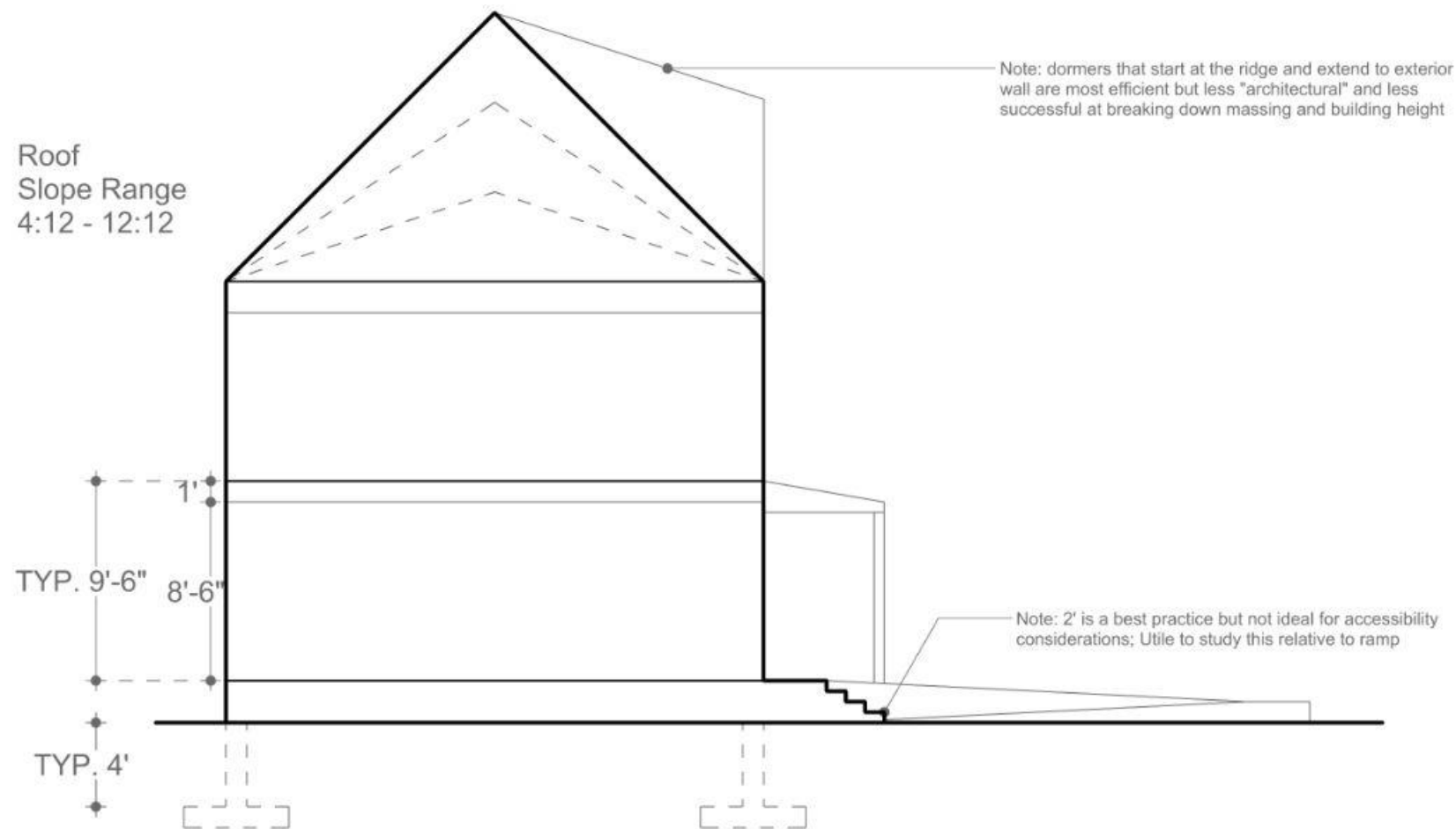


*Builder: Bensonwood / Unity Homes
Walpole, NH*

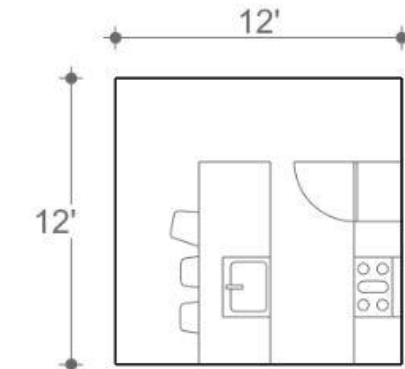


Systems Thinking

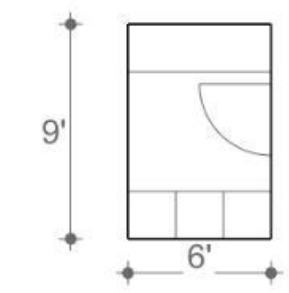
Designing with a Standardized Kit of Parts



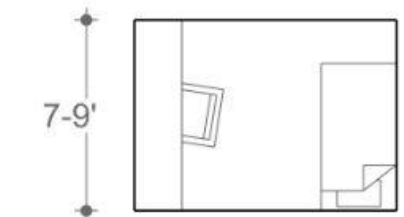
Bedroom
Queen Bed



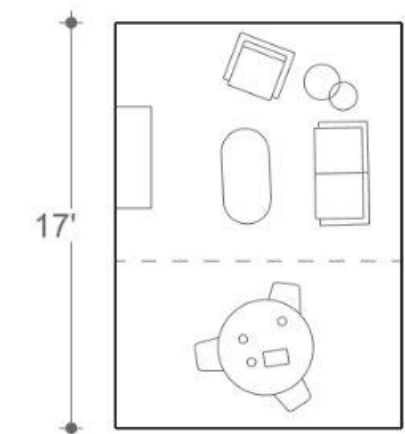
Kitchen



Mud / Foyer

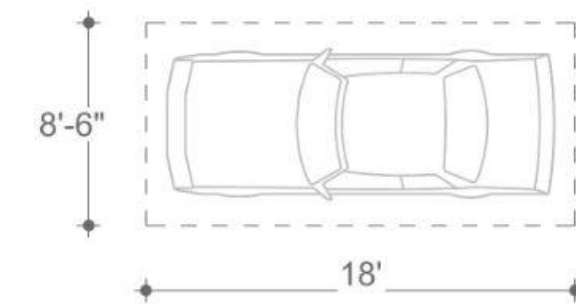


Kids Bedroom /
Office / Den



Living

Dining

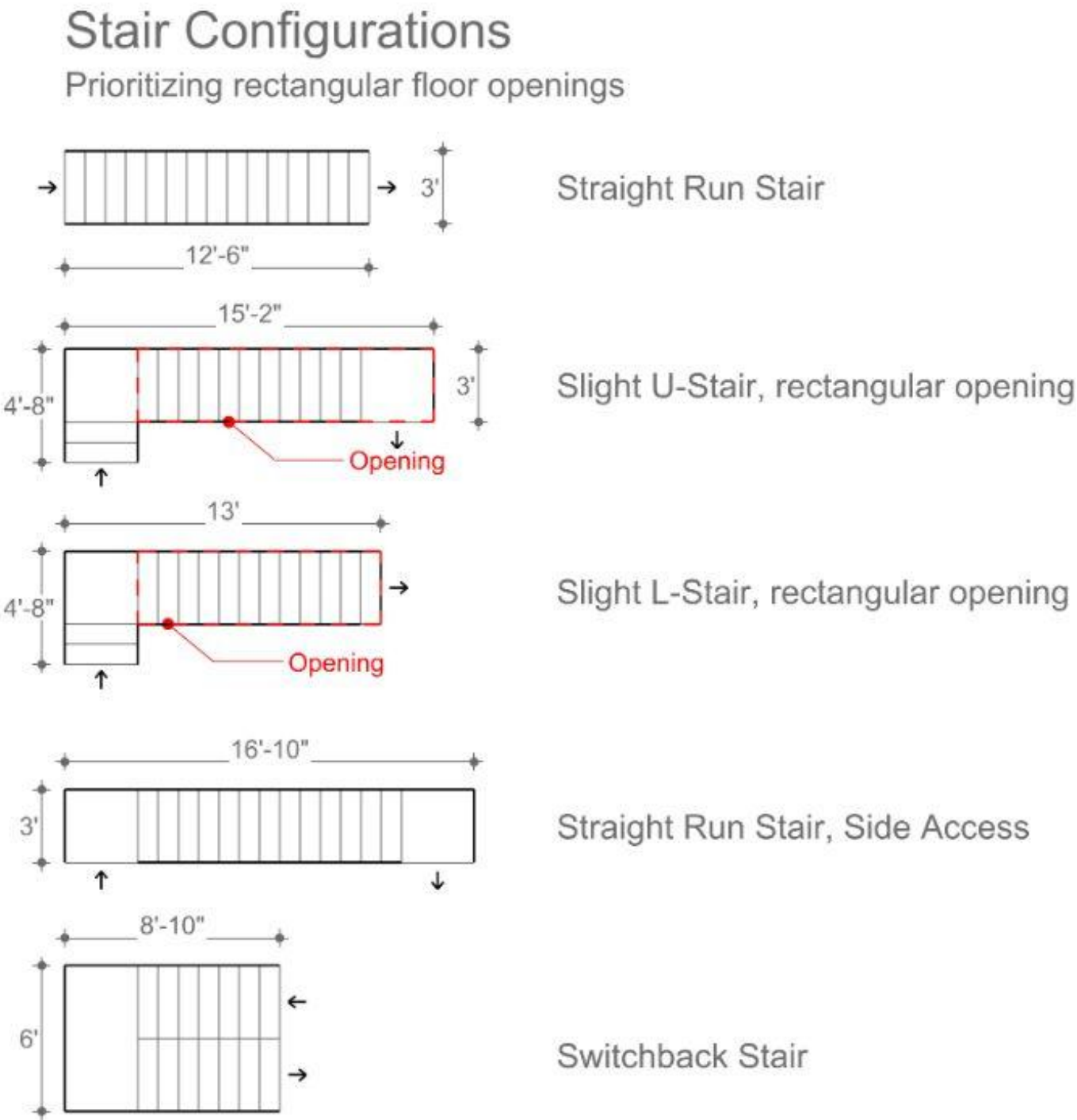
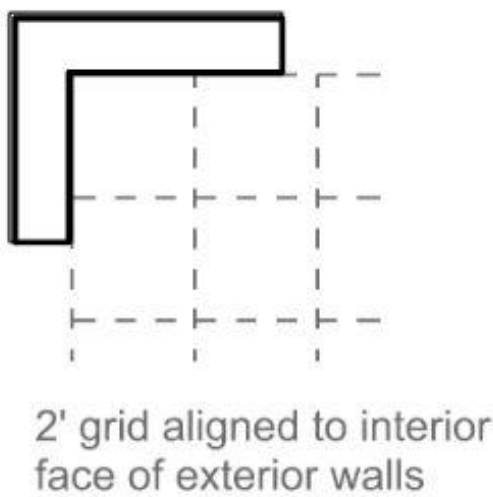
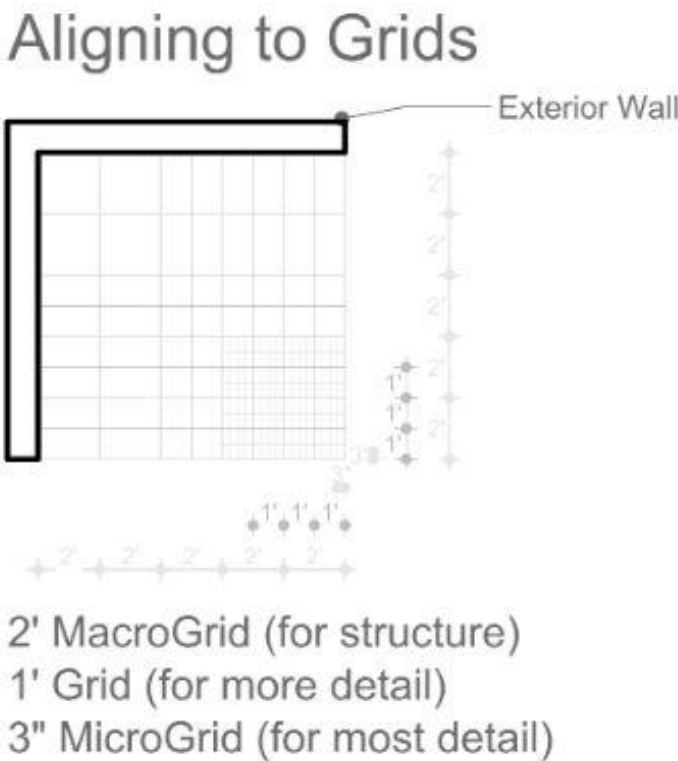


Parking

Systems Thinking

Designing with a Standardized Kit of Parts

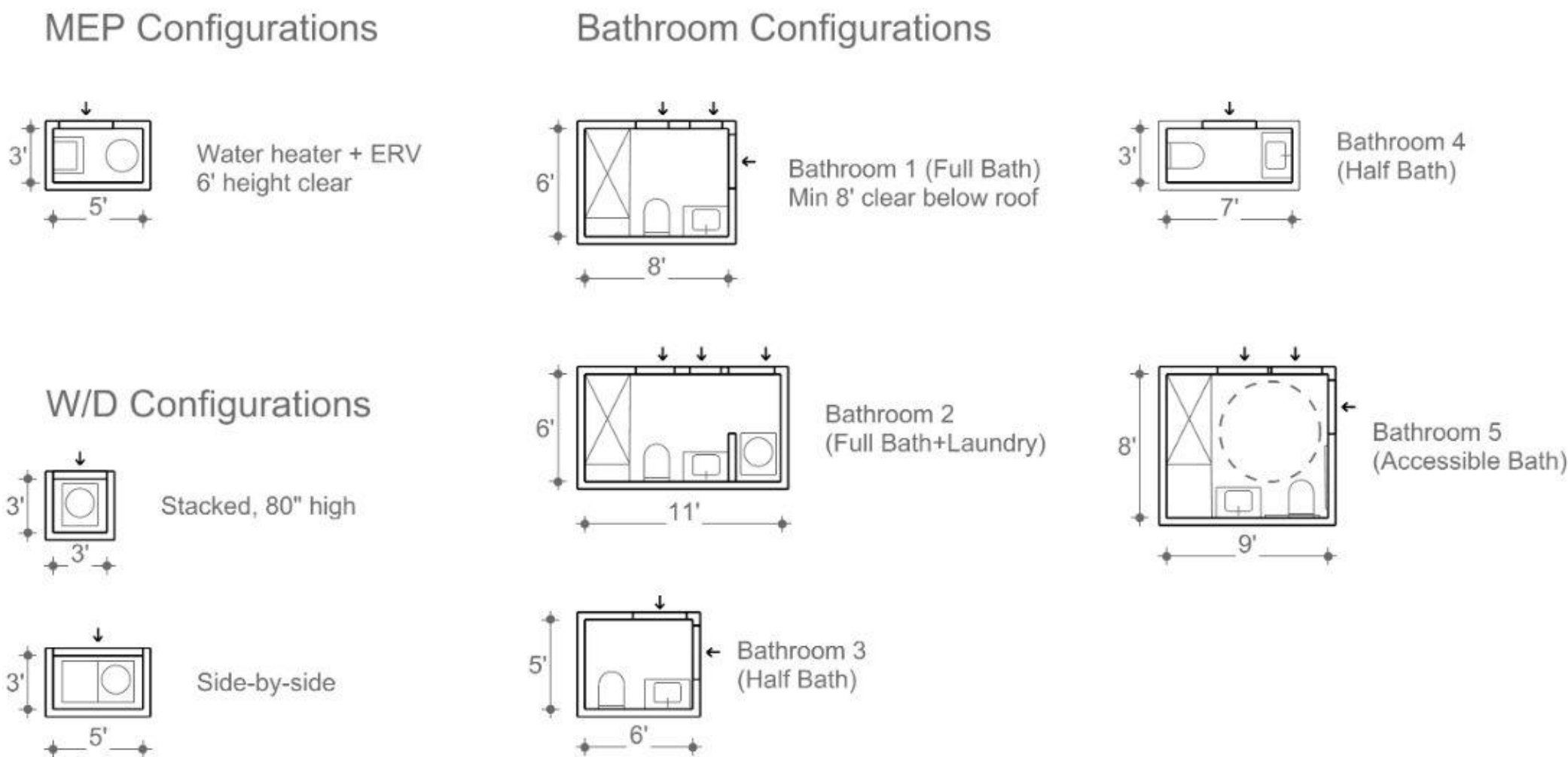
Based on panelized construction systems



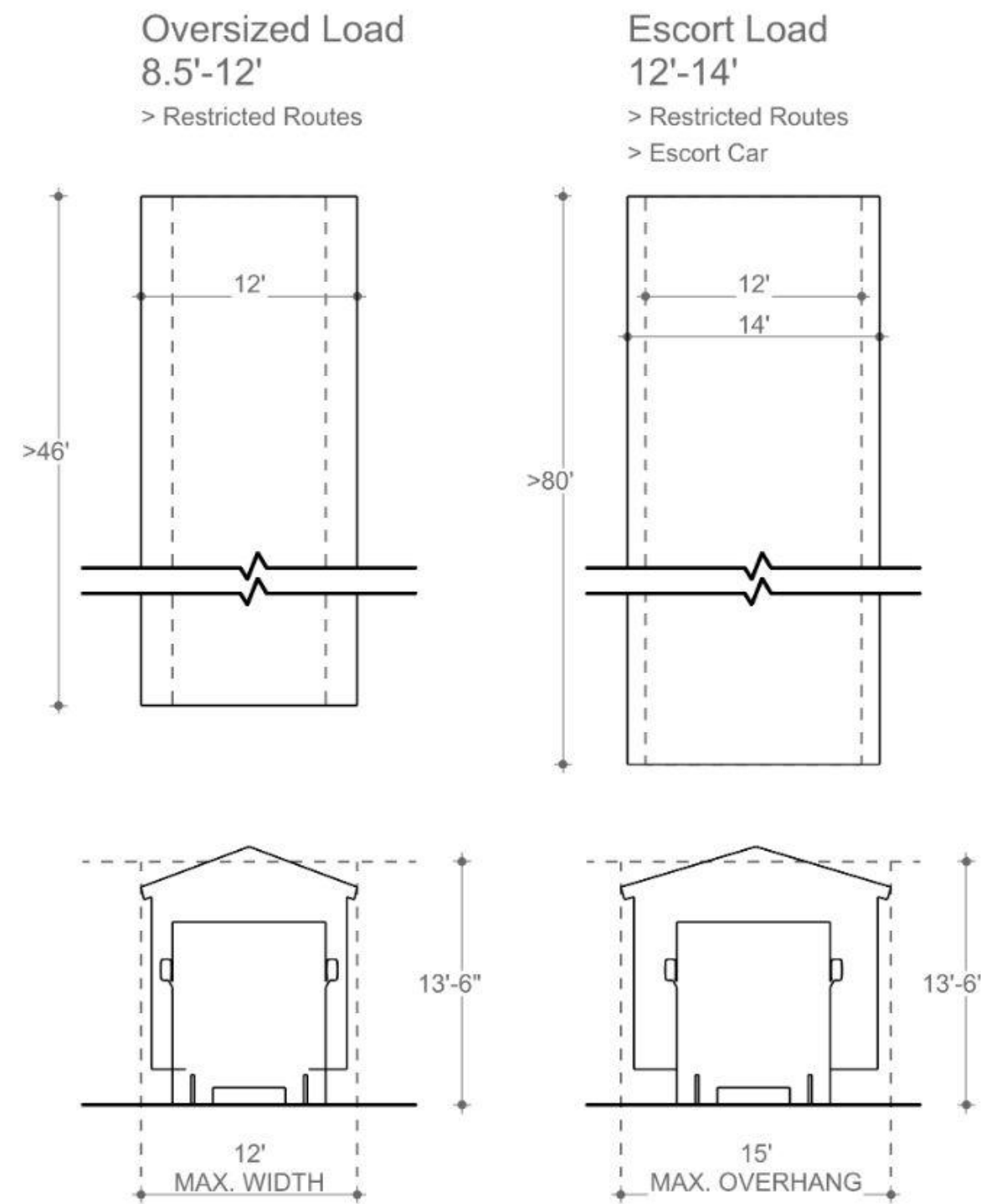
Systems Thinking

Designing with a Standardized Kit of Parts

Based on pod construction systems



Based on volumetric construction systems



Systems Thinking

Variants of Home Designs to Match Site Limitations and Developer Preference

Each 802 Homes design can be considered a “base model”

They are designed with an eye to potential future variations in order to preserve adaptability options.

Phase one home typologies were discovered and developed to fit a variety of communities and sites.

We have kept these variations in mind for the 802 Homes designs.



