Vermont Homes for All Toolkit:

A ‘Design & Do’ Toolkit for Small-scale Home Builders, Investors & Community Leaders










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House Committee on General and Housing

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Amy Tomasso, Community Planning + Project Manager, VT DHCD

AARP Vermont

VERMONT
AGENCY OF COMMERCE & COMMUNITY DEVELOPMENT
DEPT. OF HOUSING & COMMUNITY DEVELOPMENT

Introducing the Homes for All Toolkit!

Project Team Introduction

Vermont Agency of Commerce & Community Development, Department of Housing & Community Development

Alex Farrell
Commissioner of Housing
& Community Development

Chris Cochran
Director of Community Planning
& Revitalization

Jacob Hemmerick
Community Planning & Policy
Manager

Richard Amore
Manager of Placemaking and
Community Partnerships

Project Lead

Amy Tomasso
Community Planning &
Project Manager

AARP Vermont

Kelly Stoddard Poor
Director of Outreach,
AARP Vermont

AARP VT is partnering with the State of Vermont to support increased community engagement on neighborhood infill design considerations for this project.

AARP Livable Communities initiative supports the efforts of state entities, local leaders and residents to make communities more livable and age-friendly. Among the keys to livability is housing that's both suitable for and adaptable to the diverse and ever-changing needs of Vermont households and individuals.

Consultant Team Introduction

The project lies at the intersection of:

- Residential design
- Community planning and regulatory frameworks, and
- Feasibility, financing, and implementation

This is our specialty and where our passion lies.

Utile Roles & Expertise

- Project Management
- Engagement Lead
- Planning
- Urban Design
- Architecture
- Sustainable Design

Subconsultant Roles & Expertise

- Policy and Feasibility Analysis (Neighborhood Workshop)
- Local Community Development Advising (CommonLand Solutions)

Core Management Team

Matthew Littell, LEED AP
Principal-in-Charge, Utile

Zoë Mueller,
Project Manager & Urban Planner, Utile

Dedicated Specialist Team

Xiaoran Zhang, LEED AP ND
Urban Designer, Utile

Vermont Local

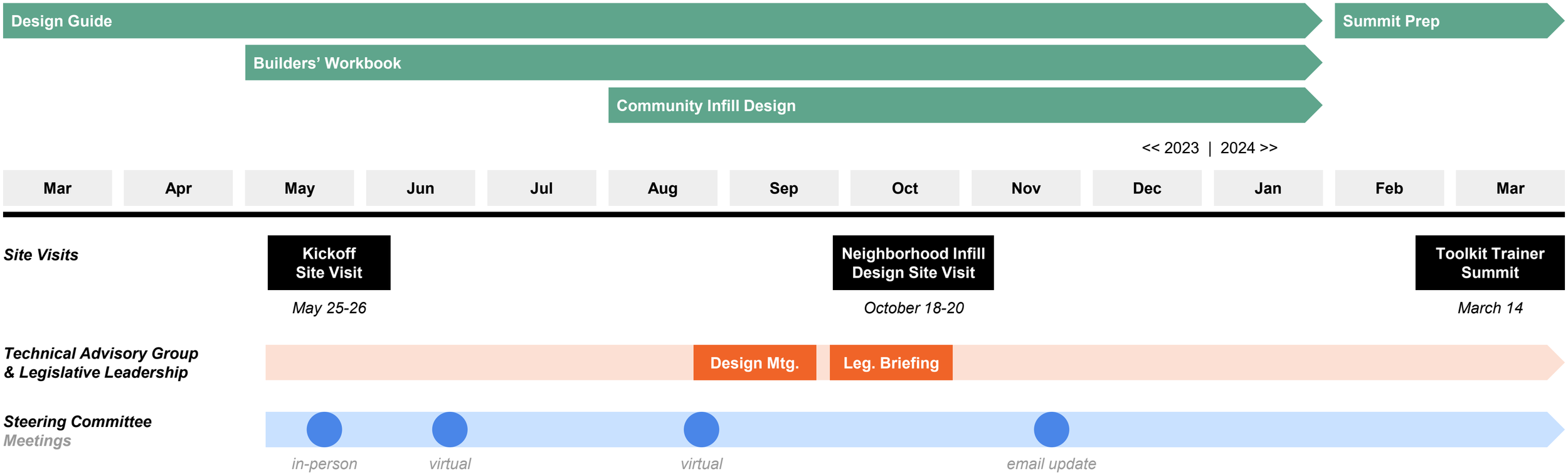
Alex Davis, AIA, CPHC®
Housing Architect, Utile

Neil Heller
Policy and Feasibility Analysis,
Principal, Neighborhood Workshop
Faculty, Incremental Development Alliance

Vermont Local

Liz Curry
Local Community Development Advisor,
Principal, CommonLand Solutions

Process



Members

Leslie Black Plumeau, Research and Community Relations Manager, Vermont Housing Finance Agency
Chad Simmons, Housing Policy and Engagement Specialist, Vermont Housing Finance Agency
Emily Phillips, Associate Housing Director, Vermont Housing and Conservation Board
Kelly Stoddard-Poor, Associate State Director, AARP Vermont
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Bill Colvin, Executive Director, Bennington County Regional Commission
Kati Gallagher, Sustainable Communities Program Director, Vermont Natural Resource Council
Katie Buckley, Director, Federal Funding Assistance Program, Vermont League of Cities and Towns
Chris Halnon, Business Loan Officer, New England Federal Credit Union
Jonah Richard, Principal, Village Ventures
Zak Hale, Hale Investments (Small-Scale Developer)
Seth Leonard, Managing Director of Community Development, Vermont Housing Finance Agency

Project Background

Homes for All Toolkit Inspiration

BUILD MAINE
SYSTEMS CHANGE

Development Ready Communities

PRIORITY DEVELOPMENT AREAS

The following priority development areas are targeted for state funding based on a set of place-based characteristics and a demonstrated positive return on investment. A community may identify locations for newly established priority development areas as part of a comprehensive planning process, where the community can demonstrate that there is no existing priority development area of the same placetype, and where the newly established area meets the criteria, excepting historic criteria.

1. DOWNTOWN

A Downtown is an area with a dense grouping of contiguous mixed-use parcels that include multi-story buildings. The area must have been planned, built, and used for mixed-use activities for more than 80 years, and include buildings of historical or architectural significance. The area must primarily consist of buildings that contain a mix of businesses, services, and residential uses. Buildings are located close together, are often times attached, and located adjacent to the sidewalk with a zero ft front setback. The area includes a network of streets that form blocks. Sidewalks are present along main commercial streets.

- ☐ Area was planned and built prior to 1940 and include buildings of historic or architectural significance.
- ☐ Mix of multi-story buildings.
- ☐ Mix of uses, including residential uses, permitted within buildings.
- ☐ Buildings located close together and often times attached.
- ☐ Majority of buildings have 0 ft front setback.
- ☐ Area includes a network of connected streets.
- ☐ Sidewalks present along main commercial street(s).
- ☐ Area has minimum value per acre of [ENTER AMOUNT].

2. VILLAGE CENTER

A Village Center is an area with a loose grouping of predominantly contiguous mixed-use parcels that contains a mix of multi-story buildings. The area must have been planned, built, and used for mixed-use activities for more than 80 years. The area must primarily consist of buildings that contain a mix of commercial, residential, and civic activities. Buildings are located close together, are often times attached, and located adjacent to the sidewalk with a zero ft or shallow front setback. Buildings are located along a loose network of streets. Sidewalks may be present.

- ☐ Area was planned and built prior to 1940 and include buildings of historic or architectural significance.
- ☐ Mix of multi-story buildings.
- ☐ Mix of uses, including residential uses, permitted within the area.
- ☐ Buildings located close together and may be attached.
- ☐ Majority of buildings have 0 ft or shallow front setbacks.
- ☐ Area includes a loose network of connected streets.
- ☐ Area has minimum value per acre of [ENTER AMOUNT].

3. CROSSROADS

A Crossroads is an area with a contiguous grouping of 2 or more buildings of historical or architectural significance that have formed a center of community within a small town or village. A Crossroads can contain a mix of commercial, residential, and civic activities. Buildings are located close together and near to the street, providing a place where people can easy walk between buildings because of their proximity.

- ☐ Area was planned and built prior to 1940 and include buildings of historic or architectural significance.
- ☐ Mix of uses, including residential uses, permitted within the area.
- ☐ Buildings are clustered.
- ☐ Majority of buildings have shallow front setbacks.
- ☐ Area has minimum value per acre of [ENTER AMOUNT].

South Bend Neighborhood Infill | Overview

ALLOWED | SPECIAL EXCEPTION | NOT ALLOWED

S1 S2 U1 U2 U3 UF NC DT

Carriage House	
Unit Configuration	1 bed / 1 bath
Unit Size	576 ft²
Optional	Garage Below
Lot Width	34' min.

Narrow House - 2 or 3 Bedrooms	
Unit Configuration	2 bed / 1.5 bath +
Unit Size	1,120 ft² or 1,390 ft²
Optional	Master Suite
Lot Width	30' min.

