

Rockingham Town Plan

September 24, 2024

Dedication Page:

Land Acknowledgment

During the days of Gluskabe, Mother Earth was gifted with caretakers that would live in relationship with her and her children to provide a sustainable past, present, and future. The Sokoki Abenaki are the traditional caretakers of the area now known as Rockingham, centered on Kchi Pôntekw (pronounced kih TSEE pohn TOOK), the Great Falls, on the Kwenitekw (pronounced KWEH nee took), the Long River (Connecticut River). It is vital to honor these beginnings and recognize the ongoing dedication and importance of indigenous culture within the shared community and within the land that we gather, live, learn, and work on. Together we look forward to learning about living in relationship with this place and each other and strengthening our communities.

September 24, 2024

Dear Citizens of Rockingham.

In 2016, we adopted a technical update of the Rockingham Town Plan which was, itself, an update of previous town plans going back to the 1990s. That Town Plan served Rockingham well.

After that technical update, a new journey began, and the Planning Commission undertook a significant overhaul of the Town Plan. We wanted a modern, streamlined document that could be incorporated into the decision-making of municipal boards, staff, and volunteers. Using surveys, interviews, and holding public meetings to gather community input, we were developing a Town Plan with a broad base of public support. About eighteen months into this update, the pandemic struck and placed the Town Plan on indefinite hold.

In 2021, Planning Commissioners returned to the Town Plan and reflected on how we changed from the pandemic. The draft Town Plan no longer felt relevant, and a decision was made to start over, again. Today we view concepts like remote-work and curb-side grocery pickup as commonplace. We are adapting to inflation on groceries, heating fuel, and gasoline. We are bearing the burden of an unprecedented national housing crisis. Families struggle to find adequate childcare. Homeowners are unable to find enough qualified electricians, carpenters, plumbers, and other trades. We all notice these struggles have fundamentally reshaped our lifestyles. Commissioners understood these changes had to be considered in the Town Plan.

The new Town Plan acknowledges these realities and lays out a bold vision for our future as a community. We have structured the Town Plan so it can easily be put to work. You will see all our recommendations at the front of each chapter. If you choose, you can read further for a comprehensive, yet concise narrative. Every chapter advances a specific topic, but you will also see how they are all interconnected at a core level.

This Town Plan was partially funded by the Vermont Department of Housing and Community Development's Municipal Planning Grant program. Without state funding, we never could have accomplished this work. I must also acknowledge the following Commissioners who worked hard on the Town Plan over the years (alphabetical order): Stephanie Agers, Bonnie Anderson, Jana Bryan, Lia Clark, John Dunbar, Myles Mickle, Bonnie North, Guy Payne, Scott Phillips, Laurie Rowell., Kate Roome, Nathan Rounds, Renee Vondle, Remy Walker, Mary Wallace, Susan Hammond, Ryan Stoodley, Shannon Burbela, Jeff Dunbar, Susan Smallheer, Benjamin Masure, Gaetano Putignano, Peter Golec, Stefan Golec, Scott Pickup, Andy Howarth, Charles Wise, Gary fox, Halimeh AbuAyyash, Jim Mullen, Taylor Pichette, Dalila Hall and Deborah Wright.

How did we do? Our success will be measured in the years to come. Will our municipal boards use the Town Plan when making major decisions? Are municipal staff and citizen volunteers guided by the information and recommendations found in the Town Plan? Do the land use regulations change to advance development patterns recommended in the Town Plan? You have our best effort. We hope this new town plan serves our community wisely, faithfully.

Deborah Wright, Chair
Rockingham Planning
Commission

Declaration of Inclusion

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Declaration of Inclusion

The Town of Rockingham and Bellows Falls Village Corporation welcomes all persons, regardless of race, color, religion, national origin, sex, gender identity or expression, age, or disability. We want everyone to feel safe and welcome in our community. We condemn racism.

As a Town and Village, we formally condemn discrimination in all of its forms, commit to fair and equal treatment of everyone in our community, and will strive to ensure all of our actions, policies, and operating procedures reflect this commitment.

The Town of Rockingham and Bellows Falls Village Corporation is committed to be a place where individuals can live freely and express their opinions.

By the Town of Rockingham and Bellows Falls Village Corporation on this day 27th of ~~September~~ September, 2022. Municipal Manager, Scott Pickup [Signature]

Town of Rockingham Selectboard

- Selectboard Chair, Peter Golec [Signature] 9/27/2022
- Selectboard Vice-Chair, Susan Hammond [Signature] 9/27/22
- Board member, Bonnie North [Signature] 9-28-22
- Board member, Elijah Zimmer [Signature] 9/7/22
- Board member, Rick Cowan [Signature] 9/28/22

Bellows Falls Village Corporation Trustees

- Bellows Falls Village President, Deborah Wright [Signature]
- Trustee, James McAuliffe [Signature] 9-27-22
- Trustee, Jeff Dunbar [Signature] 9/27/22
- Trustee, Stefan Golec [Signature]
- Trustee, Wade Masure [Signature] 9-27-22

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1 Introduction

The Rockingham Town Plan of June 2024 presents a forward-looking vision for the town, acknowledging changes such as remote work, inflation, and the housing crisis that have reshaped lifestyles and priorities. Developed through community engagement, including surveys and public meetings, the plan aims to provide a streamlined, modern framework for municipal decision-making. This plan reflects a collaborative effort, funded in part by the Vermont Department of Housing and Community Development, and represents a collective vision for Rockingham's future, emphasizing adaptability to current realities and challenges while laying out a bold vision for community development.

1.1 Purpose of a Town Plan

The purpose of the Rockingham Town Plan is to guide the town's development in a manner that acknowledges recent changes in work patterns, economic challenges, and housing needs. It sets a structured approach for maintaining, evolving, and transforming the town's physical, economic, and social landscape to enhance quality of life. By outlining objectives at the start of each chapter, followed by comprehensive narratives, the plan aims to serve as an actionable guide for municipal boards, staff, and volunteers, ensuring that all future developments align with the community's broad-based public support and vision for a sustainable future.

This synthesis captures the essence of the Rockingham Town Plan's introduction and purpose, reflecting its commitment to guiding the town through changing times with a focus on sustainability, community well-being, and thoughtful development.

1.2 Rockingham's Statement of Objectives

The Rockingham Town Plan, reflecting the "Maintain | Evolve | Transform" vision, sets out to guide the future of the community through various objectives tailored to address specific areas of growth, conservation, and development. These objectives are designed to leverage the town's unique characteristics while addressing current challenges and opportunities, aiming for a future that balances growth with sustainability and community well-being. Key objectives identified in the plan include:

- Guide development towards existing villages and hamlets with municipal services, preserving rural land in outlying areas.
- Encourage mixed-use redevelopment in downtown Bellows Falls.
- Revise land use regulations in rural areas to support low-density development while conserving natural resources and maintaining the scenic landscape.
- Direct development away from flood-prone areas to protect human life and natural resources.
- Support economic development initiatives that align with the town's character and infrastructure capacity.
- Promote housing diversity and affordability to meet the community's needs.
- Enhance transportation infrastructure to support sustainable and efficient movement within and around the town.
- Encourage community and economic activities that contribute to a vibrant, healthy, and resilient Rockingham.
- Promote historic preservation and sensitive adaptation of historic structures, landscapes, and neighborhoods

1.3 Compatibility with Other Plans

The Rockingham Town Plan aligns with the broader regional planning efforts and the objectives of neighboring towns by focusing on harmonizing development with environmental stewardship, enhancing community well-being, and promoting economic sustainability. It underlines the importance of collaborating with nearby communities and regional bodies to achieve mutual goals, ensuring a cohesive approach to regional development. These objectives demonstrate Rockingham's commitment to a planning approach that is both locally grounded and regionally integrated, ensuring that its development is sustainable, inclusive, and reflective of shared regional values and priorities.

Key objectives include:

- Focusing growth in areas with existing infrastructure to maintain the rural character of outlying areas.
- Encouraging economic development that is consistent with the town's character and regional economic strategies.
- Enhancing housing affordability and diversity to meet the needs of the community.
- Protecting natural resources and promoting environmental sustainability.
- Upgrading transportation infrastructure for better regional connectivity.
- Supporting community facilities and services that address the needs of residents and align with regional objectives.
- Implementing climate resilience and adaptation measures to safeguard against environmental changes.

2 Land Use

2.1 Objectives

The following objectives are the Town Plan's obtainable targets for applying the Maintain | Evolve | Transform vision.

- Guide development to the existing villages and hamlets served by municipal services and facilities and maintain productive rural land in the outlying areas of Rockingham.
- Bellows Falls has been designated as a federal opportunity zone.
- Encourage the redevelopment of downtown Bellows Falls in a way that embraces a mix of civic, business, residential, and cultural land uses.
- Revise the Town's Land Use Regulations and Policies applicable to the Town's rural areas to enable low-density development that conserves natural resources, open space, the scenic landscape, and rural character.
- Guide development away from flood or erosion-prone lands that have the potential to harm human life, damage property, and degrade our natural resources.

2.2 Maintain | Evolve | Transform

Land use is divided into these three distinct categories. Community planners use a Maintain | Evolve | Transform vision to focus on planning priorities and define the degree of change required.

Maintain: Places that must be maintained and preserved for future generations.

- Meeting House Historic District
- Bellows Falls Petroglyph Site (Kchi Pontegok)
- Agricultural and forestry lands

Evolve: Places should change in ways that keep their core identity but adapt them to modern lifestyles and economic activities and accessibility improvements.

- Downtown and residential districts in our villages and rural hamlets:
 - Bellows Falls Designated Downtown
 - Bellows Falls Neighborhood Historic Districts
 - Saxtons River Village Downtown Main Street
 - Saxtons River Village (outside the Main Street corridor)
 - Hamlets of Cambridgeport, Upper, and Lower Bartonsville
- Rural Residential Rockingham
- Transportation corridors:
 - VT Route 103 – Interstate to Chester town line
 - U.S. Route 5 – between Bellows Falls Village and the Interstate Exit 6
 - VT Route 121 – between Bellows Falls Village and Cambridgeport

Transform: Places that are fundamentally in need of improvement and possess unrealized potential. Some examples are:

- The Island
- Industrial Property located along Mill Street / Granger Street / Papermill Road
- Blighted neighborhoods in Bellows Falls Village
- Flood-prone areas within developed districts

2.3 Recommendations

These recommendations are how planners expect to implement the Land Use Objectives and the Maintain | Evolve | Transform vision.

- Upgrade all land use regulations to enforce modern standards that address flood plains, riparian buffers, wetlands, landscaping, stormwater, energy-efficiency, habitat and forest block protection, invasive plant management, and light pollution.
- Develop a unified bylaw that combines zoning, subdivision, and flood zoning rules into a single document.
- Revise the land use regulations to promote mixed-use in Bellows Falls Downtown and Downtown Expansion districts. Ensure new development utilizes municipal services, public transportation, and municipal parking lots.
- Revise the zoning bylaws in 'Evolve' zoning districts to accommodate mixed-use development where predominantly residential neighborhoods will not be adversely impacted (such as the Morgan Field neighborhood) and incentivize reinvestment in residential and commercial properties.
- Create a commercial business use policy in the Bellows Falls Downtown district and municipal parking lots to support retail, restaurants, and civic activities.
- Amend the zoning bylaws for the downtown design review district to exempt life safety and energy efficiency upgrades from local permitting.
- In rural residential zoning districts, revise the land use regulations to encourage the shared use of driveways and utilities as well as increase the number of lots that can use a shared driveway before hitting the private road threshold. When possible, use context sensitive design standards to avoid building private roads that are costly to construct and have negative environmental impacts.
- Expand the use of Rural Residential 5-acre, Recreation-Conservation, and Agricultural Forestry zoning districts to conserve lands that are setback from roads defined by the Vermont Agency of Natural Resources as 'Highest Priority Forest Blocks and Habitat Connectors' for further explanation see Section 2.6 Forests Blocks & Habitat. Eliminate Agricultural/Forestry (AF) districts that do not connect priority habitat corridors (e.g., AF lands between Paradise Hill and Oak Street).

- Address market force realities that may have led to the decline in the housing stock. Such as construction cost, household size and housing unit size.
- Use zoning regulations to increase density in Bellows Falls Village zoning districts. Encourage owners to increase housing options when converting older housing stock into modern, energy-efficient buildings.
- Revise the accessory dwelling unit requirements to encourage development of new residences where there is already power, driveway access, and human disturbance at an existing dwelling.
- Reduce regulations that impede home occupations, home businesses, or other small-scale cottage industries that can safely and efficiently operate in residential areas.
- In rural residential zoning districts, revise the land use regulations to encourage minimizing the footprint of developed land (i.e., driveways, utilities, buildings) in a manner that concentrates that development in one area and preserves the surrounding natural resources. Promote flexibility in the subdivision regulations to uphold existing development densities but allow for flexibility in lot shapes and sizes and frontage requirements to concentrate future development and protect the surrounding natural landscape.
- Centralize development permitting at the Planning & Zoning Department (which handles interdepartmental coordination and approvals) directing residents or property owners to one department for information on how to subdivide or develop land, connect to water/sewer services, build driveways, work within the public right-of-way, etc.
- Overhaul the Saxtons River Village zoning district by conducting a rigorous public process that defines the community's desires and aligns land use regulations with those priorities.

2.4 Background

Rockingham's current land use pattern of small villages and hamlets surrounded by rural areas reflects the layout established in the 1700s by early settlers of European descent. The villages (Bellows Falls, Rockingham, Saxtons River, Cambridgeport, and Bartonsville) evolved at key transportation points where waterpower could be harnessed. By the mid-1800s, the original forests were cleared to make way for farm and grazing land. The 1800s also saw the growth of industry and improvements in technology, power generation, and transportation systems.

The requirements of manufacturing have changed tremendously since the 1800s. In recent decades Rockingham invested heavily in creating the infrastructure that accommodates a thriving modern industrial park north of Bellows Falls. The economies of the villages and hamlets, where industrial development first took place, have transitioned to residential or mixed land uses.

Rural Rockingham has seen similar economic contraction. Agricultural fields and pastures were located along Pleasant Valley Road, Rockingham Hill Road, Parker Hill Road, Brockways Mill Road, and adjacent to the Williams and Saxtons Rivers. Many remain, although the unique challenges of farming in Vermont—the short growing season, rugged terrain, and rocky soils, combined with changing national agricultural and socio-economic patterns, led to a gradual phasing out of most farms during the 1900s.

Farming is no longer the dominant land use. Recent trends towards diversified and value-added agricultural enterprises and a strengthening consumer incentive to buy organic, humanely raised, and local products can revitalize the local agricultural economy.

Land use patterns have changed slowly over the last few decades. One noticeable trend is the increasing number of people moving to Rockingham for a higher quality of life. These individuals often bring their jobs (remote work) and relocate with their families. While this has been a steady trend redefining this community, it significantly increased during the 2019-2021 global pandemic. During the pandemic, people who lived in urban areas wanted refuge from high virus transmission rates. Rural lifestyles became an option for people no longer physically tied to work or school. The consensus is that the pandemic did not

create a new trend but significantly amplified urban outmigration. Despite the pandemic's reduced impact on society, the urban-to-rural migration trends show no sign of slowing.

Pandemic trends for the downtown, villages, and hamlets instigated land-use change at unprecedented scales. Many local businesses had their 'best years' during the pandemic when demand for local goods and services increased sharply. Discretionary income, formerly sent to the regional big box stores and restaurant franchises, was instead spent locally. People concerned with making Keene-Claremont-Brattleboro trips were more comfortable staying home and shopping in town. In turn, our local businesses innovated to provide new services under pandemic constraints redefining themselves. Restaurants moved outside onto public sidewalks, and take-out dining services were added. Local retail went online and augmented storefront sales with electronic orders and home delivery. These trends, started as imperatives to survive a pandemic, have persisted. What began as Plan C' is the new normal.

Why Land Use Planning?

Land use planning is the "blueprint" citizens and town officials use to ensure healthy development patterns in the future. Zoning and subdivision regulations guide, position, and control development, and these land use regulations are determined by the Town Plan's recommendations. A clear vision and plan establish the foundation for subsequent regulations. When private rights are exchanged for the public good, those tradeoffs must be clearly understood and supported. Since the citizens must approve the plan before it becomes official, land-use regulations will align with the majority's expectations for change and progress.

Looking at the community's strengths and weaknesses, we can promote effective strategies to address those weaknesses and reconsider some unrecognized strengths. For example, the "Bellows Falls Island and Under The Hill Brownfields Area Wide Plan" envisions a mix of residential, commercial, and industrial uses surrounded by improved municipal infrastructure and services. The costly brownfield remediation completed on the Island could make that location and its stunning views of the Connecticut River and Fall Mountain attractive for a mix of land uses. It is essential to recognize the scenic beauty of Rockingham's riverfronts, forests, streams, and waterfalls have tremendous value that has long been overlooked. Coupled with the charm of our historic villages and hamlets, this offers enormous potential for Rockingham to become an important tourist attraction.

Tourism is one of the largest industries in Vermont. In 2022, tourism reached \$3 billion, supporting 30,000+ jobs in Vermont or the equivalent of 10% of Vermont's workforce. Approximately 13.3 million visitors spent money on lodging, food and drink, goods, and services, with summertime being the busiest tourism season.

Key Findings

Regulations regarding land use have a tremendous influence on the community's fiscal, social and environmental health. We must consider how land use evolved in Rockingham over the past several decades. We need to examine current patterns and how land use impacts: roads and bridges, flooding concerns, police and fire services, energy use, housing needs, and economic development. This helps us set policies to guide future land use and development toward a sustainable future for all of Rockingham.

Key land use details are:

- A single property, the Bellows Falls hydroelectric dam, accounts for 1/3 of the town tax base and more than 1/2 of the Bellows Falls Village tax base.
- Rockingham is a predominantly residential community. Commercial and industrial properties account for a small percentage of the town's land and tax base. Residential properties account for more than 40% of the land base and 55% of the tax base. Bellows Falls is even more solidly residential than the town as a whole – residential properties would represent 82% of the village tax base without the hydroelectric dam.

- Bellows Falls and Saxtons River Village represent only 10% of the town's land base, but 65% of the tax base and 68% of the housing stock. Higher-density and multi-family residential properties contribute significantly more tax dollars per acre than low-density and single-family residential properties. The cost of providing services to dispersed, low-density development in rural Rockingham is significantly higher than delivering services to compact, high-density village development. It is far more efficient to repair, restore, and even repurpose existing buildings. Rockingham's historic buildings are unique, and many of them contribute to historic districts. Maintaining historic homes and places benefits the community and preserves our local history.
- Rockingham has land well-suited for industrial and commercial uses. The industrial area on US Route 5 north of Bellows Falls is a prime location for the region's major employers. Today the industrial area is at capacity, but businesses are changing, and the infrastructure can support any conceivable future development. There is water, sewer, power, and fiber. The industrial areas along VT Route 103 are suitable for businesses dependent on convenient highway access and do not require municipal water or sewer.
- Downtown Bellows Falls, the Island, and Saxtons River have space well-suited for a greater range of land uses for people to live, work, play, and shop in one defined area.

Key Challenges

This Town Plan acknowledges the land use regulations have not been adequately updated over the years, that there are conflicts with how development has impacted residential neighborhoods, and that developers view current regulations as overly restrictive. Land use regulation must support the Town Plan's recommendations. The most significant challenges facing land use are:

- Roads and bridges influence land use and vice versa. In Bellows Falls, the closure of the Vilas Bridge transferred traffic flows away from the Island and the Square towards the Old Arch Bridge and the northern parts of the village. Businesses that relied upon the old traffic pattern have adjusted or closed. There is pressure to follow the traffic and use Rockingham Street and Atkinson Street for commercial activity. Land use regulations can adapt to the possibility that fixing the Vilas Bridge is a long-term project. Changes to land use regulations on the Island, along Bridge Street, the Square, and Westminster Street, can be adapted to lower traffic flow patterns and to support the recommendations of the Bellows Falls Island and Under The Hill Brownfields Area Wide Plan. Land use regulations for properties along Rockingham Street (north of the Old Arch Bridge) 'may' adapt to the higher traffic volumes as indicated below.
- Atkinson Street and Westminster Street are zoned residential and have a healthy mix of residential and commercial land uses. This area has a complicated history. There has been lost development opportunities and development that has led to neighborhood conflicts. The land use regulations can incorporate these lessons and allow greater flexibility in development review. The goal is to protect existing residential properties.
- Saxtons River Village struggles with conflicts between residential and commercial land uses and a general pattern of disinvestment and property neglect. There is just one zoning district for the entire village, and the land use regulations apply equally to all parts of the village. There are very different needs along Saxtons River's Main Street than in the surrounding neighborhoods. Main Street has had a history of conflicting land uses (permitted or not) operating near residences. The residential areas off Main Street are predominantly single-family, and multi-family is appropriate only in limited areas. Because of generous setback requirements, vacant lots that could support a residential unit cannot be developed. Land use regulations have been inadequate in addressing this village's unique character, diversity, and complexity. Paradoxically, the regulations are overly-complex, with different standards if a property has access to a private water system and/or the municipal wastewater system.
- Townwide land use regulations have discouraged new development and redevelopment. Their

complexity has provided citizens and landowners with limited resources. Zoning requirements have made it difficult to improve or redevelop non-conforming properties that may violate setbacks or other dimensional standards. Many of the most celebrated destinations are properties incompatible with today's zoning. Many historic homes "*encroach*" upon significant property setbacks, and new owners are challenged to add simple additions such as a front porch. Zoning should encourage development that mirrors our favorite places and supports our cherished older homes.

