ACCELERATING HOUSING DEVELOPMENT IN SOUTHERN VERMONT

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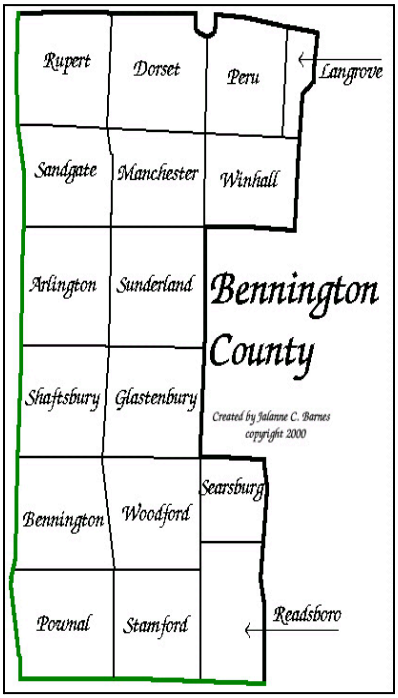
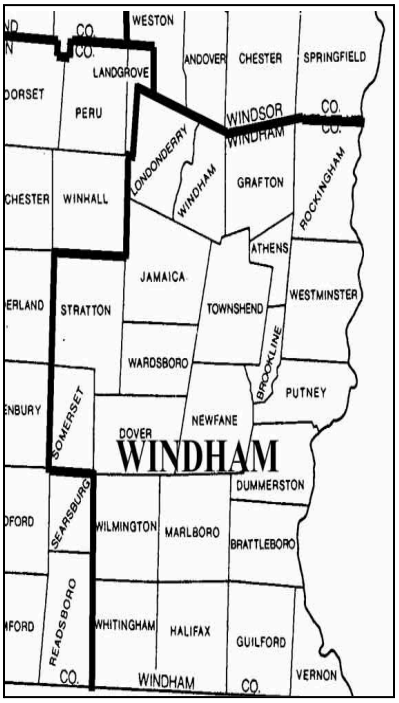
INTRODUCTION

Housing shortages pose a critical challenge in Southern Vermont, demanding immediate action. This report outlines research findings on the housing needs and infrastructure of Bennington and Windham counties, focusing on identifying towns that are well-positioned to support housing development and expansion.

Objective:
To create a prioritized list of towns for housing initiatives, complemented by GIS maps, offering the Brattleboro Development Credit Corporation (BDCC) a strategic framework and visual representation of towns with the infrastructure needed to support housing development, ensuring its efforts are effectively targeted.

GEOGRAPHICAL OVERVIEW





Bennington and **Windham** are two counties situated in the southern region of Vermont. Bennington County comprises 17 towns and 3 incorporated villages, while Windham County includes 22 towns and 1 unorganized town. Bennington County falls under the management of the Bennington County Regional Commission (BCRC), and Windham County is overseen by the Windham Regional Commission (WRC). For this project, our analysis focused on municipalities located within the geographical boundaries of these two counties, encompassing a total of 40 municipalities.

QUESTIONS WE ANALYZED

- **Where are the current village centers located in Bennington and Windham counties?**

Village centers are designated areas within towns that serve as focal points for community, commerce, and often residential activity. These designations aim to preserve the unique character of rural towns, encourage compact and efficient development, and support economic revitalization. By concentrating development in these areas, village center designation promotes sustainable growth, reduces urban sprawl, and maximizes the use of existing infrastructure, such as roads and utilities. They are important for housing expansion as they offer incentives like grants and tax credits to developers, making it easier to address housing shortages while maintaining a vibrant, walkable community environment.

- **What is the condition of the existing drinking water, sewage, and wastewater systems in different towns?**

Drinking water, sewer, and wastewater systems are critical infrastructure networks that provide safe water supply, manage waste, and ensure environmental protection. Established systems are essential for housing expansion as they reduce development costs, expedite project approvals, and support higher-density housing without compromising public health or the environment. They enable efficient use of resources, minimize contamination risks, and attract residents and businesses, fostering sustainable growth and economic revitalization in communities.