Standard House - 3 or 4 Bedrooms	
Unit Configuration	3 bed / 2.5 bath +
Unit Size	1,632 ft² or 1,902 ft²
Optional	Master Suite
Lot Width	32' min.

SMALL DEVELOPER COMPANION MANUAL

INC•DEV ALLIANCE

9 PRINCIPLES OF THE

INCDEV APPROACH

1. Commit yourself to a place you love that needs you.
2. Take the next smallest step.
3. Learn the rules so you can maximize the opportunity within them.
4. Build in rectangles that can adapt and improve over time.
5. Opt for cozy & human over large & luxury.
6. Focus on building a stronger neighborhood one project at a time.
7. Employ, support, and partner with locals, creating stewards of the neighborhood.
8. Rightsize regulation and re-legalize time-honored buildings.
9. Build things that give more than they take.

Project Kickoff

What will the toolkit do?

Purpose:
Re-introduce Missing Middle Housing (MMH) to Vermont by focusing statewide attention on small-scale gentle infill and incremental development as a strategy to address Vermont's housing and affordability crisis.

Audience:
- Prospective and emerging small-scale developers
- Planning and regulatory policymakers
- Municipal and community leaders
- Vermont-based technical advisors for MMH

Example of MMH in Corinth

Toolkit Goals
1. Build Affordably
2. Grow Small Developers
3. Cultivate Local Support
4. Empower MMH Champions

Context

Missing Middle Housing is not new in Vermont!

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

Cottage Court infill development (Bristol Cohousing)

Traditional “multi-family” housing in VT

Project Overview

What do we mean by “Missing Middle Homes”?

Missing Middle Homes is a housing term that describes a range of house-scale residential building types that have multiple units that are compatible in scale and form with detached single-family homes. In the context of this project, this term is intended include Accessory Dwelling Units (ADUs), duplexes, townhouses, courtyard apartments and mixed use neighborhood commercial building types.





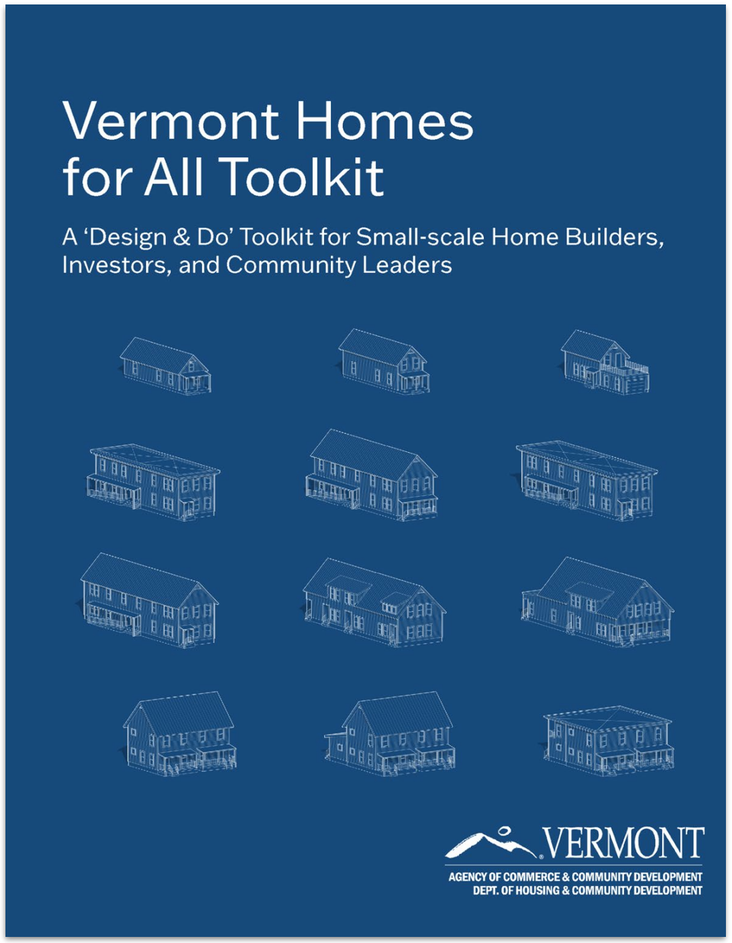





Project Overview

What is the purpose of this project?

- Provide a policy, design, and development foundation to encourage the creation of more diverse housing typologies in Vermont that meet housing needs.
- Develop “homes for all” typologies and designs with a character and scale that is modest, sensible, and aesthetically familiar to a broad range of Vermonters.
- Develop educational capacity building and training tools to encourage broad support of and contribution to a healthy and diverse implementation of the housing concepts developed through this effort.



Vermont Homes for All Toolkit

The Toolkit provides a foundation for the implementation of “homes for all” typologies in Vermont by providing predevelopment-ready building design prototypes, guidance on how to address design factors for incremental infill development in existing communities, and start to finish guidance on the development process.

Part 1.
Builders’ Workbook

Part 2.
Missing Middle Homes Design Guide

Part 3.
Vermont Community Infill Design Case Studies

Toolkit Trainer Summit & Training Resources

Part 1. Builders' Workbook

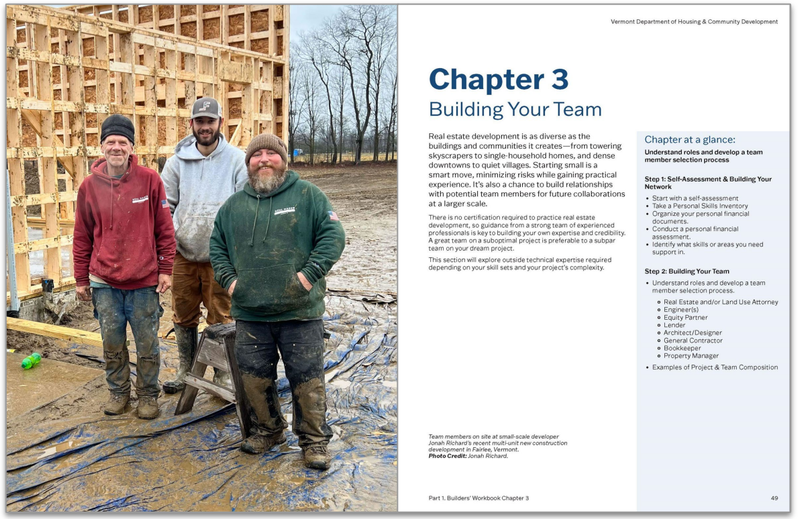
What this section of the Toolkit covers

Step-by-step guidance on all aspects of the development process for a broad audience of potential developers.

Chapters:

1. Your role in small-scale development
2. Identifying development-ready sites
3. Building your team
4. Business and financial frameworks
5. Feasibility methodology
6. Design
7. Permitting and construction
8. Implementation and management

Example spreads >>



Vermont Department of Housing & Community Development

Chapter 3

Building Your Team

Real estate development is as diverse as the buildings and communities it creates—from towering skyscrapers to single-household homes, and dense downtowns to quiet villages. Starting small is a smart move, minimizing risks while gaining practical experience. It's also a chance to build relationships with potential team members for future collaborations at a larger scale.

There is no certification required to practice real estate development, so guidance from a strong team of experienced professionals is key to building your own expertise and credibility. A great team on a suboptimal project is preferable to a subpar team on your dream project.

This section will explore outside technical expertise required depending on your skill sets and your project's complexity.

Chapter at a glance:

Understand roles and develop a team member selection process

Step 1: Self-Assessment & Building Your Network

- Start with a self-assessment
- Take a Personal Skills Inventory
- Organize your personal financial documents:
- Conduct a personal financial assessment:
- Identify what skills or areas you need support in.

Step 2: Building Your Team

- Understand roles and develop a team member selection process.
  - Real Estate and/or Land Use Attorney
  - Engineer(s)
  - Equity Partner
  - Lender
  - Architect/Designer
  - General Contractor
  - Bookkeeper
  - Property Manager
- Examples of Project & Team Composition

Team members on site at small-scale developer Jonah Richard's recent multi-unit new construction development in Fairlee, Vermont.
***Photo Credit:** Jonah Richard.*

Part 1. Builders' Workbook Chapter 3 49

What is the process?

The small-scale development process can be broken down into three phases: 1) Startup; 2) Assessing the Options; and 3) Implementation. Across all phases, there are three themes that guide the process: Place & Design, Team, and Business Model. These three themes vary in their demands in each phase, but always remain a touchpoint. You can use the diagram below as a quick reference guide for this Workbook so you can jump to the sections that are most relevant to you at a given time.

Phase 1: Startup

Inception of an idea.

This phase is exploratory and involves tasks that can be completed without any formal commitments or spending money. This is where you get your 'bucks in a row' to create a base to work from going forward.

- See Chapter 3 for assessing yourself and building a team.
- See Chapter 1 & Chapter 2 for community/site selection.

Phase 2: Assessing the Options

Feasibility and refinement of an idea.