Age-In-Place



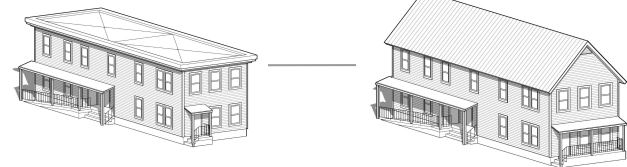
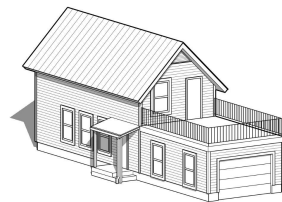
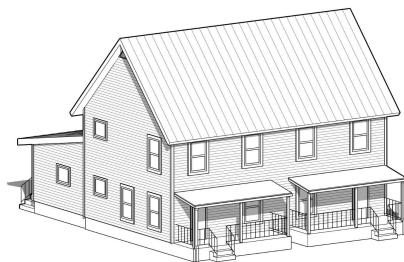
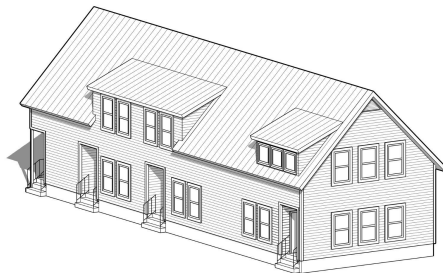
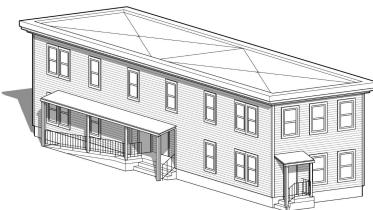
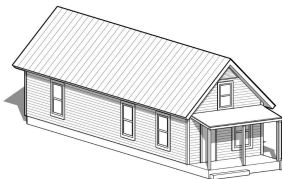
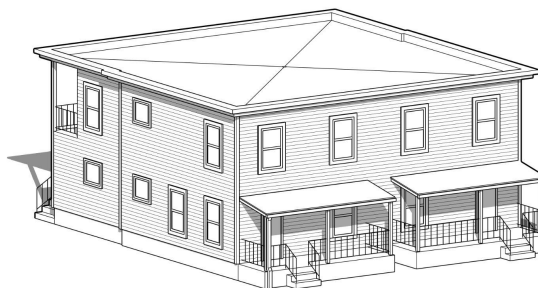
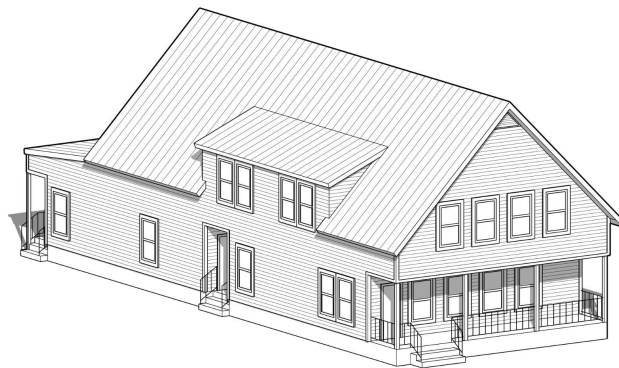
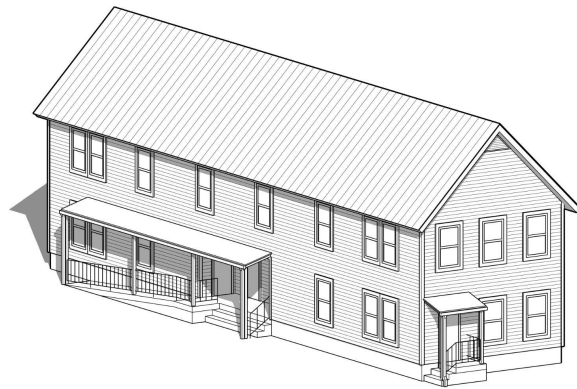
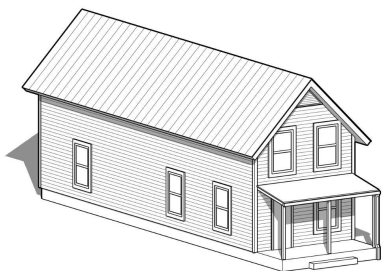
Narrow Lot



Village



Side-by-Side

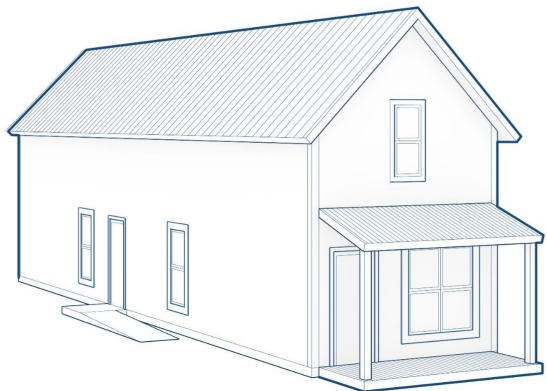


Systems Thinking

Variants of Home Designs to Match Site Limitations and Developer Preference

These variants will not be included in the 802 Homes Catalog, but will be kept in mind in the design of the ten “base models”

Potential Variant
Attached
Garage/Carport



Railroad Flat

Single Unit



Foursquare

Potential Variant
Rear Unit Conversion
to Accessible



Back-to-Back

Two Units

Potential Variants
Add Rear “Backpack”
Unit or Bedroom



Side-By-Side



Paired Starter Home

Potential Variants
Third Floor Unit or First
Floor Commercial



Triple Decker

Two Units

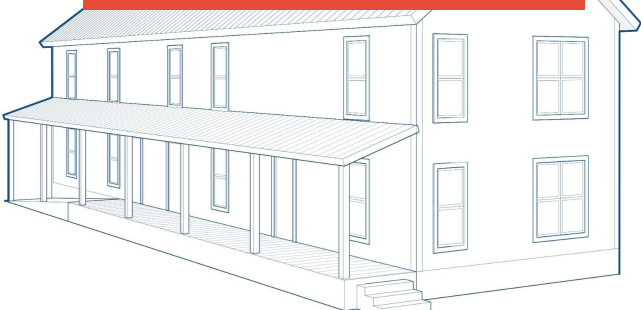
Potential Variants
Two- & Three-Unit
Shallower Versions



Village 4

Four Units

Potential Variant
Two-Unit
Shallower Version



Narrow Lot

Potential Variant
Three-Floor
Version



Stackable

Four or More Units



Rowhomes

“Development-Ready” Community Partners



Create a roadmap for other communities by identifying the steps required to incorporate **administrative approvals** into bylaws or streamline existing administrative approval processes for 802 Homes

State-Level Pre-Approval from Div. of Fire Safety



Streamlined Local Permitting and Approval



Local Infill Opportunities and Supportive Bylaws



More Homes
Delivered through
Predictable Process

“Development-Ready” Community Resources

Co-Developed with Community Partners to Facilitate Implementation Momentum Statewide

How can municipalities **create a predictable, right-sized process** for Missing Middle Housing, infill development, and 802 Homes?

DEVELOPMENT-READY BEST PRACTICES

Aspirational tool for communities in the pursuit of “development-readiness”

- Municipal Investment Prioritization & Alignment
- As-of-Right Development Standards Best Practices
- Development Review & Permitting Best Practices

PERMITTING GUIDE

Checklist-style template for aspiring developers that clearly outlines required documentation and level of detail required for permitting.

- Tailored to Housing Types and Development Scenarios Typical to 802 Homes/Gentle Infill
- Adaptable for Each Municipality

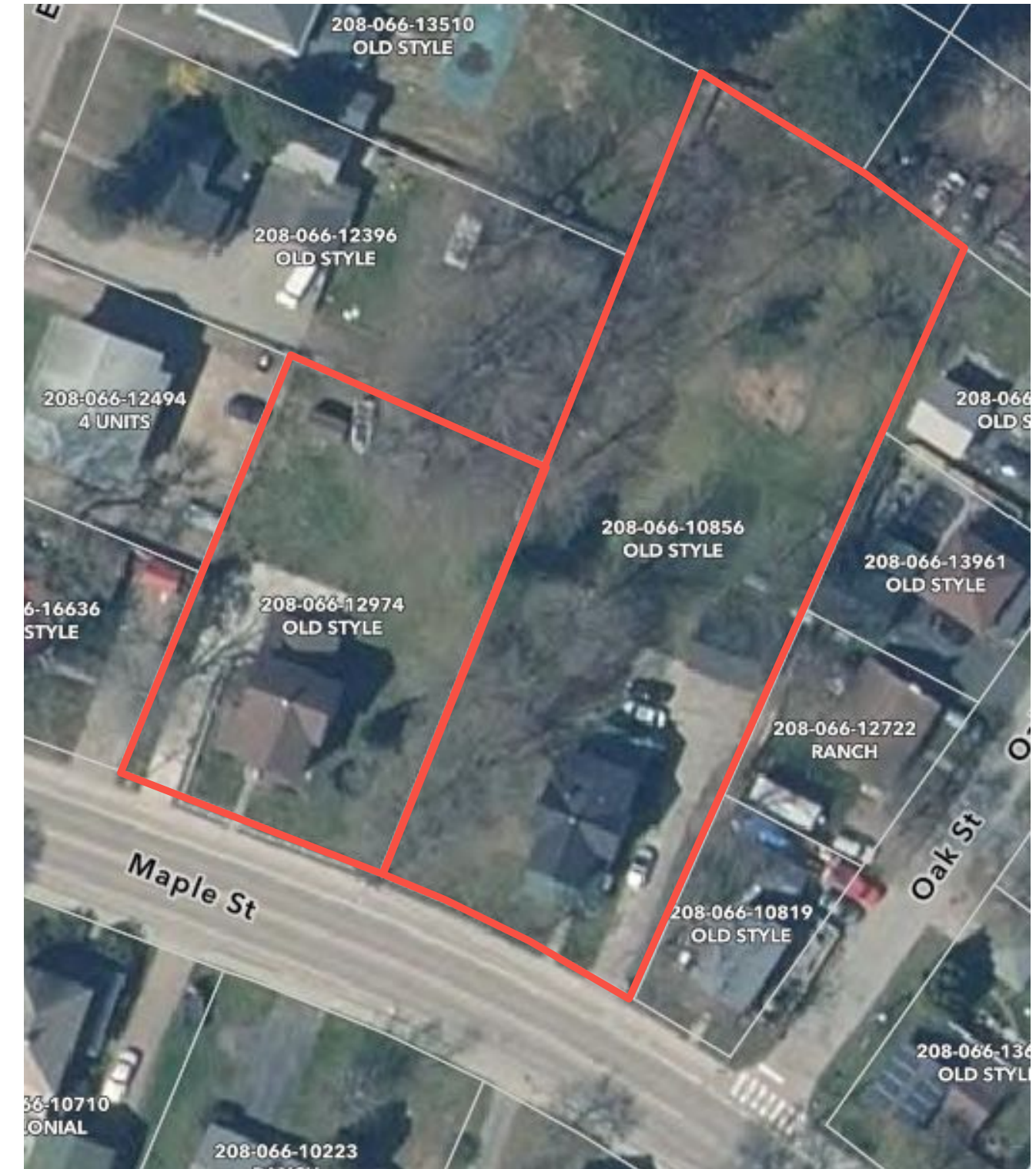
Permit Audit Process to Inform Community Resources

What does it take to **permit and build** an 802 Home?

What is **possible** under current regulations?
Are there missed **opportunities**?

How can we **improve the process** and **create better conditions** for infill housing development?

1. Streamline and Simplify Process for Small-Scale Development
 - Enable Administrative Approval (Multi-unit and Minor Subdivision)
 - Pre-Approval in Design Review Districts
 - Clarify and Standardize Permit Requirements (limit open-ended use of “may”)
2. Update Development Standards to Enable Context-Appropriate Infill
 - Second Principal Structure on a Lot
 - Dimensional Standards
 - Shared Driveways
 - Frontage Requirements
 - Flag lot or Small-lot Subdivisions



From Design Plans to Built Homes

How Can 802 Homes be a Vehicle for Recalibrating the Housing Delivery System?

Align the system –
building form, local
codes, housing
construction, workforce,
infrastructure, and
capital funding –
**to make housing
development more
predictable and
less risky.**



Building the Network: Small-Scale Developer Trainings

Partnership of DHCD, LAOB, VHFA. Training by Incremental Development Alliance and HELM Construction Solutions.

Multi-entrance points to build local capacity:

- Workshops (101-Level, Single-day)
- Academy (5, 3-hr Online Sessions)
- Advanced 1:1 Project Coaching
- Community of Practice

Status:

- Over 250 Vermonters registered for program.
- Stated interest in developing in all 14 counties.
- Over 65 prospective developers at each workshop event held so far.
- ~\$750,000 in funding through the LAOB to support pre-development costs



Locations of Workshops >>>



<<< Intake Form



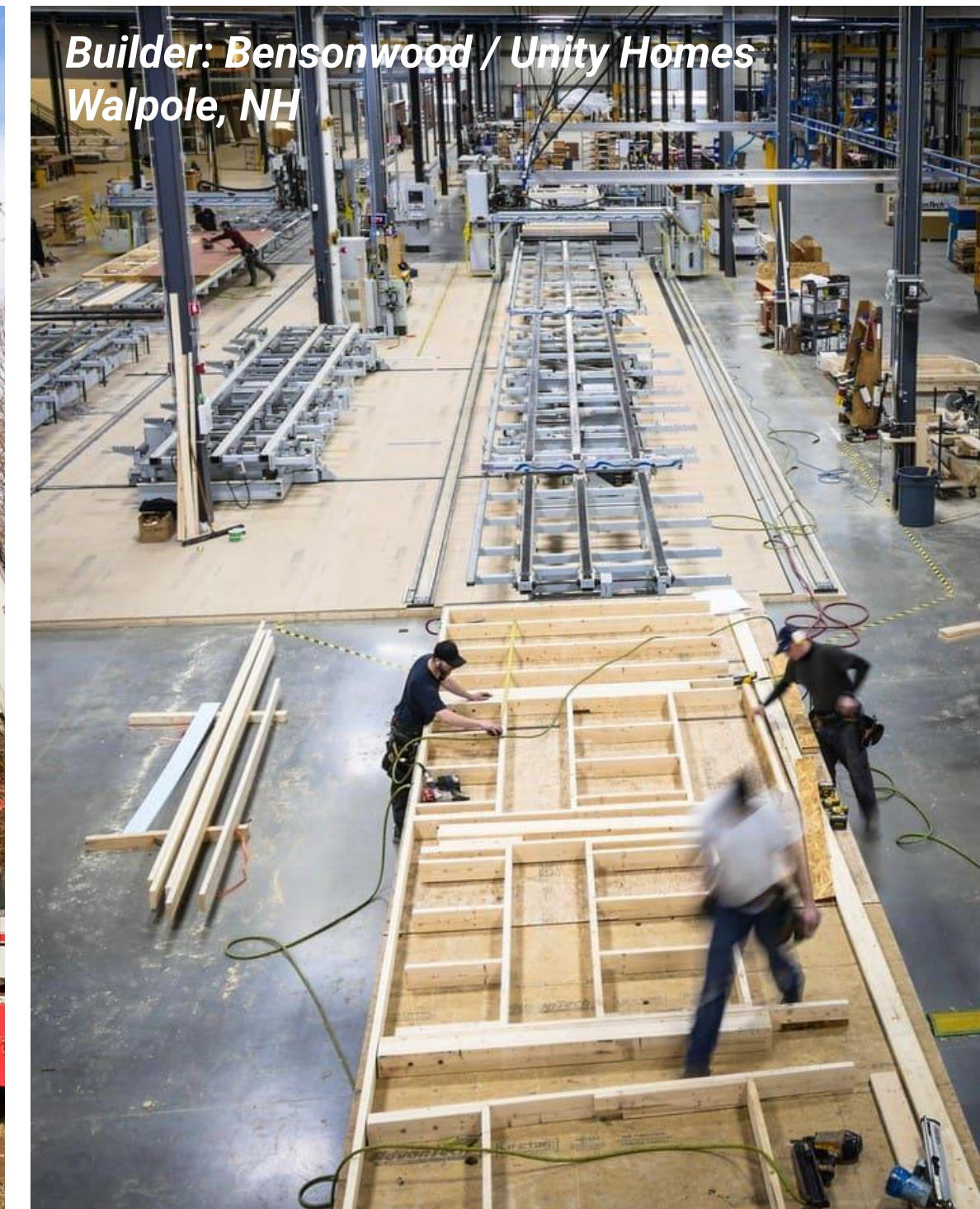
Scale Matters

How Can 802 Homes be a Vehicle for Recalibrating the Housing Delivery System?

Single, one-off projects cannot create efficiencies.

But repeated production of standardized designs across communities can:

- Stabilize supply chains
- Promote business expansion
- Enable bulk purchasing
- Lower construction costs



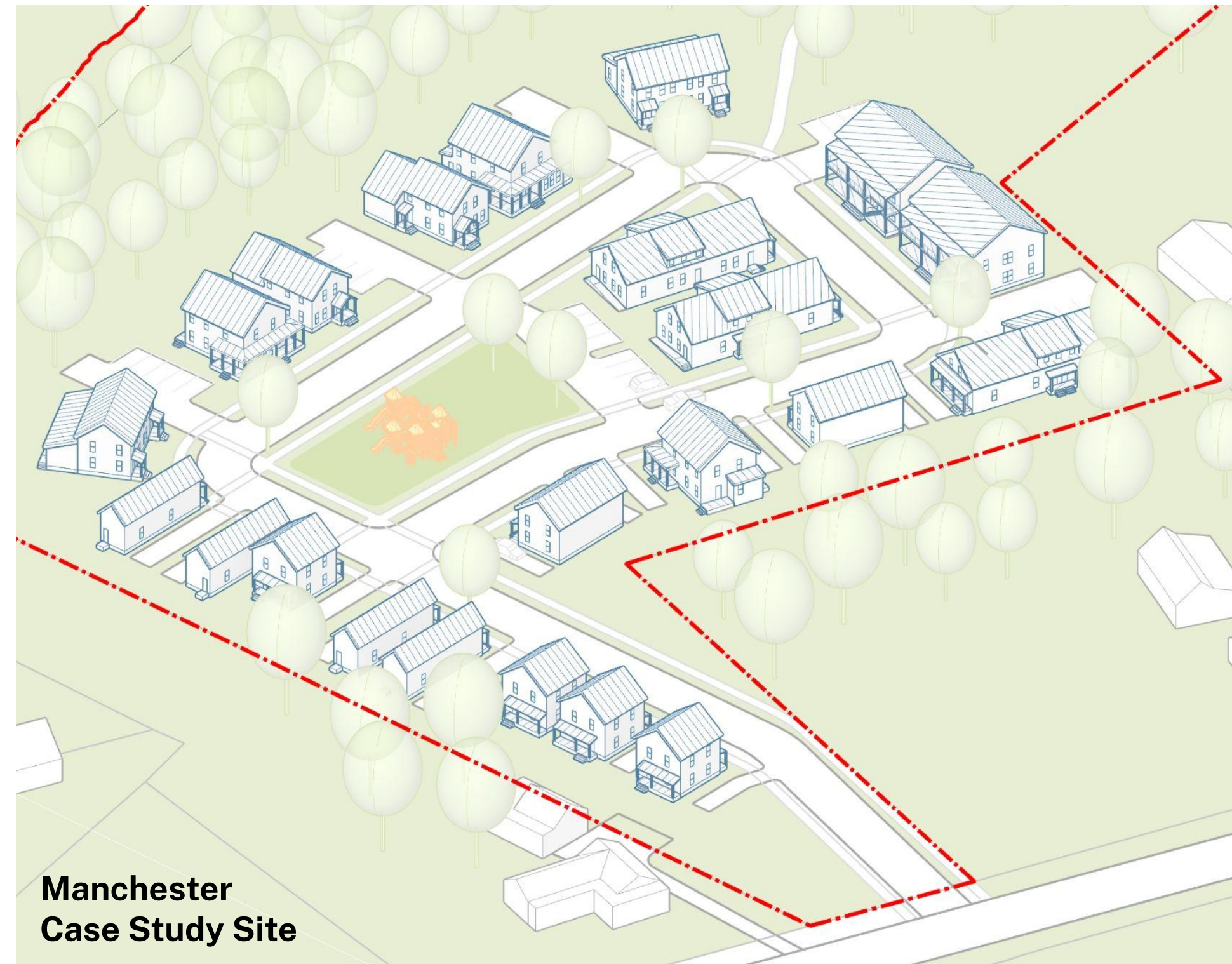
Bulk Purchasing

Aggregating Demand for Modular, Off-Site Built Housing to Increase Production

With Support from the Treasurer's Office
Currently in Draft Legislation

Three Different Potential Models

- **New Neighborhood** through Single Developer
 - Stonecrop Meadows Model



Bulk Purchasing

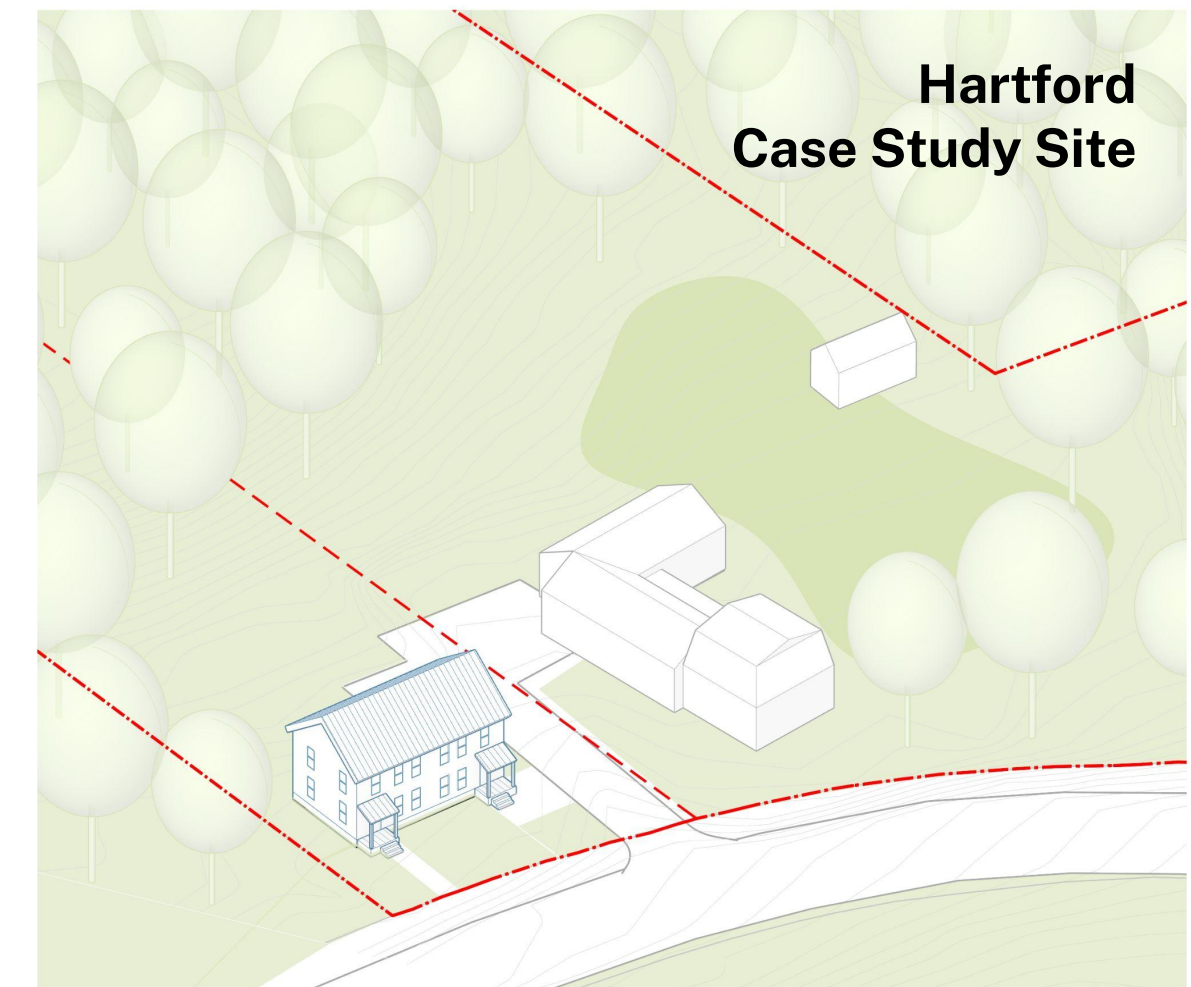
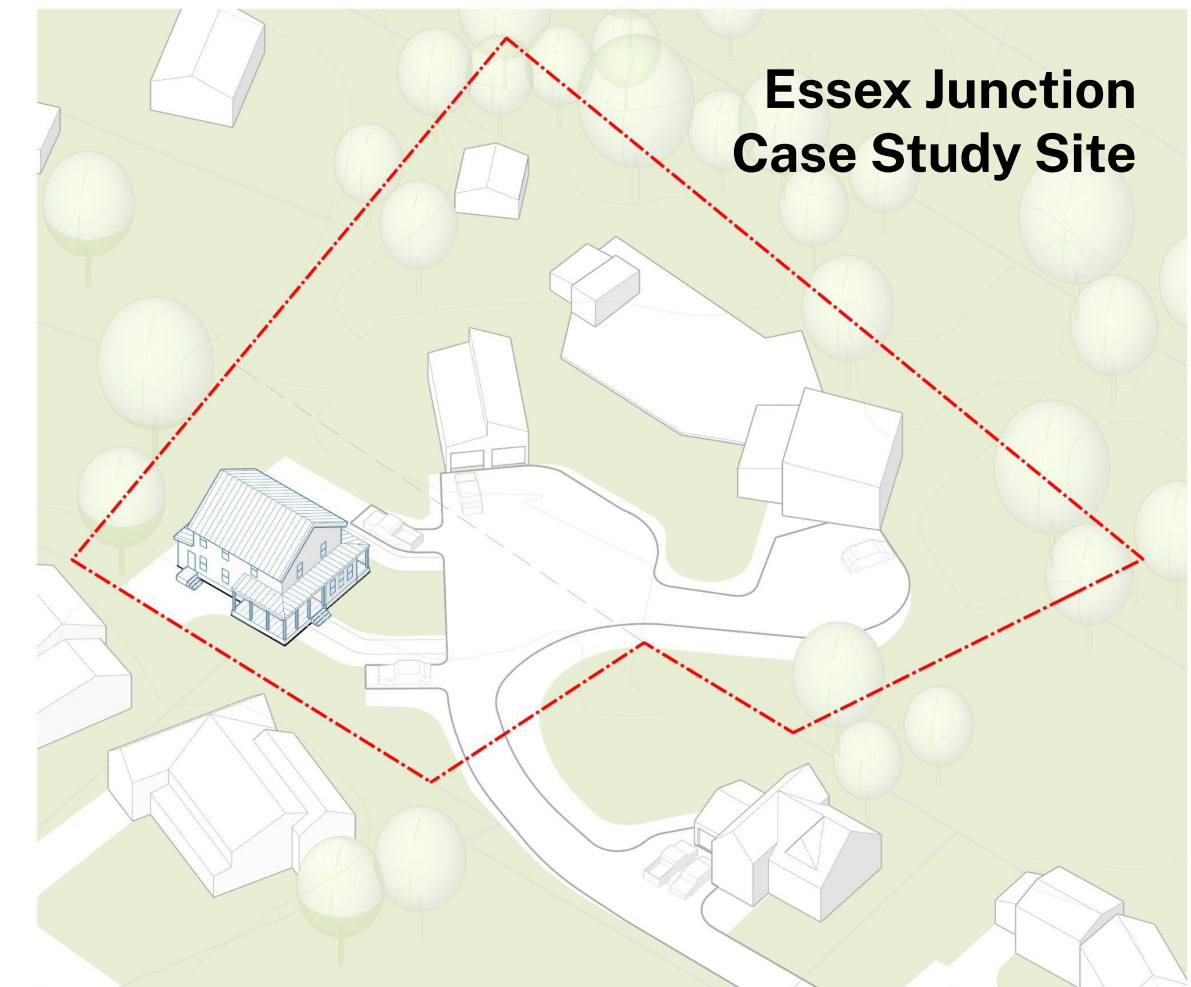
Aggregating Demand for Modular, Off-Site Built Housing to Increase Production