- **Which towns have zoning laws that support housing expansion?**

Land use and zoning laws regulate how land in a specific area can be used, dictating whether it is designated for residential, commercial, industrial, or agricultural purposes. These laws are crucial for housing expansion as they ensure orderly development, protect community resources, and balance competing interests. Zoning laws can enable higher-density housing, mixed-use developments, and affordable housing by allowing for flexible use of land in strategic areas. Conversely, restrictive zoning can hinder expansion by limiting housing types or imposing burdensome requirements. Effective land use policies, aligned with infrastructure and community needs, are key to facilitating sustainable housing growth.

- **What are the floodplain policies and control measures for each town?**

In housing expansion, floodplains and flood-related policies play a critical role. Development in floodplains is often restricted or regulated to prevent property damage, loss of life, and environmental harm. Flood policies, including zoning restrictions and building codes, ensure that new housing complies with safety standards, such as elevated construction or setbacks. Established flood control infrastructure can make adjacent areas safer and more attractive for development. Considering floodplains and flood policies is vital for sustainable housing expansion, ensuring resilience against climate risks and safeguarding communities.

- **Which towns have expressed interest in housing expansion?**

Towns' interests in housing expansion vary based on goals like affordability, economic growth, sustainability, population retention, and infrastructure efficiency. Some focus on affordable or workforce housing to attract diverse residents, while others prioritize low-density developments to preserve rural character. Expanding near existing infrastructure reduces costs and disruption, while aligning housing with economic hubs fosters growth and job creation.

HIGH LEVEL OVERVIEW OF OUR WORK

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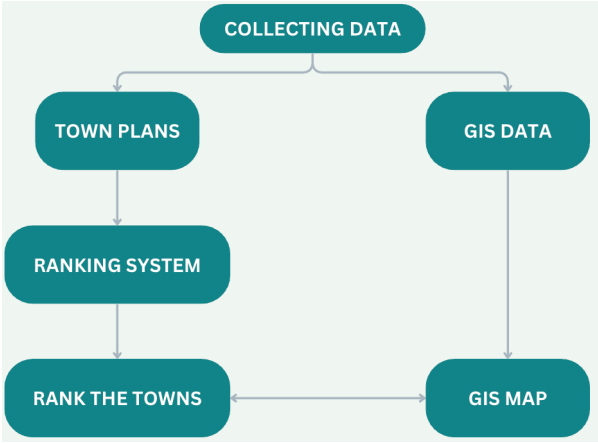
<td> 
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Collected publicly available data from various reliable sources.
Used non-spatial data (e.g., town plans) to develop a ranking system for towns based on analyzed indicators.
Created a GIS map of Bennington and Windham counties using spatial data (e.g., maps) to visualize infrastructure-related indicators.

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DATA SOURCES

GIS MAP	**RANKING SYSTEM**
GIS datasets from Vermont Geodata Portal ● VT Town Boundaries ● Village Centers and Neighbourhood Development Area boundaries ● FEMA Flood Map ● Wastewater Infrastructure ● VT Parcel Data	Town plans from websites of ● Bennington County Regional Planning Commission (BCRC) ● Windham County Regional Planning Commision (WRC) Village Centers and other designation dataset from website of ● Agency of Commerce and Community Development (ACCD)

A comprehensive table detailing all sources along with their descriptions is available in Appendix 1.

GIS MAP

Full GIS Report can be accessed **HERE** .