Most small-scale developers will spend their time in this phase exploring options, which can take a long time, even years. This includes researching development rules, potential sites, sketching loose site plans according to these rules, and running financial feasibility analyses. Don't worry, this workbook provides guidance for learning these useful skills.

- See Chapter 2 for conceptual site sketching.
- See Chapter 5 for financial feasibility methods.
- See Chapter 6 for the basics of site and building design.

Phase 3: Implementation

Moving forward with the best project.

After multiple ideas have been explored and tested, one site and project design needs to be chosen to move forward with. At this point a purchase option can be signed, contingent on receipt of financing and local approvals. A site plan and building drawings will need to be submitted to obtain permits. Once a permit is received, the building or parcel of land can be purchased and the focus will shift towards managing the construction process.

- See Chapter 2 on identifying development-ready sites.
- See Chapter 7 on permitting and construction.

Place & Design

The physical, legal, cultural, and environmental parameters of a site and the community where it is located. Chapter 6 is your home base for this topic.

Community & Neighborhood

You will likely start with a conceptual location in a community or neighborhood you are familiar with, or with a site you already own.

Site & Scale

In Phase 2, engaging with site and place will likely look like a loose sketch drawing of development concepts simply to test the feasibility of an idea and explore how that idea interacts with a particular site's context in terms of function and scale.

Full Design

By the time you reach Phase 3, you should be working with a real site for which you have real purchase options. By this point you should be working with one or more design professionals.

Team

The people you will need to rely on to support you at some point in the development process. Chapter 3 is your home base for this topic.

Assessing Yourself, Thought Partners & Network

Building your team starts with you—understanding your skillsets and gaps, and the network of people you rely on.

Specialist Advisors & Equity Partners

In Phase 2, you'll want to begin bringing in specialist advisors and identifying equity partners to support you as you begin to get into more technical analysis and prepare to make financial and legal commitments.

Contracts

By the time you reach Phase 3, you should be preparing and executing contracts that define the relationships you have with each team member.

Business Model

The way you structure your project from a legal, financial, and operational perspective. Chapter 4 is your home base for this topic.

Owner Occupied vs. LLC & Rent or Sale

Your business model starts with your relationship to the project and how you imagine managing it over time.

Market, Occupancy & Financing

In Phase 2, you'll want to fine-tune your business model by considering the sub-market you'd like to cater to (which may be driven by local housing demand) and what kind of financing and legal structure would support that.

Preparing for Sales or Property Management

By the time you reach Phase 3, you should be preparing to market your project for sale or putting property management systems in place well in advance of when your construction process concludes.

Don't forget this process is iterative, not linear!!

This process diagram may appear linear, but the reality is more fluid. A project is constantly being reassessed as new information comes to light.

Forming a Business

As mentioned previously, the Limited Liability Corporation, or LLC, is the most important and commonly used business structure to meet the needs of small-scale developers. Below we will offer a primer on what an LLC is and how to think about structuring your own.

Limited Liability Corporation

An LLC's primary advantage is that it separates the business's legal and financial obligations from the personal assets of its owners. Members of the LLC typically enjoy limited liability, meaning that their personal assets are shielded from business debts and legal liabilities including credit default or personal litigation.

A key component of operating a business under the LLC structure is the 'operating agreement.' Having an LLC operating agreement is not required in the State of Vermont, but is highly recommended because it fully outlines roles, responsibilities, return expectations, project management, and the procedures for dissolution.

Below, we will outline how the creation of multiple LLCs interact in a development project, who might be a member of one or the other, and how this business structure affects project finance options. Business structure also has implications for taxes and loans that will not be addressed at length in this workbook. You should discuss the specifics of your project with tax specialists and lenders to better understand how your chosen business structure will interact with taxes and loans.

If you are interested in exploring alternatives to the standard LLC structure described in this workbook, the Small Business Association (SBA) has details on other common business structures. Regardless of whether you opt for an LLC or another structure, you should plan to discuss the details of your business structure with a local attorney or tax advisor—especially since the requirements vary by state and online information may be inaccurate.

Development Project Business Structure

1. Development Company

To separate personal assets and liability from the development business, you should consider forming a development company first as a limited liability corporation (LLC). The corporation will be the developer of each project you take on, and each project will also be its own individual LLC. Using this business structure protects the individual who is undertaking development projects, and protects those who invest in different individual projects developed by the company.

The development company does not typically require much operating cash since the small-scale developer will pay for each project separately - in other words, each project will have its own distinct capital stack (see section below, "Building Your Capital Stack"). The development company's expenses consist of business insurance and office expenses. The development company's revenue comes solely from developer fees and excess profits. These profits are drawn from the operating income of individual projects after all expenses and capital reserve contributions have been paid.

2. Development Project

It is good practice to also form an LLC for each property being developed.

The project LLC consists of the development company LLC and its equity partners (those who have invested in the project). Again, the 'operating agreement' describes roles, responsibilities, return expectations, and how a member's shares might be bought out.

Within this structure, and outlined in the operating agreement, are distinct roles with their associated responsibilities. Members of a project LLC can be individuals, corporations, another LLC, or even a trust. In the most straightforward structure of a project LLC, there are two primary roles:

a) **member (the operating partner):** this is you—the small-scale developer (or their development company LLC).

b) **members (equity partners):** your other investors in the project.

Creating separate LLCs for individual development projects allows members of each project to vary accordingly. Using the example above, let us consider adding a second project where Equity Investor A is not involved while Equity Investor B joins alongside another partner (Equity Investor C).

The Role of Design

Sketching a site layout concept is a valuable skill that can can save money and make projects more livable and desirable to tenants or purchasers. Small-scale developers should be comfortable generating conceptual site layouts as part of their feasibility analysis. These site layouts do not need to be of high-quality artistic value, they only need to be able to clearly communicate the physical implications of ideas. Testing conceptual site layouts in tandem with your pro forma development will allow you to go back and forth between the physical and financial feasibility to find a workable approach for both.

Once a workable approach is determined, the site plan sketch can be used to communicate ideas to a designer, architect, zoning official, lenders, and contractors. More refined drawings from a design professional can come later but having the skill to do this initial legwork saves the small-scale developer from calling and paying a designer for every idea, only to find out it may not work. We recommend small-scale developers draw a concept sketch, then input the idea into the pro forma and rework as needed.

To do this, only a few tools and skills are necessary. Some may choose to use a software program, but a simpler approach is pen, paper, and markers or colored pencils.

A local arts supply store will have everything required, which includes:

- A double ended marker or felt-tipped pen with one thick end and one fine point end.
- See-through trace paper.
- Tape – a removable type such as drafting tape is easier to work with.
- Red and blue colored pencils for iterative drafting.
- Other colors for illustration such as light green for grass, dark green for trees, light gray for pavement, and dark red for buildings. These can be colored pencils or professional markers such as the AD Markers made by Chartpak.
- Optional: Engineering scale, but can also use a basic ruler.
- Optional: Parallel glide ruler for drawing lines. This is optional because measuring and making dots, then connecting these dots is perfectly acceptable. Also, a slightly wiggly line provides texture, where a perfectly straight line can appear too rigid, especially at this conceptual phase. Keep it loose.

A couple of insider notes before getting started.

Line weights. When drawing, designers use a concept of line weights to make a site plan easily legible by directing the observer's eye to important items. Line weights refer to the thickness of a line to communicate its importance. For example, a lot boundary line will be thick because it is an important demarcation representing the limits of where ideas can take place whereas the outline of pavement will be lighter because it is more flexible as ideas change.

Line types. Some lines are not solid and have a standard way of being represented graphically:

- A lot boundary line is represented by a dash-dot-dot-dash.
- A setback line is all short dashes.

Start by measuring out the dimensions of the lot directly onto a piece of regular-sized printer paper. Place the street and the front of the lot at the bottom of the page and label the street, which will enable observers to quickly become oriented.

A scale of 1-to-20 works well with this size of paper. What this means is that every inch on a ruler translates to twenty feet in the drawing. So, a 100-foot-deep lot will be five inches. To make smaller measurements such as ten feet, use one-half inch, or one-quarter inch for five feet.

After drawing the lot boundary line using the thick end of the Sharpie, refer to the relevant zoning standards (which should be recorded in a tab of your Static Pro Forma excel workbook accessible via the Sample Pro Formas appendix). Next, draw the front, side, and rear setbacks with the thin end of the Sharpie. These setback lines identify what is known as the 'buildable area,' where structures are allowed to be placed. Be sure to also include any

existing structures or other items that must remain and be worked around. Now you have a base layer to work from.

Using the printer paper with the lot boundary and setbacks as the base layer, lay a piece of trace over it and tape it down. This is where ideas can be sketched out but also easily crumpled up and thrown out if they do not work. You may also find yourself using a portion of the plan that you like but modifying another portion. This can be accomplished by laying yet another piece of trace over the top and tracing over the good parts while offering a blank space to modify what is not working as well.

The process of iterative drawing and adding pieces of trace can get confusing. One way to keep track of your ideas is to use red for things that do not, or cannot, change such as setbacks or existing streets and sidewalks. Blue is used for flexible items such as new walkways or new building locations.