- Land use regulations in the rural areas of the town promote residential densities incompatible with productive rural land. The 1-acre zoning jeopardizes these cherished working landscapes, with excessive potential for subdivision and development. This density would exceed the town's public infrastructure capacity, particularly on low-traffic gravel roads. This will only increase with the expected rise in migration from new residents desirous of a more sustainable lifestyle.
- Existing land use regulations in the Town's rural areas are based solely on rigid mathematical models (for example, minimum lot acreage, frontage, width, depth, and driveway requirements). These rigid mathematical models result in the destruction and fragmentation of the town's natural resources and rural character. These regulations should evolve toward flexible, performance-based regulations that preserve natural resources and rural character. For example, encourage, not discourage, the shared use of curb cuts, private driveways, and utility lines.
- In the Town's urban areas, existing dimensional requirements result in many lots being classified as "non-conforming lots." For example, in Bellows Falls, nearly half of all lots are "non-conforming lots." Revise the Zoning Bylaw's dimensional requirements so that these lots will better meet the existing built environment.
- As work-at-home and small-scale home-based businesses are an increasingly viable and necessary alternative to traditional work arrangements, zoning should not obstruct this trend. Home occupations and businesses have needlessly strict zoning requirements, so few individuals pursue permits. Anecdotal evidence suggests it is a common practice to ignore zoning requirements. The town rarely issues zoning permits despite the proliferation of at-home occupations and businesses. Work at home is especially appropriate in the villages and hamlets where large historic homes could easily be retrofitted for the dual purpose of living and working. Some larger homes could become single-family homes populated with work-at-home family members instead of being divided into rental apartments.
- Land use regulations can adapt to encourage energy efficiency and renewable energy production. Downtown design review guidelines can promote flexibility in building renovations that encourage energy conservation and support renewable solar energy production. Redesign of apartments within the village areas should have higher densities when these buildings are converted into modern energy-efficient buildings. While energy-efficient buildings are a goal we cannot ignore the need to manage water and water vapor in all of its forms during any remodeling – this ensures durability.
- While mentioned as a town-wide challenge, In-fill development and redevelopment in Saxtons River and Bellows Falls should be encouraged by easing dimensional standards. In many instances, properties that had non-conforming buildings but lost their exempted status can no longer be redeveloped. In other cases, new property owners learn that even small changes to their buildings are prohibited by local zoning. Local zoning should be more flexible to promote housing investment

- Commercial zoning districts should not extend into known flood hazard areas and high-value conservation lands. An example is the Commercial-Industrial zoning district that abuts the Williams River at R-1. The town has zoned these lands for high-density commercial development, directly impacting scenic, recreational, and natural resources. Predictably, land development of any scale along the cove affects wildlife habitat, contributes to increased stormwater runoff and water pollution, and introduces noise and light pollution that will irrevocably change these natural lands. Land-use policies should not contradict Rockingham’s goals of protecting high-quality conservation lands.
- Land use regulation shall support the established settlement patterns, encourage development where the public infrastructure exists, and discourage development in rural areas lacking the necessary infrastructure. Higher-density development mitigates development pressure on our productive rural lands, helps promote vibrant, walkable communities, and mitigates the financial impacts of maintaining and reinvesting in our significant inventory of large residential homes.
- The Town Plan describes environmentally sensitive areas including steep slopes, wetlands, floodways, unique natural features, wildlife habitat, historic sites, high elevations, ridgelines, and scenic resources. A telecommunications facility and associated infrastructure shall avoid undue adverse impacts on these areas to the greatest extent possible. Where there may be adverse impacts, the project shall be designed to mitigate these impacts to the greatest extent possible.
- Telecommunication towers and related infrastructure shall be designed to minimize the visual impact of height and mass. Materials shall be of a type, style, color, and location so as to blend into the site, minimize glare, and not result in undue adverse visual impacts to the natural landscape or the built environment. Disturbance to existing topography or vegetation shall be minimized, unless found necessary to mitigate visual or aesthetic impacts.
- New wireless telecommunications facilities shall be of “stealth” design [employing materials, architectural design (e.g., “monopines”), color schemes, lighting fixtures or enclosing the facilities entirely within, for example, an existing steeple or a silo].

2.5 LAND USE CATEGORIES

Mixed-Use

In recent years, there has been a growing awareness that the automobile-centric lifestyle of many modern communities may not be ideal. A mixture of land uses appeals to more and more people who desire to work, live, and shop without constantly relying upon an automobile. The major areas that either support mixed-use or are ideal for mixed land uses include:

- Downtown Bellows Falls
- Westminster/Atkinson/Rockingham Street (South of the Fire Station)
- The Island
- Saxtons River ‘Downtown’ Main Street

High to Moderate Density Residential

Residential uses are areas we identify as neighborhoods. These areas are dedicated to homes and discourage large-scale commercial or industrial activities. High to moderate density is defined as having a minimum of 2 homes per acre. As density increases, these areas require public water and sewer in place of wells and septic systems. The major areas that support high to moderate-density residential are:

- Bellows Falls Village (outside major travel corridors)
- Saxtons River (outside the Main Street corridor)

- Bartonsville
- Cambridgeport

Commercial and Industrial Use

Commercial and industrial uses are concentrated along the state highway corridors. Major commercial and industrial areas include:

- Route 5 North Industrial Park
- Transport Park (Route 103)
- Vermont Country Store (Route 103)
- Route 103 Bartonsville

Productive Rural Lands

Productive rural lands do not require development to improve them. They provide agriculture, open space, and wildlife habitat. These lands are located outside villages and hamlets and away from major roads and municipal services. Development is only acceptable if it remains low-density, meets an appropriate need, and scales with the rural landscape. Residential, commercial, and mixed uses are only suitable if compatible with the landscape. Development that creates traffic impacts, demands increased municipal services, or compromises wildlife habitat should be discouraged.

Productive rural lands are lands that can be *worked*. Removing agricultural lands that were farmed for generations is a significant loss. Vermont is committed to reversing the decline of agriculture. New farmers and farmer transplants are relocating to Rockingham, where the land is affordable. Our region actively and proudly supports farmers, offering them numerous seasonal farmer's markets and reasonable access to the urban markets in Keene-Brattleboro, the Upper Valley, and the Pioneer Valley. New farmers inject the community with energy and vitality, saving the land from abandonment.

Six farms account for 1,310 acres, and ten woodland parcels total 950 acres. That is just a subset of the approximately 13,000 acres of Rockingham lands enrolled in the Current Use Program—48% of the town's total land area. Productive farms prevent the growth of residential subdivisions and sprawl-type development while continuing Rockingham's legacy for sustainable agriculture and a simpler, healthier rural lifestyle.

Conservation and Open Space

There are about 1,880 acres of public conservation/open space land and 550 acres of private conservation land in Rockingham. Approximately 500 acres owned by Great River Hydro LLC are dedicated to conservation and recreation. Much of that land is available for public access, including Herrick's Cove's recreation and wildlife viewing area.

Civic

Approximately 2,500 acres of land are used for civic purposes. This included 1,570 acres of municipally-owned land and 500 acres of state-owned land. Other civic land uses include schools, social or fraternal organizations, religious institutions, health and human service providers, and nonprofit arts organizations.

Institutional

Bellows Falls supports municipal facilities, community, and health and human service organizations. Saxtons River is home to the Vermont Academy. Few institutional land uses pay full property taxes (real and personal property used for charitable purposes is exempt from local property taxes under state law). These uses are best located in villages with higher populations and supporting infrastructure. These uses are also economic engines instrumental in helping smaller, local businesses.

2.6 Future Land Use

Land Capability

Fundamental to land use planning is guiding development towards the land best suited to accommodate the proposed use. Some of the factors affecting land capability include:

- Development in the rural areas of Rockingham outside the service areas of the municipal sewer systems will depend on on-site septic systems for wastewater disposal.
- Although historically, development in Rockingham has been close to rivers and streams, we now understand development in riparian areas, including floodplains and river corridors, poses significant hazards.
- Large areas of Rockingham are remote and not currently accessible from maintained public roads. The cost of providing infrastructure and services to develop these areas is significantly higher than for development located in and near the villages or along main roads.
- Extending roads into inaccessible areas fragments forest blocks and creates surfaces impervious to rainfall, adding to the potential for downstream flooding. New construction encroaches upon land poorly suited for development and exacerbates stormwater runoff, which magnifies downstream flood risks.
- Redeveloping commercial or industrial lands in our existing villages and hamlets must account for contaminated soils. Polluted soils present financial and legal uncertainty. A great deal of expertise and expense is required to remediate these properties. For redevelopment to succeed, private-public partnerships are necessary.
- Redeveloping residential properties in Bellows Falls has its own unique set of challenges. Dilapidated properties depress neighborhood home values, creating a disincentive for homeowners to continue investing in their properties. In most cases, rehabilitating homes requires owners to spend more money than the actual value of the house and property. Developers should be allowed to address market-based demand for studio and 1-bedroom apartments. These renovations can replace the larger apartments that have less market demand. While the number of people residing in a building may not change, additional units justify the renovation projects.

Future Land Use Map

The Future Land Use Map illustrates Rockingham's desired future land use pattern summarized as:

- Maintain Bellows Falls and Saxtons River as the principal focal points for community growth and development.
- Continue to build out and intensify industrial and commercial uses in designated areas.
- Promote industrial development while preserving the character and aesthetic of rural Rockingham by employing visual buffers and landscaping.
- Support changes in zoning that advance the Bellows Falls Island and Under The Hill Brownfields Area Wide Plan.
- Maintain productive rural lands and preserve them for low-density residential homes, agriculture, forestry, recreation, and conservation.
- Avoid extending roads and services into remote areas to minimize the fragmentation of large blocks of interior forest land.
- Protect water quality and reduce flood hazards by maintaining or establishing riparian buffers along streams and rivers throughout town.

The land use objectives follow a Maintain | Evolve | Transform vision described in the Vermont Department of Housing and Community Development's State Planning Manual on the Municipal Plan. Land use recommendations are specific tasks that planners will use to revise the town's land use regulations.

In addition, the town's land use regulations should be consulted and considered whenever future land use in

Rockingham will be affected by regulatory, judicial, or legislative decisions. The priority is ensuring energy and telecommunications (Act 248) and regionally significant development (Act 250) conform to the Town Plan.

Bellows Falls Designated Downtown

Downtown designation supports the town plan's land-use policies that enhance Bellows Falls' historical character, economic vitality, walkability, quality of life, and role as a regional center. State designation offers both the municipality and property owners within the designated area benefits, including:

- Owners of income-producing historic buildings can access tax credits for eligible improvements.
- The municipality has access to the Downtown Transportation Fund and priority consideration for state grants.
- The municipality has greater authority to set speed limits and install signage.
- The municipality may create a business improvement (special assessment) district within the designated area to fund capital improvements.
- Land within and near the downtown area is eligible for the state's Neighborhood Development Area program.
- Land within the downtown is exempt from Act 250 fees, and some projects are exempt from Act 250 review or have reduced criteria.

Saxtons River Designated Village Center

Village center designation (as opposed to a designated downtown) supports the town plan's land-use policies that maintain the historic scale and pattern of development, encourage private investment in historic buildings, promote infill and improve the walkability of the town's existing and planned centers. State designation of village centers gives the municipality and property owners significant benefits, including:

- Owners of income-producing historic buildings can access tax credits for eligible improvements.
- Land within and near the village center is eligible for the state's Neighborhood Development Area program.
- Rockingham is more competitive for grants in the village center.

The Designated Downtown and Village Centers result in tangible benefits for landowners and the town. Several landowners have used the designated centers for tax credits and for installing sprinkler systems in their buildings. The Town has also benefited by getting preferential ranking for state grants.

Neighborhood Development Area

The Neighborhood Development Area designation encourages the town and developers to plan for new and infill housing in an area within walking distance of the designated downtown or village center.

Eligible areas for designation are neighborhoods within ¼ mile of the designated downtown or village. In Rockingham, this would include significant areas of Bellows Falls and, to a lesser extent, neighborhoods in Saxtons River. The recommendations for the Neighborhood Development Areas are included in the Housing Chapter.

Forest Blocks and Habitat Connectors

Vermont reforested itself over the last 150 years. This trend ended a decade ago when total forested acreage started to decline annually. Forests and natural habitat is not eliminated by a major development that allows everyone to observe dramatic change. Instead, forests and natural habitats are reduced to one small residential or commercial development at a time and at a scale guaranteed to escape notice. Rural sprawl is what the state identifies as the primary driver for forest fragmentation and habitat destruction. As a local example, people living in Atcherson Hollow have seen housing densities triple over the last few decades. If that trend continues, the hollow will have its natural habitats subdivided into a suburban-style development pattern.

The Vermont Agency of Natural Resources mapped and prioritized Rockingham’s highest priority interior Forest blocks. The highest quality interior forest blocks and natural habitats are south of Route 103, north of Route 121, and west of Rockingham Hill Road. These lands are sometimes zoned appropriately, but some areas have 1-acre zoning districts extending deep into these Forest Blocks. The 1-acre zoning can lead to development densities that fragment these interior forest blocks and reduce habitat quality. Further subdivision of these interior forest blocks into 1-acre building lots is not conducive to preserving rural lifestyles, healthy forests, and natural habitats.

Those portions of the highest priority interior forest blocks setback from roads should be rezoned from R-1 to AF (Agricultural and Forestry) while those portions of interior forest blocks along roads should be rezoned from R-1 to R-5 where doing so would not create a neighborhood of non-conforming lots (when a group of neighboring one acre lots is included within a five acre zoning district).

Forests and natural habitats are productive rural lands that yield enormous benefits to the town and provide residents with a range of critical goods and services. This includes:

- Preserve water supply and water quality
- Provide flood control for downstream villages and hamlets
- Contribute to clean air and carbon sequestration
- Spur economic development by supporting outdoor recreation, tourism, and forestry.

Forestry itself is positioned in the market to become a significant economic generator. The collapse of the western US and Canadian markets has resuscitated commercial forestry to the Northeast. Lumber prices spiked 250% in 2021-2022 and have created strong markets for local timber production.

Land use regulations and easements are tools to address forest blocks and habitat fragmentation. These tools must be used judiciously and only in areas that have ecological significance. Areas with minimal acreage that are zoned for Agricultural and Forestry (i.e., two zones east of Saxtons River) do not advance habitat preservation and should be eliminated.

Albee’s Cove, Herrick’s Cove, and Roundy Cove are Resource Areas. These areas are unique and very different from the other lands labeled “Resource Areas.” Consider creating a separate designation for these three areas since they are basically floodplain, marsh, and farmland.

PROPOSED LAND USE MAP

The categories of uses portrayed on the Proposed Land Use map are described in the following sections.

Conservation and Resource Areas are similar with respect to their physical character. Some areas within these designations both present serious limitations to development and offer significant resource values.

1. **Conservation Areas** are essentially undeveloped areas which are largely wooded. Some of the Conservation areas have limited access to an improved public road and to necessary public utilities and services, while others may have poor soils or steep slopes.

Much of the Conservation areas may not be suitable for large scale development due to these factors but may be suitable for small scale development in relation to the overlying zoning district. The range in lot sizes under

the Zoning Bylaw reflects the proximity to public roads and land use in the late 1960's when the Rockingham Zoning Bylaw was originally proposed.

Those Conservation areas which are most remote from public highways and utilities should remain largely undeveloped until there is a demonstrated need for more intensive development and public services are available in these areas. Should development within Conservation areas be proposed, cluster development is the preferred design.

2. **Resource Areas** generally should be used primarily for agriculture, forestry, recreational and open space uses with single family residences scattered throughout the Resource areas. It includes lands subject to flooding, such as along the Connecticut River, or which may be wetlands or critical for wildlife. This includes Resource areas which are within Recreation-Conservation zoning districts, on the State of Vermont wetlands map, or which support critical wildlife habitat. Resource areas which meet these criteria should remain undeveloped to maintain their natural character.

Some lands within the Resource areas are located within zoning districts which allow for a range of lot sizes from one to 5 acres. These limited areas may be suitable for small scale development in relation to the overlying zoning district.

3. **Rural Areas** are those which, for the most part, can support low to moderate intensity residential and non-residential development. Moderate intensity is considered to be 1-3 acres per residential unit on the average.

Rural areas have been mapped for suitable topography within close proximity to town highways, or with convenient access to present population centers such as Bartonville, Cambridgeport, Rockingham, Saxtons River and Bellows Falls.

Areas for residential development within the villages of Bellows Falls and Saxtons River are limited, and the rural areas have seen and will continue to see a demand for more housing development in the future.

Rural areas allow for a low intensity mix of rural land uses in addition to agriculture, forestry and residential. Some uses allowed within rural areas are essential to the community and cannot be located in more urban or village areas. These uses should also include small-scale home businesses and outdoor recreation as long as these uses are compatible with one another and do not cause excessive noise, pollution, or disturbance.

The Rural Area east of Interstate 91, and north of the Williams River, is a visually sensitive area due to its proximity to the Connecticut River. This area is within a Natural Resources Overlay district under the Zoning Bylaw. Development in this rural area must be sensitive to the scenic qualities intrinsic to the Connecticut River.

4. **Commercial-Industrial Areas** are shown where physical conditions and proximity to transportation

and municipal services are suitable for industrial development, and where industry is presently concentrated. Sites for future expansion of industry are available within these areas. Minimum lot sizes range from 20,000 square feet to one acre dependent upon the feasibility of connection to public water and/or sewer.

Most recent industrial development has occurred in the area north of Bellows Falls which is served by that municipality's water and sewer.

In general, due to topography and other physical conditions, large areas for new economic development are limited. Good industrial land should be used for that purpose and consideration given to the impact that other incompatible uses, such as residential, can have on future industrial development of these particular areas.

5. **Hamlet Areas** include the small population centers of Cambridgeport, Upper and Lower Bartonsville, and Rockingham Village. For the most part they include land which can support moderate to high intensity rural development with one residential unit per acre considered to be the maximum, unless sewer and water service are provided. It should be recognized that in some areas one acre may be insufficient for siting of an on-site wastewater disposal system due to soil type and the need to meet isolation distances from wells, watercourses, etc.

The desirability of these population centers should be enhanced by encouraging the location within these areas of small commercial (neighborhood-scale type) activities serving local needs. Large commercial and industrial activities with a broader impact should be located in the designated commercial/ industrial areas

6. The old Rockingham village area has been designated a **Historic Hamlet** to encourage compatibility of new development with the Rockingham Meeting House and its surroundings. The zoning bylaws should contain reasonable provisions to preserve the setting of this hamlet and to ensure that the architecture and design of any future development is compatible with existing structures of the 18th and early 19th century period.

7. The **Village Area** includes the Village of Saxtons River in which sewer service is either available or can be provided by extensions of sewer lines. Within the village, sewer service allows for a relatively high population density and a combination of residential, institutional, commercial, and light industrial uses. Minimum lot area is dependent upon connection to private water systems and/or the municipal sewer system

Potable water is supplied by individual wells and these resources must be protected. It is important that the Zoning Bylaws effectively maintain the character of the village, particularly its approaches, commercial center, and residential and institutional neighborhoods.

The majority of the Village is on the National Register of Historic Places. Building design should enhance and not detract from this designation. Refer to the Historic Resources chapter and maps.

Development of areas within the village not served by public sewer should be reviewed and considered in

view of their potential for relatively high population density upon extension of the sewer system. Expansion of village area to the north/northwest is limited given the extent of Vermont Academy land. Expansion of the "village area" would actually be outside the village limits.

While there is a municipal sewer system in the Village, water is supplied via individual wells. Maintenance of water quality is of present concern with recent experiences of groundwater contamination.

Uses allowed within the village as a whole include residential, commercial and industrial. The village character is a traditional "Main Street" with its post office, churches, grocery store and other commercial shops. The remaining areas have been primarily residential with two large institutional uses, Vermont Academy and Kurn Hattin, at the north and south ends of the village. The latter, now the Warner Center, is a mixed use commercial center for small business and residences.

Maintenance of this village character entails careful consideration of proposals for non-residential uses located other than on Main Street and of any large-scale development plans with resulting impacts on traffic and noise. Consideration also should be given to development of zones within the Village area to define what level of activity is acceptable in a small village setting with close proximity between commercial and residential uses.

Route 121 serves as the major roadway to and from the Village. (Refer to the Transportation section.) This includes through traffic from Grafton and Westminster West.

8. An **Urban** development area has been designated which encompasses the intensively developed areas of Bellows Falls Village, the Oak Hill area, and areas immediately north of Bellows Falls Village which are served by the Village sewer and water systems or are within reasonable distances from the existing systems.

This "urban" portion of the community has been the area of the most intensive land use activity with existing infrastructure to serve the more intense uses. Minimum lot sizes vary throughout the "Urban" area and range from 7,000 sq. ft. to 14,000 sq. ft.

Within the Village, issues include development of the Hyde Hill Brook drainage basin, increased through truck traffic, intrusion of commercial uses into residential areas, continued development on the Island and within the traditional industrial area.

The easterly portion of Bellows Falls Village (the Island and east of Granger Street) is an industrial area. This changes into the commercial area of the Square and Rockingham and Westminster Streets before shifting to the residential neighborhoods. Much of the Island and downtown area is within National Historic Register districts. See the Historic Resources chapter and maps.

The Village is bordered by steeply sloping wooded hillsides on the west which are near critical watershed areas. At the north end, the urban area is separated from the Industrial area by the topography of the Connecticut River "setback" and steep embankments. New development has primarily occurred on the hillsides above and to the west of the original village area.

Individual commercial activities can be found in residential areas in the Village. A long-term effect of the spread of commercial development into residential areas is to drain the downtown of its purpose and vitality. One issue is how to maintain enough commercial use in residential areas to serve those neighborhoods while at the same time preventing a decline in the downtown business district.

Access into Bellows Falls Village is via Route 5 from north & south, Route 121 from the west, and N.H. Route 12 from the east. Atkinson Street is both a major residential street plus used by through traffic. Steady increase in truck traffic and the impact on the downtown and residential areas has raised concerns in the village.

An **Urban Expansion area** has been designated and includes the area west of the older village. This area is near the watershed and includes land within the Hyde Hill drainage basin. Watershed protection and storm water control are limiting factors for increased development. Adequate water pressure for connection into the municipal system may also be a restriction. Development in this area should be connected into municipal sewer.

9. **Forest Preserve Areas** include publicly owned lands presently designated as public forests. These preserves provide natural resource areas for public use and enjoyment. Of critical importance, the Bellows Falls Village Forest serves as the watershed of Minards Pond, the Village water supply. Other areas include the Saxtons River Village Horan Forest, the Town of Rockingham Oak Hill land, and the Bellows Falls Village wooded playground land. The Dorand State Forest is a forest preserve area in the Bartonville area of the town.

10. **Agricultural Areas** include lands presently in agricultural use or ownership, or where soil conditions are particularly suitable for continued or expanded agriculture. Proposals for non-agricultural development in these areas should be planned to minimize their impact on agricultural uses or potential. Minimum lot sizes vary considerably and reference must be made to the zoning map since agricultural areas are located in several different zoning districts.

Agricultural areas are not shown on the Land Use Maps, but detailed information can be found in the Agricultural section of this document and on the Agricultural Lands Map.

11. **Flood Hazard Areas** are lands with a major flood hazard potential. One should refer to the official floodway maps available at the Zoning and Town Clerk's offices for detailed information and location. Development of these lands must conform to the Town of Rockingham Flood Hazard Area Zoning Bylaw. Refer to the most current Federal Emergency Management Agency (FEMA) maps for floodplain areas.