The web-accessible version (currently hosted locally) of GIS map can be accessed **HERE .**

Each of the geospatial maps from the Vermont Geodata Portal provided the following information:

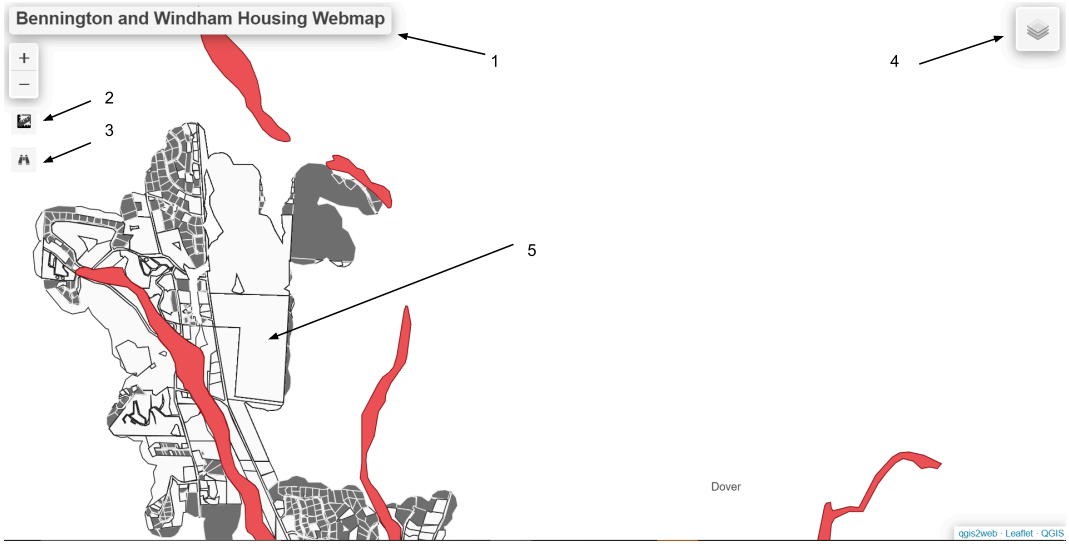
- **VT Town Boundaries**: Geographic limits of towns in Vermont.
- **Village Centers and Neighborhood Development Area Boundaries**: Designated areas for concentrated development and revitalization.
- **FEMA Flood Map**: Flood-prone areas for risk assessment and planning.
- **Wastewater Infrastructure**: Locations of sewer systems and treatment facilities.
- **VT Parcel Data**: Property boundaries and ownership details.

We created a comprehensive GIS map that highlights village centers, neighborhood development areas (NDAs), wastewater infrastructure, FEMA floodplain locations, and parcel data across 40 towns. Town zoning maps were cross-referenced with infrastructure data to prioritize areas that support housing development while balancing environmental conservation and floodplain restrictions.

Instructions to access the web map:

1) Download the file labeled *Qgis Vermont housing map.zip*
2) Unzip (do not move files into different folders!)
3) Open the HTML document called *index*

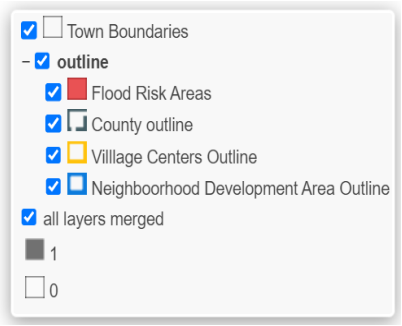
READING THE MAP:



1 - The *title* of the map

2 - *Measure distance tool*

3 - *County search bar*. You can jump to any county in Bennington or Windham by typing in the name. Names are only recognized when you type in ALL CAPS.