This is the phase of drawing where there should be the most back and forth from the drawing to the pro forma, especially when unit count or building square footage change. Other calculations, such as what percentage of lot area the buildings use, should be regularly checked to make sure the zoning standards are being met.

A final site plan can be drawn and colored once a workable plan has been determined. This final sketch should be drawn with good line weights, proper line types, and a bit of color to differentiate between features such as parking, landscaping, waste bins, utility features/boxes, snow storage, and structures. A phone picture or scan can be used to capture this final image digitally and then print or share.

A few basic tools and techniques is all it takes to begin a conceptual site plan. Shown is a 100-foot x 100-foot, 10,000 square foot lot with setbacks at 1:20 scale, where 1 inch equals 20 feet.

Part 2. Missing Middle Homes Design Guide

What this section of the Toolkit covers

A series of context-sensitive "homes for all" typologies with illustrated designs.

Components:

- Overview of design approach and home typologies based on research into vernacular design elements, and local case studies
- Four predevelopment-ready missing middle home building typology designs, each with several variants/customizations:
  - Age-in-Place
  - Narrow Lot
  - Village
  - Side-by-Side
- Explanation of the "Telescoping Home" Aggregation Pattern

Example spreads >>


Vermont Agency of Commerce & Development

Overview of Design Approach

All home typologies in this Toolkit have been designed to take into account general residential architectural best practices at a schematic level. The home typologies are intended to serve as inspiration for developers to start thinking about their particular sites' development opportunities. In all cases, further development of these designs by the developer and their architect, engineer, or other building professional will be required to certify that they meet local, state, and federal codes and are suitable for a particular site.

Basic Design Constraints & Approach

Generally speaking, typologies have been designed to be narrower than they are long. This enables them to work in a wide array of vacant and underutilized parcels and allows for varying parking solutions within door yards (side yards), and rear yards. The overall parcel dimensions, environmental and infrastructural constraints, local zoning requirements, and parking dimensional requirements will dictate the typology and scale of development your parcel can support. Other site considerations that should be considered when laying out your potential development on your site include well and wastewater infrastructure placement, storage of household waste (trash/recycling/compost), parking area, snow storage, retention of usable on-site open space, and location of mailboxes (e.g. aggregated in one common location, or individualized). See Chapter 6 of the Builders' Workbook and the Community Infill Design section of this toolkit for more on these site-specific design considerations.

Roof Design & Rain and Snow Shed

Each typology has been drawn with a recommended roof configuration that maximizes interior square footage while maintaining an exterior profile that is consistent with single-dwelling unit norms. In some cases, typologies have been drawn to show both pitched and flat-roof options. When selecting the roof type for your development (e.g. pitched vs flat), you should consider whether the roof type will shed excess snow and rain into specific areas of your property—especially emergency egresses. The inconvenience of rain shedding from a roof onto a unit entrance or related stair/ramp can easily be solved with gutters. However, snow and ice shedding from roofs onto circulation and egress areas can be dangerous. If pitched roofs are proposed, it is

Existing Vermont homes that are, or could be, small multi-unit missing middle homes.
Photo Credit: DHCD.

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Vermont Department of Housing & Community Development

Existing multi-unit building in Barre, likely converted from a single-unit dwelling. ***Photo Credit:*** Utile.

highly recommended that all unit entrances and related stairs/ramps be protected by a roof. Snow shedding into driveways and walkways is also a hazard, but this is often secondary to other competing design considerations.

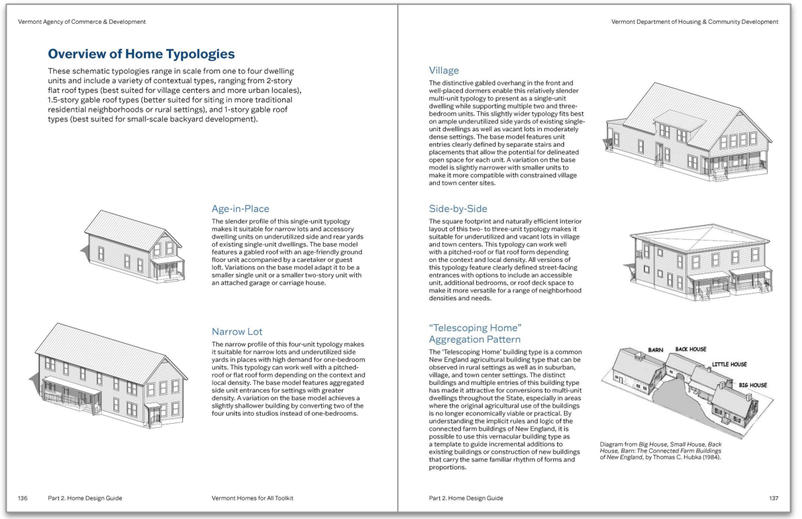
Floor Plans & Interior Functionality

Typology interiors have been designed to be efficient and practical while maximizing the resident experience:

- Shared common areas have been eliminated, as they can be difficult to manage and maintain. This means that each upper-floor dwelling unit has its own entry and stair.
- All entrances have been designed to include ample storage for coats and boots, and mudroom benches have been incorporated where feasible.
- Living areas are open-concept to allow for furnishing flexibility, while maintaining reasonable flooring joist spans to minimize material cost and maximize ceiling heights. Where necessary to limit costly long joist spans, isolated columns have been incorporated into some layouts.
- In-unit laundry facilities have been provided in varying configurations (side-by-side or stacked) based on the constraints of each interior layout. Laundry has been incorporated on the same level as bedrooms where space permits for added convenience.
- Additionally, two-level dwelling units include a half bath on the ground floor to better accommodate guests and limit the need to traverse upstairs frequently.

In all cases, development teams will need to closely coordinate egress and code requirements with the local authorities who have jurisdiction, especially on means of egress, secondary means of egress/escape, and placement of mechanical closets/equipment relative to bedrooms.

Part 2. Home Design Guide 133


Vermont Agency of Commerce & Development

Overview of Home Typologies

These schematic typologies range in scale from one to four dwelling units and include a variety of contextual types, ranging from 2-story flat roof types (best suited for village centers and more urban locales), 1.5-story gable roof types (better suited for siting in more traditional residential neighborhoods or rural settings), and 1-story gable roof types (best suited for small-scale backyard development).

Age-in-Place

The slender profile of this single-unit typology makes it suitable for narrow lots and accessory dwelling units on underutilized side and rear yards of existing single-unit dwellings. The base model features a gabled roof with an age-friendly ground floor unit accompanied by a caretaker or guest loft. Variations on the base model adapt it to be a smaller single unit or a smaller two-story unit with an attached garage or carriage house.

Narrow Lot

The narrow profile of this four-unit typology makes it suitable for narrow lots and underutilized side yards in places with high demand for one-bedroom units. This typology can work well with a pitched-roof or flat roof form depending on the context and local density. The base model features aggregated side unit entrances for settings with greater density. A variation on the base model achieves a slightly shallower building by converting two of the four units into studios instead of one-bedrooms.

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Vermont Department of Housing & Community Development

Village

The distinctive gabled overhang in the front and well-placed dormers enable this relatively slender multi-unit typology to present as a single-unit dwelling while supporting multiple two and three-bedroom units. This slightly wider typology fits best on ample underutilized side yards of existing single-unit dwellings as well as vacant lots in moderately dense settings. The base model features unit entries clearly defined by separate stairs and placements that allow the potential for delineated open space for each unit. A variation on the base model is slightly narrower with smaller units to make it more compatible with constrained village and town center sites.

Side-by-Side

The square footprint and naturally efficient interior layout of this two- to three-unit typology makes it suitable for underutilized and vacant lots in village and town centers. This typology can work well with a pitched-roof or flat roof form depending on the context and local density. All versions of this typology feature clearly defined street-facing entrances with options to include an accessible unit, additional bedrooms, or roof deck space to make it more versatile for a range of neighborhood densities and needs.

"Telescoping Home" Aggregation Pattern

The "Telescoping Home" building type is a common New England agricultural building type that can be observed in rural settings as well as in suburban, village, and town center settings. The distinct buildings and multiple entries of this building type has made it attractive for conversions to multi-unit dwellings throughout the State, especially in areas where the original agricultural use of the buildings is no longer economically viable or practical. By understanding the implicit rules and logic of the connected farm buildings of New England, it is possible to use this vernacular building type as a template to guide incremental additions to existing buildings or construction of new buildings that carry the same familiar rhythm of forms and proportions.

Diagram from Big House, Small House, Back House, Barn: The Connected Farm Buildings of New England, by Thomas C. Hubka (1984).

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Vermont Agency of Commerce & Development

Village

Village Three (Base Model)

The distinctive gabled overhang in the front and well-placed dormers enable this slender multi-unit typology to present as a single-unit dwelling while supporting multiple two and three-bedroom units. This typology fits best on ample underutilized side yards of existing single-unit dwellings.