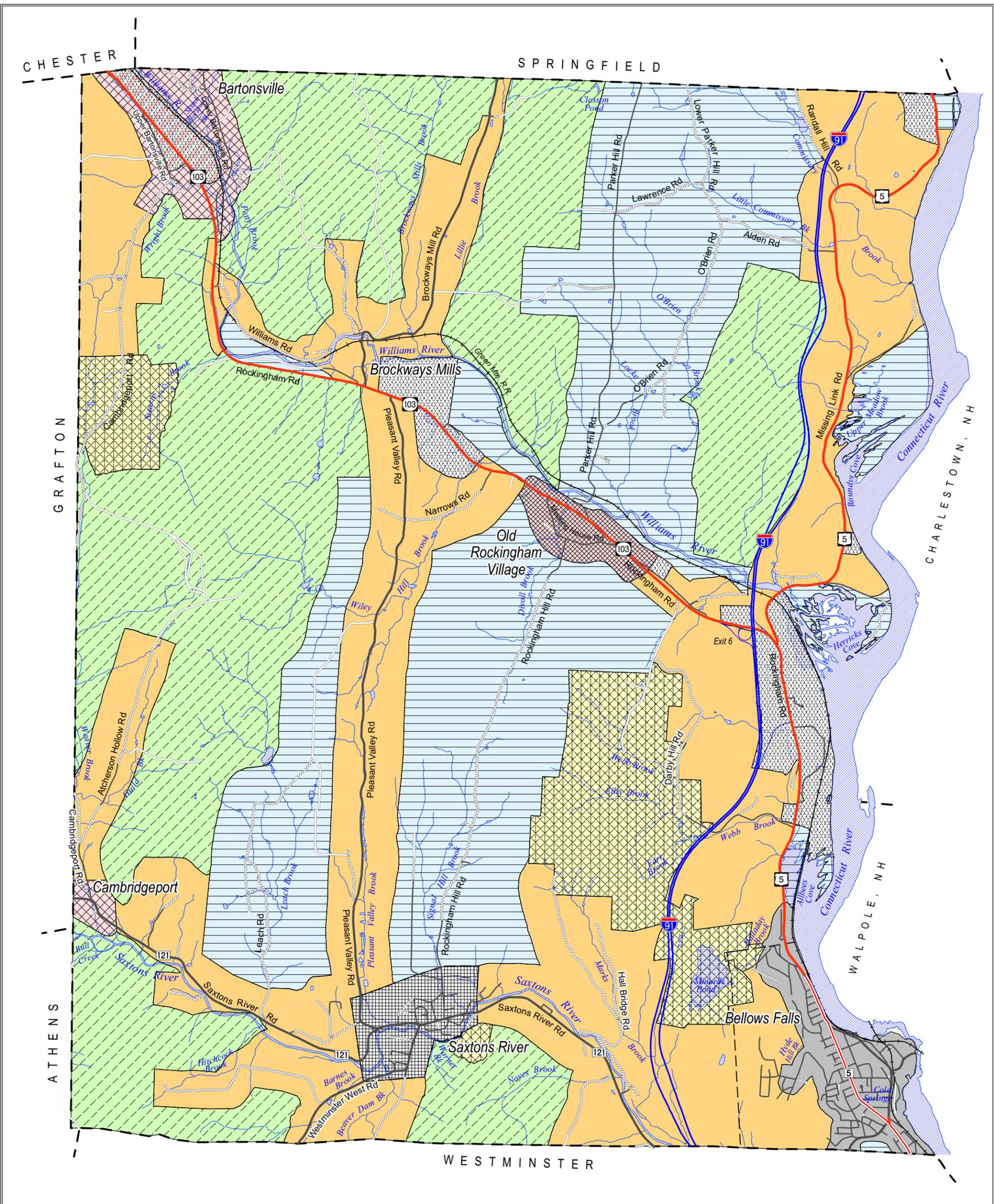
It should be noted that small streams which have the potential for flooding and causing damage are not shown on either this map or on the official floodway maps. Careful consideration to the topography must be given when considering development of these sites. The Town should work with the Vermont Fluvial Erosion

Hazard Program to identify these areas.

12. **Pond and Stream Areas** may include buffer zones away from the shorelines of ponds and permanent streams. Ponds are defined to include natural wetlands, ponds and lakes, but to exclude artificial ponds constructed by the current owner. Development within these areas should be compatible with the scenic, recreational, or wildlife habitat values of the stream or pond, and should not cause contamination or undue erosion.

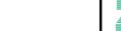
Other values include groundwater storage and surface water stabilization. Provision of access areas, dry hydrants or other facilities for fire protection purposes in these buffer areas should not be restricted. Seasonal streams which have significant wildlife habitat and fisheries value should be protected.

Wetland boundaries should not be considered absolute. They may change from time to time depending on such factors as time of year, precipitation received, geological processes (erosion, sedimentation etc.), beaver activity, and human alterations. Final determination of wetlands boundaries is made by the State of Vermont Agency of Natural Resources.



Existing Land Use

-  Commercial - Industrial
-  Conservation
-  Forest Preserve
-  Hamlet
-  Historic Hamlet
-  Resource
-  Rural
-  Urban
-  Village

-  Interstate highway
-  Federal or state highway
-  Class 1 town highway - paved
-  Class 2 town highway - paved
-  Class 3 town highway - paved
-  Class 3 town highway - unpaved
-  Class 4 town highway (not all are shown on map)
-  Legal town trail
-  Railroad
-  Private roads not shown
-  Stream
-  River or pond

Rockingham, Vt. 2024 Town Plan

Data sources:
- Existing land use district boundaries were determined by the Rockingham Planning Commission and digitized by WRC.

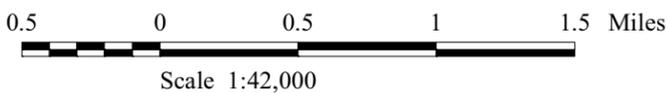
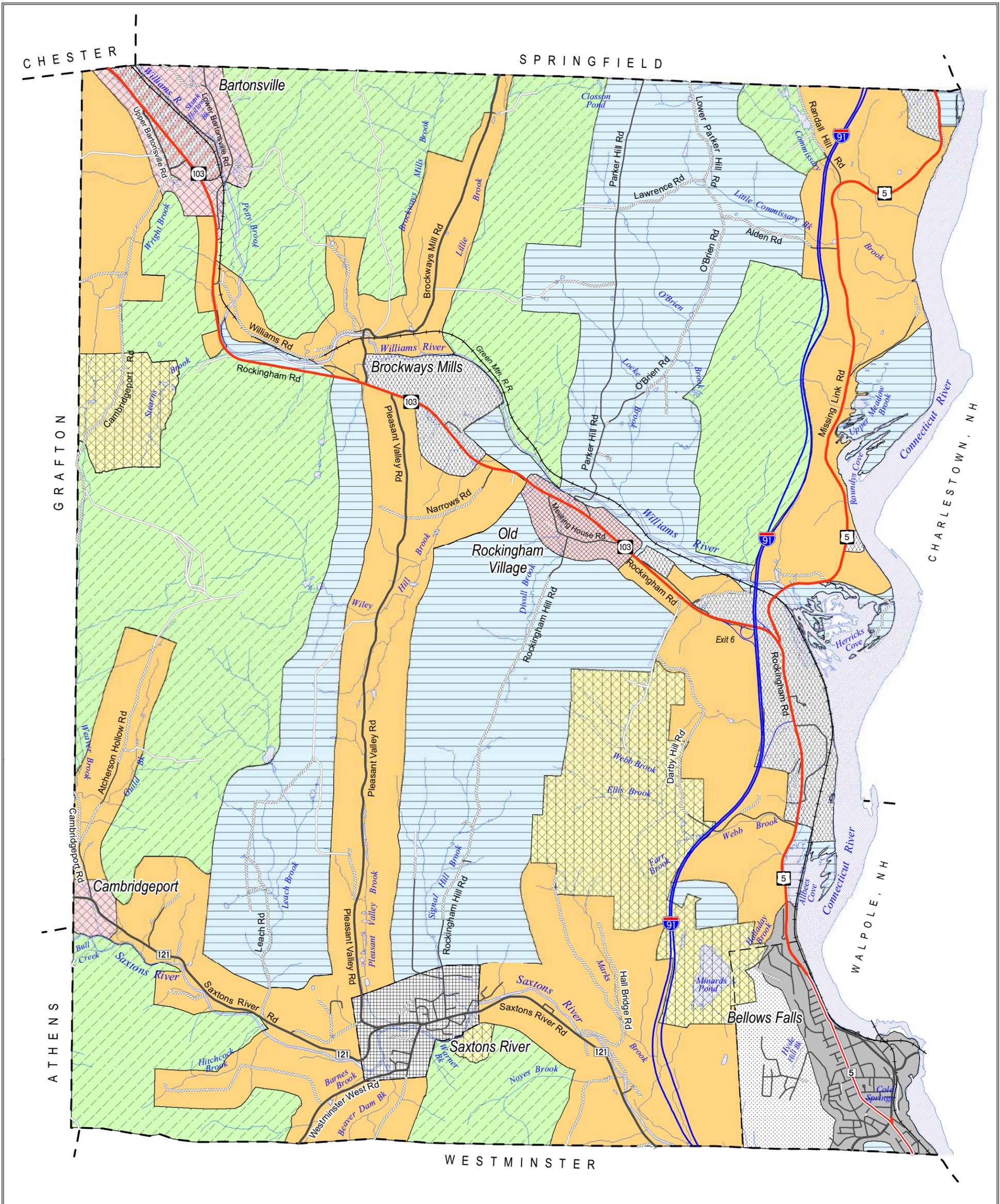


Figure 1: Existing Land Use Map
Windham Regional Commission, February 2024;
u:\GIS\Towns\Rockinghm\TP2024_ELU.mxd



Proposed Land Use

- Commercial - Industrial
- Conservation
- Forest Preserve
- Hamlet
- Historic Hamlet
- Resource
- Rural
- Urban
- Village
- Urban Expansion

- Interstate highway
- Federal or state highway
- Class 1 town highway - paved
- Class 2 town highway - paved
- Class 3 town highway - paved
- Class 3 town highway - unpaved
- Class 4 town highway (not all are shown on map)
- Legal town trail
- Railroad
- Private roads not shown
- Stream
- River or pond

Rockingham, Vt. 2024 Town Plan

Data sources:
- Proposed land use district boundaries were determined by the Rockingham Planning Commission and digitized by WRC.



3 Compatibility

The Rockingham Town Plan has been prepared with consideration for the development patterns and plans of the neighboring communities of Springfield, Chester, Grafton, Athens, and Westminster, and the land use policies set forth in the Windham Regional Commission Plan. State statute requires a municipal plan to consider compatibility with the plans of neighboring towns and the region. Compatibility is understood to be where the implementation of one plan does not significantly reduce the desired effect of another.

Springfield lies to the north of Rockingham. Both towns share the goal of conserving our rural lands along the border. Springfield's Future Land Use Map proposes that its lands along our border be classified as either "Rural Residential" (e.g., Brockways Mills Road area) or "Working Lands" (e.g., the Parker Hill Road and Route 5 areas along the Connecticut River). Rockingham's Proposed Land Use Map likewise proposes that its land along the border with Springfield be classified as either Rural (e.g. Brockways Mills Road area), Conservation (e.g., the remote wooded ridgeline between Parker Hill Road and Brockways Mills Road), or Resource (e.g., Parker Hill Road area). Rockingham classifies the Lower Bartonsville Area at Rockingham's northwest corner as "Hamlet" and Springfield classifies this area as Rural Residential. These two classifications are compatible.

Chester borders Rockingham for only 0.3 mile at the extreme northwest corner. Chester classifies this border area as Residential (3 acres) while Rockingham classifies it as Hamlet (Upper Bartonsville), Rural (e.g., the wooded ridgeline to the southwest of Route 103), or a narrow strip (0.1 mile wide) of Commercial-Industrial (e.g., the Town's former gravel pit and other now largely "played out" gravel pits). Due to the narrowness of this border area, the land classifications are compatible.

Grafton borders Rockingham along the entire town line north of Route 121. Grafton's Proposed Land Use Map classifies lands along this border as Critical Resource (Rockingham Town Forest and Durant State Forest, both of which are located on both sides of the town line), Resource (e.g., the hillside area west of Cambridgeport Road), and Rural Residential (Cambridgeport village, which is also located on both sides of the town line). Rockingham's Proposed Land Use Map likewise classifies the border area as Forest Preserve (Rockingham Town Forest and Durant State Forest, both of which are located on both sides of the town line), Rural (e.g., Cambridgeport and Atcherson Hollow Roads areas), Conservation, or Hamlet (Cambridgeport). These four classifications are compatible.

Athens borders Rockingham along the town line south of Route 121 at Cambridgeport Village. Rockingham's Proposed Land Use Map classifies the border area as Conservation. Athens currently does not have a Town Plan or Town Plan Mapping. However, the border area between the two towns is comprised of actively farmed rural lands so there is presently no incompatibility between how the border area is now used and Rockingham's proposed classification of this area as "Conservation."

Westminster borders Rockingham along its entire southern border. The town line area between Cambridgeport and Bellows Falls is classified by Rockingham as Rural (e.g., the area along Route 121 between North Westminster and Saxtons River Villages) or Conservation (e.g., the mountainous area west and south of Hitchcock Road). In the Bellows Falls area, the area is classified as Urban (Red Light Hill area), Urban Expansion (the Oak Hill area), or Conservation (Basin Farm). Westminster's Proposed Land Use Map classifies lands along the border as Resource Conservation (Hitchcock Road area), Rural Residential (Hartley Hill and Davidson Hill Road areas), or Residential (area along Route 121 between the I-91 overpass and Red Light Hill (the Routes 121 and 5 intersection). The narrow area between Route 5 and the Connecticut River classifies as Industrial (e.g., the Granger Street small industrial businesses and the James Oil facility). These classifications are compatible.

3.1.1 Windham County Region

The Town Plan's overall land use and development pattern is consistent with the pattern envisioned in the Windham County Regional Plan's future land use policies and map. The Town Plan land use chapter uses many of the same categories in the Windham County Regional Plan.

4 Transportation

4.1 Objectives

The following objectives are the Town Plan's obtainable targets for applying the Maintain | Evolve | Transform vision.

- Direct the town's limited transportation funds towards projects that meet the greatest need and impact the most people.
- Invest in transportation projects that promote economic development and improve accessibility.
- Strengthen land-use patterns that prioritize commercial and residential development in existing villages and hamlets over rural Rockingham.
- Use transportation infrastructure investments to support energy-efficient electric and vehicle automation technologies.
- Invest in transportation system improvements to mitigate environmental impact.
- Recognize cycling and walking as means of transportation, and accommodate bicycle and pedestrian facilities in all transportation infrastructure projects.
- Preserve the historic features that give character to our roads and bridges, including tree-lined streets, stone walls, and scenic views.

4.2 Maintain | Evolve | Transform

Transportation is divided into these three distinct categories. Community planners use a Maintain | Evolve | Transform vision to focus attention on planning priorities and define the degree of change required.

Maintain: Transportation assets that must be maintained and preserved for future generations.

- Hall Covered Bridge Worrall Covered Bridge and Bartonsville Covered Bridge
- Unique pedestrian connections, including BF Westminster-School Street stairs, BF Hapgood to Front Street stairs, BF School to Prospect Street walking path, and SR Main Street to River Street walking path.
- Parker Hill Road
- Pleasant Valley Road

Evolve: Transportation assets that should change to retain service levels and be adapted to promote economic or community development goals.

- VT Route 103
- Saxtons River Main Street
- Sidewalks in the Villages of Bellows Falls and Saxtons River
- Fixed-route transit that connects neighborhoods to major employers, shopping centers
- Flexible parking standards for residential housing
- Electric vehicle charging stations

Transform: Transportation assets that need improvement and have unrealized potential to support the community.

- Multi-modal transportation facilities for the Island
- Walking and bicycling along VT 121 from Bellows Falls to Saxtons River
- Downtown streets and sidewalks along The Square, Rockingham, and Westminster Streets and along SR Main Street and adjacent side streets.
- Walking and bicycling along Atkinson Street
- Roads and bridges that can be enhanced to reduce impacts to our waterways.

4.3 Recommendation

These recommendations are how planners expect to implement the Transportation Objectives and the Maintain | Evolve | Transform vision.

- Use Federal, State, Local, and Tax Increment Financing to invest in the Island transportation system. This includes:
 - Upgrade all Island bridges to support increased traffic volumes and weight.
 - Create a complete sidewalk network for Bridge, Depot, and Island Streets.
 - Support the new Depot Street bridge dedicated to bicyclists and pedestrians.
 - Update all municipal parking lots with landscaping, lighting, bicycle parking, and electric vehicle charging stations.
- Develop a comprehensive pedestrian/bicycle plan for Bellows Falls and Saxtons River Villages that:
 - Eliminate sidewalk gaps and unevenness to create a safer pedestrian environment
 - Address deteriorating sidewalks, crosswalks, and pedestrian bump-outs.
 - Utilize warnings and other safety features at high-traffic volume intersections
 - Develop a menu of proposed built sidewalk typologies that can be maintained by Public Works and deployed accounting for vehicular/pedestrian volumes and speeds and overall safety concerns.
Maintain existing sidewalks and design sidewalks to fit the intensity of use. High-traffic volume corridors get wide concrete sidewalks with granite curbing. Low-traffic volume corridors receive less costly asphalt sidewalks with minimal curbing.
 - Create facilities for bicyclists accessing rural Rockingham.
- Maintain a road, sidewalk, culvert, and bridge management plan that evaluates transportation system conditions and approximate costs for future improvements.
 - Maintain a Road Surface Management System.
 - Maintain a culvert inventory and assessment.
 - Maintain a sidewalk inventory and rating assessment.
 - Inventory critical historic assets for long-term preservation
 - Develop a capital budget to schedule reconstruction projects.
 - Create capital reserve accounts for expensive road and bridge projects.
- Improves parking, enhances landscaping, slows traffic speeds, and promotes walking and bicycling.
- Amend zoning and subdivision regulations to include electric vehicle charging stations in large-scale commercial and residential development projects.
- Restore/rehabilitate '44 Steps', ensuring a safe route connecting Westminster and School streets while maintaining their historic appearance.
- Revise minimum parking space requirements for residential housing in walkable neighborhoods or with access to public transit. Allow residential housing to use off-street parking spaces on adjacent properties or municipal lots.
- Invest and commit to stormwater-related road improvements to comply with Vermont's Municipal Roads General Permit requirements.
- Develop a community-based, fixed-route transit service that provides access to the major employers, shopping centers, and residential centers in Rockingham and nearby Walpole shopping centers.

- Require the preservation of stone walls and street trees in all transportation and land use projects.
- Maintain or construct bicycle parking facilities in areas with demonstrated need (e.g., transit stops, high-traffic destinations).
- Designate preferred bicycle routes in Downtown Bellows Falls and on major corridors and make roadway modifications to those routes, with particular attention to routes used by children and youth.

4.4 Background

Rockingham is a transportation hub for Windham County. There is an extensive network of roads, including the interstate and three major highways. It is a natural geographic location for freight/passenger rail and vehicular traffic and a valuable area for industries that depend on transporting products.

The single greatest asset in any community is its system of roads, bridges, culverts, sidewalks, and supporting infrastructure. This once vital purpose-built system is our inheritance, yet it is not as relevant for today's transportation needs. With little upgrading over 150+ years, modern life requires updates to transportation infrastructure.

What we choose to repair, replace, or even abandon has long-term consequences. Solid planning principles should ground these tough choices. It is also essential to know that multiple public entities control our transportation system and that these groups develop every project differently. The complexity of government requires local planning standards if the Town expects to meet the various state and federal rules.

The last reason for planning is financial. Since 1991, the federal government has been the leader in transportation project funding. The historic American Rescue Plan Act of 2021 is an unprecedented increase in funding for state and local governments. The bill prioritizes higher planning standards before federal and state transportation programs select projects. The Town must plan and adopt clear language regarding transportation project priorities. We will be at a competitive disadvantage otherwise.

4.5 Existing Conditions

Streets and Highway Network

Interstate 91 – I-91 travels north-south on the eastern side of Rockingham, paralleling the Connecticut River and U.S. Route 5 with only four roads crossing it, effectively dividing the valley floor from the remainder of the Town. Rockingham has one interstate exit – Exit 6, at the intersection of U.S. Route 5 and VT Route 103. In neighboring Westminster, Exit 5 provides southern access to Bellows Falls and Saxtons River.

State Highways and Bridges - The location, capacity, and condition of the state highways in Rockingham directly influence the Town's land use and development pattern, as evidenced by the fact that 84% of the residential structures and 92% of commercial, industrial, or institutional structures in Rockingham are located within ½ mile of a state highway. The traffic on the state highways in Rockingham did not increase, and in many segments, traffic has declined over the last 20 years. Static traffic levels over time indicate no capacity issues.

As shown on the Transportation Map, Routes 5, 103, and 121 are the major transportation corridors:

Route 5 travels north-south along the Connecticut River through Bellows Falls and is a designated Scenic River Byway. Vermont Transportation (VTrans) classifies Route 5 in Rockingham as a major collector that gathers traffic from the local road network and feeds arterial highways. VTrans identified four segments of Route 5 as

high crash locations. There are two long bridges (>20 feet) on the state-maintained portion of Route 5 (Missing Link Rd) in Rockingham. According to VTrans inspection reports, both bridges need substantial rehabilitation or replacement. These projects are in the design and engineering phases, with construction projects anticipated in the next decade.

Route 103 connects Route 5 westward to neighboring Chester and over the Green Mountains to Route 7. VTrans classifies Route 103 as a principal arterial that delivers traffic from collector roads to the interstate. The VT 103 Corridor Management Plan for Chester & Rockingham documented the existing condition of the highway in 2009 and is included in this town plan by reference.

Route 121, a town-maintained state-numbered highway, links Bellows Falls and Saxtons River. It continues westward through Cambridgeport and Grafton before intersecting with Route 11 in Londonderry. VTrans classifies Route 121 as a major collector.

Town Roads

Rockingham maintains 78 miles of town road, 34 miles of which are unpaved. These roads include the 1.5-mile Class 1 portion of Route 5 (Rockingham Street - Atkinson Street - Westminster Street) and almost 6 miles of Route 121, a Class 2 town highway.

Rockingham maintains a local road inventory to assess the condition of town roads and prioritize construction projects. Using a Road Surface Management System, the Highway Superintendent proposes an annual list of road projects each fiscal year that is reviewed and approved by the Municipal Manager and Selectboard. To sustainably manage the town's system of roads, the goal is to match paving needs with available funding.

Town Bridges

There are nine long bridges (>20 feet) and 18 short bridges (6-20 feet) on town roads in Rockingham. VTrans bridge inspection reports indicate that 3 of the long bridges need major rehabilitation.

The Bridge Street bridge over the canal is listed as a high priority. Deck resurfacing in 2017 extended the lifespan of this bridge by approximately ten years. Significant repairs are still required.

VTrans is in the design and engineering phase for the Depot Street Bridge. The Town selected an off-alignment bridge design. The off-alignment bridge significantly improves tractor-trailer, inter-city, and tour bus access. The current Depot Street bridge cannot accommodate large trucks because of weight restrictions and the tight turning radii onto Canal Street. Once the off-alignment bridge is constructed, the Depot Street Bridge will be replaced with a dedicated bicycle and pedestrian bridge.