4 - *Layers*. This shows what layers you are currently able to view. Clicking on the blue check mark will make the layers invisible. All layers merged refers to the housing (1) vs the no housing (0) parcel chunks throughout the map—>

5- *Info popup*. It will open when you hover over a parcel. Will tell you if the parcel has housing, the owners and mailing address of owners (if available), and the parcel type: (category)—>

Results:

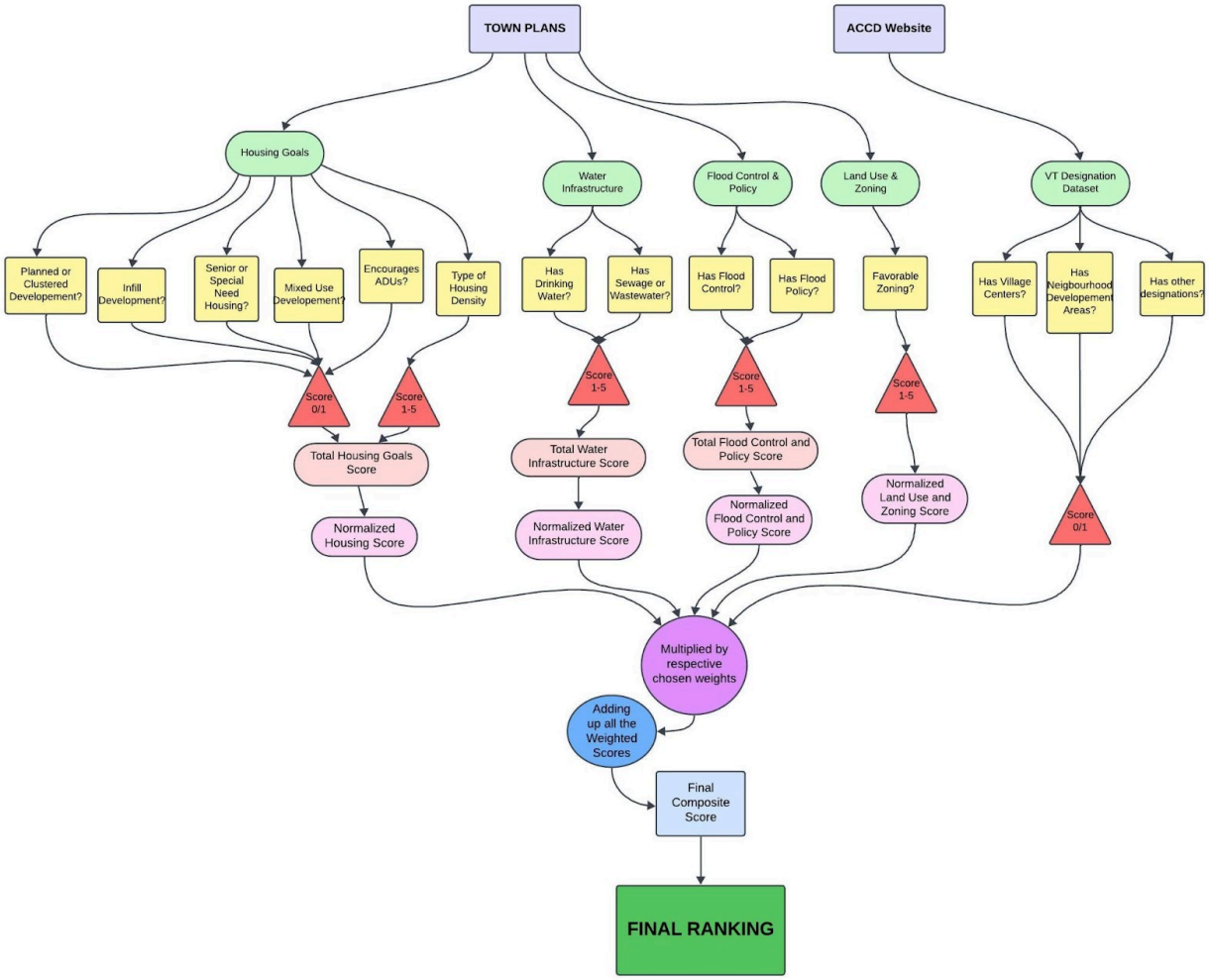
A web-accessible GIS map was created (currently on local access), allowing dynamic exploration of the town's infrastructure. Overlaps of village centers, wastewater lines, and NDAs indicated prime housing zones.