Development Metrics	
Number of Units	3 Units
Number of Bedrooms per Unit	(1) 1 Bedroom, (2) 3 Bedroom
Unit Types (Accessible/Age-Friendly)	(1) Accessible, (2) Conventional
Gross Square Footage per Unit	676 sf / 1,426 sf / 1,496 sf
Building Footprint	30' × 70'

This home in Randolph was the inspiration for the Village typology.

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Vermont Department of Housing & Community Development

Ground Floor Plan
This depicts a schematic approach to the ground floor for this typology.

Second Floor Plan
This depicts a schematic approach to the second floor for this typology.

Disclaimer: These plans represent a schematic approach to a two unit building. Further development of the design by the developer and their architect, engineer or other building professional will be required to certify that it meets local and state codes, and that it is suitable for a particular site.

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"Telescoping Home" Aggregation Pattern

Basic Concept

The "Telescoping Home" building type is a common New England agricultural building type that can be observed in rural settings as well as in suburban, village, and town center settings. The distinct buildings and multiple entries of this building type has made it attractive for conversions to multi-unit dwellings throughout the State, especially in areas where the original agricultural use of the buildings is no longer economically viable or practical. By understanding the implicit rules and logic of the connected farm buildings of New England, it is possible to use this vernacular building type as a template to guide incremental additions to existing buildings or construction of new buildings that carry the same familiar rhythm of forms and proportions

This collection of photos illustrates variations on the vernacular connected farm building typology found throughout Vermont's rural and village settings.
Photo Credit (Top Left): *Doug Kerr, East Poultney.*

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Vermont Department of Housing & Community Development

Key Features of the Pattern

The observed pattern and logic of the "Telescoping Home" building type is documented meticulously in Thomas C. Hubka's 1984 book *Big House, Little House, Back House, Barn: The Connected Farm Buildings of New England.*

To replicate the logic of a traditional connected farm building it is helpful to understand the typical function and inter-relationships of the buildings - the "big house" was typically the primary home and living space, often organized around the hearth or chimney, the "little house" was often intended to house the kitchen, the "back house" was conventionally a workshop or summer kitchen space for cottage industry, and the "barn" was for agricultural, animal husbandry, and mechanical uses.

Some of the key features include:

- A central sheltered dooryard is typically located to function as a multi-purpose side yard sheltered from the elements by the L-shape of the larger barn and workshop-type buildings enclosing the rear.
- Balance of proportion and mass is typically achieved through a "larger, plainer bulk of the barn" serving as a counterpoint to the slightly "smaller but more intricate mass of the big house"
- Each building is typically staggered from the footprint and roofline of the buildings it abuts.
- The entire complex typically has a unified architectural style, which is applied in greater detail to the big house and applied in a more diluted way to each successive building in the connected complex.

Above: Diagrams from *Big House, Small House, Back House, Barn: The Connected Farm Buildings of New England* by Thomas C. Hubka (1984).

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Part 3. Vermont Community Infill Design Case Studies

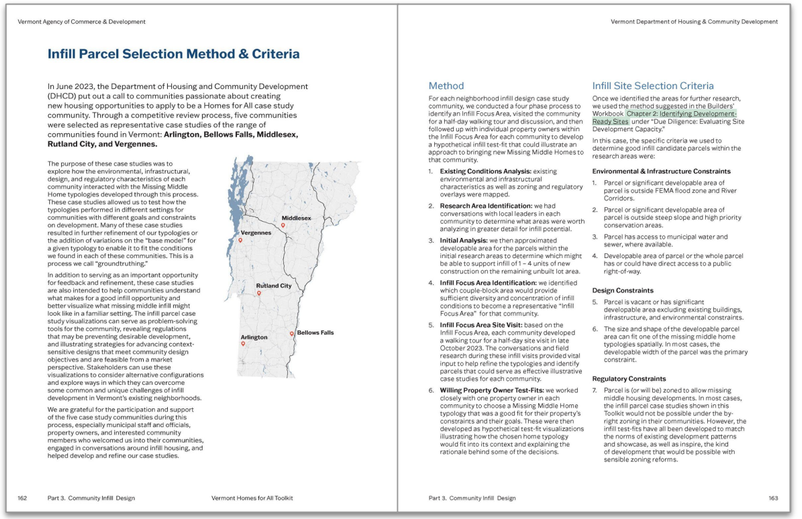
What this section of the Toolkit covers

Documentation of case studies used to test and refine the home prototype designs and builders workbook concepts in the context of five representative Vermont communities.

Components:

- Infill parcel selection method and criteria overview
- Case studies including site selection mapping and case study parcel test-fit visualizations for:
  - Arlington
  - Bellows Falls
  - Middlesex
  - Rutland City
  - Vergennes

Example spreads >>



Home Design Development

Initial Scale Calibration for Development “Sweet Spot”
& Design Prototype Work

Development “Sweet Spot”

Toolkit Focus

Sweet Spot #1
Scale: 1-4 units

Units Per Building
1-4 units

Unit Sizes
1-2 bedroom units with expandability options

Unit Types
At least one ground-floor unit designed with accessibility + aging-in-place in mind

Use Mix
Residential

This scale is a great place for a first-timer to get started.

Why?
- Lower risk on-ramp
- Capacity building to grow a cohort of small scale developers that can eventually grow into Sweet Spot #2

Sweet Spot #2
Scale: 5-11 units

This scale is more challenging for a first-timer.

Challenges:
- Necessitates more complex financing
- Triggers additional code considerations

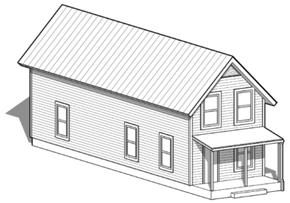
Opportunities:
- Economies of scale
- Live-work and mixed-use

Missing Middle Homes Design Guide

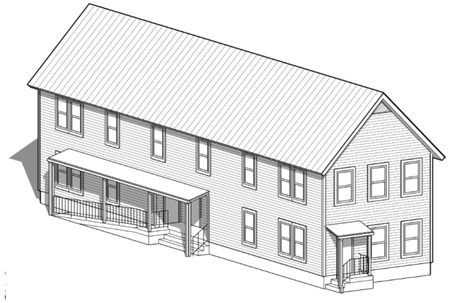
Discovered Typologies

Starting with existing Vermont typologies observed during our initial site walks, we developed idealized versions.