The Vilas Bridge crosses the Connecticut River from the Island to Walpole. The State of New Hampshire owns 93% of the total bridge. In 2009, New Hampshire closed the bridge due to structural deficiencies. The 2023-2032 New Hampshire 10-year Plan budgets 17 million for planning, design, and construction. Bridge construction is scheduled for 2029.

While the Vilas Bridge is closed, the Depot and Bridge Street bridges are the primary connection to the Island. If the island bridges are allowed to remain in disrepair, land use regulations should adjust to

mixed-use development. The community should not expect to support high-density industrial development on an Island lacking a modern bridge network.

The New Arch Bridge crosses the Connecticut River and connects Route 5 to New Hampshire Route 12 at the northern end of Bellows Falls. With the closure of the Vilas Bridge to traffic in 2009, the Old Arch Bridge is the one link between Bellows Falls and North Walpole. The bridge was rehabilitated in 2021 and will be serviceable for the foreseeable future.

Culverts

The Town of Rockingham maintains an inventory of its 615 town-maintained culverts. Every two years, the Highway Superintendent reviews and assesses culvert conditions. Culverts in poor condition or failing are replaced based on priority and funding availability. Often culverts are replaced preventatively as part of a larger road reconstruction project. In those cases, the Town wants to prevent disturbing newly paved surfaces. Continue to use beaver deceivers where culverts are compromised by beaver activity.

Downtown Bellows Falls

Traffic circulation, congestion, and safety remain ongoing concerns in downtown Bellows Falls. Lighting changes, removing parking spaces, and increasing the number of crosswalks in recent years have had minimal effects. Traffic levels in downtown Bellows Falls have never recovered from the closure of the Vilas Bridge. Traffic and parking demand plummeted during the height of the pandemic, only to rebound to near pre-pandemic levels.

The Downtown must define itself as a destination. Recent downtown lighting work demonstrates how small, low-cost improvements can dramatically raise the appeal of the Downtown. The 2021 completion of the Brown-Fuller Memorial Park creates another destination for visitors and makes the downtown more attractive. The combination of these facilities makes walking and bicycling more convenient and appealing. It mitigates parking demand by encouraging motorists to use parking on the Island to access downtown businesses.

Town Highway Costs

The amount spent on town highways is the single largest town expense. Town highway maintenance is funded almost entirely through property taxes – the state aid Rockingham receives each year for road maintenance represents less than 10% of the department's budget.

State law requires Rockingham to reduce stormwater-related erosion from town roads. Roads bordering streams and rivers must be improved so contaminated run-off does not flow directly into surface waters. While expensive, maintaining clean water is overwhelmingly supported by citizens, and these erosion projects improve the overall health of the road and lower future maintenance costs. We can no longer tolerate storms eroding gravel roads and ditches, sending material into our waterways. By reducing stormwater erosion, we are keeping expensive road materials where they provide the most significant public benefit.

The Road Surface Management System (RSMS), bridge inspection, and culvert inventory data point to a need for more significant investment in repairing and maintaining town roads, bridges, and associated infrastructure. Deferred maintenance budgeting sustained artificially low tax rates by delaying important transportation projects. Abandonment is rarely realistic, and transportation infrastructure must be reconstructed at higher costs.

Private Roads

There are very few private roads in Town, and they are unlikely to play a role in future development. Rockingham will ensure new private roads are built to town standards, including adequate emergency access and stormwater management. This is important when these roads intersect public infrastructure, as the failure of a private road can damage town assets.

Public Transit

Southeast Vermont Transit (SEVT) operates Rockingham's MOOver. The MOOver offers weekday commuter service between Bellows Falls, Brattleboro, Springfield, Ludlow/Okemo-Rutland, and the Lebanon-Hanover area. It also operates a free in-town shuttle that serves Bellows Falls and Walpole. The MOOver also manages programs to provide transportation for seniors and people with disabilities. The Town appropriates a small amount of funding each year to support public transit. All buses are equipped with bike racks. Bus ridership will improve if services match commuting schedules.

Parking

Parking is not a concern in Saxtons River Village or the Town of Rockingham. Bellows Falls has approximately 2,100 parking spaces (1,200 on-street, 500 private off-street, 400 public off-street). Parking is generally available. There are a few occasions when parking becomes an issue, such as lunch hour at the Square. The constraints are best addressed with BF Police enforcement of 2-hour parking limits.

Rockingham allows on-street parking on most public roads but prohibits on-street overnight parking during winter. Residents can purchase overnight parking permits for municipal lots.

Rockingham owns and maintains a park-and-ride adjacent to The MOOver's bus depot on Route 5. A number of The MOOver's bus routes service the park-and-ride.

Residential parking standards are derived from minimum off-street parking requirements defined in local zoning. These parking standards are applied town-wide and not adjusted for access to municipal parking lots, ability to walk, bicycle, or use public transit. The town can adjust minimum parking space requirements for areas that have alternative transportation. Parking maximums could also benefit properties that need more landscaping and permeable soils for drainage. In Bellows Falls, municipal lots could provide overnight parking for apartments with the proviso that parking must be strictly enforced to prevent illegal parking. Some downtown apartments require residents to park in municipal lots, but often people ignore these requirements and illegally park behind buildings and other undesirable locations.

Walking and Bicycling Facilities

There is strong community support for improved bicycle and pedestrian facilities throughout the Town. Bellows Falls and Saxtons River have an almost complete system of sidewalks and are considered walkable communities. Sidewalks exist on every road that requires them.

The town needs to develop a process of sidewalk planning that defines a simple hierarchy of needs: (1) most expensive facilities installed along high-traffic corridors, (2) medium-cost facilities constructed where vehicle/pedestrian volumes are lower, and (3) low-cost or no facilities used for neighborhood streets with local traffic only.

Downtown sidewalks, on-street parking spaces, and bump-outs were all used to expand shopping and dining opportunities during the pandemic. Outdoor spaces allowed the community to assist struggling businesses with building occupancy restrictions. The community strongly supported using public infrastructure to support businesses. Downtown was where businesses successfully operated in parking spaces and sidewalks safely – because the Square and adjacent roads have low travel speeds and motorists focused on being downtown. It is possible to continue using downtown public spaces by updating the town’s transportation policies.

The Town maintains unique pedestrian connections that are legally public rights-of-way. These connections are considered short-cuts within the transportation network and can reduce trip distances from ½ mile to 500 feet. These connections are:

- 44 steps connecting Westminster and School Streets (legally defined as an impassable Class 4 town highway)
- 78 steps connecting Hapgood and Front Street (legally defined as an impassable Class 4 town highway).
- Asphalt walkway connecting School Street Ext. and Prospect Street (described as a legal trail).
- Asphalt walkway connecting Main Street and River Street in Saxtons River (defined as a Class 4 town highway. A roof cantilevered off of the 25 Main Street building (replaced in 2020) protects part of the sidewalk from snowfall.

Outside the villages, bicycle and pedestrian facilities are limited. Most roads do not have adequate space to accommodate cyclists and vehicle traffic. The Vermont Department of Tourism and Marketing Vermont Bikeways Map includes many popular bicycle routes. Anyone who has bicycled VT Route 121 and Pleasant Valley Road knows these scenic routes attract tourists who shop at our stores and stay overnight in local lodging.

Bicycling is also becoming more convenient with new technologies. Steep hills are no longer obstacles for electric-propelled bicycles. As bicycle use increases, plans are in place to install bike racks at various locations around Town. Electric bicycles have limited drawbacks compared to the louder 2-stroke engine-propelled bikes that impact quiet streets and neighborhoods.

The focus is on expanding and improving Rockingham's recreational bicycle and pedestrian infrastructure. Two local trail groups have been working on both new and existing bicycle and pedestrian trails and plan to promote the use of these trails. Saxtons River Valley Trails Initiative is creating a path from the Bellows Falls Riverfront Park to Saxtons River, connecting with the Pinnacle/Bald Hill Trail. The Windham County Trails Alliance is creating a wooded trail network on Oak Hill in Bellows Falls near the Recreation Center. The local nonprofit Bellows Falls Community Bike Project provides affordable bikes, promotes bicycle safety, and can provide a bike rental service.

Information and grant incentives are available through VTrans’ “Safe Routes to School.” Central Elementary School and Bellows Falls Middle School have incorporated walking and bicycling safety into their physical education classes. For example, using manually activated beacons at the intersection of Atkinson and School Street could improve the awareness of pedestrians.

A Selectboard-appointed Bicycle and Pedestrian Committee is developing trail connectivity plans for the Town and coordinating efforts with the Windham Regional Commission. This type of committee is necessary to access the Vermont Agency of Transportation grants.

Automated and Electric Vehicle Technologies

Vermont is actively developing laws on the testing and deploying of automated vehicles. Vehicles already come equipped with varying levels of automated driving technology. As time goes by, automation will become a standard. Automated vehicles' potential for mobility, social, and economic benefits are significant. Vermont's ability to facilitate the deployment of automation is essential to the state's transportation system and economy. Leadership should take an active role in this aspect of our community.

Electric vehicles are a technology that pre-existed the internal combustion engine. For years, electric vehicles struggled to be anything beyond a fringe technology. All the major automotive companies have embraced electric vehicles. The expansion of government programs and price increases at the pump have hastened public interest and enthusiasm. In the next 10-20 years, electric vehicles will be the dominant vehicle type on our roads. Planning for more charging stations will prepare us for the future, including promoting or requiring charging stations in residential and commercial development projects.

Rail

The Genessee-Wyoming, Pan-Am Systems, and Green Mountain Railroad operate through Rockingham, generally paralleling the Connecticut River, with the train tunnel running through downtown Bellows Falls. Amtrak's Vermonter line passes through Rockingham with two daily stops in Bellows Falls. The Vermonter provides service between St. Albans, Vermont, and Washington, D.C., via Springfield, MA, New York City, Philadelphia, and Baltimore. The train station on the Island is in disrepair and requires renovation. In 2022, town voters elected to purchase the train station, and the Development Office is planning a public-private partnership to fix the building. In New England, rail ridership continues to increase, and the Island needs the required infrastructure to accommodate a passenger rail stop.

Airport

There are no commercial airports, heliports, or other landing facilities in Rockingham registered with the Federal Aviation Administration. There is a helipad at Sonnox. The nearest airport is Hartness State Airport, a state-owned general aviation airport located in Springfield. The airport does not offer passenger air service. The Lebanon Municipal Airport in West Lebanon, New Hampshire, is the closest facility offering regular passenger air service. Still, most Rockingham residents drive to the major airports in Windsor Locks, CT; Manchester, NH; Burlington, VT; Albany, NY; and Boston, MA.

Transportation Hub

The historic Island area of Bellows Falls has served the community's transportation needs for many years, beginning with the canal in the 1800s, transporting boats around the "Great Falls" on the Connecticut River. It continues as a rail center, off-loading for trucks and providing Amtrak passenger service. Intercity bus service also stops on the Island. The three municipal parking lots on the Island provide much-needed parking for workers, residents, and tourists. Future development on the Island must be closely coordinated and supportive of downtown development.

Protecting Cultural Resources & Transportation

Transportation can complement and reinforce the historic preservation of our cultural heritage. The roads, bridges, and sidewalks system were completed in the mid-1800s. There have been very few changes in the last 175 years. We want to preserve the system that we find attractive and is a foundation for tourism. Historic roads attract people to walk and bicycle. We want to promote recreation on our roads and give residents driving alternatives.

5 Housing

5.1 Objectives

The following objectives are the Town Plan's obtainable targets for applying the Maintain | Evolve | Transform vision.

- Encourage a diversity of housing options, from tiny homes and accessory dwelling units to large-scale energy-efficient multifamily housing complexes.
- Employ housing regulations to incentivize energy efficiency, renewable energy production, and sustainable transportation technologies.
- Promote historic preservation and ensure new housing stock preserves these traditional neighborhoods' historic look and feel.
- Capitalize upon recent 'work from home' trends and allow home occupations and businesses throughout town.



5.2 Maintain | Evolve | Transform

Housing is divided into these three distinct categories. Community planners use a Maintain | Evolve | Transform vision to focus attention on planning priorities and define the degree of change required.

Maintain: Housing that must be maintained and preserved for future generations.

- Within the Meeting House Historic District.
- Within the Bellows Falls Neighborhood Historic District.

Evolve: Housing that should change in ways that retain the good but are adapted to promote economic or community development objectives.

- In Downtown Bellows Falls
- Variety of options that support home occupations and home businesses

Transform: Housing that impedes community prosperity and fundamentally needs improvement.

- Unsafe, substandard, and blighted within Bellows Falls Village
- In need of redevelopment or renovations for energy sustainability and climate resiliency
- Vacant buildings that are presently uninhabitable



5.3 Recommendations

The following objectives are the Town Plan's obtainable targets for applying the Maintain | Evolve | Transform vision.

These recommendations are how planners expect to implement the Housing Objectives and the Maintain | Evolve | Transform vision.

- Enforce Vermont's existing rental housing and fire safety codes by implementing ordinances for Bellows Falls and Saxtons River Villages.
- Use local ordinances and land use regulations to address dilapidated housing in thickly settled neighborhoods.
- Develop a program that uses public funds to acquire vacant, abandoned or deteriorated properties. Work with developers - public and private - to redevelop these properties.
- Consider the Vermont Neighborhood Development Area for Bellows Falls and Saxtons River.
- Amend land use regulations to include historic preservation design standards to preserve and enhance historic homes.
- Promote reinvestment of existing housing stock. Use the Revolving Loan fund to finance owner-occupied housing projects that restore dilapidated properties with high-quality, energy-efficient housing.
- Increase available housing options for people who value downtown living. Evolve the Bellows Falls 'Central Business District' into a mixed-use 'downtown' district.
- Amend land use regulations to allow more housing where municipal water and sewer service exists.
- Reduce requirements for home occupations and businesses to the minimum that is required to preserve a neighborhood's residential character.
- Promote sustainable energy strategies and incentivize residential building renovations to address energy sustainability and climate resiliency.
- Relocate existing housing away from flood-prone areas or upgrade housing to meet flood-resilient standards.
- Maintain the enforcement of the Residential Building Energy Standards (RBES) at the point of sale, apartment buildings should be inspected for RBES compliance
- Identify and promote safe and healthy housing standards as well as Residential Energy Housing Standard
- Consider the inclusion of special needs and age groups at risk in housing discussions.



5.4 Background

For our 5,000 residents, homes are found in the rural hills of Rockingham, Bellows Falls, and Saxtons River Villages, and within the hamlets of Bartonsville and Cambridgeport. Many homes predate modern amenities, and it is essential to appreciate the historic nature of the housing stock. The housing in our villages and their surroundings has been shaped by many factors: the mills situated along the rivers, railroad accessibility, good farms and pastureland, and easy transport through the rough terrain and across waterways. The surrounding topography will always limit housing within our town. Steep rocky hills, rivers requiring riparian buffers, and the inherent concerns about flooding constrain development. This



demands a creative approach whether through restoration, repurposing, or replacing adequate housing. Housing is the town's highest priority.

Bellows Falls village holds the moniker of the “front porch capital of the world” and has art, business, and culture-centric downtown considered highly walkable by national rankings. Much of the residential area of Bellows Falls is on the National Register of Historic Places. Many owners have worked to restore the beauty and detail of their Victorian homes, thus maintaining the aesthetics of the village neighborhoods. Most of Saxtons River Village, including the older residential areas, is also on the National Register of Historic Places. Many old homes near downtown Bellows Falls are still large single-family homes, while others are multifamily apartment conversions. Land for new housing is available in rural Rockingham. There are three mobile home parks. There is senior housing in our village centers. The pandemic transformed housing as people relocated from urban and suburban areas seeking rural lifestyles with urban-type amenities. Rockingham experienced unprecedented home sales and an in-migration of new residents. The increase is unsustainable, but the trend of increasing numbers of people who can work at home, go to school at home, and otherwise participate in their town is the new normal. Housing will need to be adapted to reflect these new market forces.



The Current Conditions

Single-Family and 2-4 Unit Housing

The Rockingham Grand List includes 1,681 residential properties that are single-family homes or small apartment buildings with 2-4 units. Approximately 66% of homes are owner occupied. Single-family homes are about 50% of all housing stock, and 2-4 unit apartments are approximately 30% of housing stock. About 40% of the single-family homes and nearly 90% of the small apartment buildings are in Bellows Falls. The buildings with 2-4 apartments are typically larger and have multiple bedrooms. These apartments are for families and unfortunately are not the studio or 1-bedroom apartments that are the most desirable in the current housing market.



There was significant housing construction in Rockingham during the 1970s and 1980s, but the town has averaged less than eight new homes per year since 1990. Nearly 70% of the homes in Rockingham were built before 1960 (this increases to 82% for homes in Bellows Falls). Every year, less than a half dozen new houses are constructed in Rockingham. Nearly all that new housing is outside Bellows Falls and Saxtons River villages. Housing inventory in the villages is further constrained due to the presence of vacant, abandoned, or deteriorated properties.

5+ Residential Unit Housing

The Grand List included 32 properties defined as commercial apartments. Less than 10% of Rockingham's housing is commercial apartments. This housing is primarily located in Bellows Falls because large apartments require municipal water and sewer service.



Rental Housing

About 35% of Rockingham's housing stock consists of rental units. Rental housing is concentrated in neighborhoods within Bellows Falls, comprising nearly half of all units. There was almost no change in the total number of rental units over the last 30 years. Residential market analysis reports that the most significant housing type shortage is the studio and 1-bedroom unit type. These are units for individuals or couples without children. Changes in land use regulations should facilitate building conversions that increase the supply of studio or one-bedroom apartment units.

Senior Housing

Approximately 25% of Vermont’s population is expected to be age 65 or older by 2030. The median age of Bellows Falls residents was slightly younger than in the town, which likely reflects the availability of affordable rental housing. Many of Rockingham’s seniors will want to “age-in-place” over the next 20 years. Some will stay in their current homes; many seniors will seek alternative housing that is smaller, more affordable, closer to services and public transportation, lower maintenance, and single-level with accessibility features. There is a limited amount of housing in Rockingham that meets those criteria.

Available senior housing in Rockingham includes:

- Canal House
- L&M Family Caregivers
- Riverview Apartments
- Sterling House



The community is reliant on seniors to “age-in-place.” A continuum of housing, from apartments to nursing homes, must be available to allow people to remain in the community as they age.

Special Needs Housing

It is crucial to provide transitional and permanent housing for people who have challenges, who may be in crisis, and in need of temporary support from their community. Special needs can include individuals or families that are victims of domestic violence, struggling with substance abuse, mental illness, or physical disabilities. It might also include individuals or families who were forced to evacuate unsafe housing or have suffered economic hardship.

Temporary Housing

The only local destination for temporary housing is an older motel just north of Bellows Falls Village. The motel rooms are small rooms with 1-2 beds, a modest bathroom, and no kitchen facilities. If the motel is over-capacity, people are transferred to similar places in Brattleboro and White River Junction. These motels are a significant distance for people with limited transportation. A motel, conceived of as a place for a traveling visitor to stay 1 or 2 nights, is not a place for families to wait weeks or months while searching for permanent housing. Motel housing is not helpful and its use is discouraged.

Downtown Housing

Bellows Falls is a Designated Downtown that concentrates land use density within a compact area. There are many options for transportation, parking, and a great variety of retail and social establishments within a walkable village center.

A vibrant downtown is critical for the future of Rockingham. Downtown needs to be many things to many people during the day and night. As most New England communities have learned to appreciate, the best balance for a vibrant downtown is to promote a mixture of residential and commercial uses.

Promoting mixed uses in the downtown will be a critical priority in future updates of the town's land use regulations. Historic places like the Howard Block on the Square, the Exner Block on Canal Street, and the Edward Arms Block on Westminster Street exist as grandfathered uses. People who live downtown tend to shop at stores, visit restaurants, go to the movies, and participate in civic events. Renovating these historic buildings is only possible when developers can demonstrate a mix of income streams from commercial and residential uses.

Mobile Home Parks

The town has 42 mobile homes in three mobile home parks. The average assessed value of a mobile home is approximately \$10,000. Two mobile home parks are privately owned; Windham Windsor Housing Trust owns the third.

Two mobile home parks are located within the flood hazard area. Mobile homes are at a greater risk of being swept downstream or substantially damaged during a flood. Most mobile homeowners cannot afford flood insurance. When losses occur, the expenses are borne entirely by the homeowner.

These mobile home parks existed before local zoning and state and federal regulations. It is unlikely they would be constructed today because of building and zoning codes. The age, quality, and condition of the infrastructure serving these mobile parks present a liability for park residents and the town. The Windsor-Windham Housing Trust has effectively managed its mobile home park, and there are no known liabilities. The other two Rockingham mobile parks are susceptible to flooding, aging infrastructure, and deteriorating mobile homes.

Energy Efficiency and Renewable Energy Production

Historic homes require immense resources to maintain. These houses are poorly sealed against the elements and have old heating systems, inefficient water heaters, antiquated electrical wiring, old appliances, and little insulation. Building inspectors routinely find knob & tube electrical wiring, old coal-fired boilers refitted to burn oil, and poorly sealed windows and doors. There is an environmental cost, but the greatest immediate threat is the financial liability for low- and middle-income families exposed to escalating electric and fuel oil bills.

While inefficient today's standards, Rockingham's housing was constructed before cheap energy and when people were attentive to the environment. For example, the average house built around the 1800s is ideally situated for solar power production. Back then, good sun exposure was vital when heating with wood to survive long, cold winters. Many historic homes can support rooftop solar to offset their electricity needs at a moderate expense.



Housing will play an essential role in creating the charging infrastructure for electric vehicles. While the town and a few major employers install charging stations, this is not scalable. Residential housing has to be where we build vehicle charging infrastructure as vehicles transition to electric.

State and federal public programs typically finance energy projects. Towns can also incentivize homeowners and landlords by using land-use regulations and tax policies to motivate investment. The following bullets provide a supporting explanation for energy-related recommendations.

- Do not tax energy efficiency. The increased property value associated with solar panels, water heaters, battery backups, and other investments does not have to be counted against the property owner during a reassessment.
- Consider low-interest loans using the town's revolving loan funds. This program can help relieve owners of high energy bills, and those energy cost savings can go to loan payments.
- Invest in the Windsor-Windham Housing Trust to promote energy-efficiency home renovation programs.
- Extend zoning waivers to homeowners and landlords that install solar panels and electric vehicle charging stations.
- Reduce minimum lot requirements in zoning districts with connections to public water and sewer—these aid developers in building net-zero homes or homes that meet Vermont's residential energy code standards.
- Energy efficiency upgrades are upfront expensive but have long-term payoffs. The town can incentivize building upgrades by allowing developers to increase the number of units, waive dimensional regulations. For example, convert old duplexes to multiple studios or 1-bedroom units. This addresses a critical housing need, and the additional units provide the income to pay off the investment.

Energy-efficient housing is poorly defined. Zoning waiver uses can stipulate specific minimum standards. The public needs to differentiate between replacing a light bulb versus a \$200k renovation to achieve a net-zero energy apartment with solar panels and electric vehicle charging stations. The town must discourage the former, while heavily incentivizing the latter.