Limitations:

- **Outdated GIS Datasets**:
  Certain GIS datasets, such as floodplain maps and infrastructure records, were outdated. While still useful, they may not accurately reflect current conditions, such as updated flood resilience measures or recent infrastructure expansions. Access to updated data would enhance accuracy.
- **Missing Drinking Water Infrastructure Map**:
  A drinking water infrastructure map was unavailable. Adding this data to the GIS map would have highlighted which towns have established systems, but this feature is absent from the current map.

RANKING SYSTEM

Full Report of the Ranking System can be accessed **HERE** .
A flowchart visualizing the ranking system can be accessed **HERE** .
The ranking system can be found **HERE** .
Rubrics can be found **HERE** .



The ranking system evaluates the suitability of 40 towns in Bennington and Windham counties for housing expansion. It uses key metrics categorized under Housing Goals, Water Infrastructure, Flood Control & Policy, Land Use & Zoning, and Designations. The methodology involves:

1. Data Collection: Town plans and state designation datasets were sourced from relevant regional and state agencies.
2. Metrics: Each town's policies and infrastructure were assessed using detailed criteria, such as housing density encouragement, water and wastewater system readiness, flood management, and zoning laws. Designations like Village Centers and Neighborhood Development Areas (NDAs) were also considered.

3. Scoring System:
    - Metrics were scored on scales from 0-5 or binary (0/1).
    - Scores were normalized using Min/Max normalization for comparability.
    - Weights were assigned to reflect the relative importance of each category.
4. Final Score: Weighted scores across all categories were aggregated into a Final Town Score, which determined each town's ranking.

Town Ranking Results:

- **Purpose:**
  The **Final Town Score** is used to rank towns, with higher scores indicating better overall performance across the assessed metrics.
- **Ranking Logic:**
  Towns with higher scores rank higher, as their scores demonstrate stronger performance in critical areas such as:
    - Housing goals
    - Water infrastructure
    - Flood control and policy
    - Land use and zoning
    - Village Centers, NDAs, and other government designations
- **Significance of High Scores:**
  A higher final score suggests that a town has:
    - More robust infrastructure.
    - Favorable policies for housing development.
    - A balanced approach to growth and conservation.

Limitations:

- Certain town plans lacked information on some metrics analyzed under **Housing Goals** and **Land Use and Zoning**. These towns were assigned a score of zero for the missing information, which effectively assumes they have no interest in those metrics—an assumption that might not reflect reality. The absence of information could stem from factors such as insufficient community engagement. Under the current scoring and ranking system, a few of these towns face disproportionately higher penalties, even if they possess adequate infrastructure. To ensure a fairer assessment, the ranking system should be refined to reduce the penalties for missing information.
- Some of the town plans were more than 5 years old.

TOWN RANKS

This is the current town rank based on the described ranking system.

County	Municipality	Rank	Final Total
Windham	Brattleboro	1	0.93
Bennington	Manchester	2	0.87
Windham	Rockingham	3	0.80
Windham	Putney	4	0.80
Bennington	Bennington	5	0.77
Bennington	Pownal	6	0.75
Bennington	Arlington	7	0.72
Windham	Vernon	8	0.64
Bennington	Dorset	9	0.61
Bennington	Peru	10	0.60
Windham	Wilmington	11	0.60
Windham	Whitingham	11	0.60
Bennington	Shaftsbury	13	0.59
Bennington	Stamford	14	0.55
Windham	Wardsboro	15	0.54
Windham	Westminster	15	0.54
Windham	Newfane	17	0.51
Windham	Grafton	18	0.51
Windham	Londonderry	19	0.51
Windham	Guilford	20	0.50
Windham	Dover	21	0.49
Bennington	Sunderland	22	0.47
Windham	Marlboro	23	0.47
Bennington	Rupert	24	0.44
Windham	Jamaica	25	0.43
Bennington	North Bennington Village	26	0.42
Windham	Townshend	27	0.32
Windham	Windham	28	0.32
Windham	Stratton	29	0.27
Windham	Halifax	30	0.26
Bennington	Woodford	31	0.26
Bennington	Old Bennington Village	32	0.26
Windham	Dummerston	33	0.26
Bennington	Manchester Village	34	0.25
Windham	Brookline	35	0.24
Bennington	Sandgate	36	0.21
Bennington	Landgrove	37	0.21
Bennington	Glastenbury	38	0.17
Windham	Athens	39	0.11
Windham	Somerset	40	0.00