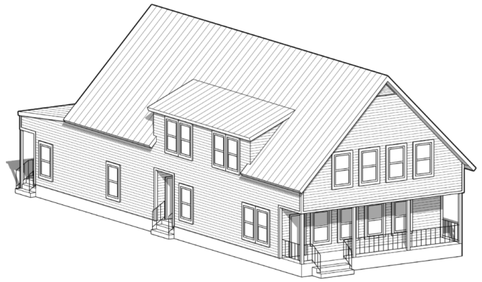
Age-In-Place



Narrow Lot



Village

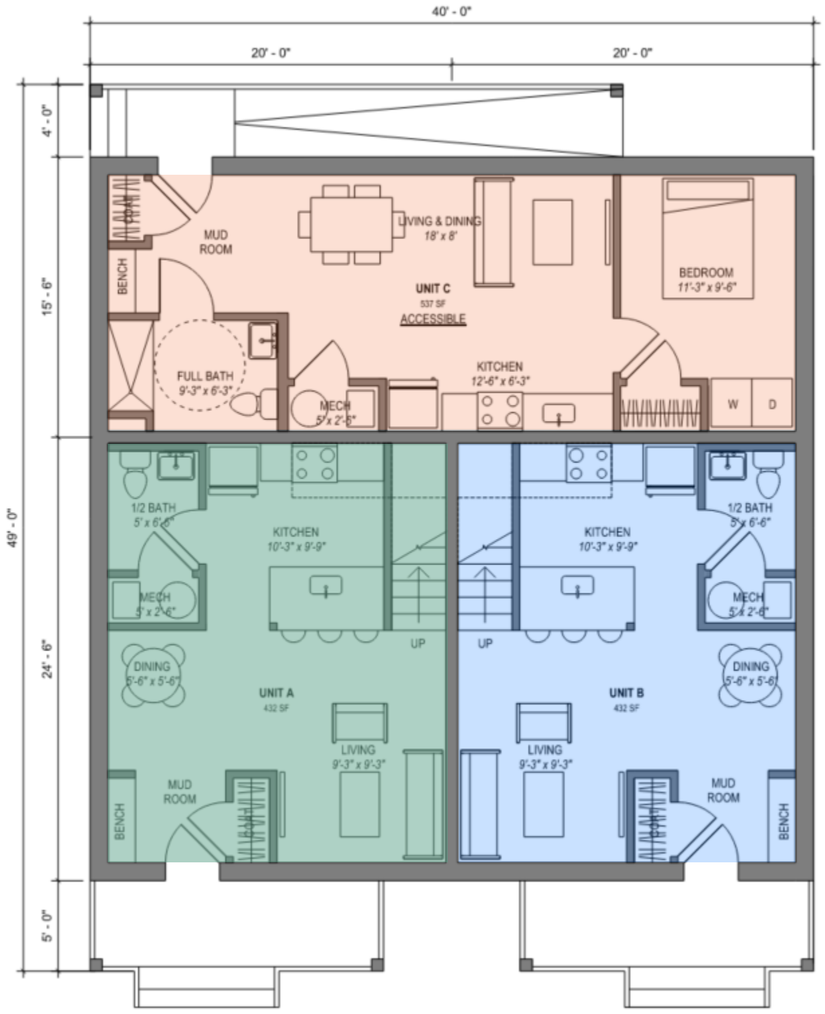


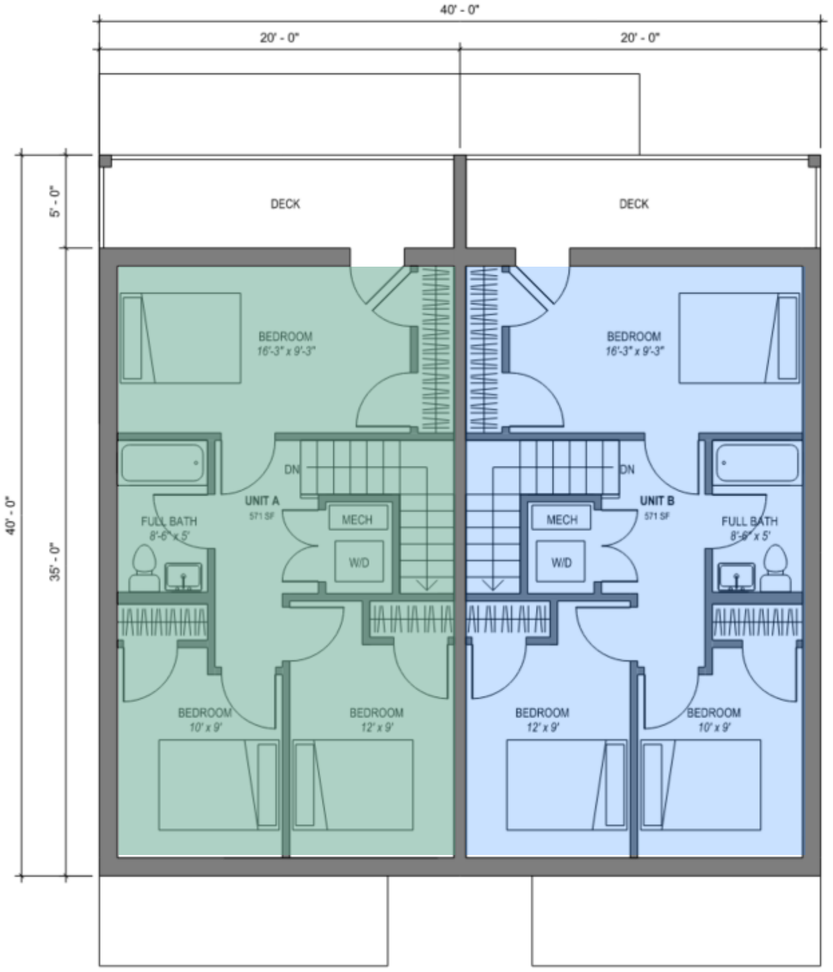
Side-by-Side

“Telescoping Home” Aggregation Pattern

Example of Prototype Unit Design

Side-by-Side Plus One Plus Prototype





Neighborhood Infill Design

Neighborhood Infill Design Pilot Communities

In order of population size:

1. **Rutland City** (Rutland County, Population 15,807)
2. **Rockingham / Bellows Falls** (Windham County, Population 4,832 / 2,747)
1. **Vergennes** (Addison County, Population 2,553)
2. **Arlington** (Bennington County, Population 2,457)
3. **Middlesex** (Washington County, Population 1,779)

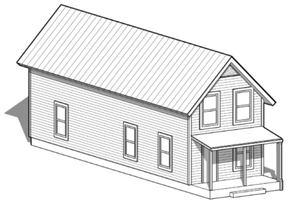
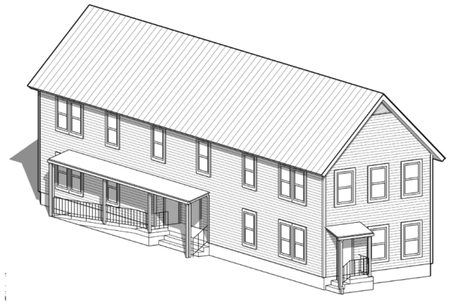
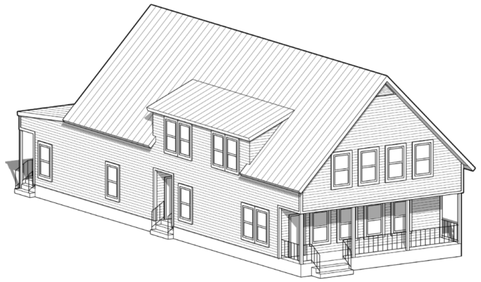
We identified one “focus area” within each of these communities to serve as a site-specific local testing ground for how these home typologies can be integrated into existing neighborhood contexts throughout a wide range of Vermont communities.

Neighborhood Infill Case Study Site Visits

October 2023

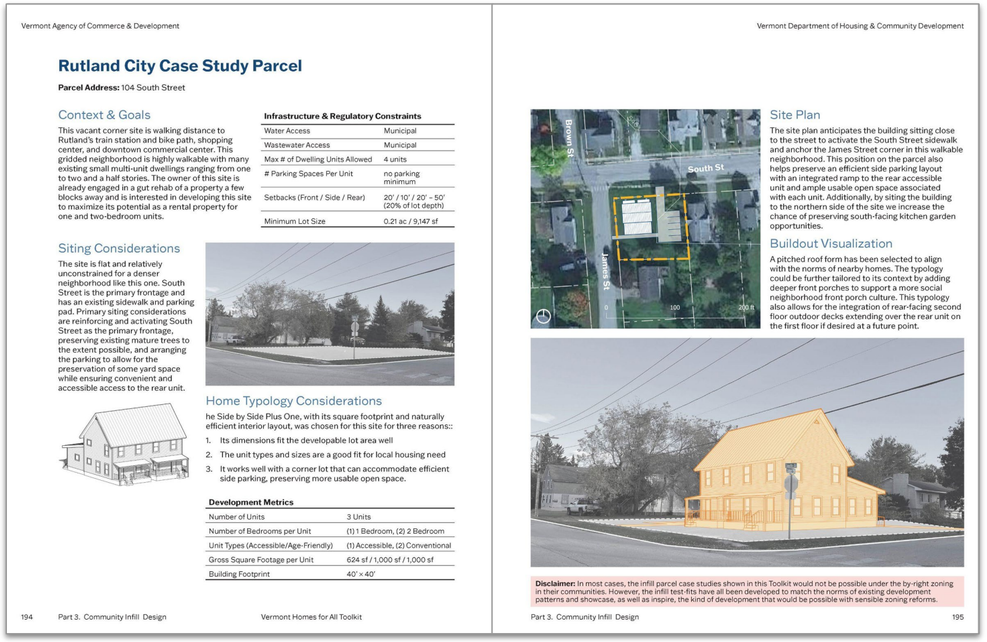
Neighborhood Infill Design Siting Considerations

Parcel and Buildable Area Dimensions for Urban Design Siting of Typologies

	Age-In-Place	Narrow Lot	Village	Side by Side	"Telescoping Home" Aggregation Pattern
					
	1 home	*4 homes*	*3 to 4 homes*	*2 to 3 homes*	*varies*
Bldg Width	***14'***	***20'***	***25' - 30'***	***40'***	***varies***
Bldg Depth	***50'***	***70' - 80'***	***70'***	***40'***	***varies***

Neighborhood Infill Case Studies

Rutland City



Vermont Agency of Commerce & Development

Rutland City Case Study Parcel

Parcel Address: 104 South Street

Context & Goals

This vacant corner site is walking distance to Rutland's train station and bike path, shopping center, and downtown commercial center. This gridded neighborhood is highly walkable with many existing small multi-unit dwellings ranging from one to two and a half stories. The owner of this site is already engaged in a gut rehab of a property a few blocks away and is interested in developing this site to maximize its potential as a rental property for one and two-bedroom units.

Infrastructure & Regulatory Constraints

Water Access	Municipal
Wastewater Access	Municipal
Max # of Dwelling Units Allowed	4 units
# Parking Spaces Per Unit	no parking minimum
Setbacks (Front / Side / Rear)	20' / 10' / 20' - 50' (20% of lot depth)
Minimum Lot Size	0.21 ac / 9,147 sf

Siting Considerations

The site is flat and relatively unconstrained for a denser neighborhood like this one. South Street is the primary frontage and has an existing sidewalk and parking pad. Primary siting considerations are reinforcing and activating South Street as the primary frontage, preserving existing mature trees to the extent possible, and arranging the parking to allow for the preservation of some yard space while ensuring convenient and accessible access to the rear unit.

Home Typology Considerations

he Side by Side Plus One, with its square footprint and naturally efficient interior layout, was chosen for this site for three reasons::

1. Its dimensions fit the developable lot area well
2. The unit types and sizes are a good fit for local housing need
3. It works well with a corner lot that can accommodate efficient side parking, preserving more usable open space.