Housing Affordability and Availability

The lack of affordable housing has been a statewide concern. It is a problem affecting low-income households and, increasingly, middle-income households. The state needs workforce housing, both

rental and owner-occupied housing stock. Towns that successfully address the housing shortage can retain and recruit new businesses.

The most affordable housing tends to be in the older neighborhoods in Bellows Falls. Converting rental units to medium-priced condominiums eases the predicament faced by young singles and families seeking to build equity and aging seniors wanting to maintain equity. These older neighborhoods are also where developers can convert two and three-bedroom units into studio and 1-bedroom units for more affordable rental housing. Transforming residential housing to meet market demand justifies building renovations and modernizing.

Working at Home

The rise in home occupations and businesses is a new trend. Arrivals come with their jobs or companies. They have children who either attend remote schools or transition to the local school system. How these individuals work remotely varies. A common option is to allocate a portion of an existing home for an office or production space. Another option is to construct an accessory building that hosts a workspace. Last, small numbers seek office space in the downtown or village centers. Mixing home with employment is fundamental to this shift in how we live and work. These arrangements also vary within a household as one family member may utilize a basement office, and another locates into a downtown office space.

Historically, the community has not allowed home occupations or businesses without stringent standards of local review and approval. That has served chiefly to drive these individuals underground. In 2022, practically all home occupations and home businesses operate without local zoning permits. They can do this precisely because they work absent public notice.

Substandard Housing

The condition and maintenance of residential properties, primarily in Bellows Falls, is an issue of community concern, as evidenced by the responses to the 2018 Rockingham Community Survey. The condition and maintenance of homes drive the perception that some neighborhoods are declining.

While there are many stable neighborhoods, there is evidence that neighborhoods that have transitioned away from homeownership toward rentals show signs of decline. Poor property management leads to the loss of neighborhood stability. Buildings that are allowed to deteriorate decline in value, depress the value of surrounding properties, and generally make a neighborhood less desirable. Residents who abut these deteriorated properties are distressed and often unable to enjoy their property, see the futility in investing in their own homes, and ultimately want to sell and relocate. In extreme cases, quality homes cannot sell at any price because the proximity to a dilapidated house discourages all buyers. Substandard housing disproportionately impacts these homes because the sights, smells, loud noises, nuisance animals, and other offensive behaviors are directly adjacent to them.

Older homes and neighborhoods need ongoing improvement and maintenance to remain desirable places. These homes require upgrades to make them more energy-efficient or remove hazards like lead-based paint. While buyers can purchase a home, they may not have the additional resources necessary to repair or maintain a backlog of deferred maintenance. The HUD Fair Market rates primarily drive rents in Bellows Falls. Many landlords believe that there would not be an adequate return on their investment at those rental rates if they made significant improvements. Additionally, landlords who receive fixed rents through state or federal programs have little incentive to improve buildings beyond minimum habitability standards.

Future Housing Needs

To strengthen Rockingham’s housing, we need a multi-faceted strategy to improve our neighborhoods and provide affordable, safe, economical housing. This includes, but is not limited to, improving roads and sidewalks, creating additional good job opportunities, managing crime, and continuing to improve and promote our excellent school system defined While Approximate.

With a limited number of virgin lots within Bellows Falls, to ensure the strength of our housing, we must explore ways to maintain and improve upon the current housing stock while looking at creative ideas to encourage infill housing development.

Bellows Falls has many older, large houses, and there is a potentially positive move towards incentivizing the rehabilitation of these older buildings. Rehabilitating these buildings into multi-family homes, duplexes, studio or 1-bedroom units, or condominium-type houses could help provide residents with clean, modern, and affordable living.



Photo credits: Elijah Zimmer, John Dunbar

6 Economy

6.1 Objectives

The following objectives are the Town Plan's obtainable targets for applying the Maintain | Evolve | Transform vision.

- Pursue local and regional economic development project priorities that grow the economies of Rockingham, Greater Falls region, Windham County, and Southern Vermont.
- Support the creative arts, community art, landscape-designed public spaces, modern streetscaping practices, and civic lighting and beautification projects.
- Embrace housing as an economic development engine for retaining and attracting businesses.
- Create incentives for developers to include tax stabilization or abatement policies, home-buyer programs, and energy-efficiency or renewable energy generation programs.
- Support the self-employed, a dominant force in our economy, by making home-based occupations and businesses a top economic development priority.
- Promote childcare and early education providers as crucial for modern families and a requirement in a healthy economy.
- Support diversified agriculture and tourism-based activities that allow local farms to remain economically viable.
- Create and maintain measurements for monitoring economic activity.

6.2 Maintain | Evolve | Transform

The Economy is divided into these three distinct categories. Community planners use a Maintain | Evolve | Transform vision to focus attention on planning priorities and define the degree of change required.

Maintain: Economic assets or policies that must be maintained and preserved for future generations.

- Infrastructure improvements to support existing businesses
- “Bellows Falls Designated Downtown”
- “Saxtons River Village Center” designation
- Vermont Route 103 corridor - valuable for tourist-based traffic

Evolve: Economic assets or policies that should change to acknowledge the realities of a 21st-century economy.

- Municipal policies and ordinances to be more supportive of existing businesses.
- Bellows Falls Neighborhood Historic District zoning to promote historic preservation while modernizing homes and providing greater housing choice.
- Public facilities to meet community, education, and economic development priorities
- Local farms and local agricultural products
- Rockingham’s creative economy to be used as a means to promote community and economic development

Transform: Economic assets or policies that have proven obsolete and need change.

- Economic data and reports that guide municipal projects and policies
- Town of Rockingham’s services to better meet the needs of citizens and landowners
- Land use regulations for licensed in-home childcare facilities
- Central Business (CB-7) and Central Business Expansion (CBE-14) zoning districts to include the Riverfront (RF-14) and the Industrial Districts (IND-14) (the Island).

- Participation in regional economic development initiatives and work to implement Southern Vermont / Windham County priorities that can directly benefit Rockingham.

6.3 Recommendations

These recommendations are how planners expect to implement the Maintain | Evolve | Transform vision and the Economy objectives.

- Publish a Development Office-sponsored annual report that quantifies economic performance in Rockingham. Present data in simple-to-understand formats for residents, businesses, community planners, and elected officials.
- Continue downtown revitalization efforts that specifically target building improvements and mixed-use development.
- Encourage redevelopment projects and promote mixed-use development in the Saxtons River Designated Village Center.
- Implement the Southern Vermont Comprehensive Economic Development Strategy Report.
- Participate in the Brattleboro Area Affordable Housing program and ensure Rockingham residents can access grants and financing to upgrade single, duplex, and multifamily housing.
- Participate in and promote housing programs that support investments in owner-occupied housing.
- Participate in regional economic development initiatives and work to implement Southern Vermont / Windham County priorities that can directly benefit Rockingham.
- Support VT Route 103 corridor businesses, like the Vermont Country Store, to capitalize on tourist-based traffic.
- Support individuals, private businesses, and nonprofit organizations that promote the creative arts and local agriculture.
- Seek Vermont Neighborhood Development Area designation for the Bellows Falls Neighborhood Historic District. Amend the zoning bylaws to restrict new construction that would degrade historic preservation in the Bellows Falls Neighborhood Historic District.
- Connect Central Business (CB-7) and Central Business Expansion (CBE-14) zoning districts to include the Riverfront (RF-14) and the Industrial Districts (IND-14) (the Island). These are interdependent districts that should have similar development standards.
- Amend the zoning bylaws to:
 - Make it easy for self-employed, independent contractors, and small business owners to work from home.
 - Increase housing densities to promote energy conservation and renewable energy production; eliminate excessive parking and other impervious surfaces; support public transit, bicycling, and walking; and increase landscaping and stormwater management.
 - Allow short-term rentals in all residential zoning districts.
- Amend the zoning bylaws and the 'Work within the public right-of-way' municipal ordinance to allow downtown businesses and civic functions to use the sidewalks, downtown parking lots, on-street parking spaces, and public lands.
- Implement a registration system for short-term rentals to create an analytical database to inform a short rental strategy.
- Evaluate the Bellows Falls Opera House main and lower theaters, the 2nd and 3rd-floor town offices, the Bellows Falls Fire/Police Department 3rd-floor classroom, and the Rockingham Recreation Center for community, school, and economic development projects.
- Work with interested parties/businesses and establish childcare or early education facilities on municipal property (surplus lands or an existing building).
- Promote in-home childcare and early education services by offering revolving loan funds, surplus town property, and property use agreements at town facilities.

- Amend land use regulations to allow licensed childcare facilities in all residential and commercial zoning districts.
- Implement the recommendations of the Bellows Falls Island and Under The Hill Brownfields Area Wide Plan.
- Understanding the Town of Rockingham is itself a business, and town services will modernize to better serve citizens and landowners. Continue one-stop-shop development review and approvals, create online-based bill payment and permitting services, and publish digital town records online.

6.4 Background

The early European settlers built agricultural settlements, and the Village of Rockingham loosely surrounded the historic Rockingham Meeting House. With significant waterpower available, Bellows Falls and Saxtons River villages eventually became the focus of entrepreneurial and economic activity. The narrowness of the river at the Great Falls in Bellows Falls made it the ideal location for the first bridge across the Connecticut River. The Tucker Toll bridge, which opened in 1785, connected New Hampshire and Vermont, facilitating trade to Montreal and other northern destinations. The Great Falls also provided an excellent power source, and it ran water wheels for the many mills built in Bellows Falls in the 18th and 19th centuries. Today it provides hydroelectric power. Operated by Great River Hydro, LLC, the power generated is sold on the regional market, primarily to areas in the south of our region. Later in the 19th century, Bellows Falls became an essential hub for rail traffic in New England, leading to a boom in industrial manufacturing and the economy.

6.5 Current Conditions

The industrial and transportation economic heydays of the past left the two principal villages with a collection of old mills with contaminated soils and hazardous materials, providing the opportunity for Brownfield Area-Wide Plans and redevelopment. The Village of Bellows Falls still functions as an employment center in the region due to the availability of land, access to transportation routes, and municipal infrastructure suitable to support small-to medium-scale manufacturing and other businesses. Nonetheless, Rockingham's total labor force has declined in total numbers over the last 30 years.

Employment Data

As of 2022, there are 1,871 total jobs in Rockingham. Private employment counted at 1,451 jobs which primarily include construction (520 jobs), manufacturing (459 jobs), and retail (371 jobs). Public employment, a combination of federal, state, and local government provides 420 jobs. The total represents a loss of about 330 jobs in just five years.

Employment data for land use and housing is underreported or allocated to other categories. For example, a professional services employee is counted in that category regardless if they are working at a business or at home. The town will need to do community surveys to collect data on people who live and work from home.

In this rapidly changing economy, economic data must be current. Elected officials and citizen planners make decisions that have real economic development consequences. Regular feedback using economic data will inform and guide future decisions. Town plans are updated on an eight-year cycle and will lack current economic data. Annual reporting is a more appropriate tool for understanding economic activity.

Child Care

There are two ways to consider childcare's contribution to a healthy economy. First, childcare in the early years, from infancy to preschool, is critical for learning, building skills, and socialization. People who receive high-quality childcare mature into more prosperous and resilient adults. Supporting early development is essential for preparing the next generation to enter the workforce.

Second, working parents depend wholly on childcare providers to care for their children in their absence. A lack of quality childcare forces families to choose between staying home or working. Companies find it impossible to recruit professionals for the lack of childcare. Sometimes, working parents commute to childcare providers in Claremont, Keene, or Charlestown. More often, working parents and their families, who could be the lifeblood of this community, relocate to other towns with adequate childcare.

The state maintains the Vermont Bright Futures Child Care Information System website. In 2022, there were five licensed childcare providers with a total capacity of 73 children. These are licensed capacities and do not reflect enrollment numbers, usually lower because of staffing limitations. The 2020 census estimates 225 children aged 0-5 reside in Rockingham, giving the average family a 30% chance of getting childcare. This is consistent with childcare facilities' estimates of having five children for each available slot. The lack of childcare providers is a severe challenge.

Short-term Rental Housing

It is impractical to develop a tourism economy when there are few places to stay. There are no hotels. There are few inns or bed and breakfasts. The attempts to locate a new hotel have not succeeded because hotels require a larger market to operate profitably.

In 2022, approximately 50 rental properties are listed in online marketing services. These rooms, apartments, and houses were rented for vacation lodging, homestays, and seasonal rentals. The total numbers fluctuate seasonally, and the online services fail to capture the total volume of rental activity in town. The town's zoning does not address short-term rental housing directly, so the current rentals operate within a gray area. If zoning addressed short-term rental housing, more inventory could potentially exist.

Taxable Properties

Vermont uses taxes raised from property values to fund schools and local/state governments. A sales tax impacts everyone equally; economists refer to this as a regressive tax. Property taxes are generally proportional to an individual or family's level of wealth; that is a progressive tax. The 2022 grand list represents 2,268 individual taxable properties. Those properties collectively represent 568 million in total taxable value. This is the 4th consecutive year the grand list has increased in total value.

Planners have increasingly paid attention to the types of development that favorably contributes revenue to the town in the form of taxes. The local pizza shop on .08 acres or the 3 unit condominium on .25 acres can bring 3-7 times the revenue of a retail store on 3 acres, an industrial business on 10 acres, or a single-family residential home on 20 acres in rural Rockingham. As the town considers land use decisions that impact the tax base, promoting revenue generating development will offset the overall tax burden for all residents.

Self-Employed

The role of the self-employed, independent contractors, and even work-at-home employees has grown exponentially over the last two decades. Few town plans address this, and few available statistics exist. Unlike other rural towns, Rockingham has excellent access to high-speed internet, and the downtown,

villages, and hamlets are attractive places to live and work. It is critical housing policies make it easier for home occupations and businesses to operate. It is essential to quantify the extent of partial or full self-employed individuals.

Agriculture and Forestry

Outside Bellows Falls and Saxtons River, Rockingham is primarily a rural town with a working landscape that supports agriculture and forestry businesses. Approximately 55% of the land in Rockingham is farm or forest land enrolled in the Vermont Current Use Program.

Vermont Current Use Program

The Current Use program is a powerful economic tax incentive to keep Vermont rural. Owners of enrolled properties gain a substantial tax break in exchange for adhering to professionally managed land for forestry and farming purposes. Rockingham gets reimbursed the difference (highest/best use of land versus the agricultural value use of land) by the state for those taxes exempted for the property owners. To learn more, visit the Vermont Agency of Administration, Department of Taxes website that explains the current use program.

The program impacts forestry and farming in the following ways:

Forestry: Requires licensed foresters to establish Management Plans for sustainable, productive logging. The trucking of logs is economical and convenient due to good roads – wood processing plants operate on VT Route 103 for similar reasons. A forestry practice, maple sugaring, has increased as existing farms diversify.

Farms: Requires the land to be actively farmed with crops or animals. There are also tax exemptions for agricultural buildings, such as barns, used for farming. The tax incentive reduces the cost of farming large tracts of land, discouraging subdivisions and development.

Farms and Food Production

The grand list had 12 farms in 2000, whereas in 2021, there were four farms. The two dairy farms two decades ago converted to beef farms. Many hay and corn fields produce feed for dairy farms operating in Westminster, Walpole, and other towns.

While open land is abundant in Rockingham, highly productive tracts of agricultural land are scarce. The limitations of steep slopes, vulnerability to flooding, and the attraction of developing residences are essential factors regarding the future use of agricultural land. The Stickney Farm is the only farm in active conservation. However, acres that are productive for corn and vegetables are not conserved. The productive acres for food crops are small but necessary to protect future food security.

The diversity of food production in Rockingham has notably increased. Whereas in the latter decades of the 1900s, the focus of economic farm activity was primarily dairy farms, plus some beef and orchard, there is now a growing diversity of small-scale active use of land for mixed fruits, vegetables, chickens, pigs, and more.

There are numerous smaller homesteading farms that, although not the primary income source for their operators, are sustaining Rockingham's rural character and way of life. Some sell their products in downtown Bellows Falls at the Farmers Market weekly from June through October, augmented by occasional holiday markets held indoors in the winter. There are numerous other day markets in

surrounding towns, including a winter Saturday market in Brattleboro. Vermont’s local and artisanal food network is an important economic development engine that attracts people to this area.

The picturesque landscape and relative proximity to major urban centers present opportunities for tourism ranging from working farm and maple syrup tours to hiking and river trips. The accessible mountains throughout the region are a popular destination for autumn visitors, locally known as “leaf-peepers.”

Commercial and Industrial Land

Within the compact Villages of Saxtons River and Bellows Falls, there is room for commercial and retail expansion but little in the way of locations suited and zoned for heavy manufacturing. There are several unused former manufacturing buildings in Bellows Falls. The expense of environmental clean-up and structural rehabilitation has prevented most of them from being put to reuse. These legacies of Rockingham’s past could be assets but funding the revitalization of historic buildings requires creativity and resources.

Industrial development occurs on lands adjacent to VT Route 103 and US Route 5. Rockingham has a modern industrial park with public services on US Route 5 near the interchange. The town’s major manufacturing employers operate there.

Island Mixed Use

At the center of the Island, the Robertson Paper Mill was demolished, and the soil contamination was remediated. This presents a significant redevelopment opportunity for the entire island. The Bellows Falls Island Area Wide Plan (2022) provides community-supported recommendations for redeveloping the Island and properties directly adjacent to the Hydroelectric power.

Rockingham and Creative Arts

The creative economy contributes to Rockingham’s quality of life and a growing economic engine. Businesses that capitalize on the Vermont brand to create cultural goods and experiences have been attracted to our town because of our comparatively affordable housing and low-cost commercial spaces. Groups like the River Artisans Cooperative in Bellows Falls have provided retail space for local artisans. Nonprofit organizations such as Main Street Arts in Saxtons River and Wild Goose Players in Bellows Falls bring high-quality visual and performing arts to the community. Our restored and updated 1926 Opera House is an increasingly popular venue for homegrown and out-of-town live entertainment. In other cases, commercial businesses and farms employ the creative arts to define their brand. An example is a 30-foot-tall mural in downtown Bellows Falls commissioned by Wunderbar Restaurant. As Rockingham’s creative economy grows and flourishes, the community and economy benefit greatly.

Downtown as a Public Space

Thriving downtowns all share the same characteristic of placing people first and vehicles second. We must recognize that downtown is a center for economic, civic, social, and cultural activities. To be a people-first downtown, this community must view the Square and adjacent streets as activity destinations rather than travel corridors. With its streets, sidewalks, parking spaces, and buildings, the downtown should be a community destination that attracts people to visit our businesses and civic institutions.

Downtown sidewalks, on-street parking spaces, bump-outs, parking lots, and parks can be re-appropriated for public outdoor gathering spaces. Using public spaces was first accomplished during

the pandemic when the Governor’s executive orders constrained building occupancy rates and forced businesses to operate outdoors. The outdoor gatherings did not conflict with traffic or parking demands.

The Designated Downtown area is defined as the Square, the Island, Bridge Street (Square to the Connecticut River on Vilas Bridge), Westminster Street (Square to Hapgood Street), Canal Street, Depot Street, and Rockingham Street (Square to Williams Street). To the north and south, those areas called Downtown Expansion districts, the roads return to transportation corridors that balance mobility with land access (See Map).

6.6 Economic Resources

The Rockingham Development Office administers many different economic development projects, including:

- Tax Stabilization program - property owners can receive a reduction in their municipal property taxes for up to 5 years when they open a new business or improve commercial/industrial property.
- Revolving Loan Fund – businesses can get town loans of up to \$50k for projects demonstrating job creation or employee retention.
- Housing availability is now a crucial resource for rebuilding the workforce. As part of the revolving loan fund, there are \$5,000 loans for Income restricted owner-occupied 2–4-unit housing improvements and \$50,000 unrestricted owner-occupied housing improvements.

Brattleboro Area Affordable Housing is a non-profit organization serving Windham County. This organization provides grants and financing to keep rental housing apartments in owner-occupied buildings. The Bellows Falls Area Development Corporation partners with the town to secure state and federal funding and with the Vermont Economic Development Authority to redevelop commercial and industrial properties and industrial parks.

The Sustainable Valley Group (partnered with the Vermont Economic Development Authority) maintains incubator facilities for business start-ups and expansions. It recently purchased the Wyman Flint Building to redevelop this historic building.

The Bellows Falls Downtown Development Alliance is the local economic development organization that manages the Vermont-designated Bellows Falls downtown program. Vermont's downtown designation benefits are significant with direct funding, loans, tax relief, and prioritizing publicly funded capital projects. Rockingham needs to maintain Bellows Falls as a designated downtown.

Recently a new designation program was created for residential neighborhoods within walking distance of a designated downtown. The program is called Neighborhood Development Areas, and it supports smart-growth and current housing policies.

Saxtons River is a Vermont Designated Village Center. Village Centers are eligible for many of the same grants as the downtown designation program. Saxtons River’s village center designation is crucial for property owners to reinvest in their buildings and businesses.

Rockingham also benefits from regional and state agencies and organizations that support Rockingham’s economic development. The Brattleboro Development Credit Corporation (BDCC) attracts and retains businesses in southeastern Vermont. Their services include building site selection, business planning and start-ups organizing, marketing, financing, assisting with regulations and permitting, and coordinating workforce development. The Southeastern Vermont Economic Development Strategies works with the Federal Economic Development Authority (EDA) to adopt a 5-year Comprehensive Economic Development Strategy (CEDS) every 5-years. Annually, the Town and Local Development Corps submit projects to the CEDS, and they become eligible for EDA Public Infrastructure Grants.

7 Historic Resources

7.1 Objectives

The following objectives are the Town Plan's obtainable targets for applying the Maintain | Evolve | Transform vision.

- Recognize that Rockingham is a place of continuous human habitation for 12,000 years, mindful of the Indigenous presence of the Abenaki people in the regional historic landscape.
- Preserve the historic buildings, farms, fields, stone walls, and overall rural character of the community.
- Preserve the historic and architectural character of the villages of Rockingham Center, Bellows Falls, and Saxtons River, the hamlets of Cambridgeport and Bartonsville, and Brockway's Mills, and the town, state, and National Register designated historic districts.
- Encourage the preservation, restoration, rehabilitation, repair, and adaptive reuse of historic houses, outbuildings, barns, commercial and industrial buildings, and bridges.

7.2 Maintain | Evolve | Transform.

Historic Resources is divided into these three distinct categories. Community planners use a Maintain | Evolve | Transform vision to focus attention on planning priorities and define the degree of change required.

Maintain: Historic assets or policies that must be maintained and preserved for future generations include but not limited to:

- Rockingham Town Hall.
- Rockingham Meeting House.
- Petroglyph site and historic waterways
- Town cemeteries
- Adam's Grist Mill
- Bellows Falls Union Train Station
- Waypoint Welcome Center Exhibits

Evolve: Historic assets or policies that should change in acknowledgment we know more about our history and historic preservation, and we want to use this knowledge to adapt our historic resources to meet modern demands.