TOWN CATEGORIZATION

Using the town rankings and GIS maps, we can broadly categorize the towns into four groups (note that this classification is preliminary):

Wants Housing, Adequate Infrastructure	**Wants Housing, Inadequate Infrastructure**	**Doesn't Want Housing, Adequate Infrastructure:**	**Doesn't want housing, inadequate infrastructure**
● Brattleboro ● Manchester ● Bennington ● Putney ● Rockingham ● Arlington ● Dorset ● Pownal ● Whitingham ● Vernon ● Shaftsbury ● Peru ● Newfane ● Dover ● North Bennington Village	● Wilmington ● Wilmington ● Westminster ● Wardsboro ● Brookline ● Stratton ● Windham	● Londonderry ● Stamford*	● Rupert ● Grafton* ● Guilford* ● Sunderland* ● Marlboro ● Jamaica* ● Townshend ● Manchester Village ● Halifax* ● Old Bennington Village ● Dummerston ● Woodford ● Landgrove ● Sandgate ● Athens ● Glastenbury ● Somerset

Key Insights

- Brattleboro, Manchester, and Bennington stand out as highly favorable for immediate housing projects, thanks to their robust infrastructure, strong development interest, and supportive zoning policies. These towns are well-positioned to accommodate new housing initiatives without significant additional investment.
- Flood-prone areas such as Wilmington, while expressing interest in housing development, require enhanced resilience measures and infrastructure improvements to become viable candidates for future projects. Similarly, towns like Westminster, with expressed interest but insufficient infrastructure, could benefit from targeted investments to unlock their potential for housing expansion.
- Towns like Londonderry, despite having solid infrastructure, demonstrate limited interest in development, posing challenges for immediate action. On the other hand, towns like Rupert and

Windham face dual barriers of inadequate infrastructure and low development interest, making them less feasible for housing projects at this time.

UNFINISHED AREAS/NEXT STEPS/IMPROVEMENTS

- **Analysis of Socioeconomic Data:**
    1) Socioeconomic data, including population size and density, was obtained from the U.S. Census Bureau. However, due to time constraints, we were unable to collect additional socioeconomic data that could have provided valuable context for town rankings, offering deeper insights into where new housing is most needed and where existing capacity may suffice.
    2) Incorporating a population density and/or housing density layer into the GIS map can provide valuable context for understanding infrastructure needs and capacities.
- **Refining the Ranking System:**
    1) Enhance the indicators by introducing additional metrics or rephrasing questions to better evaluate and rank the towns.
    2) Develop a method to minimize penalties for towns with missing information in town plans, ensuring fairer assessments.
    3) Incorporating more structured data to enrich the ranking system and provide deeper insights.
- **Refining/Updating the GIS map:**
    1) The GIS map can be enhanced by integrating updated and complete datasets to improve accuracy and relevance.

CONCLUSION

Housing shortages remain a pressing issue in Southern Vermont, and this project sheds light on both the opportunities and challenges in tackling this multifaceted problem. Through GIS analysis and infrastructure assessment, we have identified towns poised for housing development, while also recognizing areas that need further refinement and research to enhance our findings and recommendations.

This work aligns with the broader objective of ensuring rural communities achieve a balance between growth and sustainability. Vermont's unique blend of village-centered living and expansive rural landscapes demands thoughtful planning to meet housing needs while adhering to state and local priorities.