Development Metrics

Number of Units	3 Units
Number of Bedrooms per Unit	(1) 1 Bedroom, (2) 2 Bedroom
Unit Types (Accessible/Age-Friendly)	(1) Accessible, (2) Conventional
Gross Square Footage per Unit	624 sf / 1,000 sf / 1,000 sf
Building Footprint	40' × 40'

194 Part 3. Community Infill Design Vermont Homes for All Toolkit

Vermont Department of Housing & Community Development

Site Plan

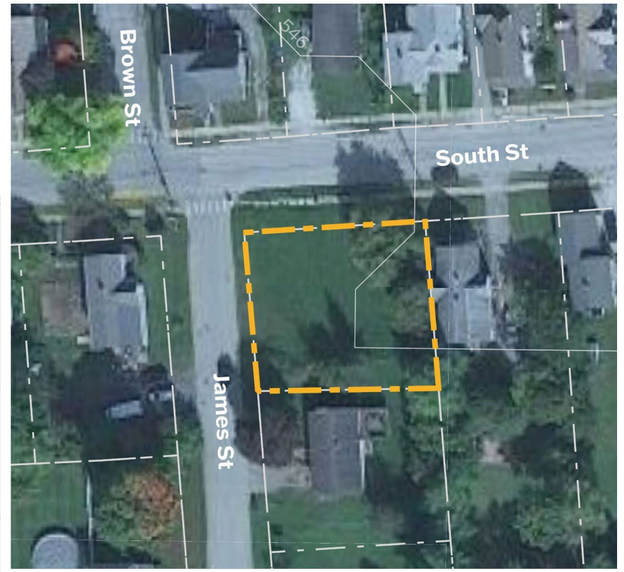
The site plan anticipates the building sitting close to the street to activate the South Street sidewalk and anchor the James Street corner in this walkable neighborhood. This position on the parcel also helps preserve an efficient side parking layout with an integrated ramp to the rear accessible unit and ample usable open space associated with each unit. Additionally, by siting the building to the northern side of the site we increase the chance of preserving south-facing kitchen garden opportunities.

Buildout Visualization

A pitched roof form has been selected to align with the norms of nearby homes. The typology could be further tailored to its context by adding deeper front porches to support a more social neighborhood front porch culture. This typology also allows for the integration of rear-facing second floor outdoor decks extending over the rear unit on the first floor if desired at a future point.

Disclaimer: In most cases, the infill parcel case studies shown in this Toolkit would not be possible under the by-right zoning in their communities. However, the infill test-fits have all been developed to match the norms of existing development patterns and showcase, as well as inspire, the kind of development that would be possible with sensible zoning reforms.

Part 3. Community Infill Design 195

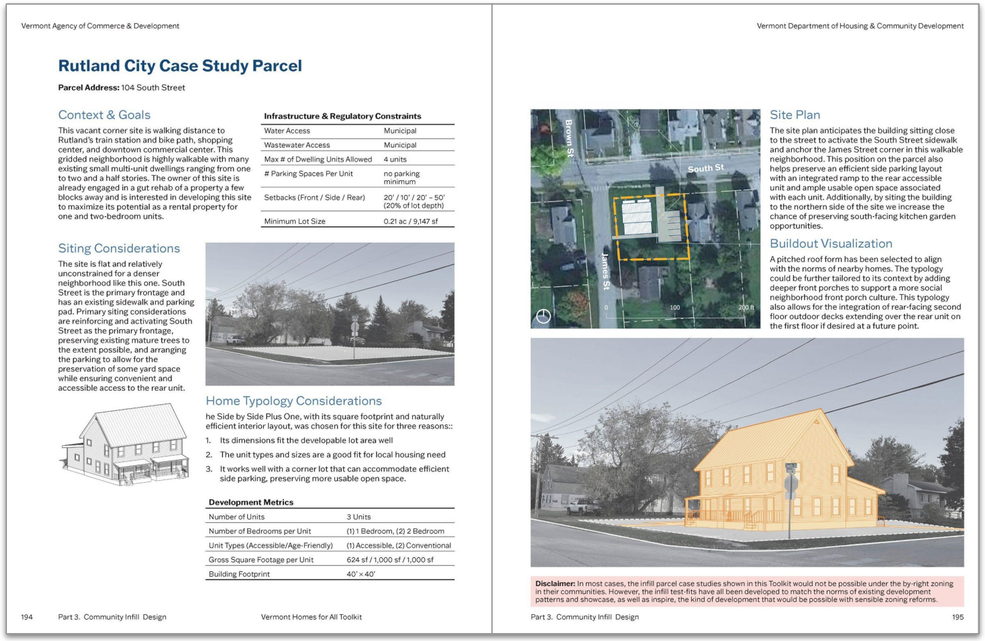


Context, Goals & Siting Considerations

- Vacant, flat corner site in gridded, walkable neighborhood.
- Has municipal water and sewer access.
- Nearby buildings range from 1-2.5 stories.
- Goal: maximize its potential as a rental property for 1-2br units.
- Siting considerations:
  - Reinforce/activate South Street frontage
  - Preserve existing mature trees
  - Arrange parking to maximize yard space and provide convenient and accessible access to the rear unit.

Neighborhood Infill Case Studies

Rutland City



Vermont Agency of Commerce & Development

Rutland City Case Study Parcel

Parcel Address: 104 South Street

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Infrastructure & Regulatory Constraints

Water Access	Municipal
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Max # of Dwelling Units Allowed	4 units
# Parking Spaces Per Unit	no parking minimum
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Part 3. Community Infill Design 195

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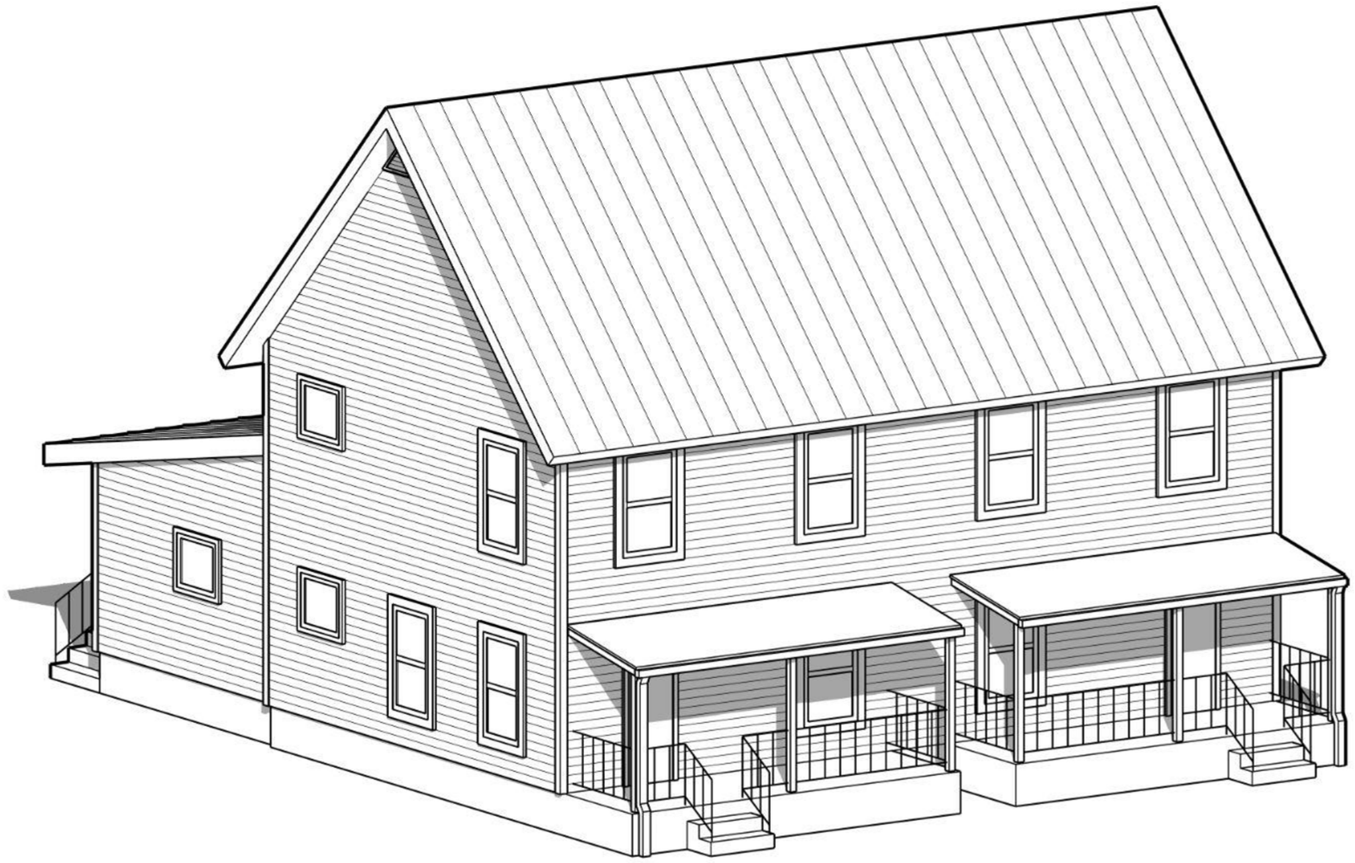
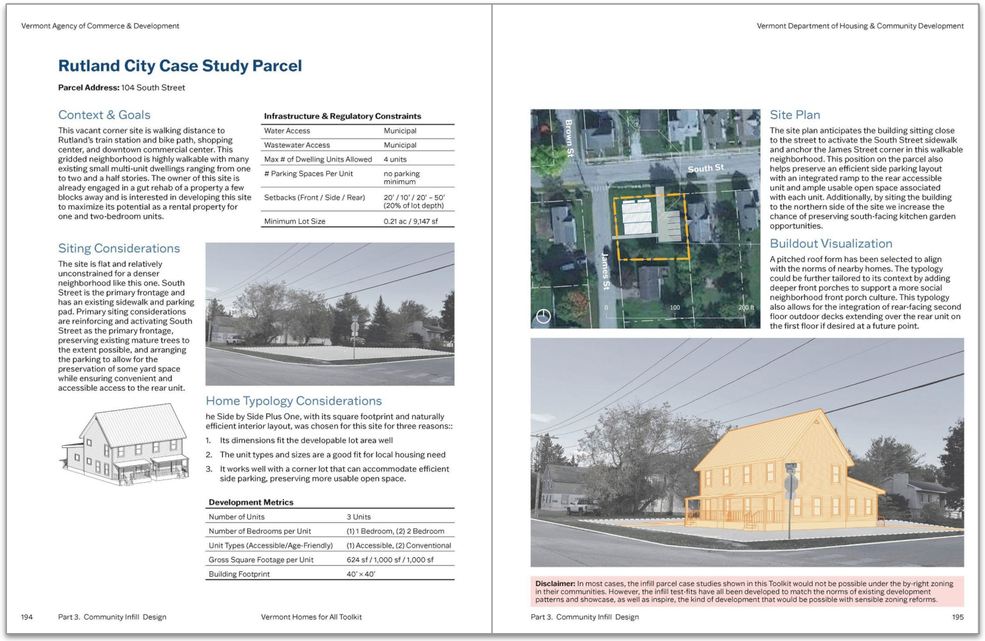
4. The pitched roof form aligns with the norms of nearby homes.