With Support from the Treasurer's Office

Currently in Draft Legislation

Three Different Potential Models

- **New Neighborhood** through Single Developer
 - Stonecrop Meadows Model
- **Scattered Site Development** through Demand Aggregation
 - Support Rural Housing Creation / Small Infill Projects



Bulk Purchasing

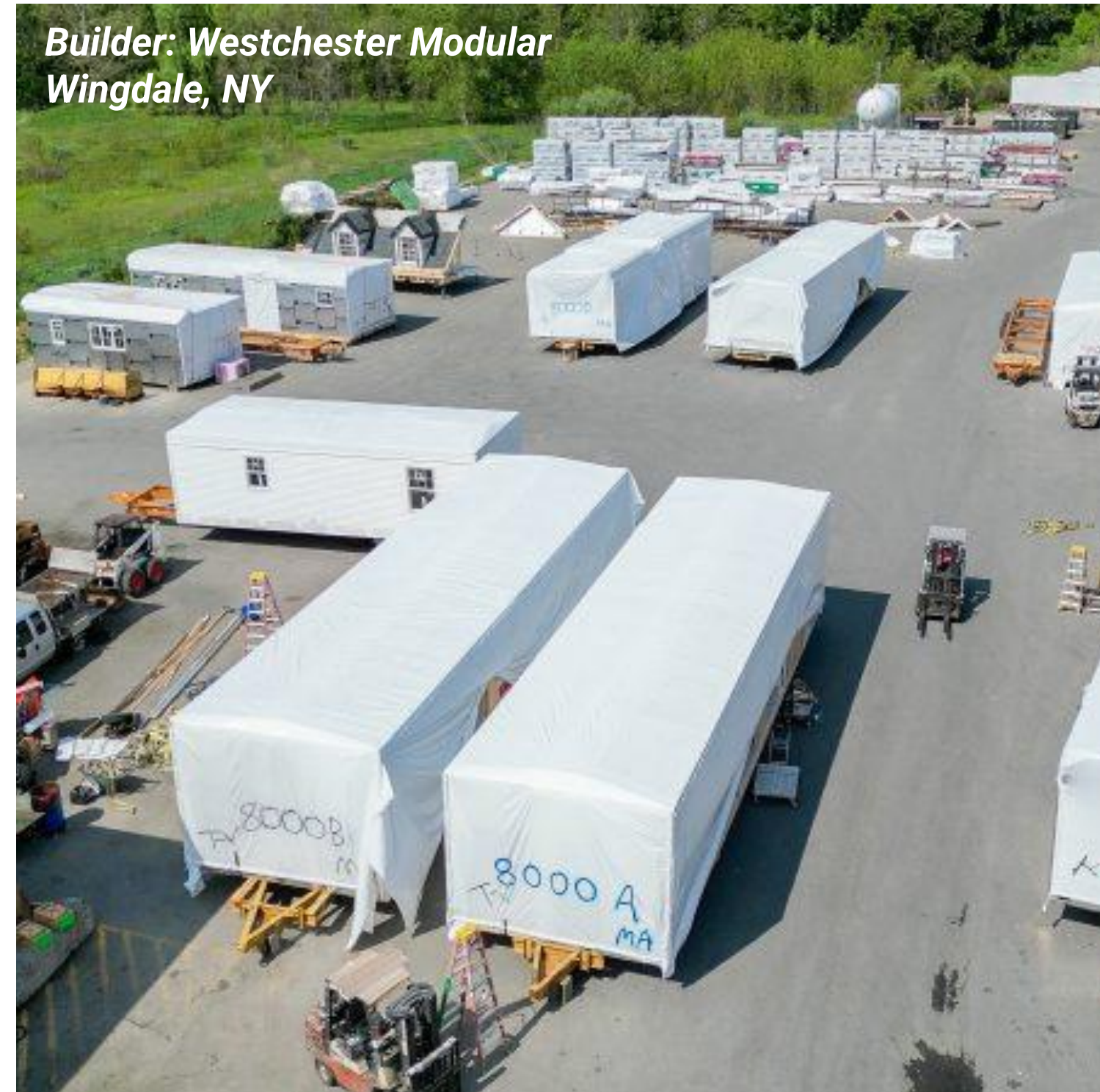
Aggregating Demand for Modular, Off-Site Built Housing to Increase Production

With Support from the Treasurer's Office

Currently in Draft Legislation

Three Different Potential Models

- **New Neighborhood** through Single Developer
 - Stonecrop Meadows Model
- **Scattered Site Development** through Demand Aggregation
 - Support Rural Housing Creation / Small Infill Projects
- **Order Enables “Inventory” Creation** at Manufacturer
 - Manufacturer Fills Gaps in Existing Orders to Even Workflow
 - Developer “Pulls Unit Off Shelf” for Installation On Site



Aligning Infrastructure and Capital

How Can 802 Homes be a Vehicle for Recalibrating the Housing Delivery System?

Streamlined, Predictable Permitting

Supportive Bylaws and Funding through MPGs

Developer Training to Expand Capacity

802 Homes Catalog, Pre-Approved Plans to Reduce Soft Costs and Community Friction

CHIP-Ready Sites and Technical Assistance through VLCT

Bulk Purchasing through Treasurer's Office to Reduce Per Unit Costs

Coordinated Capital Stack and **Seed Money** for Developers

+ **Financial Incentives** for Energy Efficiency (Tier III)

= Homes at a Price Vermonters Can Afford*

***This is the vision**; our hope is to align programs and funding to make workforce housing projects viable without Federal subsidy

Regional Collaboration

How Can We Work Across Borders to Support Housing Production?

Hosted by **Pew Charitable Trusts + Urban Land Institute**

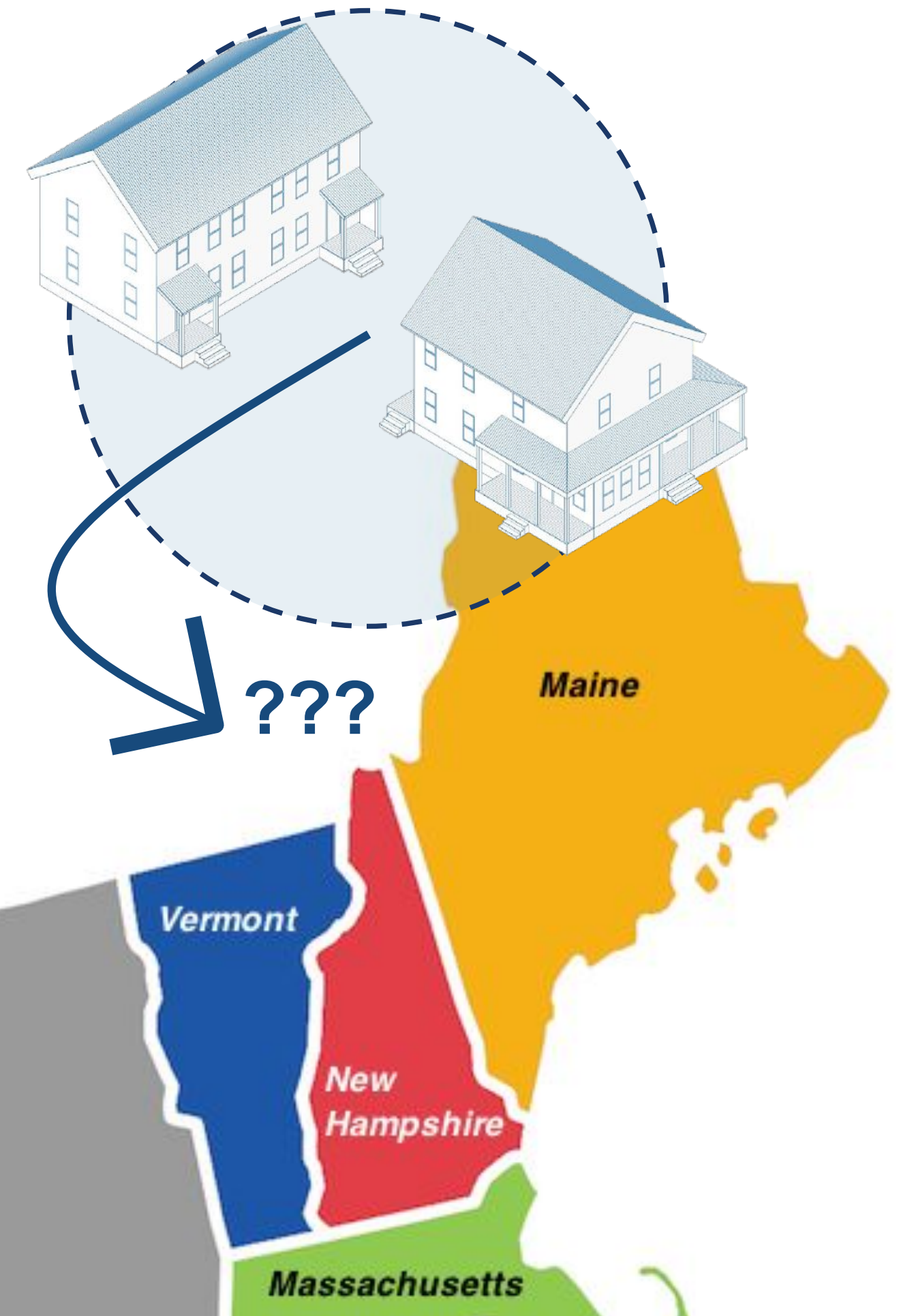
Vermont x **New Hampshire** x **Maine**

Can we...

- **Create Pre-Approved Designs** that Work in Multiple States
- **Align Building Codes** and Off-Site Construction Codes
- **Aggregate Demand** for Off-Site Construction

To...

- **Support the Network** of Off-Site Manufacturers
- **Lower Unit Cost** by Building At-Scale
- **Deliver More Homes** Quickly and Affordably





Questions?
THANK YOU!

Reference Slides

Big Picture Process + Assumptions

1. Mapping/Applicability of Types

- a. Infill Site Alignment - Demonstrate/test whether these types (+their associated parking) can fit on a variety of sites (within the zoning requirements?) - Is there enough variety in form?

2. Ownership v Rental

- a. For both fire-code and design reasons should we lock each type to either rental or ownership?

3. Optimization for Modular v Pods v Panelized v Stick-Built

- a. Do all types need to be optimized for all construction methods?
- b. Are there design adjustments that would create more efficiencies for pod, panel and bulk purchasing?

4. Regulatory

- a. State Permits: Expedited process for wastewater, water, etc for these home designs?
- b. Zoning: Expedited municipal permitting
- c. Short Term Rentals: Ways to disincentivize through design? Regulation?

Design Revisions for all Typologies

1. Balancing Livability & Affordability

- Consider potential locations for **covered parking for all age-in-place/accessible units**
 - Develop simple carport typology (with storage?)
- Audit all **first level units to see if they can be made visitable or fully-accessible**
- Audit all types (especially starter homes) for **work from home spaces**
- Think through likely **relationships to outdoor living spaces**, incorporate thoughtful door locations
- Evaluate what additional construction efficiencies can be found without compromising livability (e.g. closets > wardrobes)

2. Off-Site & Technical Assumptions

- Basements vs. Crawl Spaces vs. Slabs on Grade
 - Current thinking is we will attempt to accommodate full basements with interior and exterior access where possible. Alternative will be a MEP external closet + crawlspace or slab on grade
 - Continue to balance: flooding risk, ease of modular construction, added costs, storage
- Check all **floor-to-floor heights** to make sure they **work for modular construction**
 - This will impact stair runs
- Consider advantages of single, **combined MEP spaces for multifamily types** - rather than MEP closets inside individual units
 - Location: Should MEP be located in basement (flooding risk), attics, or external to the building?

3. Code Review (Ongoing)

- Understand whether **having a rental unit makes sprinklers required**
 - If that is the case, study whether our “sprinkler-avoidance trade-offs” (ie no common areas) are still worth including

Current List of Working Typologies

# of units	Type	Home Design Goals	Infill Site Type	# Stories	# Bedrooms	# Bathrooms
1	Railroad Flat, Caretaker	Age-in-Place Workforce Housing Starter Home For Sale For Rent	Narrow	1.5	2	2
	Variation: Railroad Flat, Flat	Age-in-Place Workforce Housing Starter Home For Sale For Rent	Narrow	1	1	1
	Patio Cottage, 2 Car Garage	Workforce Housing For Rent	Out-Building	1.5	1	1
	Variation: Patio Cottage 1 Car Garage	Workforce Housing For Rent Starter Home For Sale	Out-Building	1.5	2	1.5?
	Variation: Patio Cottage, 1 Car Garage + Ground Floor Bedroom	Workforce Housing For Rent Starter Home For Sale Age-in-Place	Out-Building	1.5	3	2?
	Foursquare	Starter Home For Sale For Rent	Wide	2	3	1.5
2	Paired Starter Home	Starter Home Workforce Housing For Sale For Rent	Narrow	2	2 / 2	1.5 / 1.5
	Side-by-Side	Workforce Housing Starter Home For Sale For Rent	Wide	2	2 / 2	1.5 / 1.5
	Variation: Side-by-Side with Additional Bedrooms	Age-in-Place Starter Home For Sale For Rent	Wide	2	3 / 3	1.5 / 1.5
	Variation: Side-by-Side with Additional Accessible Unit	Age-in-Place Workforce Housing Starter Home For Sale For Rent	Wide	2	2 / 2 / 1	1.5 / 1.5 / 1
	Back-to-Back	Workforce Housing Starter Home Multigenerational For Sale For Rent	Narrow	2	3 / 1	1.5 / 1
	Intergenerational Triple Decker	Age-in-Place Workforce Housing Starter Home Multigenerational For Sale For Rent	Narrow	2.5	2 / 4	1 / 2
3	Variation: 3 Unit Version	Age-in-Place Workforce Housing Starter Home Multigenerational For Sale For Rent	Narrow	2.5	2 / 2 / 1	1 / 1 / 1
4	Village 4	Age-in-Place Workforce Housing Starter Home Multigenerational For Sale For Rent	Narrow	1.5	2 / 2 / 1 / 1	1.5 / 1.5 / 1 / 1
	Narrow Lot	Age-in-Place Workforce Housing For Rent	Narrow	2	1 / 1 / 1 / 1	1 / 1 / 1 / 1
2-6	Stackable	Age-in-Place Workforce Housing For Rent	Wide	2+	2 / 2 / 2 / 2	1 / 1 / 1 / 1
	Townhouse	Starter Home Workforce Housing For Sale For Rent	Narrow	2	2	1

11 Types + 6 Variations (17 total types)

See [this slide deck](#) for detail on variations.

Note: there was a lot of interest in a Cape/Ranch style single story, two-bedroom home, but this was not prioritized given that market-rate products exist already and it is less cost-efficient.

Criteria for Narrowing to 10 Home Designs

1. **Delivers on Homes for All Mission**

Typologies that the market isn't already providing, prioritizing alignment with the project's core mission to create affordable-by-design homes that fill gaps in the market, align with vernacular Vermont design norms at the single-family scale (up to 2.5 stories), and are compatible with off-site construction methods.

2. **Unique Contribution to Variety** (both of shapes/sizes + in unit type offerings)

Is not duplicative of any other typologies in terms of the mix of programmatic, demographic, occupancy, and infill site alignment.

Unique contribution to one or both:

- Building and unit mix that meets a wide range of demographic needs
- Dimensional variety that aligns with common infill site conditions

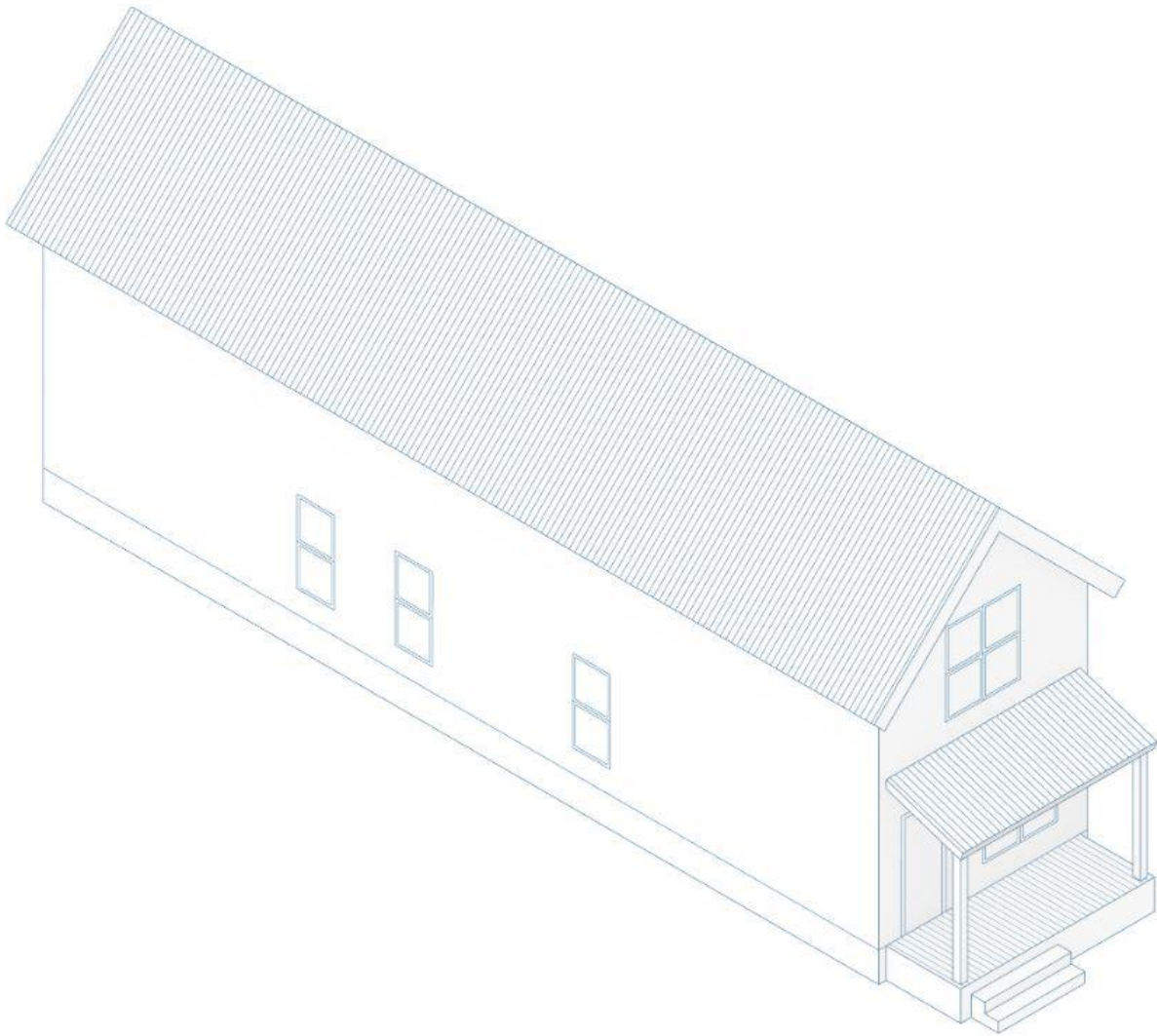
3. **Design Quality**

Unit designs already or have the potential to offer high quality of life with built-in features aligned to liveability and lifestyle preferences for Vermonters.