- The Miss Bellows Falls Diner
- Hotel Windham
- National Historic Districts Boundaries (listed in chapter).
- Incorporating the Historic Preservation Commission into development review and approval.
- Incorporating historic preservation, particularly stone walls protection, in all public and private construction projects.
- Incorporating historic preservation awareness and best practices into all public and private construction projects.

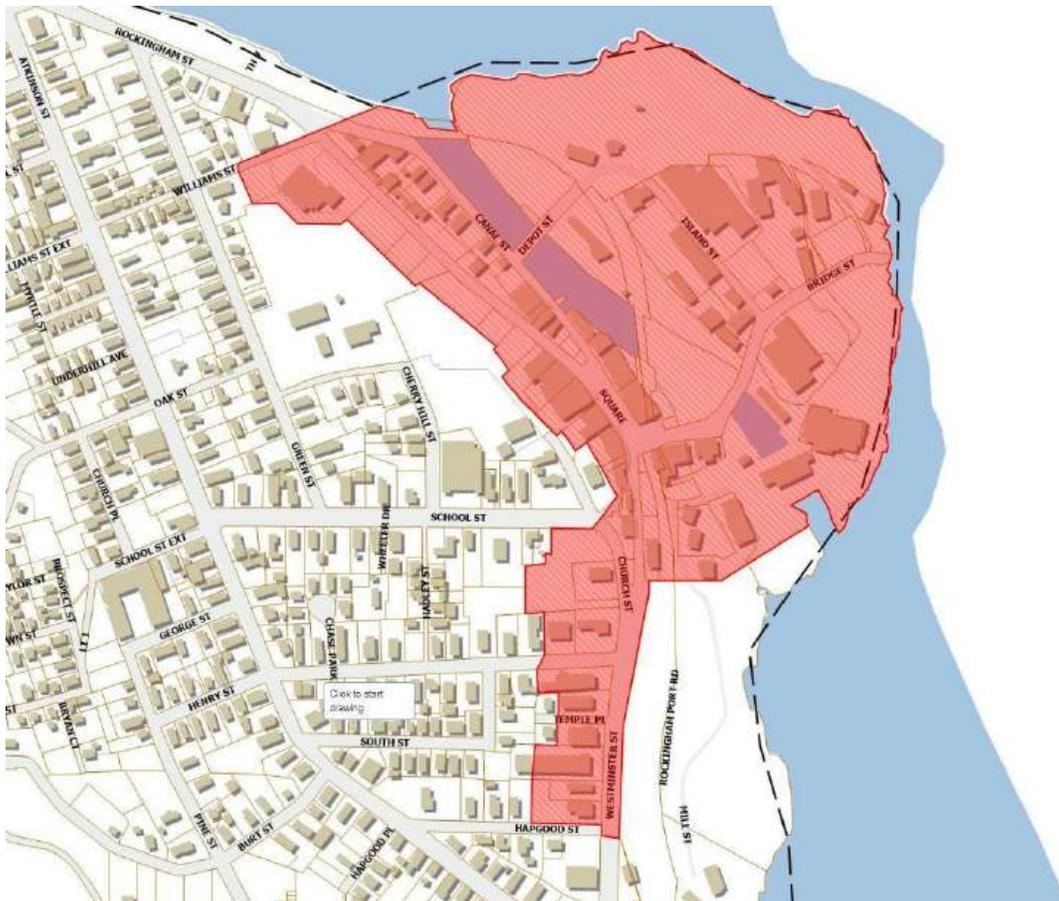


Figure 3: Designated Downtown

Transform: Historic assets or policies that need to change.

- Implement the Kchi Pôntegok project and place the petroglyphs on the national register of historic places.
- In consultation with the Elnu Abenaki and the Historical Commission design a safe and respectful observation area to view the petroglyphs
- Incorporate the Indigenous voice in multiple aspects of decision making and historical interpretation.
- Facilitate the formation of an Abenaki cultural center
- Incorporate the Historic Preservation Commission into development review and approval.
- Development of the Connecticut River Cultural Heritage Center.

7.3 Recommendations

These recommendations are how planners and historians expect to implement the Historic Resources objectives and the Maintain | Evolve | Transform vision. These recommendations guide historic preservation activity for the next 5-7 years and beyond.

- Maintain the Rockingham Meeting House maintenance plan and proactively address needed restoration and conservation projects in a timely manner.
- Enhance historic preservation awareness by supporting property owner preservation work through consultation and educational programming.
- Maintain the Old House Awards program as an event that directly promotes historic

preservation.

- Expand historic district and property nominations for the town, state, and national registries. Refine historic districts where necessary to ensure district boundaries encompass the actual historic resources.
- Use GIS mapping to highlight historic resources and educate citizens, developers, and municipal officials.
- Further efforts to preserve cemeteries and graveyards.
- Advocate for the repair/restoration/preservation of historic structures composed of dry-stone wall construction; farmhouses, barns, bridge abutments, and stone walls with matching historic methods and materials.
- Engage the Historic Preservation Committee in all development review and approval projects that are contributing structures in national registers of historic buildings or places.

7.4 Background

Our region has a long history of human habitation, estimated to reach back some 10,000 to 12,000 years as the glaciers receded and Lake Hitchcock drained into the sea. The settled indigenous settlements are documented along the course of the Connecticut (formerly called the Quinetucket) River, with villages and burials near the river's narrowest part. In the language of the Abenaki this place is called Kchi Ponteguk. Rock carvings etched circa 1000 CE mark the gateway, to this day a place of great spiritual significance and pilgrimage for Indigenous Abenaki communities. It is said fish were plentiful and the earth rich. Paths following the Quinetucket connected Skitchawaug and other villages to the north and Wantastegok to the south.

Euro-American penetration of our region began only in recent memory. Rockingham was chartered in 1752 and settled in 1763 on a hilltop mapped near the geographic center of the town, and also along the fertile upper meadows along what the Euro-American settlers recast from Indigenous language, the Connecticut River. From Rockingham Village and City Dale as the Euro-American population grew, the villages of Bellows Falls and Saxtons River and the hamlets of Cambridgeport, Bartonsville, and Brockway's Mills evolved. The land was abundant with natural resources.

Memory of this storied past must be preserved in the landscapes of the heart and mind, of what we see and where we live, from the bottom up and from the top down, and through the eyes of all in our community. Seen in this light history becomes a way of learning where memory balances who we have been with who we want to become.

Rockingham Historic Preservation Commission (CLG)

In 1987, Rockingham became one of the first three Vermont communities to form a Certified Local Government Commission (CLG). A few years earlier the National Park Service created the CLG program to empower local communities to identify and protect historically significant local buildings and landscapes of historical significance. In addition to local community control of our historic character, as a CLG the Town benefits in several ways. The CLG Program provides financial support for communities wishing to maintain their historic character. The day-to-day work is done by a part-time town staffer who coordinates CLG programs. The CLG represents all facets of the community and manages inclusive programming. Activities include:

- Advises the Town, local historical societies, and individuals on strategies for using historic resources to promote economic and community development.
- Manages a speaker's program which is a series of public presentations and discussions interpreting historic contexts to enhance community memory and awareness of the human landscapes of Rockingham's villages, hamlets, and rural spaces
- Runs Historic Homes Workshops to bring historic preservation experts to Rockingham to speak about and/or demonstrate aspects of historic home and landscape maintenance and

repair/restoration

- Coordinates the Old House Award program to recognize Rockingham;s commercial and residential property owners who have conducted exemplary exterior renovations and/or maintenance that preserves or enhances historic preservation.
- Oversees the curatorial and management responsibilities of the Rockingham Meeting House, advising the Selectboard on needed preservation projects.
- Maintains Town records and the database of historic districts and individual properties for National Register of Historic Places, Vermont State Register of Historic Places, and Town of Rockingham Register of Historic Places and Sites.
- Advises the Town and individual property owners about tax credit and other grant programs that incentivize historic preservation.

The CLG program is funded by the National Park Service and the Vermont Division for Historic Preservation. Administrative and project grants from these federal and state sources provide the capacity to implement the CLG program.

7.5 Historic Districts

Rockingham has a few National Register Historic Districts including almost Saxtons River Village, much of downtown Bellows Falls, Rockingham Village, the industrial “Island” area, and rural Parker Hill (in Rockingham and Springfield). The Bellows Falls Neighborhood Historic District includes a large residential portion between Center Street on the west, School Street on the north, Westminster Street on the east, and Westminster Terrace on the south. The Bellows Falls Neighborhood district recognizes the wealth of significant Victorian homes in a portion of the village which has seen little intrusion of incompatible architecture. In 2010, the Westminster Terrace District, the Williams Street Extension District and the George-Pine-Henry Street District were entered on the National Register. There are several structures which have individual designation including the Rockingham Meeting House, and the Miss Bellows Falls Diner. The following are Rockingham districts and sites on the National Register of Historic Places Districts and Properties:

- Bellows Falls Downtown Historic District
- Bellows Falls Island Multiple Resource Area
- Bellows Falls Neighborhood Historic District
- Bellows Falls Neighborhood Historic District
- George - Pine - Henry Historic District
- Parker Hill Historic District
- Rockingham Village Historic District
- Saxtons River Historic District
- Miss Bellows Falls Diner Historic Site
- Oak Hill Cemetery Historic Site

The following are historic districts and sites designated by the Town which are not on the NRHP:

- Meeting House Historic District
- Immanuel Episcopal Church and Cemetery Hetty Green Burial place, Church Street, Bellows Falls
- Site of First Protestant Worship Service in Vermont Territory (1704) Junction of Route 5 and 103 - Stone & brass marker

- Site of First Minister's House, Whiting Town Highway, off Route 103, Rockingham
- Stone Railroad Bridge Over Connecticut River Bridge Street, Bellows Falls
- City Dale - Upper Meadow Road Neighborhood off Missing Link Road
- Saxtons River Historic Museum Main Street, Saxtons River
- Stone Arch Bridge, west of Route 5 & south of intersection with Route 103 (near pull-off)
- Town cemeteries
- War Memorial by James Novelli, Hetty Green Park School Street, Bellows Falls
- Vermont Academy Campus
- Bartonsville Hamlet Historic District
- Cambridgeport Hamlet Historic District

Reports for these districts and historic sites are archived by the Library of Congress and available on the town's website.

The Meeting House Historic District, which exemplifies historic preservation, is regulated by the Rockingham Zoning Bylaw. The Downtown Design Review District, a zoning overlay district, also places focus on the historic value of buildings and the preservation of the architecture. The town acknowledges more is needed to integrate historic preservation in development review.

7.6 Historic American Building Survey (HABS)

The Historic American Buildings Survey is the nation's first federal preservation program. Formed in 1933 by a consortium of the American Institute of Architects, the Library of Congress, and the National Park Service, HABS provides a comprehensive and continuous national survey of historically significant buildings throughout the United States. Rockingham has three buildings surveyed and archived in HABS:

- Elias Olcott House (1763)
- Pulsipher Tavern (1765)
- Rockingham Meeting House (1787)

Reports for these buildings are archived by the Library of Congress and available on the town's website.

Rockingham Meeting House

Built by the town between 1787-1800, the Rockingham Meeting House National Historic Landmark is crucial to the town's economic and community development. The town is committed to heritage and historic tourism as a local economic driver. The current conservation and restoration work is a collaboration between the town through the Rockingham Historic Preservation Commission and the Rockingham Meeting House Association, a 501(c)3 non-profit community-based group.

The timber-frame meeting house requires continual conservation and restoration work using a professionally developed maintenance plan. The town funds these projects, but funding does not keep pace which creates a project backlog. The result has been more costly interventions to repair and even replace historic building elements that would not be required if regular maintenance was done in a timely fashion. Similar to every homeowner's goal, the town is striving to address the deferred maintenance and reduce overall expenses by staying current with maintenance activity.

Bellows Falls Petroglyph Site

The petroglyphs are rock paintings located along the Connecticut River directly adjacent to the Island and the Vilas Bridge. For the Indigenous Western Abenaki of the mid-Connecticut River Valley, petroglyph sites are sacred, regarded as the nexus of their historical and modern social and spiritual realms. Kchi Pôntegok is important to the Western Abenaki due to its location overlooking a turbulent set of falls, extensive Indigenous burial grounds directly adjacent (west) of the petroglyphs, and several nearby habitation sites. There are few petroglyph sites identified in the northeastern United States, and the

anthropomorphic designs present at Kchi Pôntegok are particularly important because they (1) are associated with a set of natural falls, (2) contain a “horned-head” design that may correlate with other shamanistic motifs identified elsewhere in the Northeast, and (3) may convey information about group identity and territory boundaries, ideology, social structure, and other cultural elements.

In 2022 the Town of Rockingham was awarded a National Park Service Underrepresented Communities grant. In the language of the Indigenous Western Abenaki Kchi Pôntegok (pronounced kit SEE POHN tuh guk) means "at the Great Falls," hence inspiring the name of the Kchi Pôntegok project. This conservation project between the Abenaki Elnu Tribe and the Town of Rockingham seeks to affirm the sacredness of the Bellows Falls Petroglyph Site along this section of the Connecticut River, address cultural representational inequalities, and include the petroglyphs on the National Register of Historic Places.

Historic Preservation Activities

Effort has been made in the past to identify, protect and preserve important historic sites, and this work must continue. The community is interested in preserving and promoting its significant historic resources, architecture, and sites as an important record of its heritage. Several buildings and sites within the town have undergone work in the past few years which has added to and preserved the historic quality of the community.

Older historic buildings were constructed prior to the enactment of modern zoning and building codes. Adaptive reuse of historic buildings is critical if we expect these buildings to remain occupied, maintained, and preserved for future generations. These codes should promote flexibility in building rehabilitation and restoration projects. For example, the old Rockingham Hotel on Rockingham Street was renovated to be senior housing which is now called Canal House. Other buildings, which once housed industrial uses, have been converted to commercial use. Development that proposes to reuse historic buildings should be encouraged, if compatible with the neighborhood in which the property is located.

The community recognizes historic resource sites other than buildings. These include the cemeteries in the Town at the Meeting House, Oak Hill, Restland (the Old Catholic Cemetery), the Immanuel Episcopal Church, Saxtons River, and Cambridgeport.

Smaller cemeteries are also important, and these include small sites on the Cambridgeport Road, Williams Road, off Randall Hill Road and Upper Bartonsville Road. The Rockingham Meeting House was used originally as both a house of worship and the town’s public meeting building. While the Old Congregational Church (now the Saxtons River Historical Society) on Main Street in Saxtons River and Christ’s Church are within the Saxtons River National Register of Historic Places District, other older churches have not been included. These include the Immanuel Episcopal Church, St. Charles Church, and Sacred Heart Church all within Bellows Falls.

Historic Societies and the Four Museums

The Town has three active historical societies including the Rockingham Meeting House Association, the Bellows Falls Historical Society, and the Saxtons River Historical Society. The last operates from an old church on Main Street, Saxtons River, and showcases a different exhibit annually. The Bellows Falls Historical Society operates the Adams Grist Mill, an intact showcase of old grist mill machinery as well as collections of other local historical artifacts. The Meeting House Association focuses on the Rockingham Meeting House.

The Rockingham Free Public Library is a rich resource for local history research providing historic maps, cataloged photographs, a genealogy research collection, microfilm of historic newspapers, and a

collection of objects specific to Bellows Falls, Rockingham, and surrounding areas. The Library also provides local history education programs, information for displays and written material, as well as reference services to assist and support local history research. The Library hosts genealogy workshops and provides genealogy reference services and research support to the local community and to individuals who send inquiries by mail or email. The Rockingham Free Public Library is a repository for all the applications for National Register status. Additional information on the Rockingham Free Public Library is detailed in the Facilities and Services chapter.

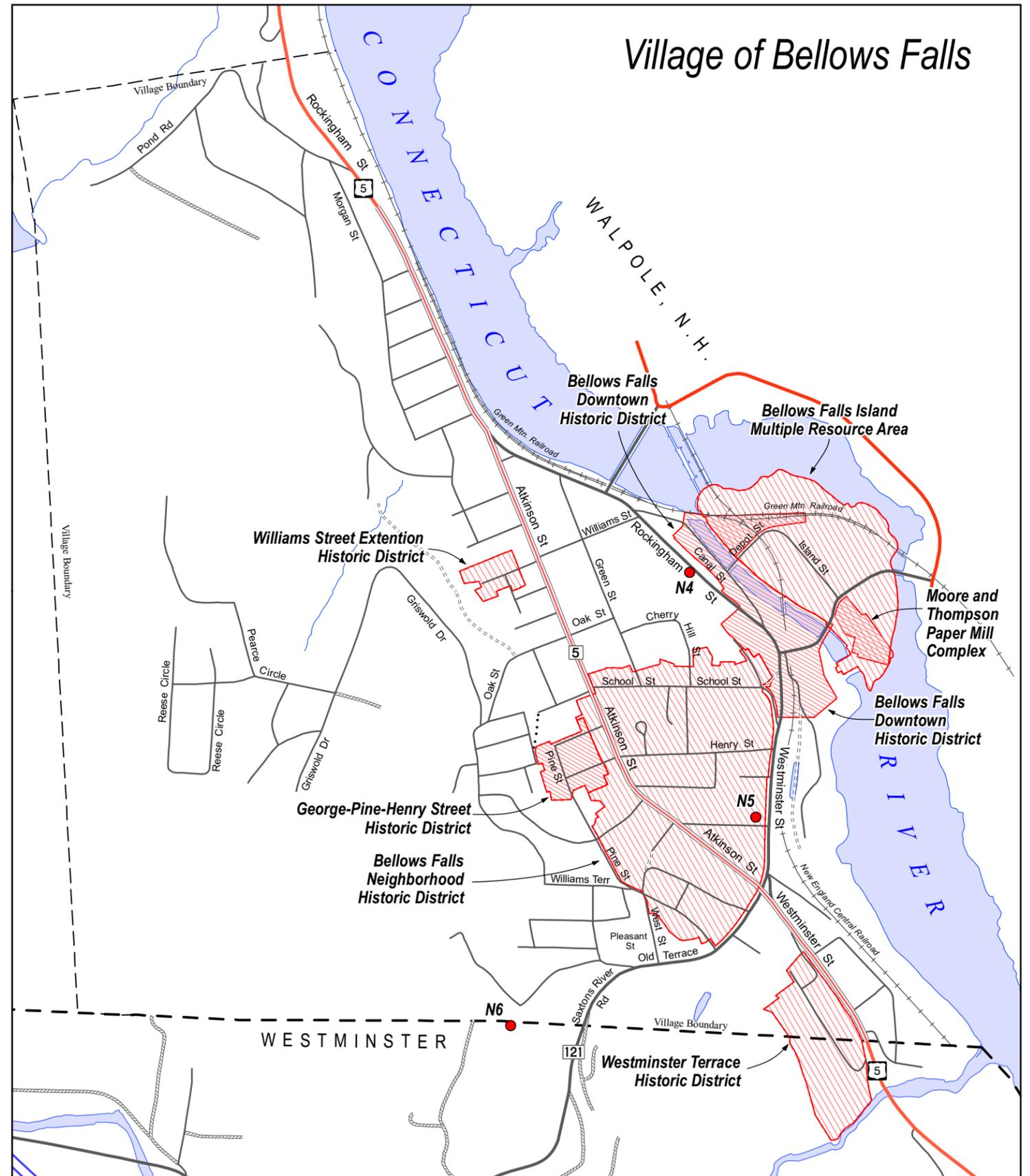
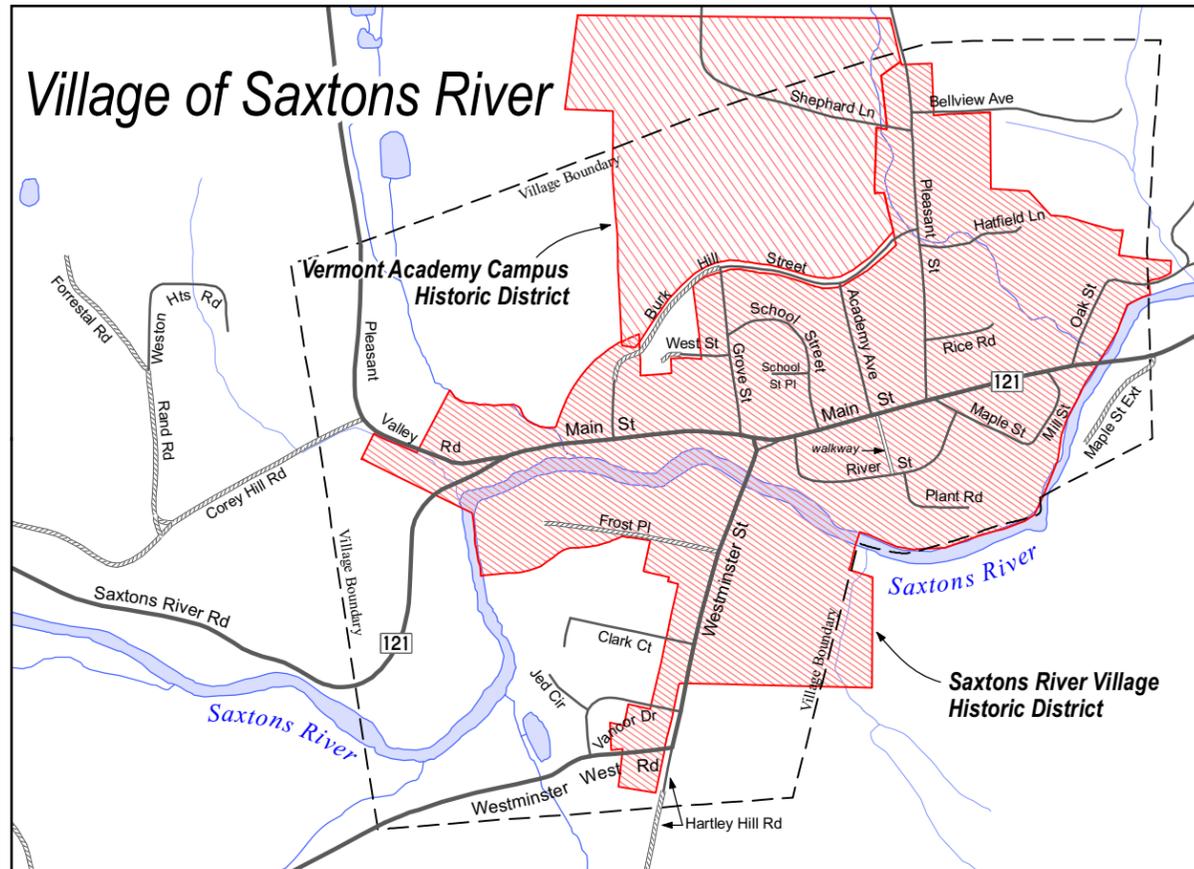
Connecticut River Heritage Center

The Connecticut River-Great Falls Heritage Center was constructed in 2002 with a focus on the history of the Euro-American community. The Center interprets, celebrates, and promotes the region, community, and the Connecticut River history, culture, environment, industrial growth, recreational opportunities, and the role of the arts. It does this through the restoration, preservation, and revitalization of the existing TLR site and structures and by telling the stories of those whose lives touched this place. The Center has served as a catalyst for the continued revitalization of the community, and as a vehicle for job creation. Accomplishments include the Bellows Falls Historic Society's stewardship of the Adams Grist Mill and the Bellows Falls History Trail "Under the Hill"; expanding the sense of industrial place such as adaptive re-use of the Bellows Falls Union Station; creation of the Connecticut River Byways Waypoint Center as part of the Transportation Gateway to Bellows Falls; and development of Walkable Rockingham.