Ultimately, this project emphasizes the importance of targeted, village-centered growth. By leveraging existing infrastructure in designated areas such as village centers and Neighborhood Development Areas (NDAs), Vermont can achieve compact, sustainable housing development while preserving the rural character that defines its identity.

SPECIAL THANKS

We extend our heartfelt gratitude to Professor Kathryn Montovan for her unwavering guidance and support throughout this project, as well as to our project partner Laura Sibilia for entrusting us with this important work and providing the essential leads to get started.

We also sincerely thank Alex Farrell, Bill Colvin, Chris Camphany, Chris Cochran, Zak Hale, Professor Timothy Schroder, Sue Westa, Tim Terway and Professor Mariya Shcheglovitova (UVM) who contributed by answering our questions, participating in meetings, responding to emails, and providing valuable resources and data.

APPENDIX

Appendix 1: All sources used throughout the project and brief descriptions of their content

Source Name	**Description**
Zoning Atlas	This is an in progress GIS map that has zoning for some areas in Vermont
Vermont National Resource Atlas	GIS map which has national flood hazards, along with general environmental layers
Vermont Center for Geographic maps list	Comprehensive list of Vermont maps/ datasheets with use cases
Designated Village centers boundary	GIS downloadable for Vermont Designated Village Centers. *Last update: 2020*
Designated Neighborhood Development Area	GIS downloadable Designated Neighborhood Development Area. *Last update: 2020*
New Town Center Boundary	GIS downloadable Designated New Town Center Boundary. *Last update: 2020*
Growth Center Boundary	GIS downloadable Designated Growth Center Boundary. *Last update: 2020*
Vermont Village Center webpage	Official Vermont webpage for Village Centers, has maps, descriptions, etc...
Census Windham	Information on Windham towns
Census Bennington	Information on Bennington towns
WRC	Windham town map, links to town plans
BCRC	Bennington town map, links to town plans
Vermont Counties map	Downloadable of the Vermont Counties

Census Data Counties GIS file	Can create a map of only relevant vermont counties
National Flood hazard Layer	The national gis database for potential flooding across america
Vermont flood ready atlas	Data on how to deal with an GIS data for identifying Vermont flood zones
Act 250 homepage	
Vermont Housing Needs Assessment: 2025-2029	Housing needs assessment

Appendix 2: All people contacted to get up to date information for this project:

Name	Contact Number	Contact Email	Description
Representative Seth Bongartz	(802)-598-3477	sbongartz@leg.state.vt.us	Vermont State Representative
Chris Cochran	(802)-595-5410	chris.cochran@vermont.gov	Director of Community Planning & Revitalization at the Department of Housing and Community Development (DHCD), The Agency of Commerce and Community Development
Commissioner Alex Farrell	(802)-636-7361	alex.farrell@vermont.gov	Commissioner at the Department of Housing and Community Development (DHCD) from the Agency of Commerce and Community Development
Chris Campany	(802)-257-4547	ccampany@windhamregional.org	Executive Director Windham Regional Commission
Bill Colvin	(802)-442-0713	bcolvin@bcrcvt.org	Executive Director of Bennington County Regional Commission.
John Adams	-	vcgi@vermont.gov john.e.adams@vermont.gov	VCGI's (Vermont Center for Geographic Information) Director
Timothy Terway	-	tim.terway@vermont.gov	VCGI's Point of contact for users and creators of VCGI's geospatial information.
Joshua Plaksa	(802)-917-1691	joshua.plaksa@vermont.gov	Digital Services Agency, State of Vermont - Montpelier
Mariya	-	mariya.shcheglovitova@uvm.edu	Extension Assistant Professor

Shcheglovitova			Community and Economic Development, Bennington Extension Office
Timothy Schroeder	-	tschroeder@bennington.edu	Geology Professor at Bennington College