Railroad Flat

Narrow ADU

# of Units	1
Bedrooms	2
Bathrooms	2
Building Dims	14' x 56'
# of Stories	1.5 stories
Overall GSF	1,189 SF



Franklin Street - Montpelier



Lafountain St - Burlington

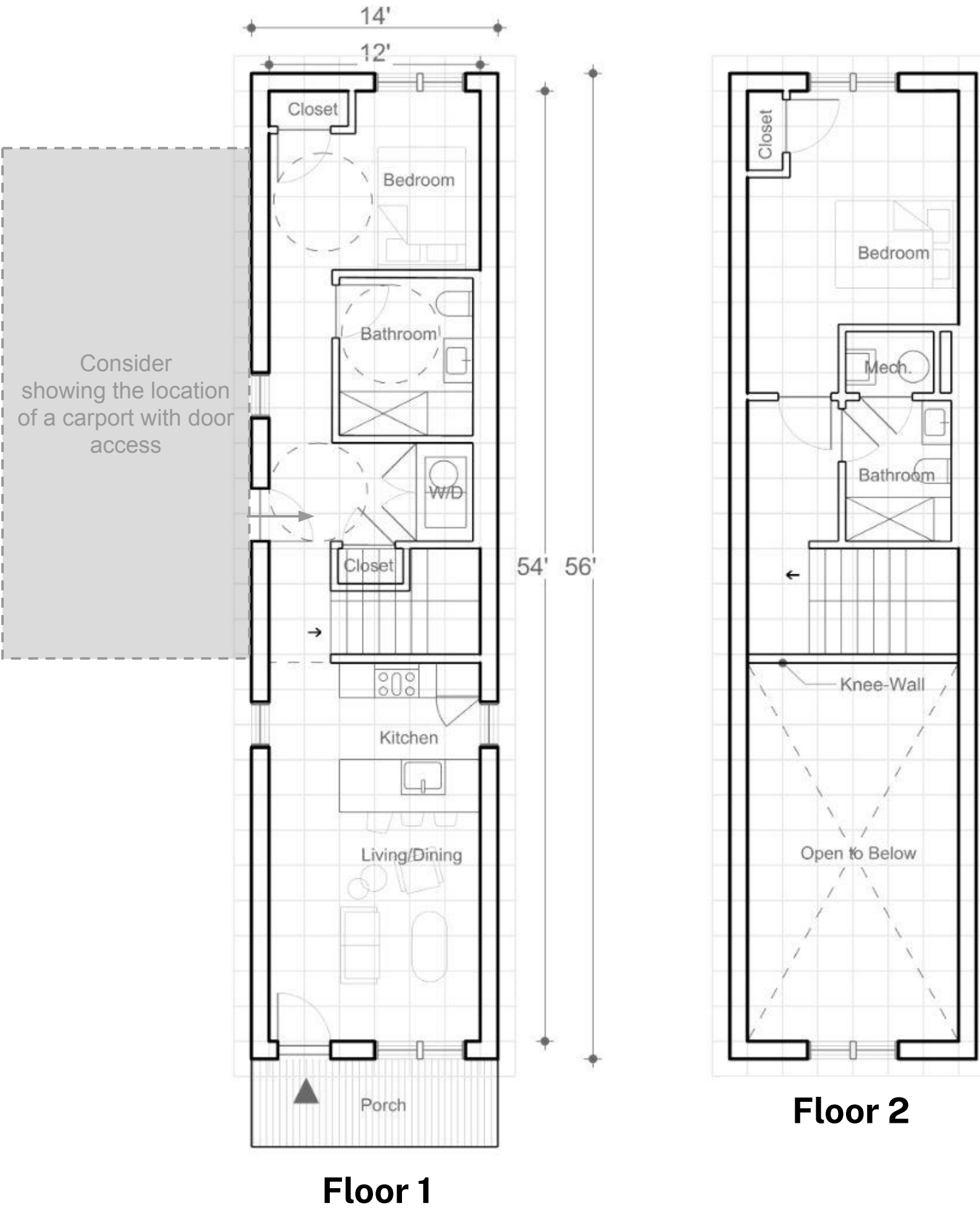
Railroad Flat

Narrow ADU

# of Units	1
Bedrooms	2
Bathrooms	2
Building Dims	14' x 56'
# of Stories	1.5 stories
Overall GSF	1,189 SF

Typology specific revisions:

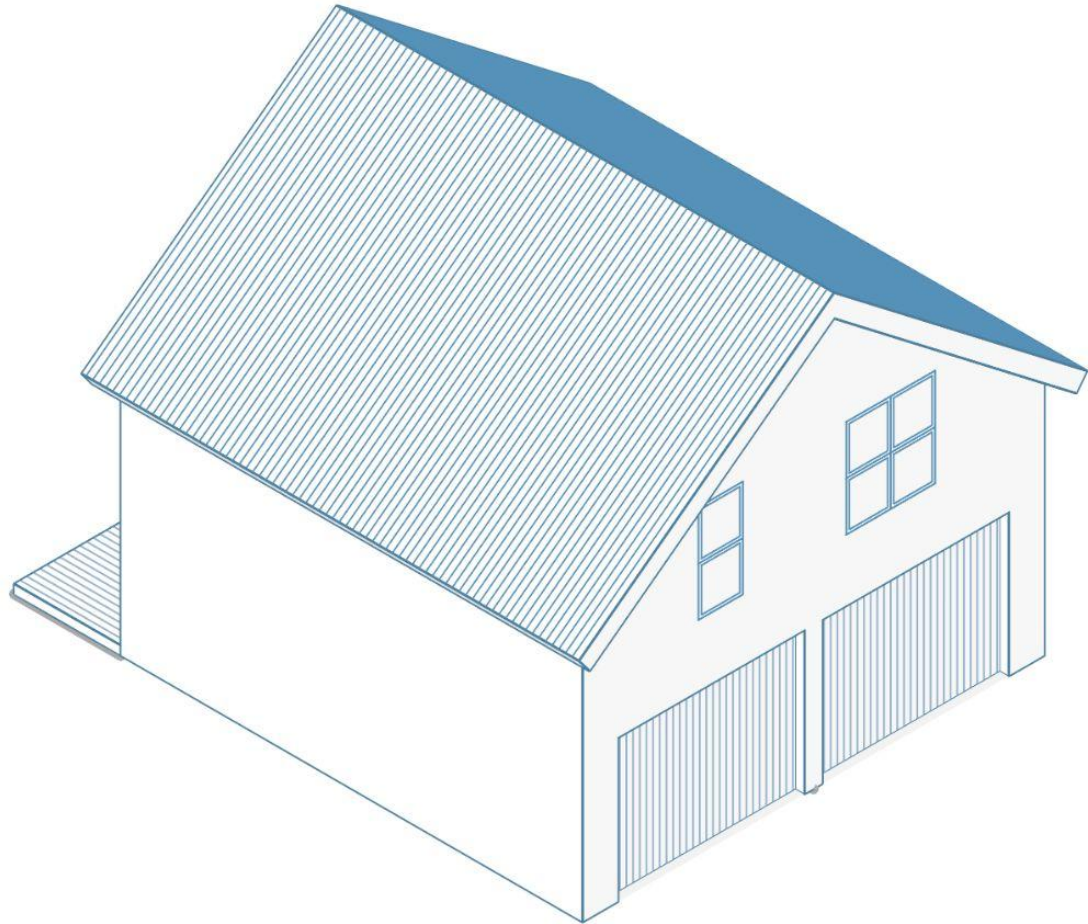
- 1. Carport and side entry door
- 2. Incorporate side-by-side washer/dryer
- 3. Add entry closet
- 4. Explore flipping upper story to borrow light from staircase rear wall
- 5. Basement access?
- 6. Many comments that “open-to-below” is wasted space, and people would prefer additional storage, bedroom or flexible work-from-home/hobby room on the second floor



Patio Cottage

Square ADU with One-Car Garage

# of Units	1
Bedrooms	2
Bathrooms	1.5
Building Dims	26' x 30'
# of Stories	1.5 stories
GSF (excl. garage)	1070 SF



Highland Ave, Manchester VT



Pleasant St, Essex Junction VT

Patio Cottage

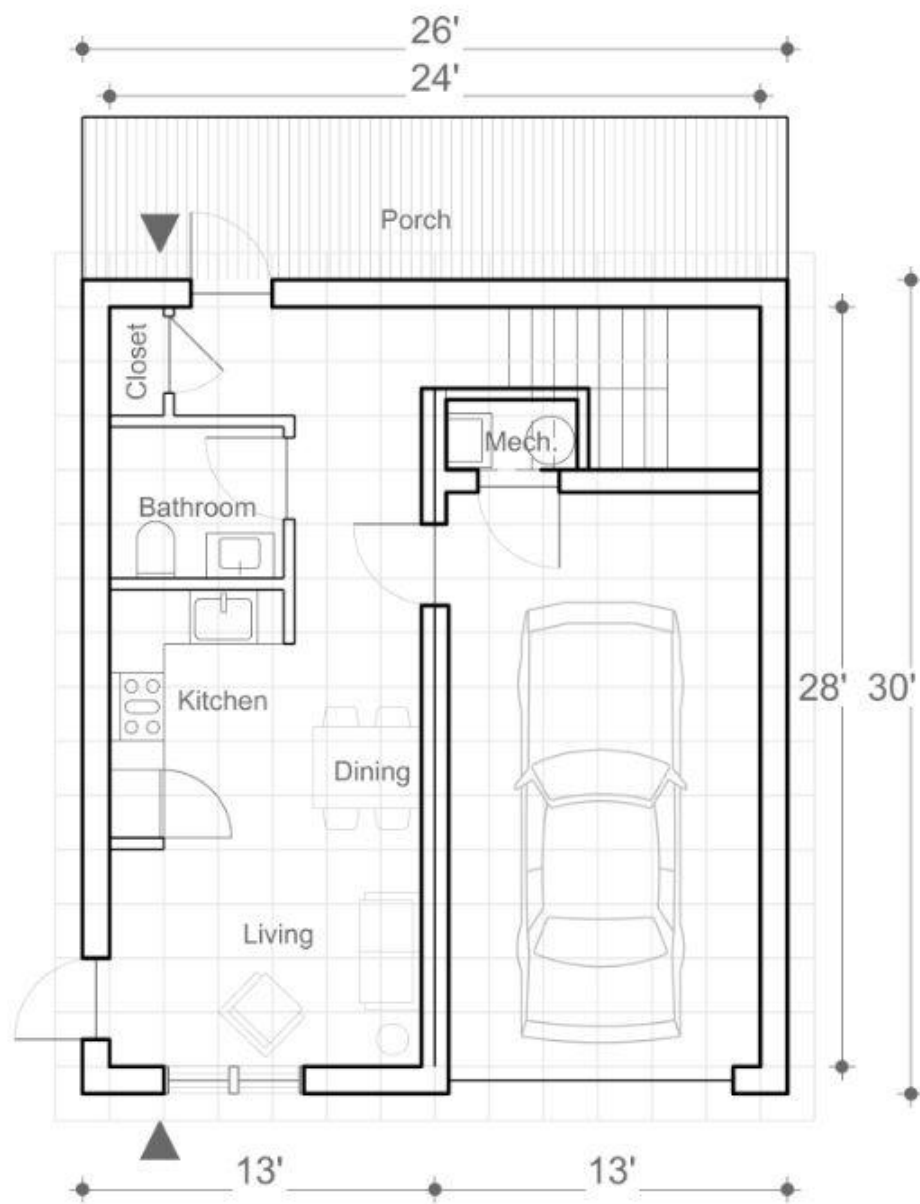
Square ADU with One-Car Garage

Elimination Candidate

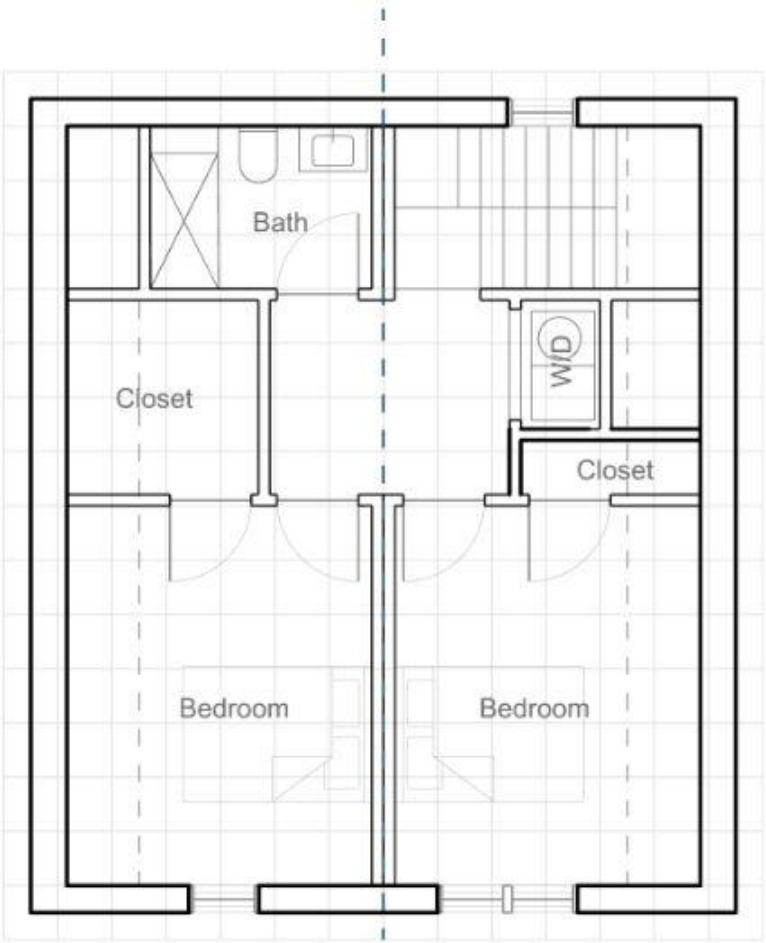
# of Units	1
Bedrooms	2
Bathrooms	1.5
Building Dims	26' x 30'
# of Stories	1.5 stories
GSF (excl. garage)	1070 SF

Typology specific revisions:

1. Need to address that this type necessitates a slab on grade (for the parking space)
2. Explore direct access to garage from interior



Floor 1



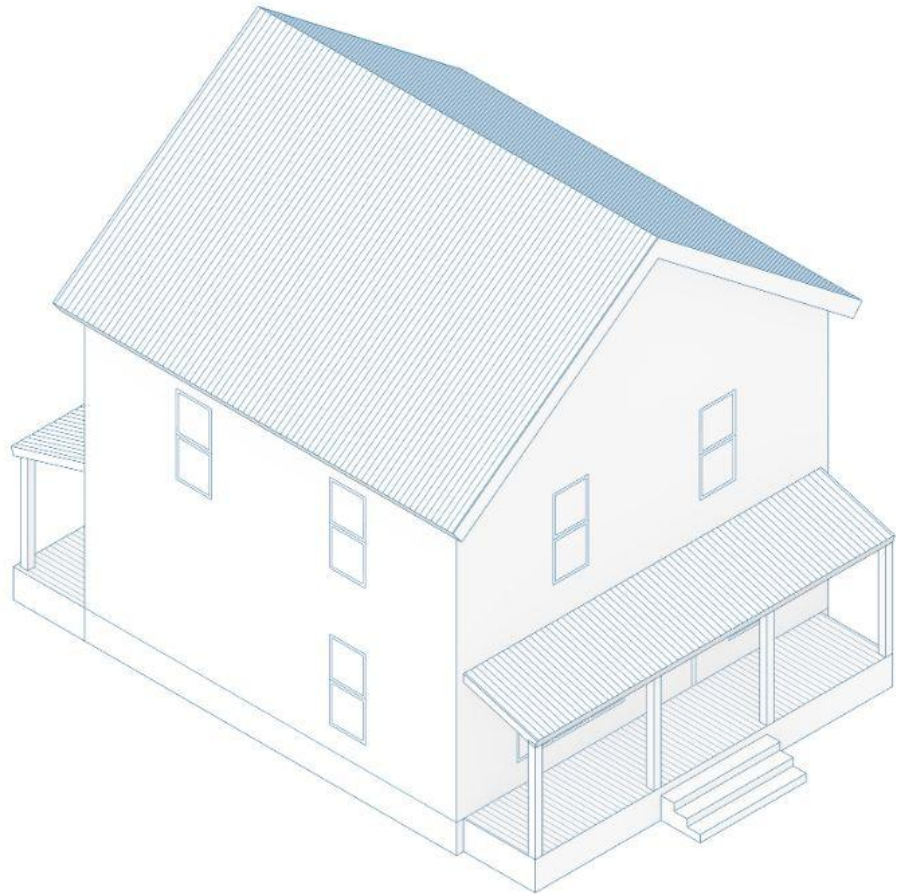
Floor 2

- Why?
1. Offsite and templated on-site garage ADU designs exist already in the private market
 2. Inherent tension between garage value for age-in-place vs. single story living compatibility due to footprint and configuration for site compatibility
 3. Limitations for volumetric modular due to inclusion of slab-on-grade for parking spot

Four Square

Square ADU / Starter Home

# of Units	1
Bedrooms	3
Bathrooms	1.5
Building Dims	26' x 26'
# of Stories	2.5 stories
GSF (excl/incl attic)	1,350 SF



Highland Ave - Manchester



Victory Circle, Hartford VT

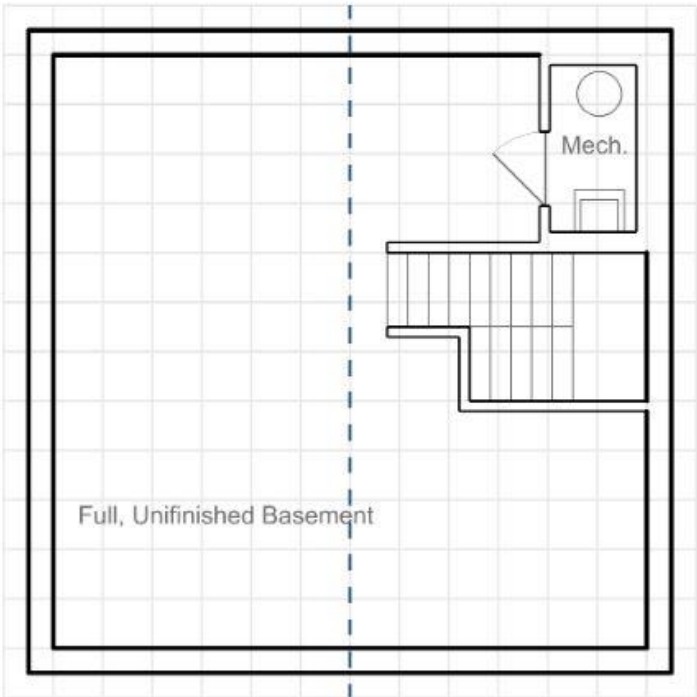
Four Square

Square ADU / Starter Home

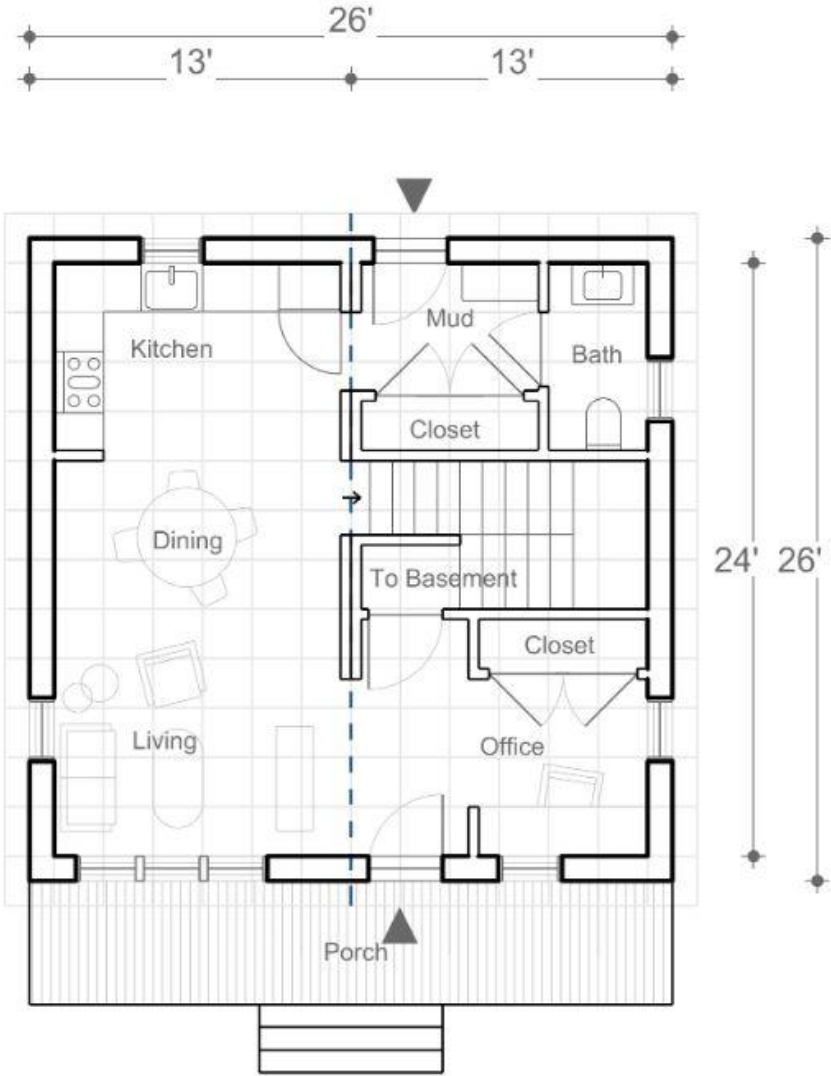
# of Units	1
Bedrooms	3
Bathrooms	1.5
Building Dims	26' x 26'
# of Stories	2.5 stories
GSF (excl/incl attic)	1,350 SF

Typology specific revisions:

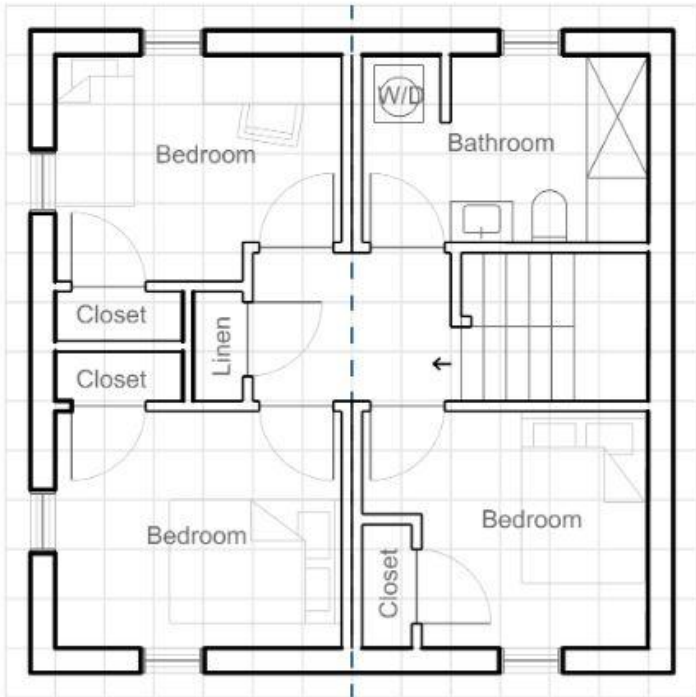
- None



Basement
(unfinished)