Historic Sites - National Register

Bellows Falls & Saxtons River, Vt.

2024 Town Plan



National Register Historic District

National Register Individual Property

- N4 Miss Bellows Falls Diner
- N5 William Hall House
- N6 Oak Hill Cemetery Chapel

Data sources:

- National and State Register places were inventoried by Paula Sagerman, Historic Preservation Consultant, and the Town of Rockingham's Historic Preservation Commission Coordinator.
- District boundaries and property locations were determined by Windham Regional Commission using official descriptions of the boundary in conjunction with Vermont digital orthophotos, Rockingham parcel data, surface waters data, and other GIS data.

WINDHAM REGIONAL COMMISSION

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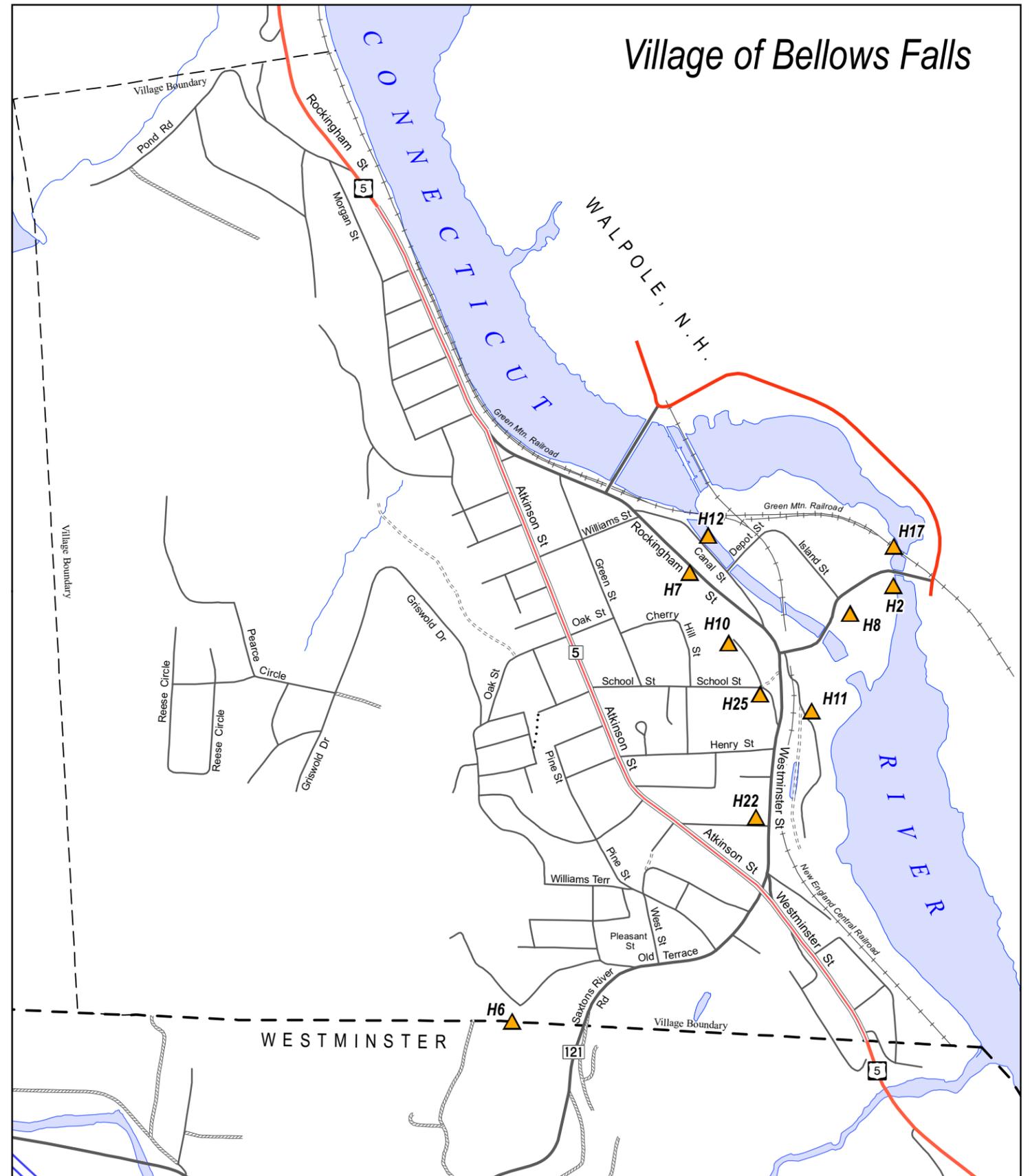
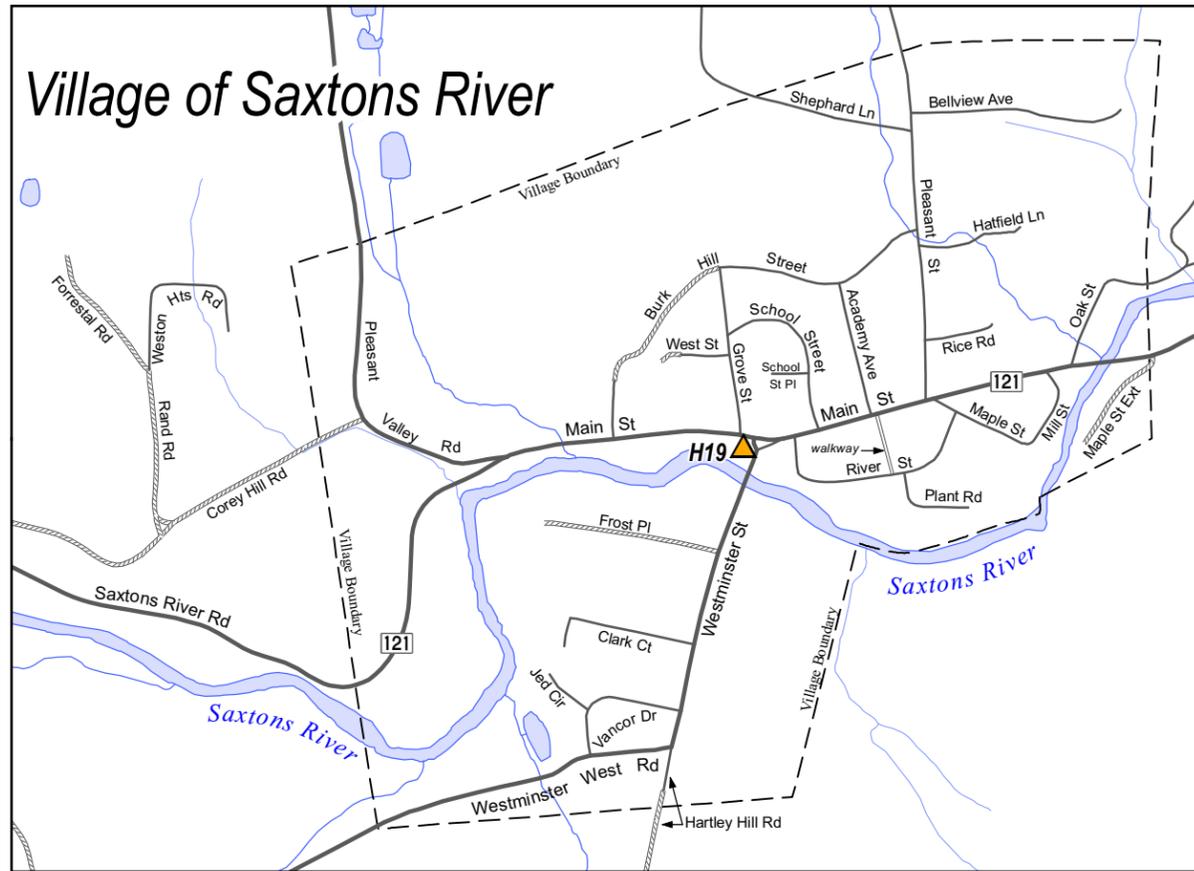
Figure 5: National Register BF & Saxtons River Historic Sites

Scale 1:12,000

0.25 0 0.25 0.5 Miles

Historic Sites - Town-Designated Bellows Falls & Saxtons River, Vt.

2024 Town Plan



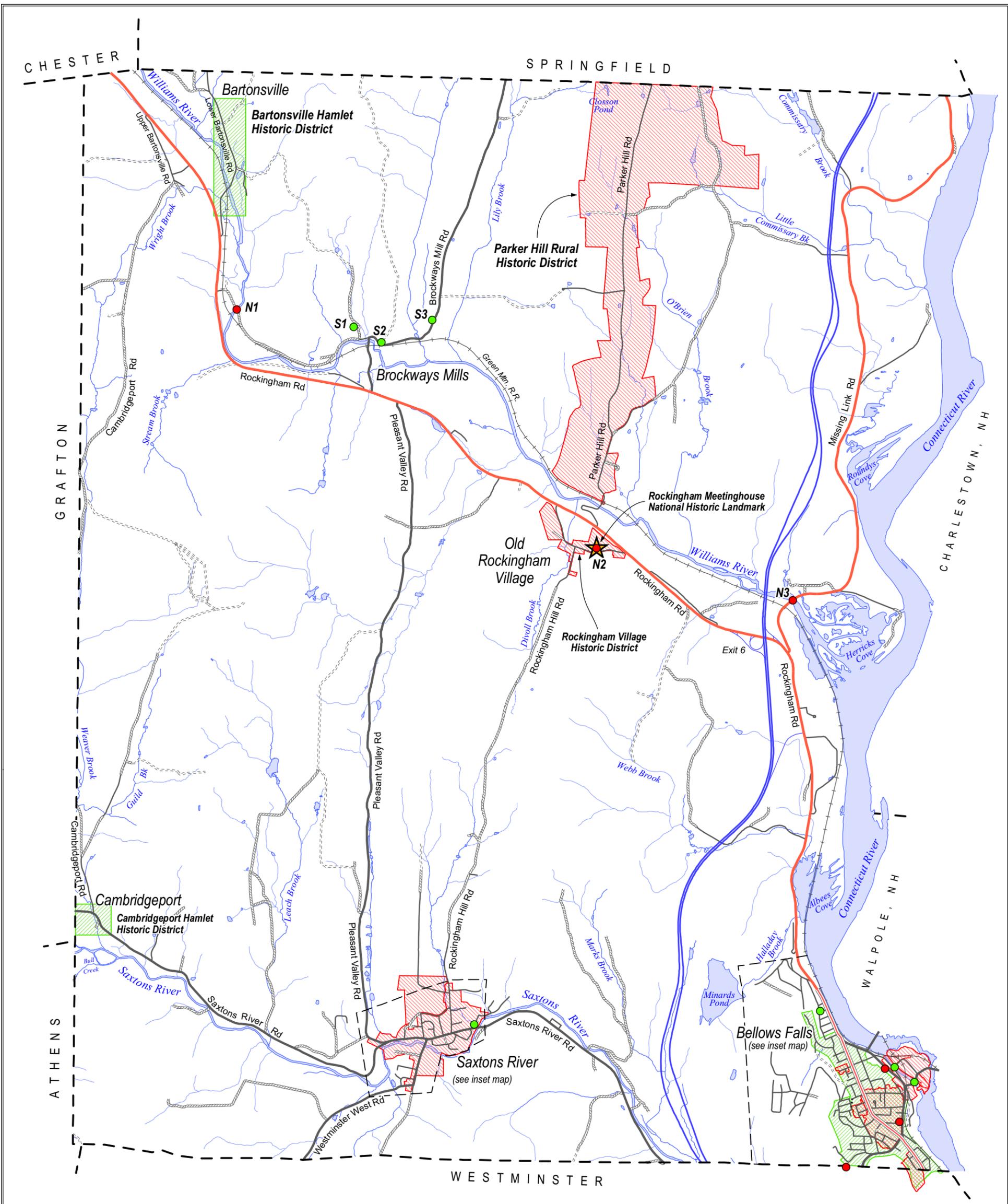
	Historic Site		Interstate highway	<p>Data sources:</p> <ul style="list-style-type: none"> - Town-designated historic sites and areas were designated by the Town of Rockingham. Data on their location were developed by Windham Regional Commission.
H2	Indian Petroglyphs		Federal or state highway	
H6	Oak Hill Cemetery Chapel		Class 1 town highway - paved	
H7	Miss Bellows Falls Diner		Class 2 town highway - paved	
H8	Moore & Thompson Paper Mill Complex		Class 3 town highway - paved	
H10	Immanuel Episcopal Church & Cemetery		Class 3 town highway - unpaved	
H11	Adams Grist Mill Museum		Class 4 town highway	
H12	Canal		Legal trail	
H17	Stone Railroad Bridge		Railroad	
H19	Saxtons River Historical Museum		Stream	
H22	William Hall House		River or pond	
H25	War Memorial by James Novelli		Private roads not shown	



Figure 6: Town-Designated BF & Saxtons River Historic Sites

0.25 0 0.25 0.5 Miles

Scale 1:12,000



Historic Sites - National and State Register

Rockingham, Vt.

2024 Town Plan

- ★ National Historic Landmark
- National Register Individual Property
 - N1 Worrall Covered Bridge
 - N2 Rockingham Meetinghouse *
 - N3 Route 5 Bridge, Williams River
 - * - also a National Historic Landmark
- State Register Individual Property
 - S1 26 Gaskill Rd
 - S2 1897 Brockways Mills Rd
 - S3 1797 Brockways Mills Rd

- National Register Historic District
- State Register Historic District

Data sources:

- National and State Register places were inventoried by Paula Sagerman, Historic Preservation Consultant, and the Town of Rockingham's Historic Preservation Commission Coordinator.

- District boundaries and property locations were determined by Windham Regional Commission using official descriptions of the boundary in conjunction with Vermont digital orthophotos, Rockingham parcel data, surface waters data, and other GIS data.

- Interstate highway
- Federal or state highway
- Class 1 town highway - paved
- Class 2 town highway - paved
- Class 3 town highway - paved
- Class 3 town highway - unpaved
- Class 4 town highway
- Legal trail
- Railroad
- Stream
- River or pond
- Private roads not shown

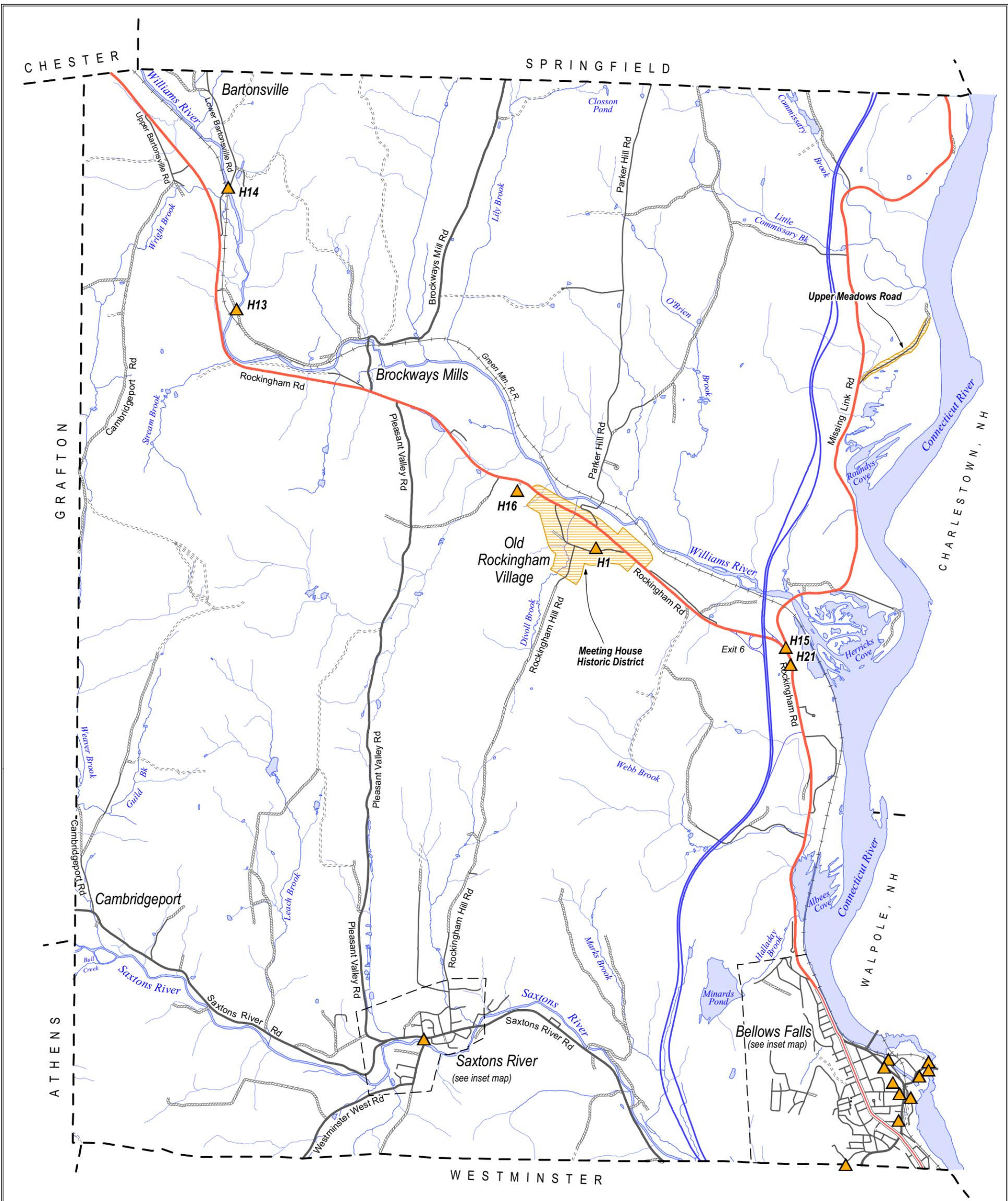
Figure 7: Rockingham, National & State Register Historic Sites

0.5 0 0.5 1 1.5 Miles

Scale 1:42,000



Windham Regional Commission, February 2024;
u:\GIS\Towns\Rockinghm\Maps\TP2024_HistSites_NatState.mxd



Historic Sites and Areas - Town-designated Rockingham, Vt. 2024 Town Plan

-  Historic Site
 - H1 Rockingham Meeting House
 - H13 Worrell Covered Bridge
 - H14 Bartonsville Covered Bridge
 - H15 Site of 1st Prodestant Church Service
 - H16 Site of First Minister's House
 - H21 Stone Arch Bridge
-  Historic Area

Data sources:

- Town-designated historic sites and areas were designated by the Town of Rockingham. Data on their location were developed by Windham Regional Commission.

-  Interstate highway
-  Federal or state highway
-  Class 1 town highway - paved
-  Class 2 town highway - paved
-  Class 3 town highway - paved
-  Class 3 town highway - unpaved
-  Class 4 town highway
-  Legal trail
-  Railroad
-  Stream
-  River or pond
- Private roads not shown

Figure 8: Rockingham, Town-Designated Historic Sites

0.5 0 0.5 1 1.5 Miles

Scale 1:42,000



8 Natural Resources

8.1 Objectives

The following objectives are the Town Plan’s obtainable targets for applying the Maintain | Evolve | Transform vision.

- Preserve a healthy ecosystem with diverse native plant and animal life, clean water for recreation, productive and healthy forests.
- Protect primary agricultural soils from development and support soil health initiatives and farmland conservation projects.
- Protect Rockingham’s scenic resources.
- Encourage and preserve tree lined streets, mitigate environmental damage from roads, bridges, and culverts.

8.2 Maintain | Evolve | Transform

Rockingham’s Town Plan is divided into these three distinct areas which provide guidance for preserving natural resources. Vermont community planners use the Maintain | Evolve | Transform framework to define the degree of change needed.

Maintain: Natural resources that must be maintained and preserved for future generations.

- Large forest blocks along the western boundary of the town
- Wildlife habitat and corridors
- Water quality

Evolve: Natural resources that can be adapted in ways that keep their essential character but are adapted to modern needs.

- Public swimming holes along the Saxtons and Williams Rivers
- Working farmlands
- Forest management plans on town-owned properties
- Planting and maintaining street trees in the villages and hamlets

Transform: Natural resources and policies that must be fundamentally changed before those resources are damaged.

- Riparian buffers in development review and approvals
- Reductions in impervious surfaces and improved stormwater management

8.3 Recommendations

These recommendations are how planners expect to implement the Maintain | Evolve | Transform vision and the Natural Resource objectives.

- Change the zoning regulations to protect significant forest and habitat blocks.
- Encourage conservation easements to promote forest conservation by private landowners.
- Develop and maintain active forest management plans for related town-owned properties
- Implement the 2021 Basin 11 Tactical Basin Plan recommendations.
- Support the removal of unused dams along rivers and streams.
- Continue surface water testing for those sections of rivers and ponds that are known swimming areas for the general public.
- Adopt measures to control invasive plants along Town roads and properties.

- Conduct a natural resources inventory, including areas of rare and endangered species and natural communities. Use this information to protect those resources using voluntary and regulatory measures.
- Encourage development within the villages, hamlets, and major roadways. Discourage development in parts of rural Rockingham that have large tracts of natural land.
- Map and protect the town's scenic ridgelines.
- Reconstruct and maintain Rockingham's transportation system to minimize impact to our natural resources.
- Extend the Resource Conservation Zoning Overlay District to include the full extent of Herrick's Cove and the Williams River outlet into the Connecticut River.
- Create new Natural Resource Overlay Districts where necessary to protect rare and endangered species and unique natural communities and wildlife corridors,
- Support the formal designation of Herrick's Cove, Great Falls, and Brockway Mills Gorge as "Outstanding Resource Waters".
- Promote street tree planning, maintenance, and new plantings.
- Expand local trail networks for hiking & biking, including the work of the Windham County Trails Alliance, building trails on Oak Hill, the Saxtons River Valley Trails Initiative, building trails along the Connecticut and Saxtons rivers in Bellows Falls and Westminster, and any trails developed in the Bellows Falls Watershed Forest on Darby Hill Road.
- Coordinate with state ANR maps of designated wildlife corridors.

8.4 Background

Earth Resources

Mineral resources include sand, gravel, stone, and clay. Sand and gravel deposits are restricted to stream channels and their banks. Privately owned mineral resources are important resources.