Neighborhood Infill Case Studies

Rutland City



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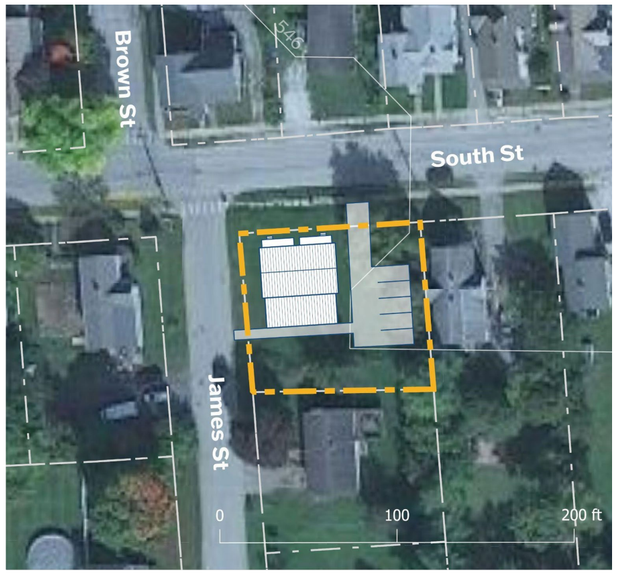


Site Plan & Buildout Visualization

- The building matches front setback norms along South Street
- Efficient side parking layout has an integrated ramp to the rear accessible unit and ample usable open space for each unit with potential for south-facing kitchen gardens.
- Other potential customizations: (1) deeper front porches to support a more social neighborhood front porch culture and/or (2) rear-facing second floor outdoor decks extending over the rear unit on the first floor.

Next Steps

Project Arc

Phase 1: Engagement & Design (2024)

Actions: Homes for All Toolkit, Builders' Workbook, Infill Case Studies
Status: Complete. VT roadshow underway

Phase 2: Training & Access (2024-2027)

Actions: Training cohort; VT catalog of construction-ready drawings
Status: Funding secure, hiring consultants for cohort, drafting RFP

Phase 3: Implementation (2025+)

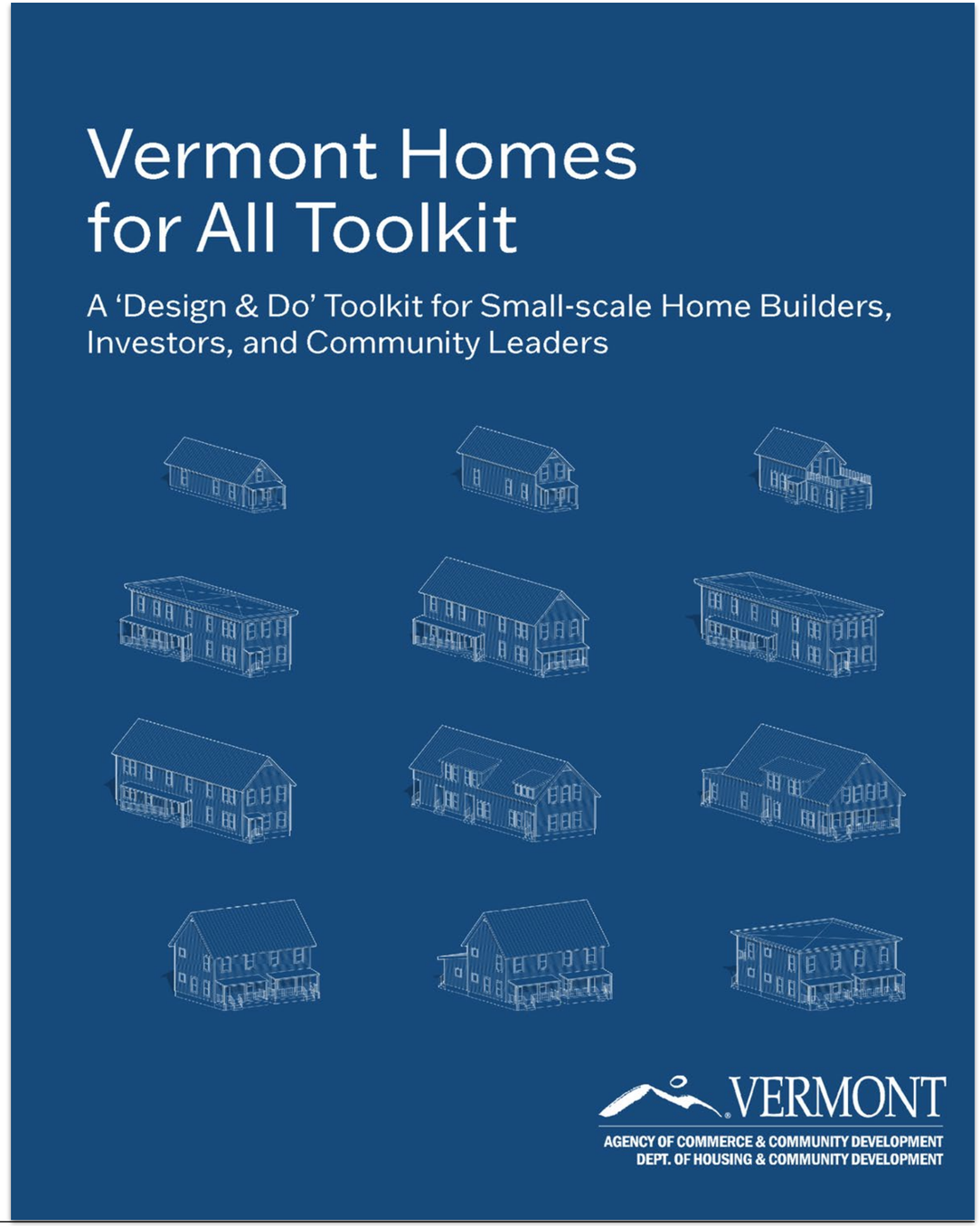
Actions: Grants for homebuilding
Status: Seeking HUD Funding (PRO Housing Grant), VCF, VHFA

How to stay involved

- Share the Toolkit widely
  - Digital version, Summit recording, webinar available: ***accd.vermont.gov/homesforall***
- Download and practice using the sample pro formas
- Engage Planning Commissions, Selectboards, housing advocates, and aspiring developers
- Continue working on bylaw modernization, wastewater expansion

Next steps:

- Stay tuned for cohort training coming late fall 2024
- Call for development-ready communities to participate in pre-approved plan set pilots



Thank you for joining us!

Join the Homes for All movement!
Vermont needs you!

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amy.tomasso@vermont.gov
chris.cochran@vermont.gov