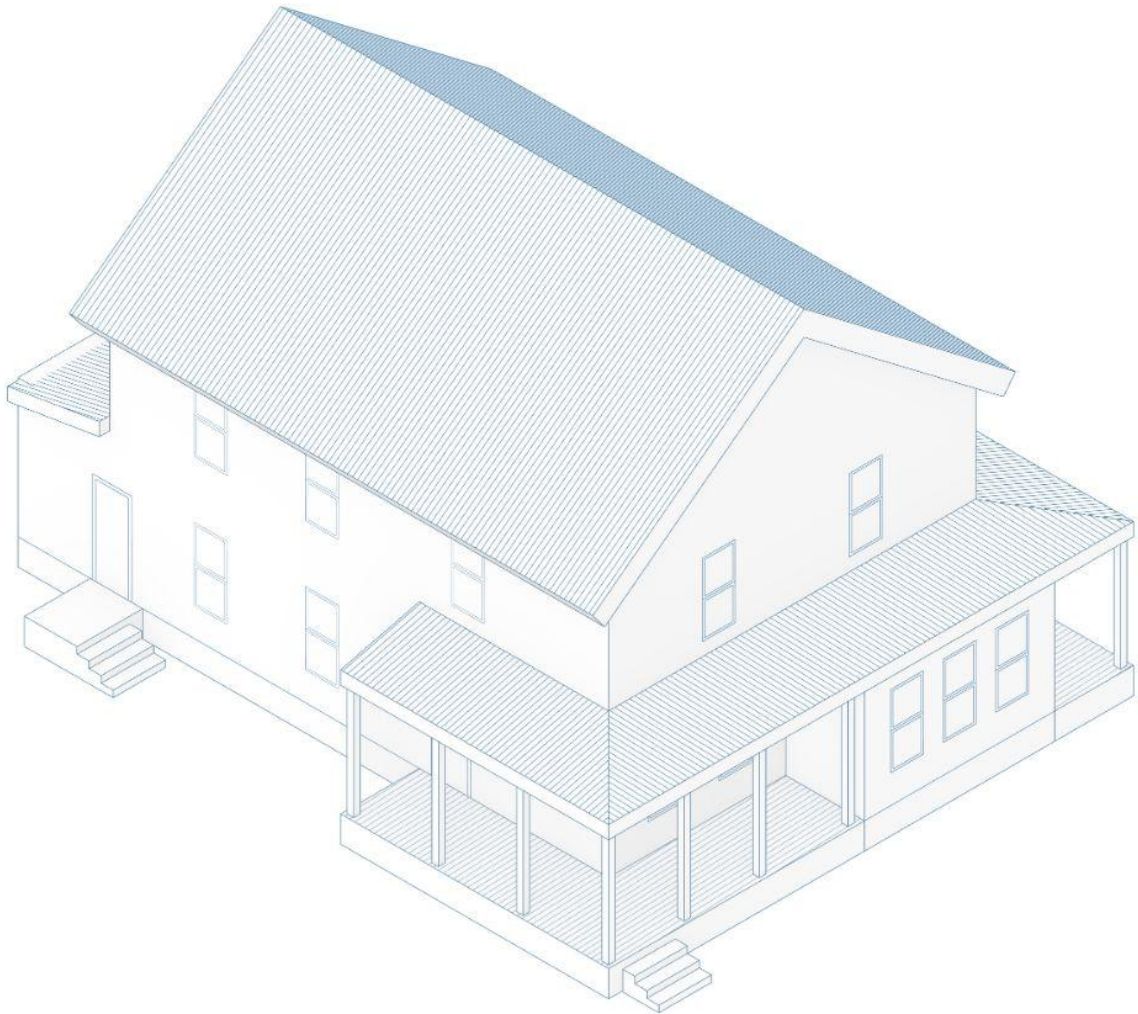
Floor 1



Floor 2

Paired Starter Home Duplex

# of Units	2
Bedrooms	2 / 2
Bathrooms	1.5 / 1.5
Building Dims	28' x 50'
# of Stories	2
GSF	2,269 SF



Hyde Park Ave -Roslindale (Boston) MA



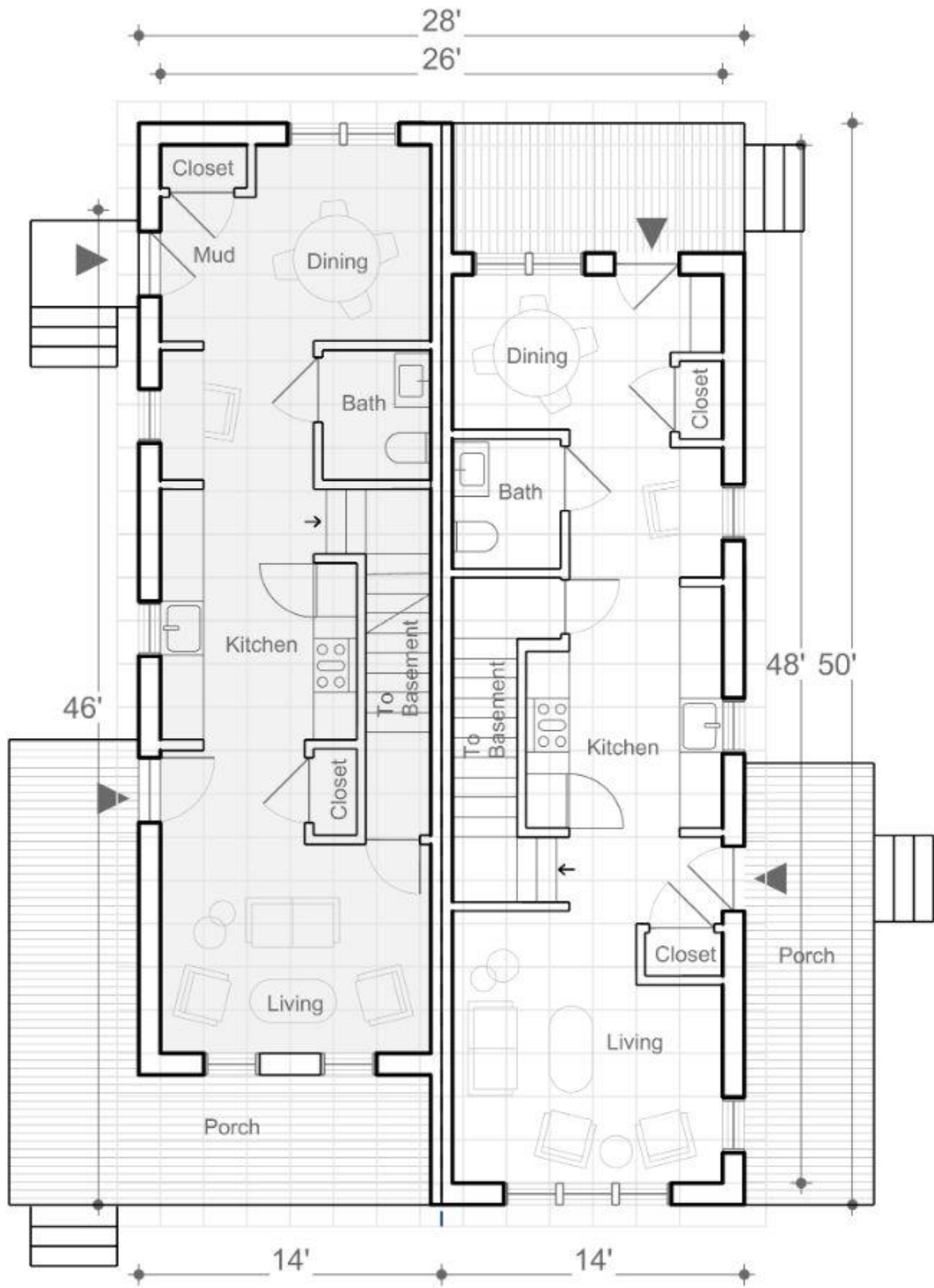
Hickory St, Rutland VT

Paired Starter Home Duplex

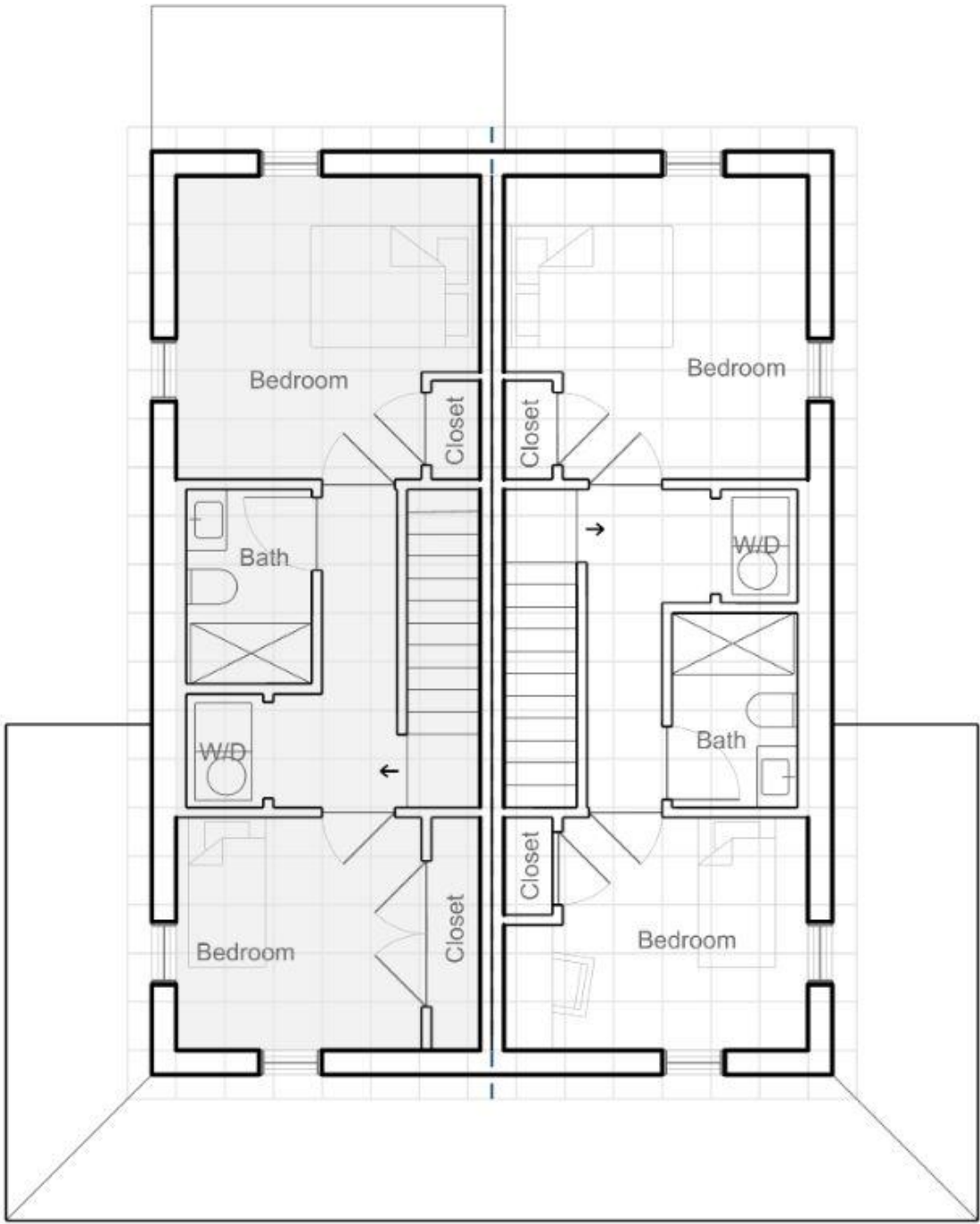
# of Units	2
Bedrooms	2 / 2
Bathrooms	1.5 / 1.5
Building Dims	28' x 50'
# of Stories	2
GSF	2,269 SF

Typology specific revisions:

1. Make ground floor of both ground floor units 4'-6' longer to add WFH niches
2. Move all entries to the sides
3. Allow both units to access basements



Floor 1

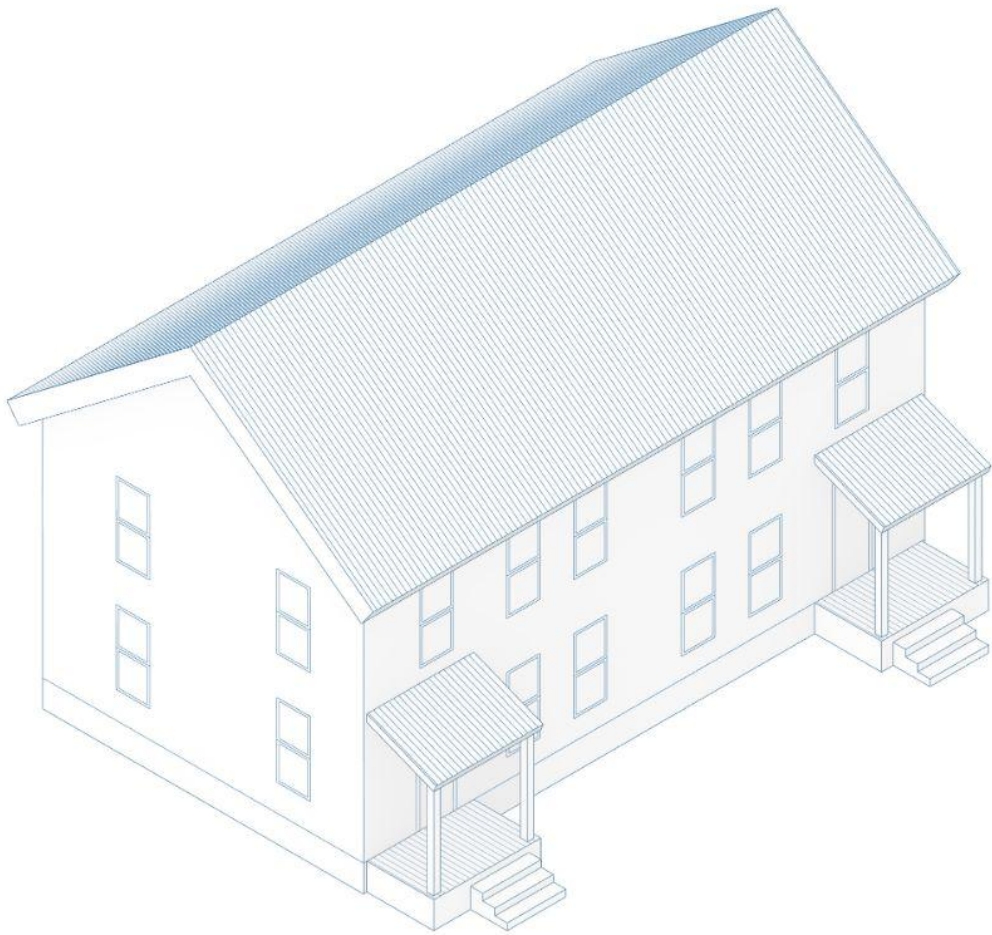


Floor 2

Side-by-Side

2 Bed Duplex

# of Units	2
Bedrooms	2 / 2
Bathrooms	1.5 / 1.5
Building Dims	42' x 24'
# of Stories	2
GSF (base/alts)	2,016 SF



Grove St, Essex Junction



St Paul Street - Montpelier

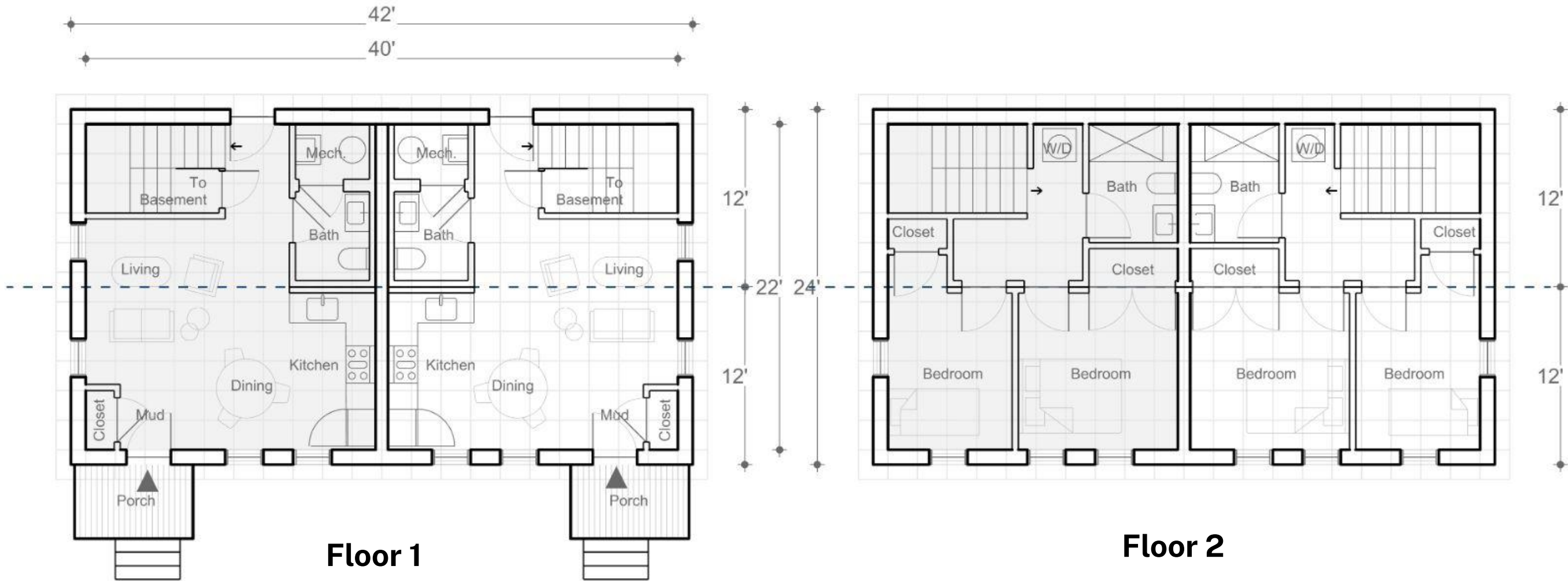
Side-by-Side

2 Bed Duplex

# of Units	2
Bedrooms	2 / 2
Bathrooms	1.5 / 1.5
Building Dims	42' x 24'
# of Stories	2
GSF (base/alts)	2,016 SF

Typology specific revisions:

- Consider ways to better align the 2nd floor to modular construction (orient marriage line horizontally?)

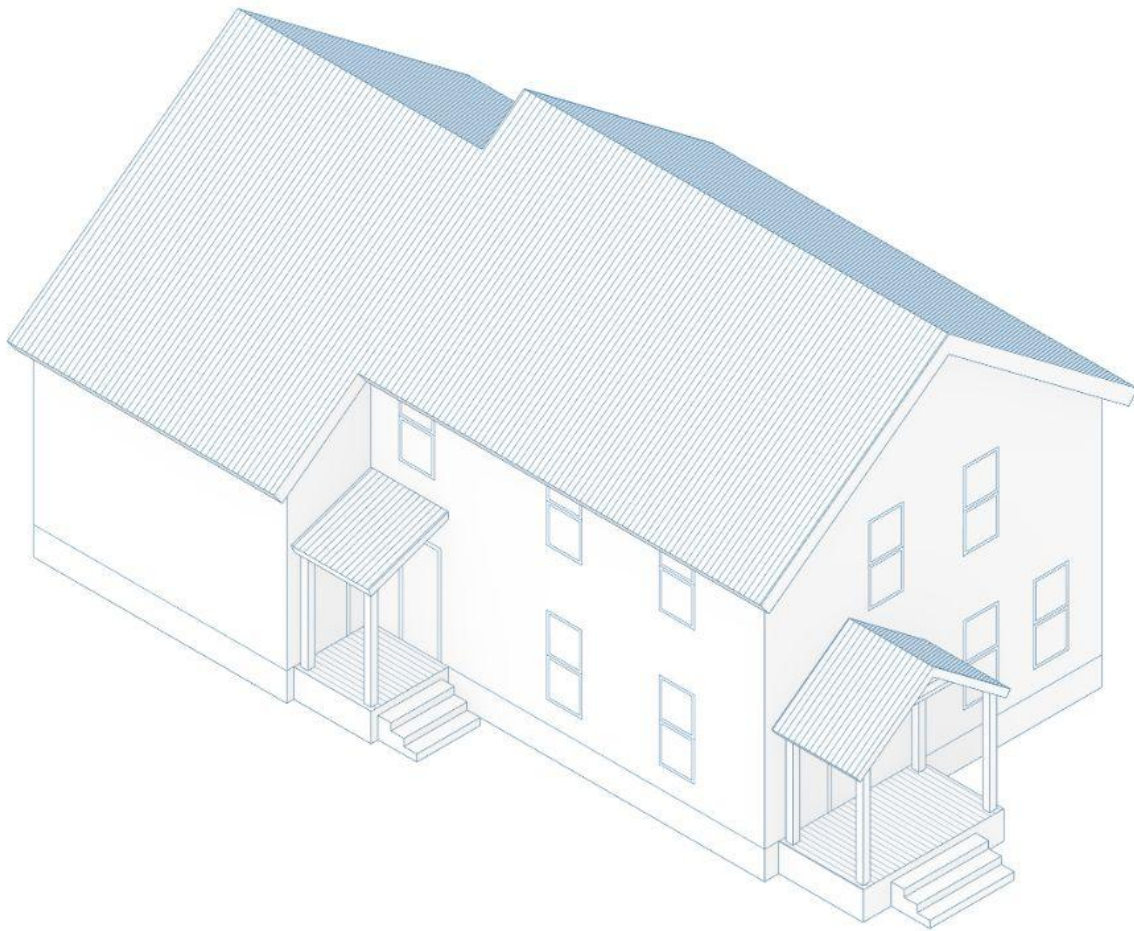


Back to Back Duplex

# of Units	2
Bedrooms	3 / 1
Bathrooms	1.5 / 1
Building Dims	30' x 46'
# of Stories	2 / 1.5
GSF	2,188 SF

Typology specific revisions:

- None



Arlington Street -Essex Junction



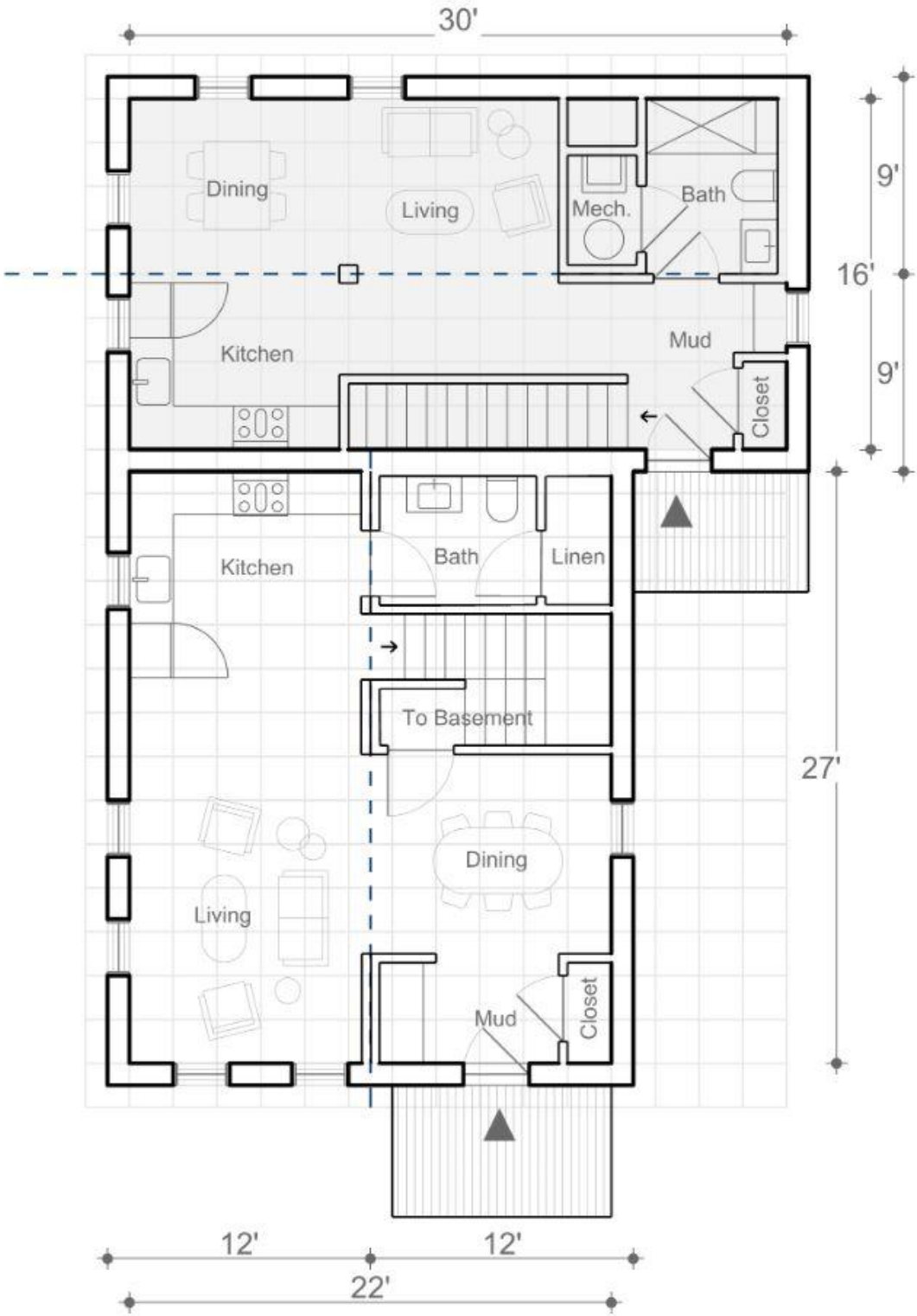
Main St, Essex Junction

Back to Back Duplex

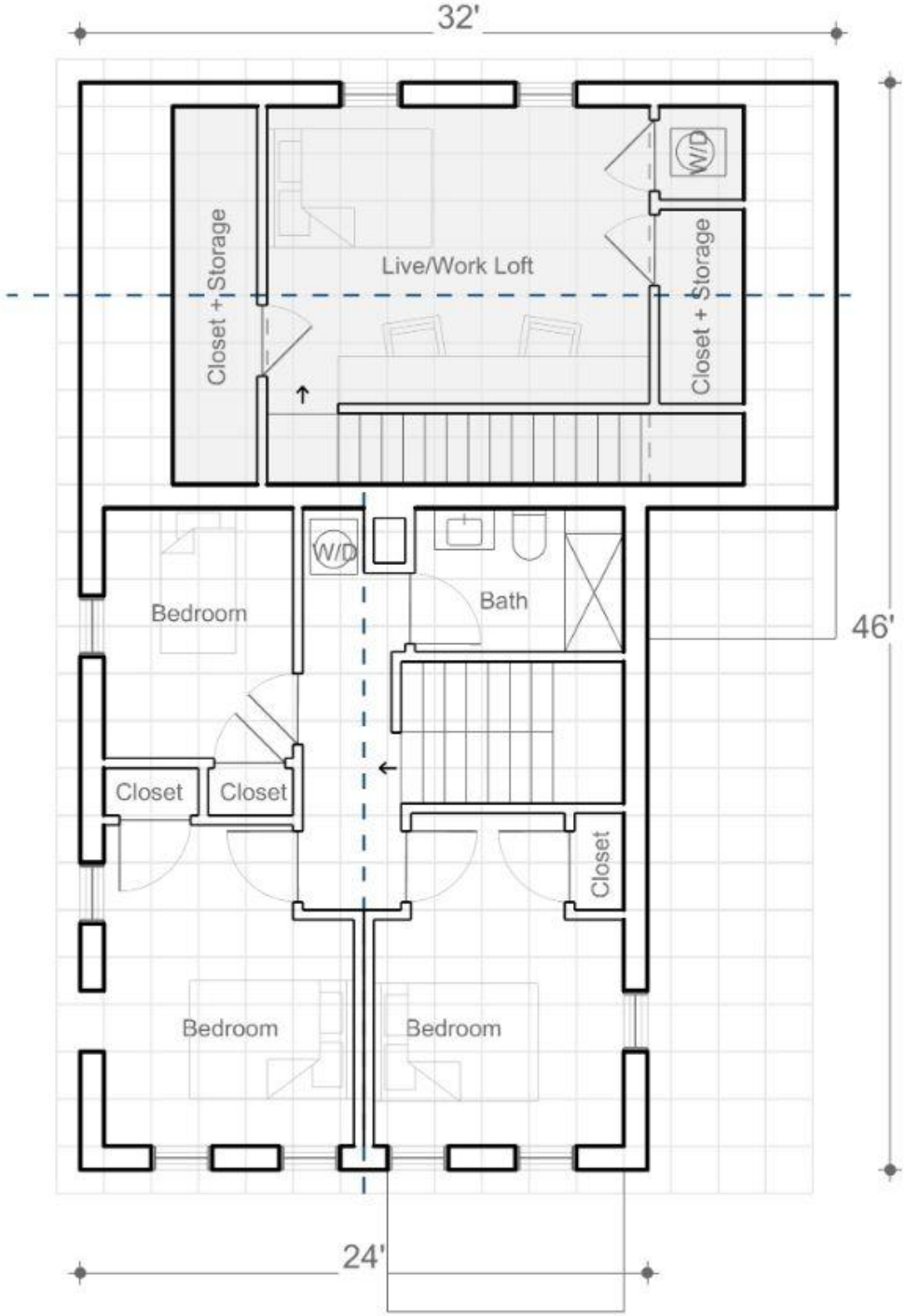
# of Units	2
Bedrooms	3 / 1
Bathrooms	1.5 / 1
Building Dims	30' x 46'
# of Stories	2 / 1.5
GSF	2,188 SF

Typology specific revisions:

- None



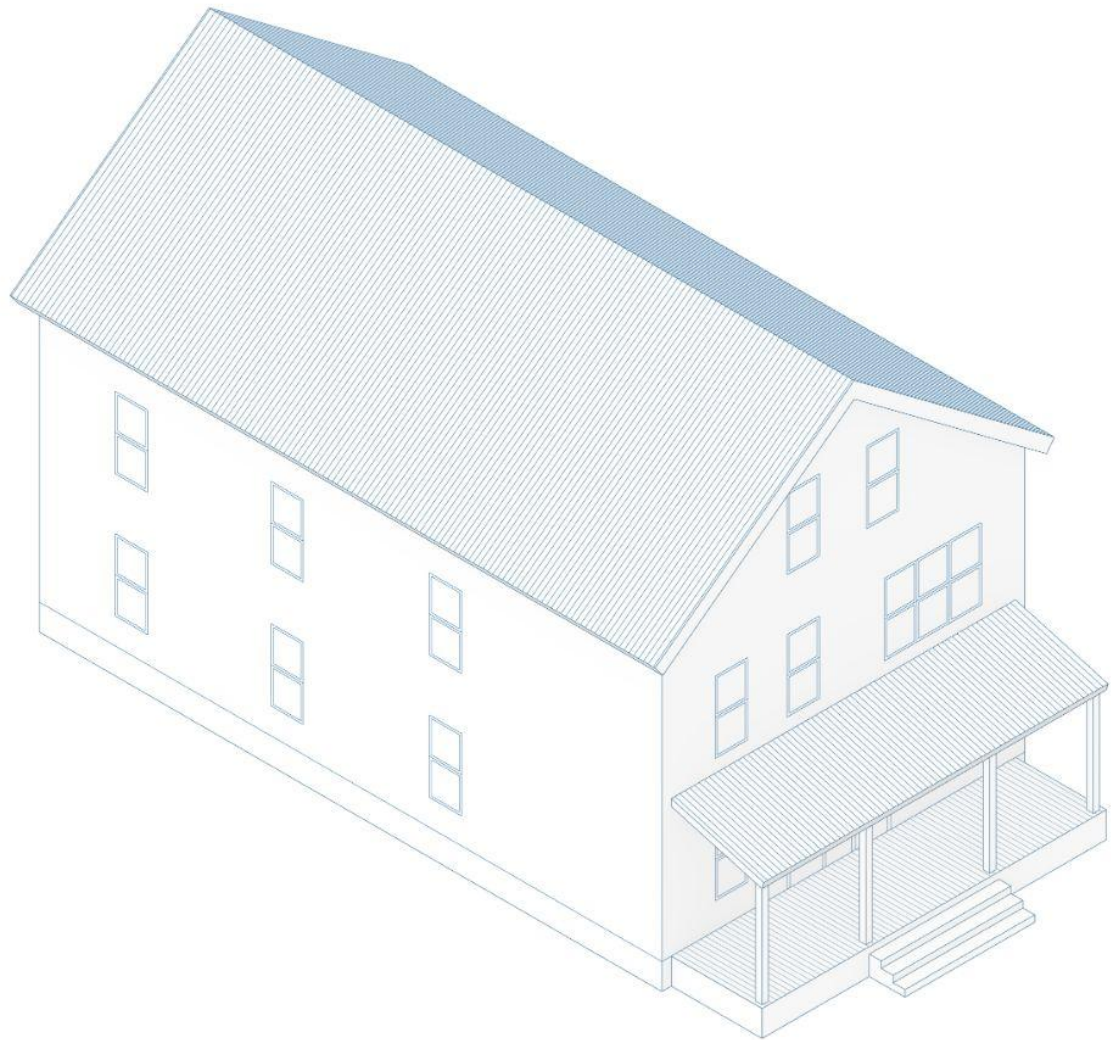
Floor 1



Floor 2

Intergenerational Triple Decker Duplex

# of Units	2
Bedrooms	2 / 3+
Bathrooms	1 / 2
Building Dims	28 x 48'
# of Stories	2.5
GSF	3,150 SF



Hartford Ave -Hartford



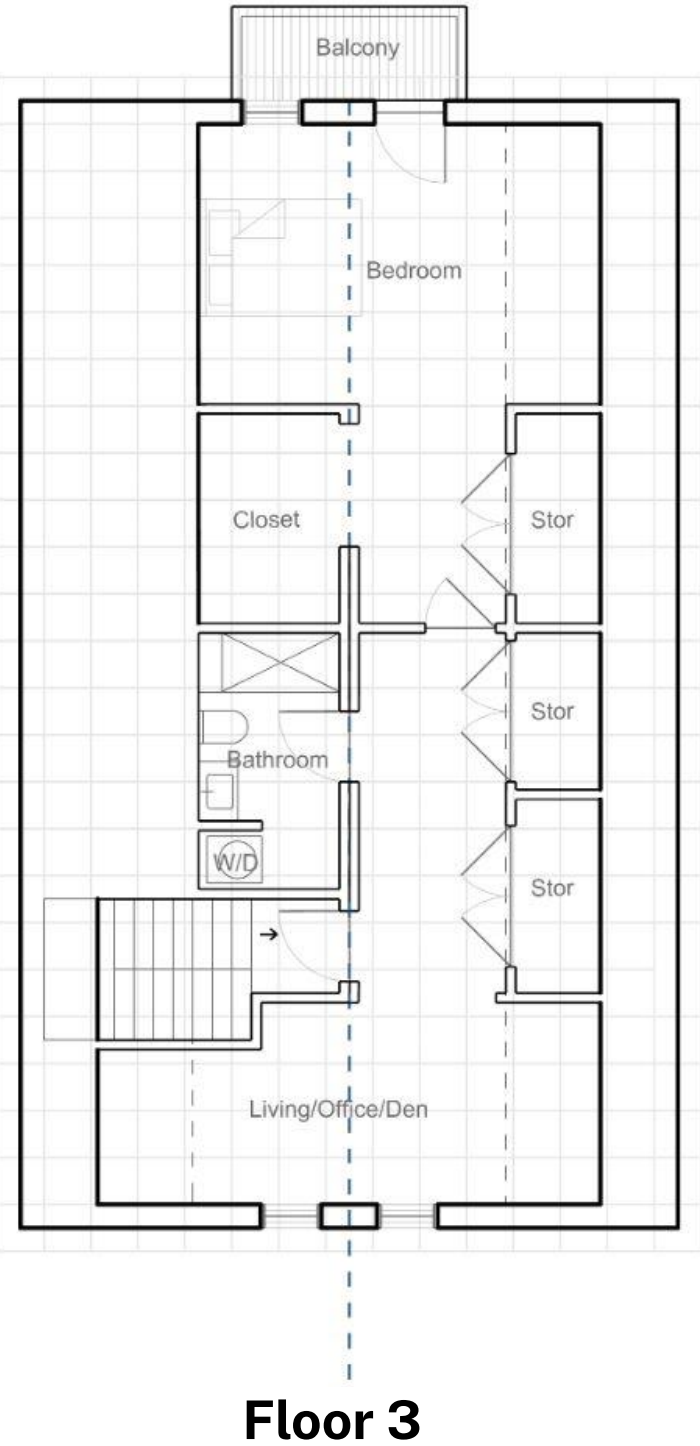
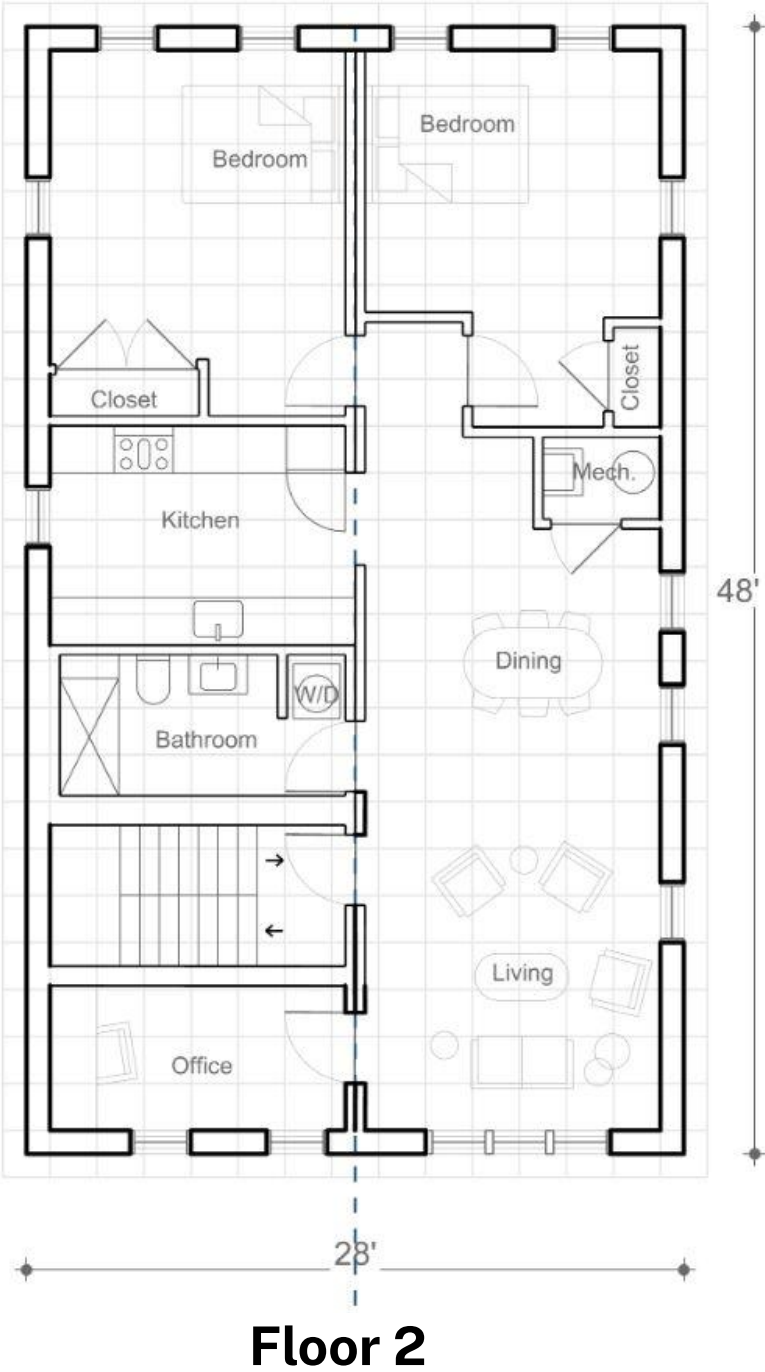
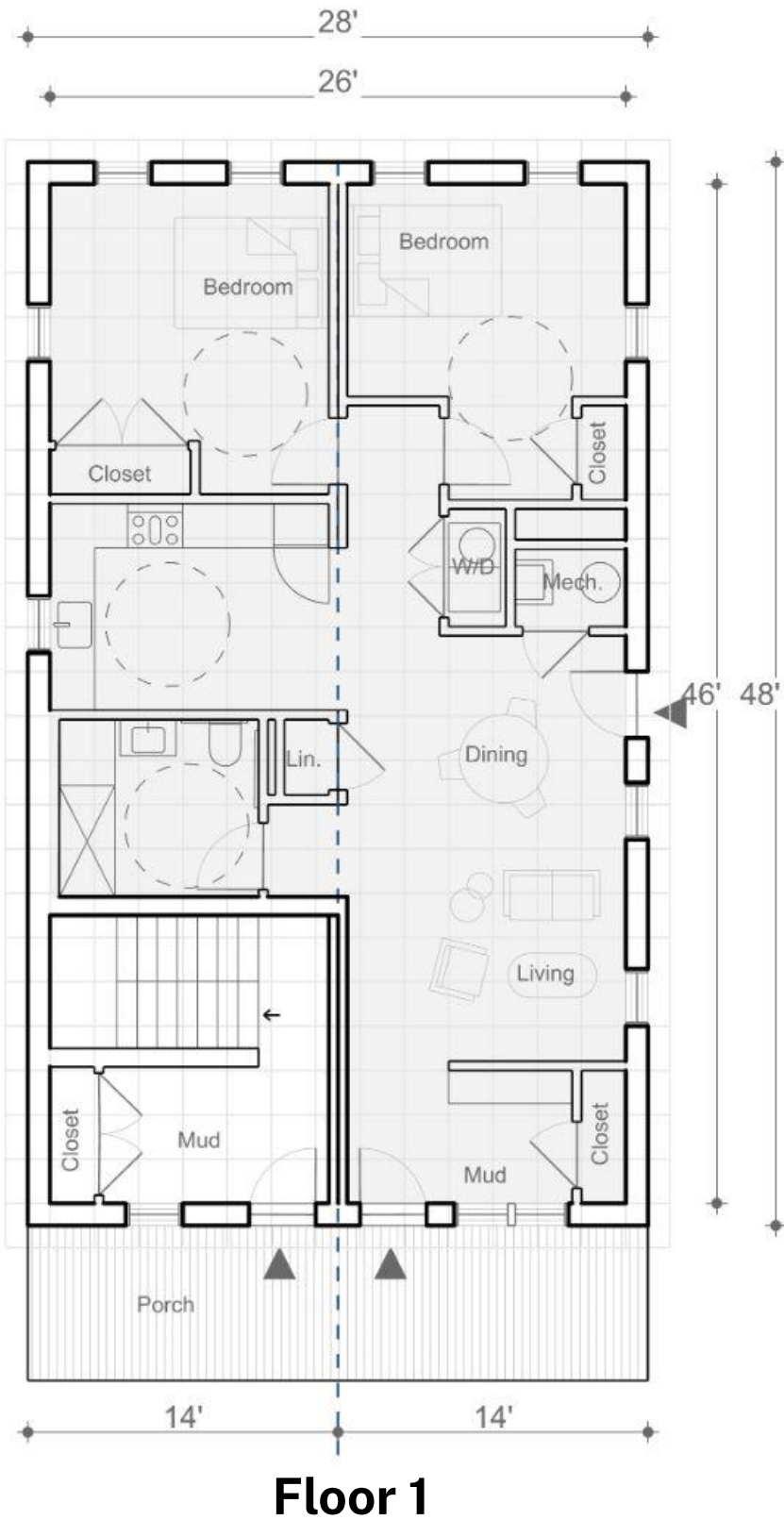
Granite St, Barre

Intergenerational Triple Decker Duplex

# of Units	2
Bedrooms	2 / 3+
Bathrooms	1 / 2
Building Dims	28 x 48'
# of Stories	2.5
GSF	3,150 SF

Typology specific revisions:

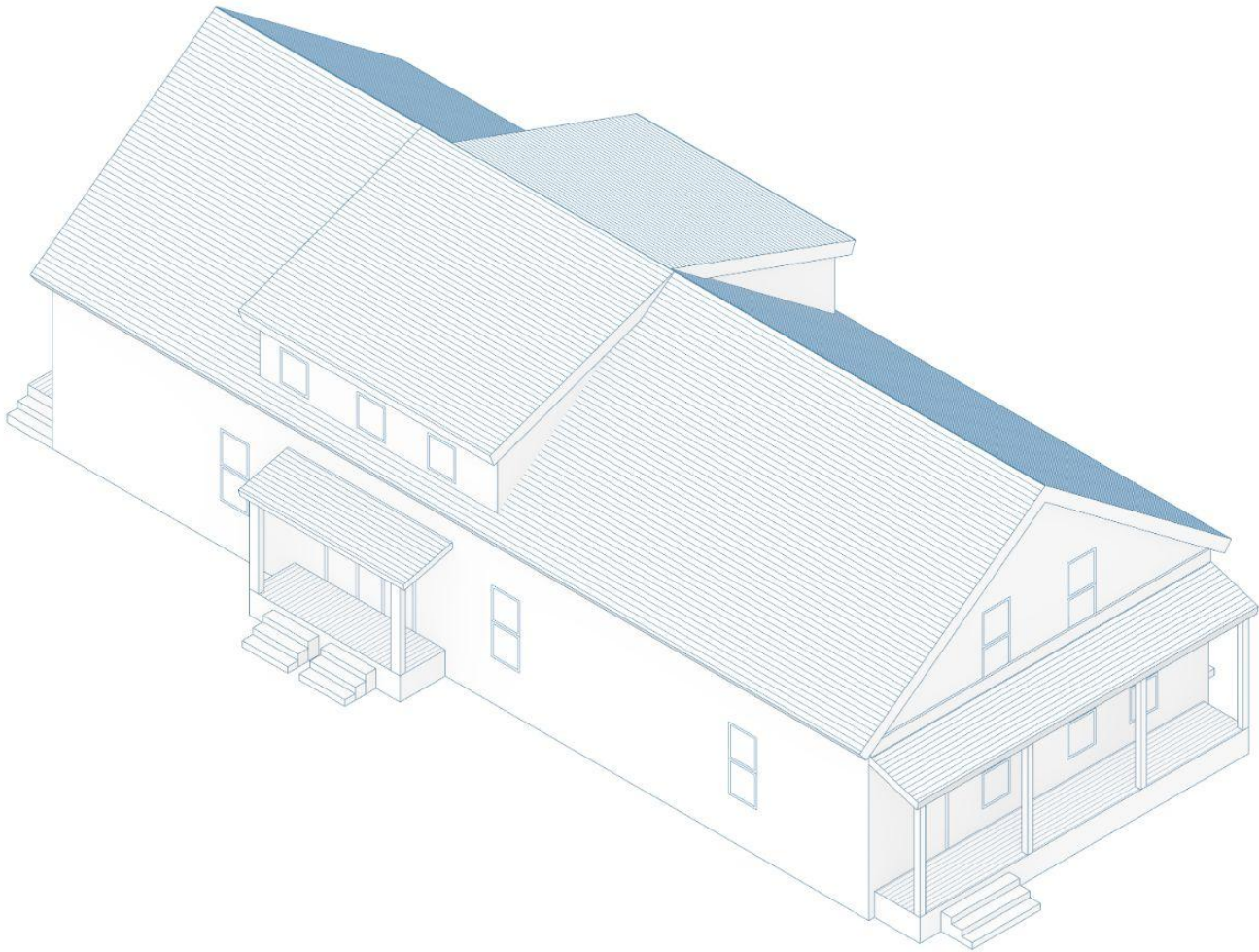
1. Test accessible layout for level 1
2. Test full width balconies on all levels
3. Continue to evaluate optimal location of stair and front-facing room light exposure and functionality
4. Continue to evaluate best way to navigate life safety code constraints on top floor



Village 4

Four-Plex

# of Units	4
Bedrooms	2/2/1/1
Bathrooms	1.5/1.5/1/1
Building Dims	30' x 74'
# of Stories	1.5
GSF	3,590 SF



School Street - Randolph



N Windsor St, South Royalton

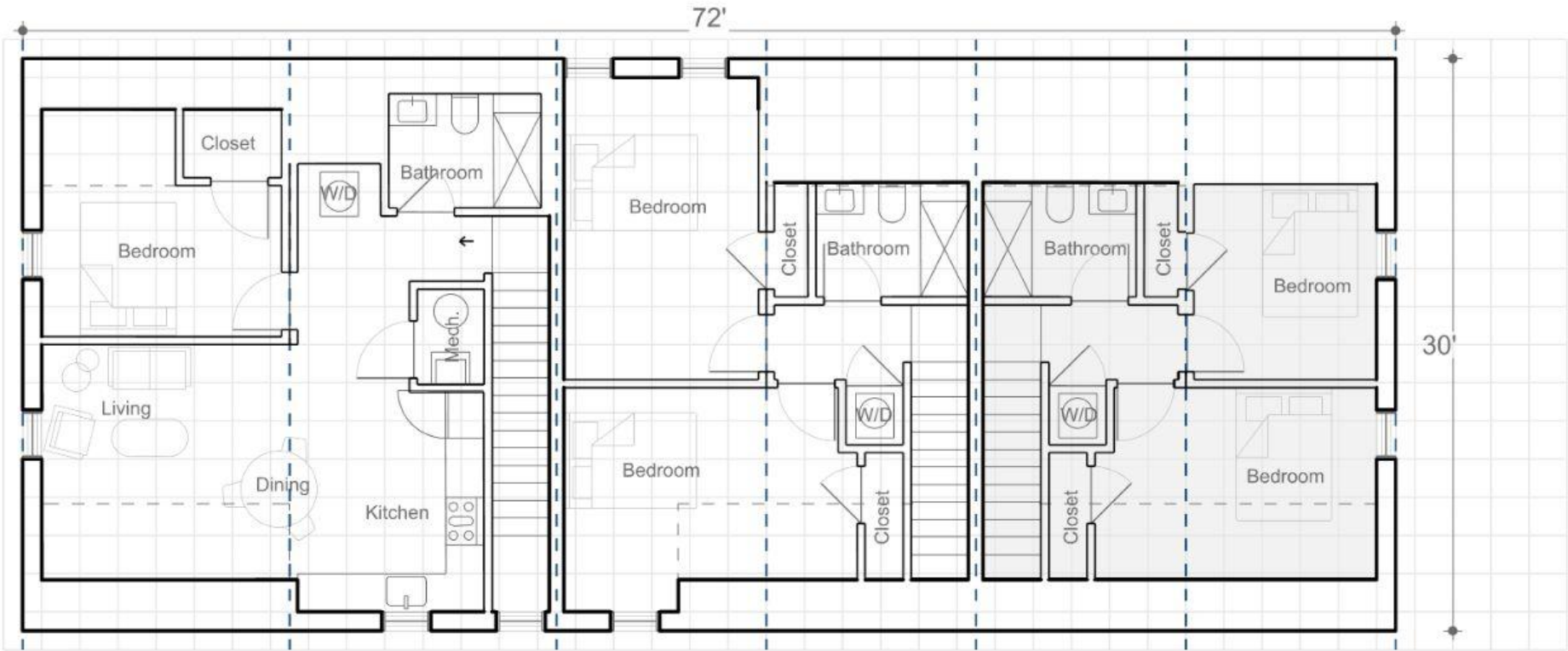
Village 4

Four-Plex

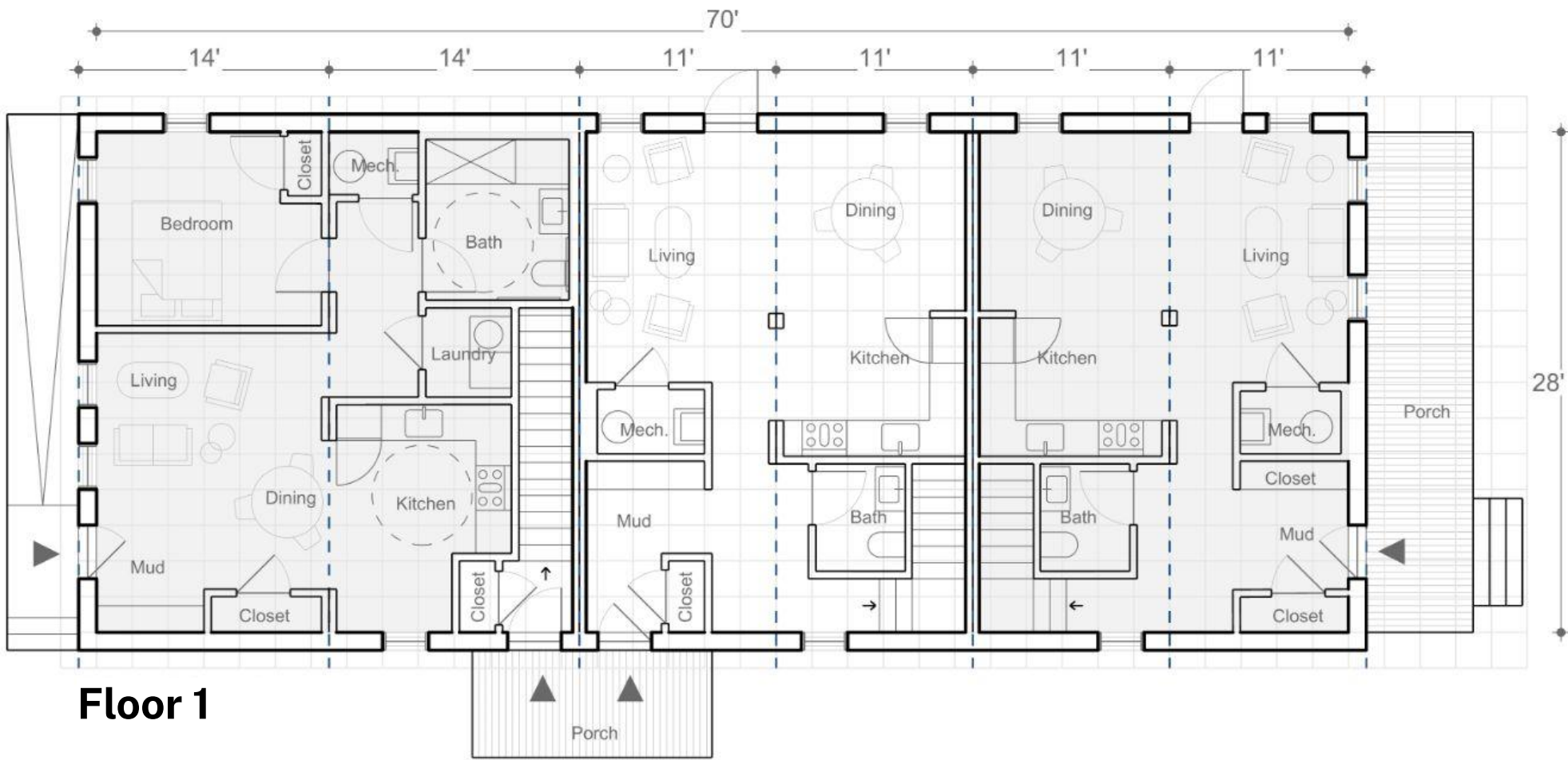
# of Units	4
Bedrooms	2/2/1/1
Bathrooms	1.5/1.5/1/1
Building Dims	30' x 74'
# of Stories	1.5
GSF	3,590 SF

Typology specific revisions:

1. Basement access
2. Modular demising lines are not quite working on the second story
3. Align dormers to modular demising lines and align across roofline
4. Improved layout for accessible first story unit and second story rear unit roofline



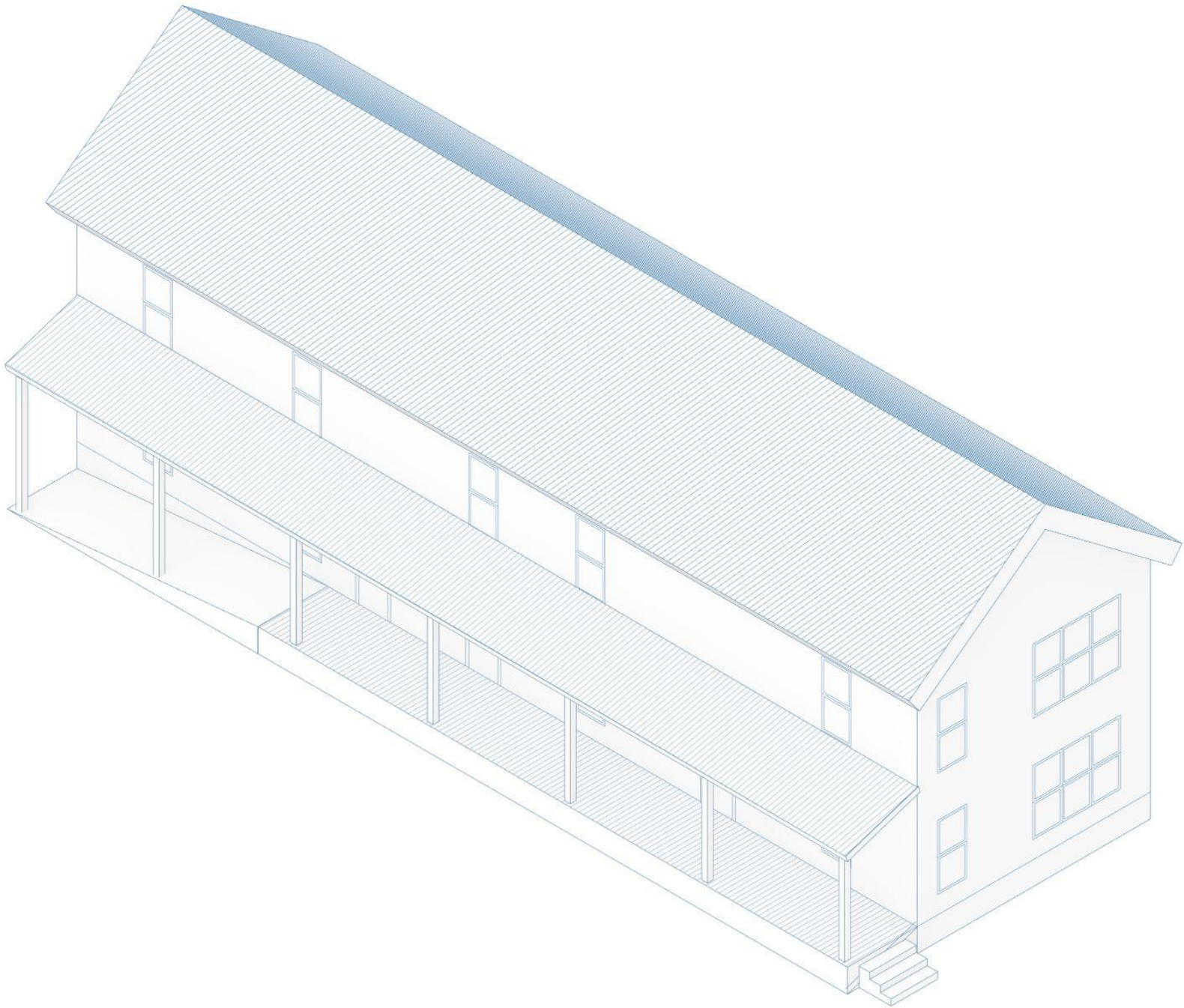
Floor 2



Floor 1

Narrow Lot Four-Plex

# of Units	4
Bedrooms	1/1/1/stu
Bathrooms	1/1/1/1
Building Dims	20' x 72'
# of Stories	2
GSF	2,658 SF



Spring Street - Montpelier



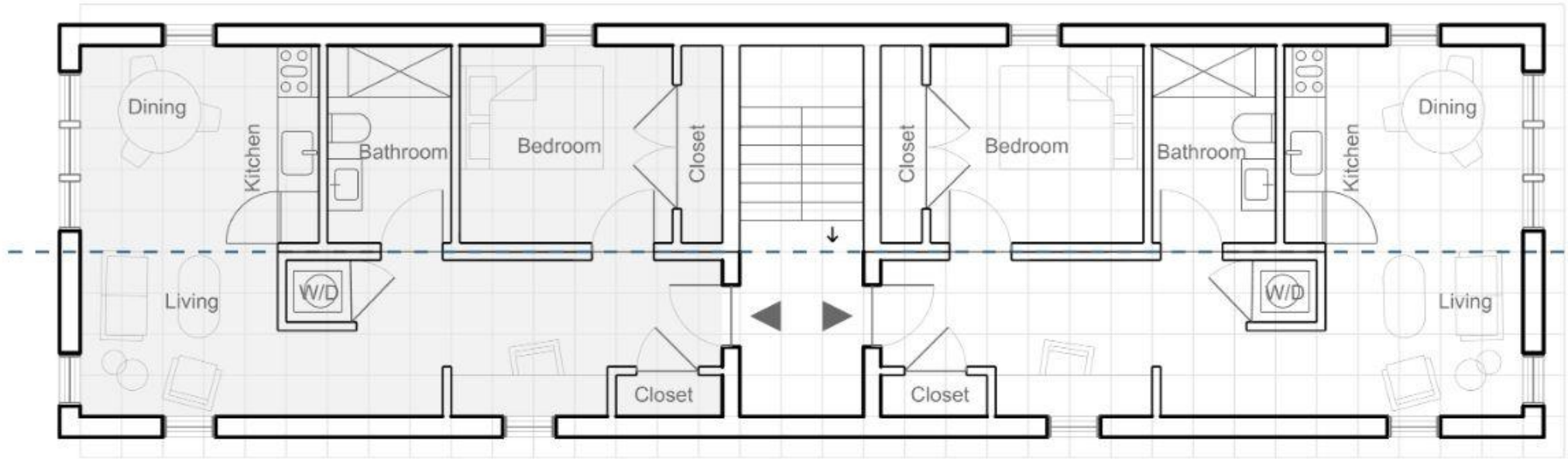
Myrtle St, Bellows Falls

Narrow Lot Four-Plex

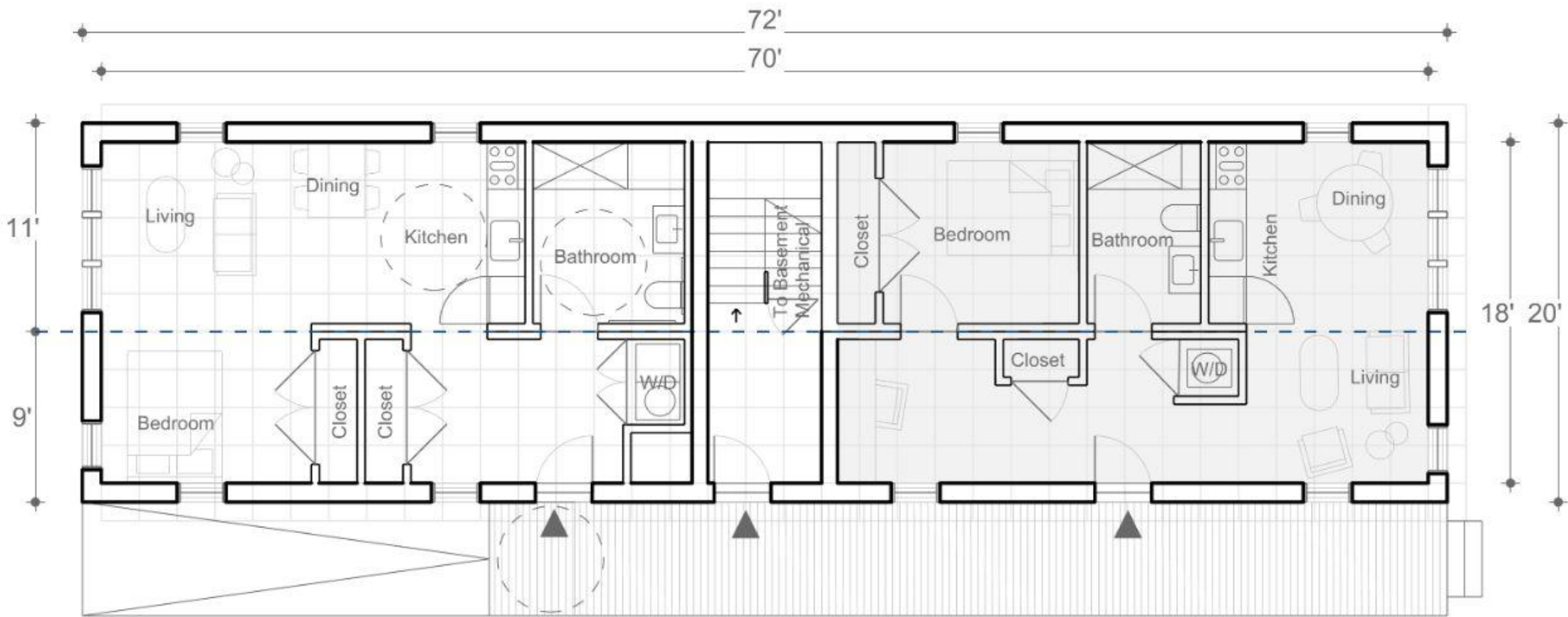
# of Units	4
Bedrooms	1/1/1/stu
Bathrooms	1/1/1/1
Building Dims	20' x 72'
# of Stories	2
GSF	2,658 SF

Typology specific revisions:

1. Move all mechanical space to attic or basement
2. Shift to one shared stair, ensure alignment of stair with modular constraints/demising line
3. Consider best way to add cover to ramp, study full length side porch
4. Explore accessible units for both ground floor units



Floor 2

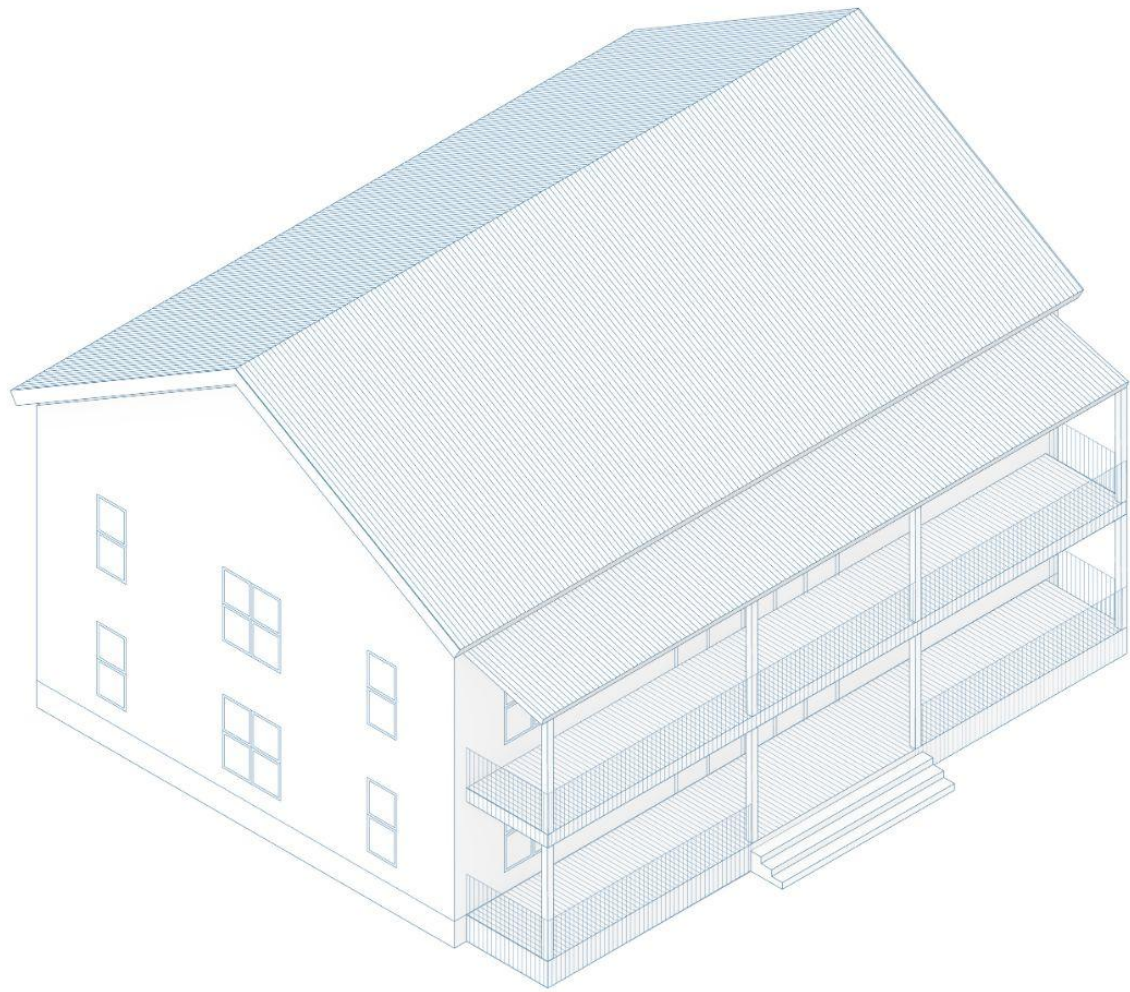


Floor 1

Stackable

Four-Plex / Six-Plex?

# of Units	4
Bedrooms	2/2/2/2
Bathrooms	1/1/1/1
Building Dims	36' x 52'
# of Stories	2
GSF	3,657 SF



Hartford Ave - Wilder (Hartford)



Jefferson St, Barre St

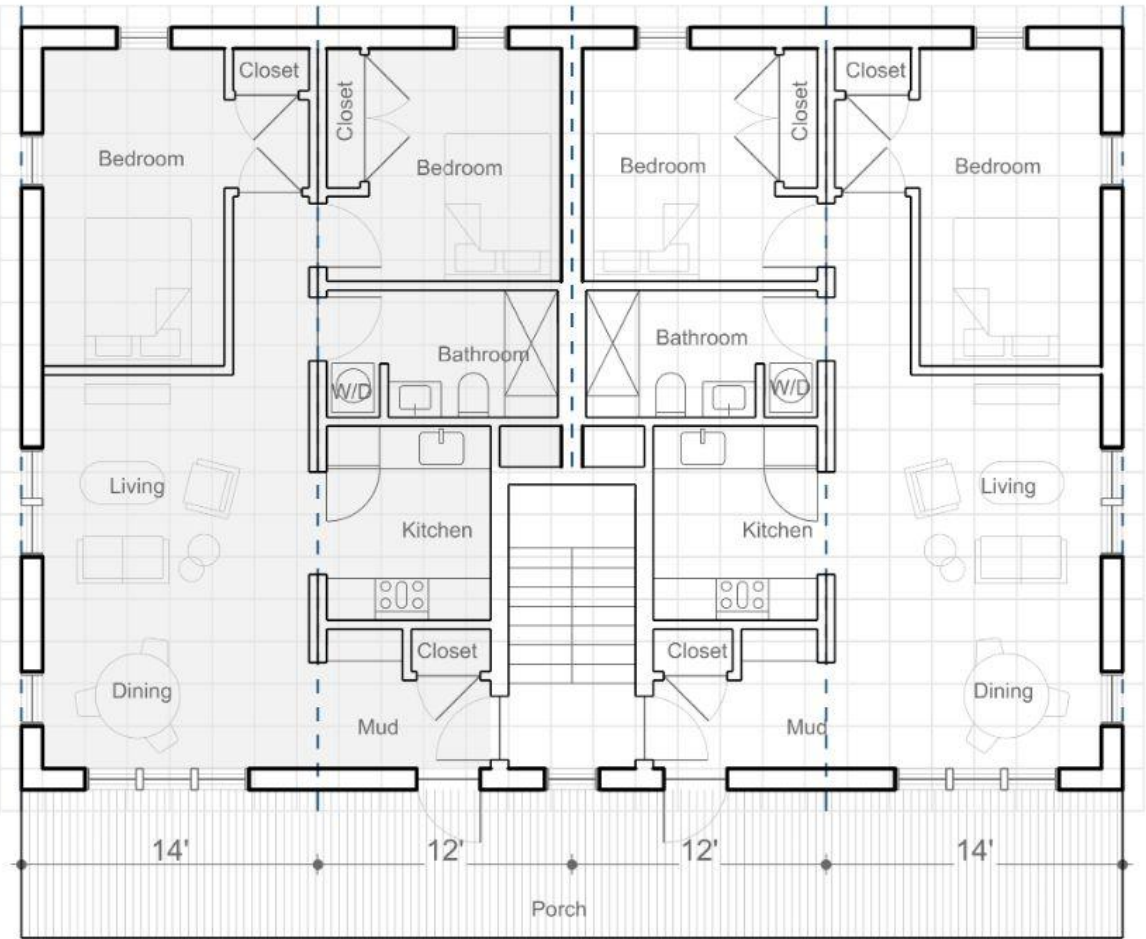
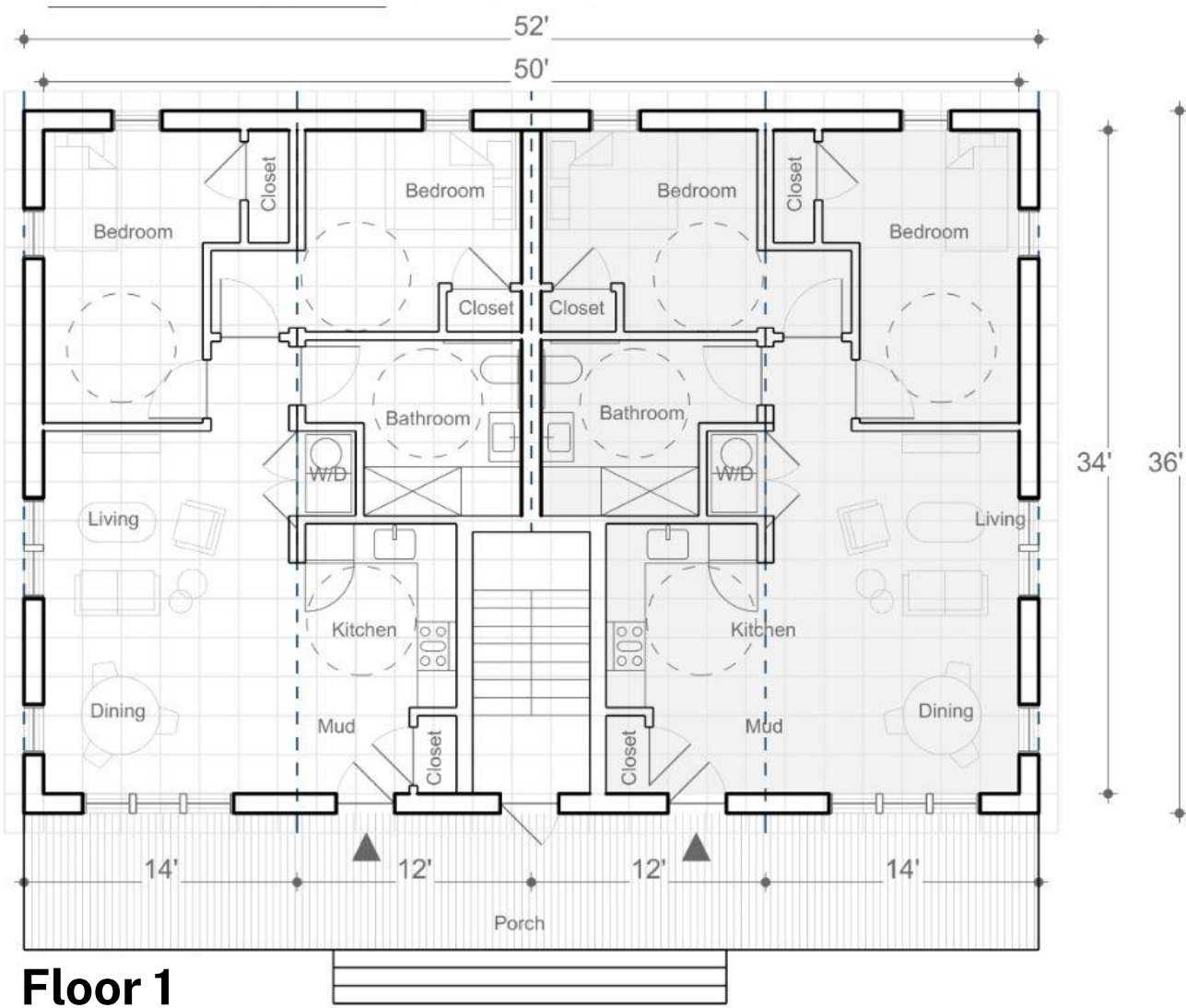
Stackable

Four-Plex / Six-Plex?

# of Units	4
Bedrooms	2/2/2/2
Bathrooms	1/1/1/1
Building Dims	36' x 52'
# of Stories	2
GSF	3,657 SF

Typology specific revisions:

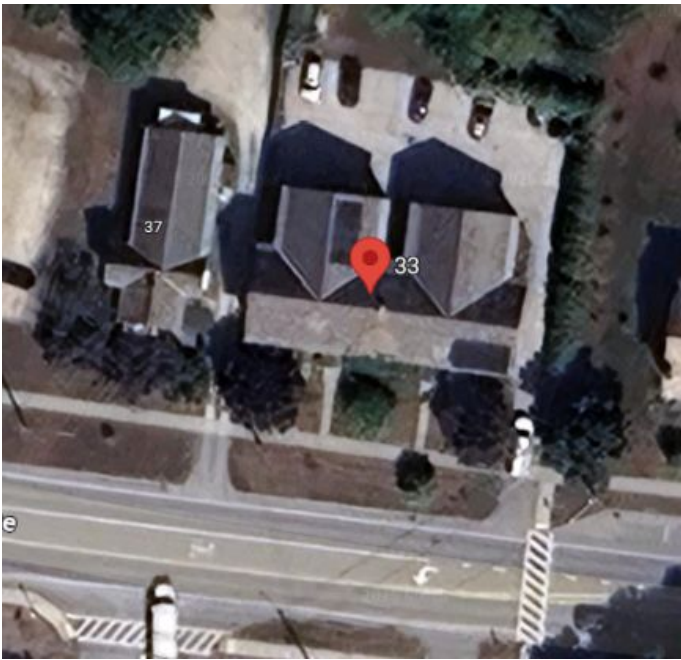
1. Test accessible layout for ground floor units
2. Determine best location for MEP
3. Explore stair configuration alternatives: If sprinklers are required anyways, would we rather have an interior stair? Prefer less prominent stair locations to emphasize full-width front porch
4. Explore ways to gain natural light in kitchen
5. Improve bedroom layouts
6. Continue studying code implications of adding third floor



Townhouse Re-Imagined

2+ Unit Aggregated

# of Units	2+
Bedrooms	2
Bathrooms	1
Building Dims	14' x 44'
# of Stories	2
GSF	1,232 SF



35 Conant Square, Brandon VT

Typology specific revisions:

1. Consider alternative module alignments and configurations so that the interior space can be more livable
2. Explore narrow front volume with pitch roof parallel to street and rear flat roof volumes (potentially with a deck) with carve-outs to allow light and air into interior living spaces



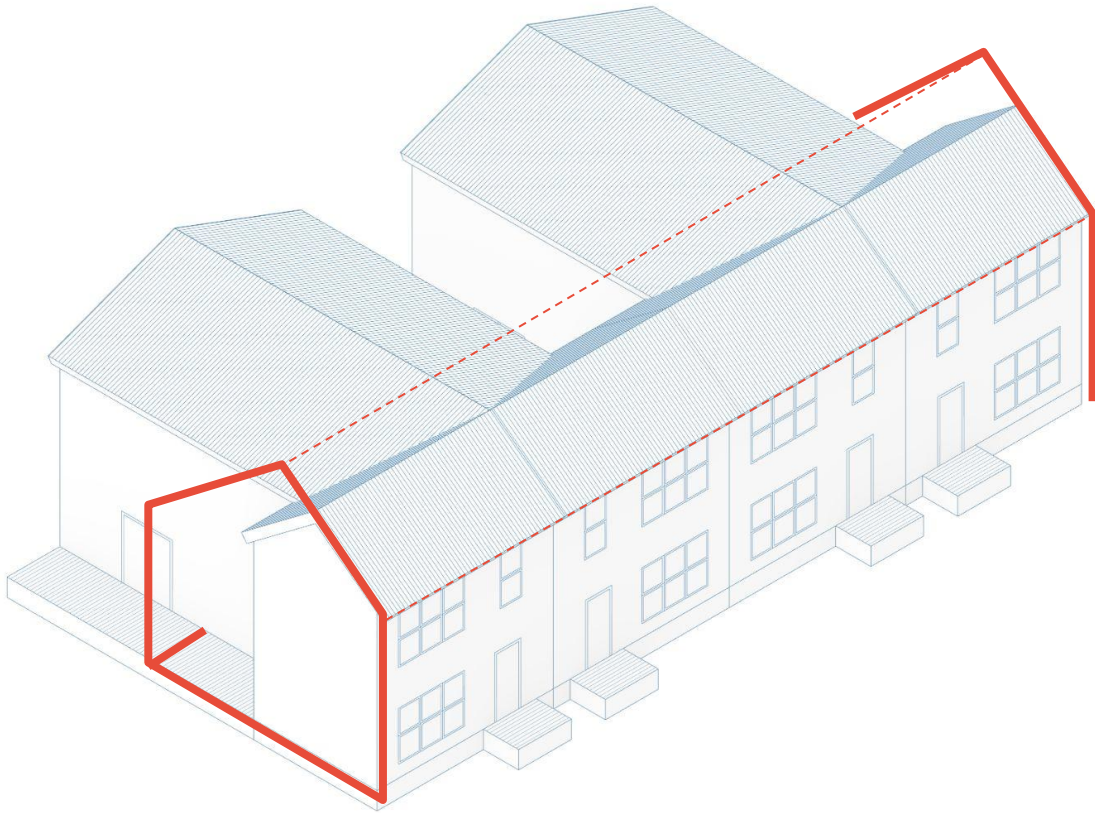
Townhouse

2+ Unit Aggregated

# of Units	2+
Bedrooms	2
Bathrooms	1
Building Dims	14' x 44'
# of Stories	2
GSF	1,232 SF

Typology specific revisions:

1. Consider alternative module alignments and configurations so that the interior space can be more livable -consider making it 2 modules wide (18', 20')
2. Explore narrow front volume with pitch roof parallel to street and rear flat roof volumes (potentially with a deck) with carve-outs to allow light and air into interior living spaces
3. Explore adding space in the middle for additional “mudroom” and MEP space on ground floor that could improve living room quality and function and improved front bedroom layout on the upper floor



Conant Square, Brandon VT



Maple St, Burlington VT

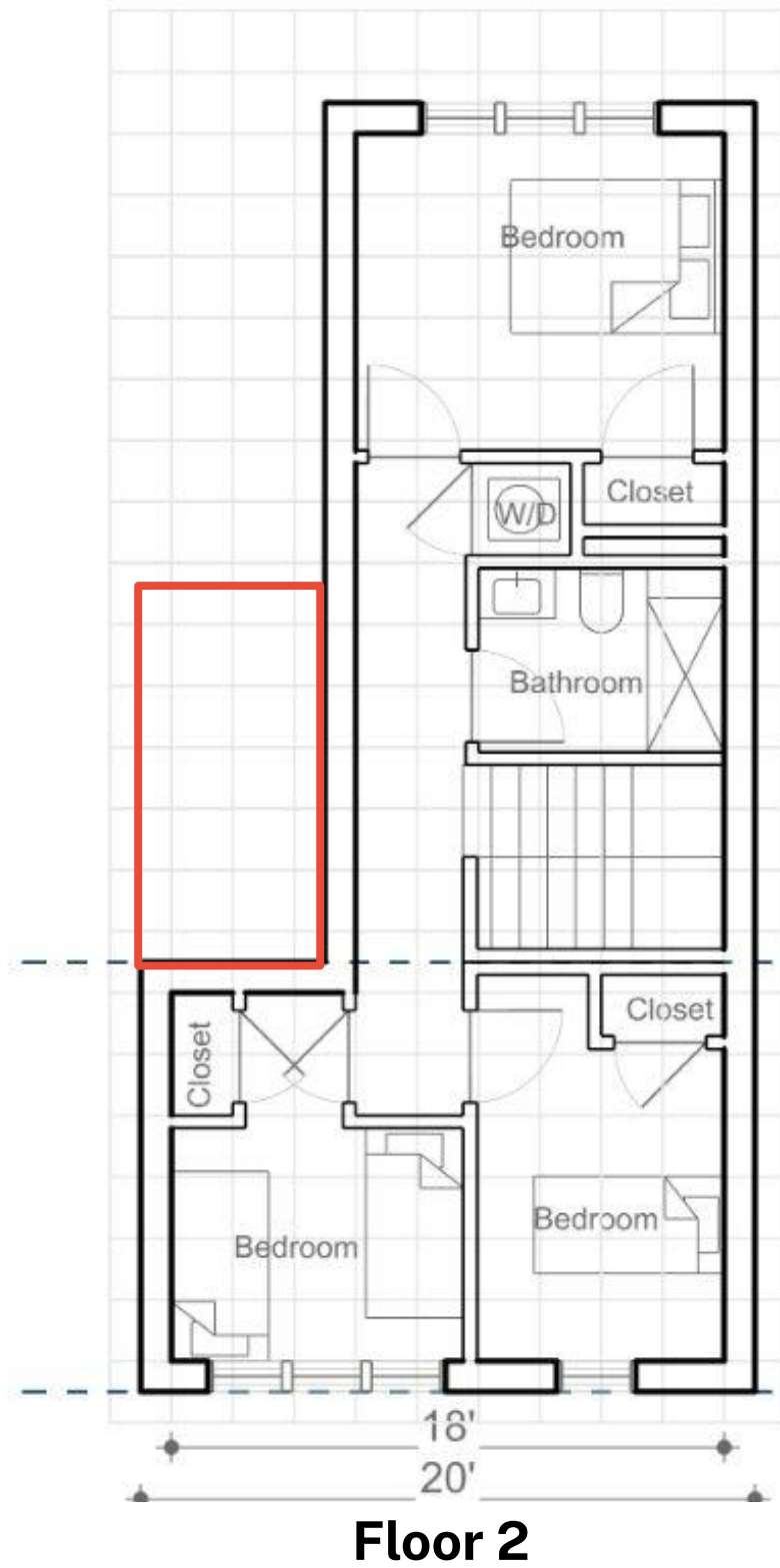
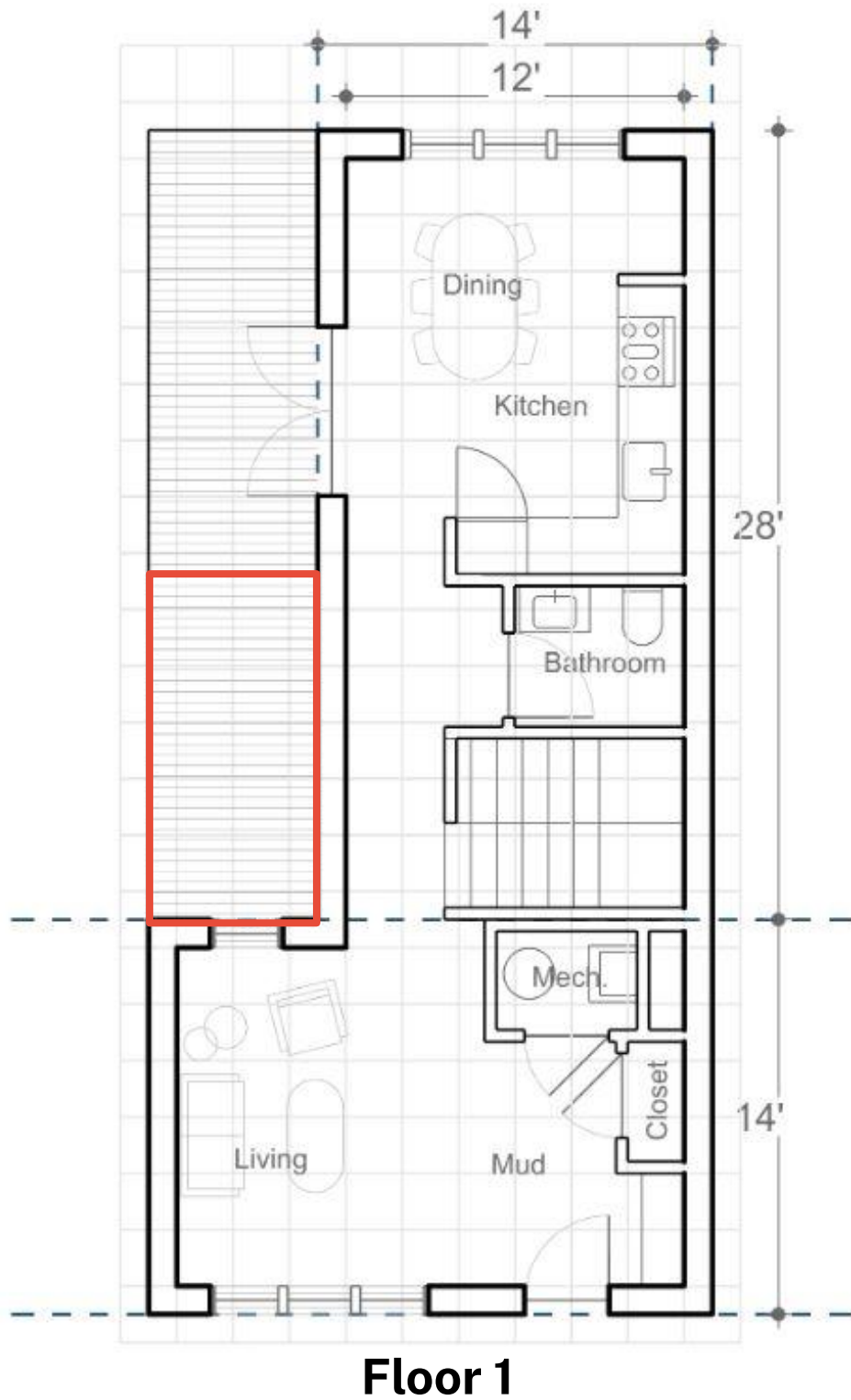
Townhouse

2+ Unit Aggregated

# of Units	1
Bedrooms	3
Bathrooms	1.5
Building Dims	20' x 42'
# of Stories	2
GSF	1,283 SF

Typology specific revisions:

1. Consider alternative module alignments and configurations so that the interior space can be more livable -consider making it 2 modules wide (18', 20')
2. Explore narrow front volume with pitch roof parallel to street and rear flat roof volumes (potentially with a deck) with carve-outs to allow light and air into interior living spaces
3. Explore adding space in the middle for additional "mudroom" and MEP space on ground floor that could improve front room quality and function and upper floor front bedroom layout



New Approach

Why?

1. Lower quality living space due to lack of side window exposure, challenges of accommodating vertical circulation with current building code and offsite volumetric modular constraints
2. Distinguish from existing offsite volumetric modular townhome models by making it narrower and balancing usable open space and parking in site planning for new neighborhoods