Extraction activity, the transportation of the material, and eventual reclamation of the extraction site are critical issues both as they relate to community needs and neighborhood impact. Resource extraction can impact neighborhoods and the community. Its long-term effects should be avoided or mitigated.

Rockingham's most significant bedrock formation is the Waits River Formation. The formation runs north-south through the middle of the town. The formation is a mix of metamorphic rock and sedimentary rock. The sedimentary rock is primarily limestone. Limestone is important because it stores groundwater that can be accessed for fresh drinking water. Limestone is also associated with rich soils, which may have a higher diversity of certain plants, such as spring ephemerals, and certain animals, such as amphibians. The limestone is a PH buffer that neutralizes acidic rainfall.

Rockingham has several areas of Primary Agricultural Soils primarily along the Connecticut River, Saxtons River and Williams River. These soils are essential for farming and must be protected from development. This is especially true for active farms on primary agricultural soils. The best long term solution there is enrolling those farms into the Vermont Land Trust program (e.g., Stickney Farm).

Wetlands

Wetlands include marshes, shrubby and forested swamps, wet meadows, bogs, seeps, and vernal pools. Wetlands are often found near ponds, rivers, and streams, but can occur in isolation with water runoff which collects in soil depressions.

We value wetlands for the wildlife habitat they sustain for amphibians, beaver, dragonflies, ducks, deer, fish, and other animals. The wetlands found at Herricks Cove and further along the Connecticut River are pristine fish and wildlife habitat and places of recreation. Wetlands provide functional benefit by storing flood waters and cleaning them before they enter our rivers and streams. The wetlands along Pleasant Valley Road is the perfect example of a wetland system that manages stormwater.

Rockingham contains approximately 910 acres of wetlands mapped by the Vermont Significant Wetland Inventory. Wetlands are protected by law and there are penalties for impacting them. Wetlands face many threats and over 35% of wetlands in Vermont have been lost. Wetlands found in Rockingham include both forested (or woody) and open (or emergent herbaceous) wetlands. Examples of forested wetlands include floodplain forests such as those observed along the Connecticut River, Saxtons River, and Williams River. The floodplain forests may be seasonally flooded and are often dominated by Sycamore or Silver Maple. Small semi-open forested wetlands perched on ledge-lined flats or in small basins are also found in Rockingham and are important wetland features for a variety of wildlife and plant species. The Black Gum tree, a tree infrequently found in Vermont, is found in small numbers in the wetlands on the west side of Minards Pond. In contrast to forested wetlands, open wetlands are wetlands not dominated by trees. Examples found in Rockingham include cattail marshes, wet meadows, and shrubby wetlands. Marshes can be observed at Herricks Cove and Roundys Cove. A shrub-dominated Class 2 wetland covering about 32 acres can be observed between Westminster West Rd. and Hartley Hill Rd. in Saxtons River, along Beaver Dam Brook.

Vernal pools can be found throughout Rockingham. Vernal pools are small (less than one-half acre), seasonal wetlands that provide breeding habitats for amphibians and invertebrates. Vernal pools are found in depressions, often in the forest, and usually lack vegetation. Several small wetlands in Rockingham have been identified as vernal pools by Vermont's Vernal Pool Mapping Project.

The riverine wetlands in Rockingham which extend from the Upper Meadows down through Roundys Cove to Herricks Cove and Allbees Cove towards Bellows Falls are extensive, interesting, and diverse. They include wet meadows, shrubby wetlands, open marshes, and floodplain forests. They provide diverse wildlife habitats for amphibians and reptiles, birds, fish, mammals, and invertebrates. They are part of a migratory flyway for migrating birds such as ducks and other waterfowl, as well as songbirds including those migrating from the southern United States and central and South America. The Vermont Agency of Natural Resources Natural Resources map shows that uncommon, rare, threatened, and endangered plants and animals are found in and around these wetlands at a higher frequency than in other places in Rockingham.

A federally and state endangered plant, Barbed-bristle Bulrush (also called Northeastern Bulrush) can be found in wetlands in Rockingham. This plant is listed as an endangered species.

Excellent information about wetlands can be found on the State of Vermont Agency of Natural Resources Wetlands Program webpage.

Forest Resources

Rockingham's forests have supported residents from the Native Americans, early settlers, and today's occupants. Early settlers used our forests to build homes, barns, bridges, and businesses. The wood provided the fuel to heat, cook, tan hides, and make furniture. Early forests were also cleared for agriculture and an early export of potash. The potash was shipped to England and was used for processing wool. Later, wood was used in local papermaking and in the basket industry. Within the past century, Rockingham's forests have reclaimed most of the cleared lands from the 1800's and early 1900's. Today's forests cover about 85% of our town and are made up of 6,900 acres of hardwoods, and 7,550 acres of mixed species, 283 acres of other forest cover. The abundant forests provide a wide array of management options including tree farming, recreation, wildlife emphasis, and old-growth characteristics.

In the 2015 "Forest Resources Report " published by the Vermont Agency of Natural Resources,

Rockingham has 1575 acres of Conserved land and 15,882 acres in Vermont's Current Use Program. Nearly 20,000 acres are in Habitat Blocks greater than 20 acres. The highest value habitat blocks are the large contiguous land areas in western Rockingham. These lands provide space for our larger wildlife like bears and moose and serve a wide-range of species. Under forest resources there are a few unique properties worth noting:

- The Rockingham Town Forest is 107 acres located in Grafton and Rockingham.
- The Bellows Falls Village Forest is 900 acres located in Rockingham.
- The Bellows Falls Playground is 66 acres which includes approximately 50 acres of forest.
- The Saxtons River Village Forest is 40 acres, but located on steep and unstable lands. Foresters discourage timber harvests to prevent the risk of further hillside erosion.
- The Dorand State Forest is 531 acres in Rockingham and Grafton.

The Town's forests provide for many forms of recreation including hunting, brook fishing, hiking, biking, horseback riding, and winter sports. The Windmill Hill Pinnacle Association (WHPA) ridgeline hiking trail traverses the southwestern portion of the town. The Bald Hill trail system in conjunction with the Bellows Falls high school trails will soon connect to the Saxtons River Valley recreational trail. The Saxtons River Valley Trails Initiative, which includes WHPA members, is exploring building trail connections between Bellows Falls, Westminster, Bald Hill, and Saxtons River to the WHPA system. The 26-mile WHPA trail system currently links to Athens, Westminster, Putney, and Grafton. There is a hiking trail around Minards Pond. Systems of accessible woods roads are found in the Dorand State Forest. VAST maintains several miles of snowmobile trails that connect to their statewide system.

A special focus on forest resources is needed as we examine the role of forest blocks mentioned above. The larger development pattern shows forests being fragmented over time. It occurs slowly, incrementally, often at the rate of one building lot at a time. As time passes, non-forest pockets multiply, expand, and connect. Eventually forest fragmentation is complete. Habitat is lost forever. Harvesting is impractical.

Beyond forest blocks, trees have significant utility in the built environment. "Urban tree" inventories and plans have been developed in Bellows Falls and Saxtons River, showing 500 public trees and 85 potential planting sites. This work needs to be updated and expanded.

Biodiversity

Having a greater diversity of plant and animal species is thought to increase ecosystem resilience, since as environmental conditions change, there may be species present that are better suited to the new conditions than to the old ones, or that can adapt to them. There may also be some species present that can tolerate a wider range of conditions than others. Our knowledge of biodiversity in Rockingham is limited since we have not conducted a Natural Resources Inventory; one is needed.

Plans for planting trees and shrubs should use species which are both native to this area and non-invasive in this area, and control of invasive plants may be useful in some locations. For example, mechanical control of knotweed with a deck mower is done annually between the Bellows Falls Wastewater Treatment Facility and the river, and additional hand control of knotweed has been done for several years along the trail south of that facility. No chemical control has been used or planned to be used. Most of the invasive animals causing problems currently are insect pests that attack trees, including the emerald ash borer and hemlock wooly adelgid and elongate hemlock scale. The current monitoring programs for these pests should be continued. The town's Hazard Mitigation Plan (2022) addresses invasive species in detail, which intersects with Flood Resilience issues.

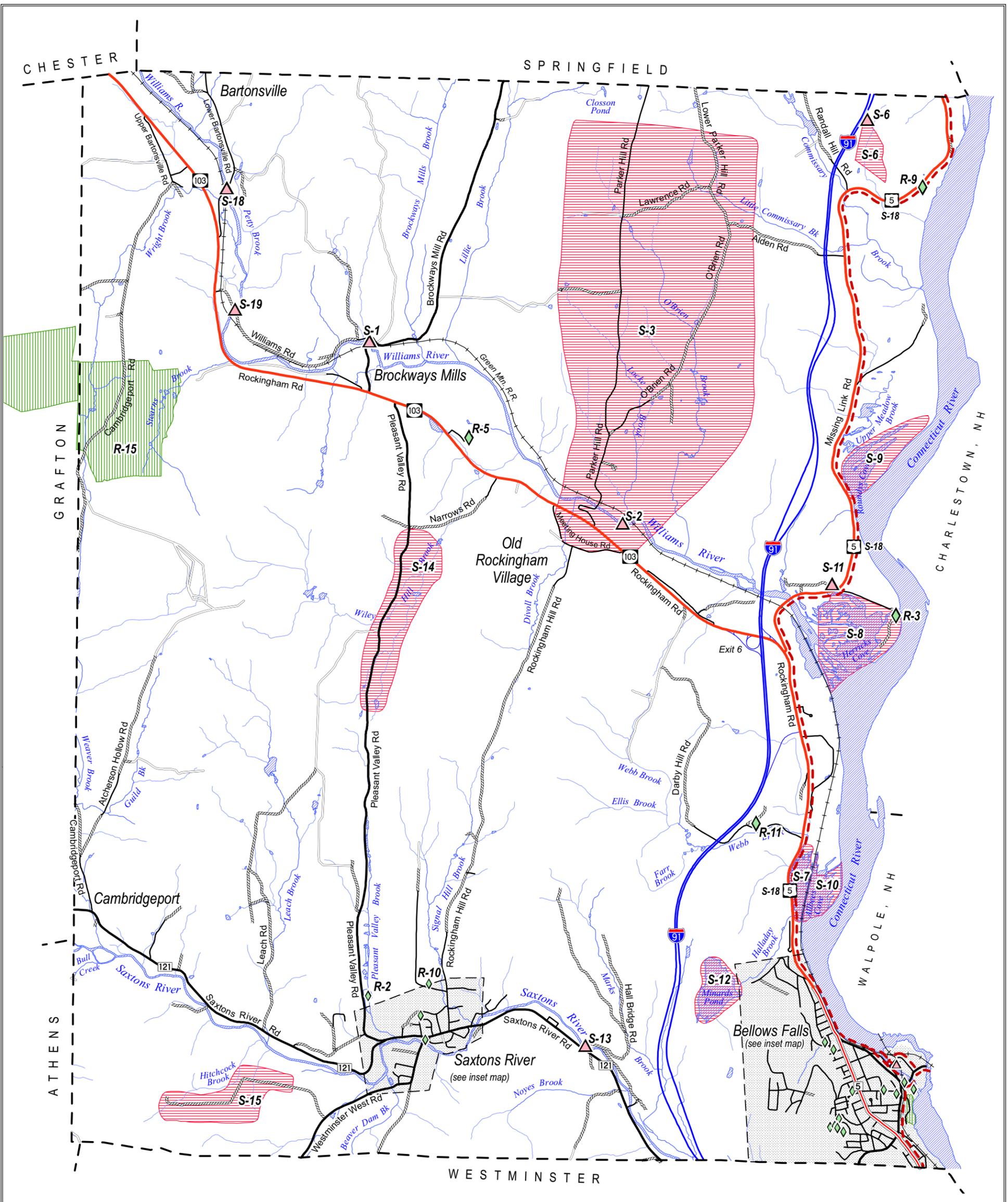
Surface Water

Rockingham is bounded by the Connecticut River on the east, which forms a large impoundment behind the Bellows Falls dam, providing both hydroelectric power and recreational opportunities. The Williams River in the north and the Saxtons River in the south traverse the Town generally from northwest to southeast enroute to the Connecticut River. The Williams River has one waterfall in Brockways Mills (Sokoki Falls) and empties into the Connecticut River at Herricks Cove, which provides a wildlife viewing and scenic area, as well as public boating access to the Connecticut River. The Saxtons River has one waterfall in Saxtons River Village, Saxtons River Falls, leaves Rockingham near where I-91 crosses VT Route 121, and then flows through North Westminster over two waterfalls (Gages and Twin Falls) on its way to the Connecticut River just south of Bellows Falls Village.

Rockingham falls within what the Vermont Agency of Natural Resources designates as Tactical Basin #11. The Tactical Basin 11 Plan provides detailed descriptions and maps of the watersheds including current conditions, and recommendations.

The Rockingham Conservation Commission works with the SouthEast Vermont Watershed Alliance to monitor water quality in the Saxtons and Williams River during the summer. Water quality is generally good, except immediately following high rainfall events which create E.Coli spikes for a few days.

Rockingham has relatively few natural ponds and lakes. The largest and best known of the artificial ones is Minards Pond (approximately 42 acres), used as the Bellows Falls drinking water supply since 1850. Other artificial ponds include Cold Springs, next to Mill Street in Bellows Falls, and others that were created to provide fishing and swimming opportunities, such as the ones along Pleasant Valley Brook north of Saxtons River. There are mill ponds on the Williams River in Brockways Mills (about 1.2 acres), which provides water to a small hydroelectric plant, and one in two parts (about 0.7 acres & 0.3 acres) on Petty Brook in Lower Bartonsville, on both sides of Eldredge Road. The latter pond was on the Williams River before it changed course in the 1869 flood. There are also several former mill ponds that no longer have functioning dams, such as one in Cambridgeport on Weaver Brook that was used by a large stone mill, and one on Brockways Mills Brook where the road of the same name turns north towards Springfield.



Scenic and Recreational Resources

Rockingham, Vt. 2024 Town Plan

- Interstate highway
- Federal or state highway
- Class 1 town highway - paved
- Class 2 town highway - paved
- Class 3 town highway - paved
- Class 3 town highway - unpaved
- Class 4 town highway (not all are shown on map)
- Legal town trail
- Railroad
- Stream
- River or pond
- Private roads not shown

Scale 1:42,000

0.5 0 0.5 1 1.5 Miles

- Scenic sites
- Recreation sites
- Scenic areas
- Recreation areas
- Ct. River Scenic Byway

Scenic Sites & Areas

- S-1 Gorge on the Williams River (Brockways Mills)
- S-2 Gorge on the Williams River (Parker Hill)
- S-3 Scenic View from Rockingham Meeting House
- S-6 View of Ct. River Valley from I-91 rest area
- S-7 Setback Area of Ct. River
- S-8 Herrick's Cove area
- S-9 Roundy's Cove area
- S-10 Albee's Cove area
- S-11 View of Ct. River from plateau
- S-12 Minards Pond and surrounding area
- S-13 Hall Covered Bridge
- S-14 Pleasant Valley farms area
- S-15 Hitchcock Hill area
- S-18 Bartonville Covered Bridge
- S-19 Worrell Covered Bridge
- S-18 Ct. River Scenic Byway

Recreation Sites & Areas

- R-2 Saxtons River Recreation Area
- R-3 TransCanada Boat Launch & Picnic Grounds
- R-5 Country Club
- R-9 Hitormis Gun Club
- R-10 Vt. Academy Indoor Skating Rink
- R-11 Polish American Club Picnic Grounds
- R-15 Dorand State Forest

Data sources:

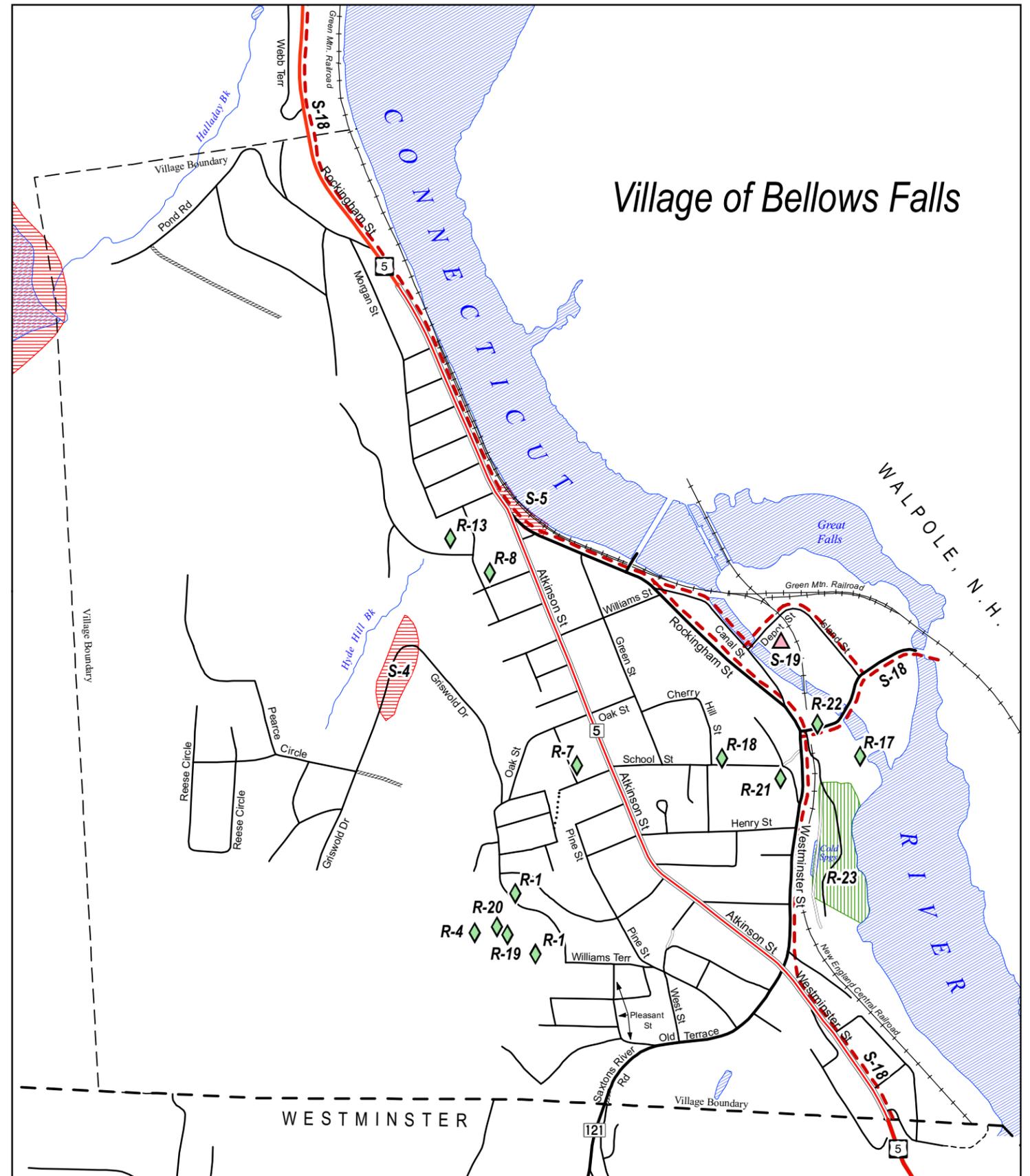
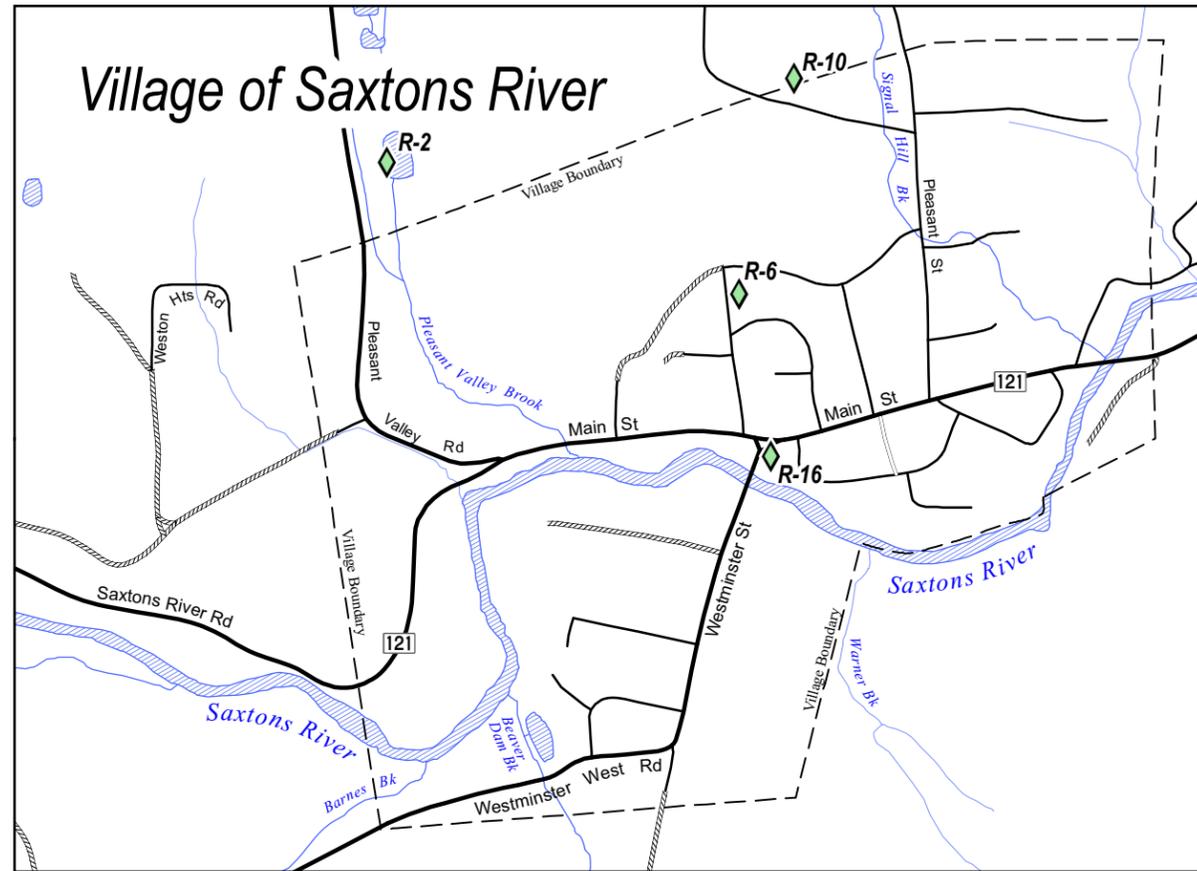
- Scenic sites and areas were delineated by the Town of Rockingham and digitized by WRC from Vt. orthophotos.
- Recreation sites and areas were delineated by the Town of Rockingham and digitized by WRC from 1:5000 Vt. orthophotos.

Figure 9



Scenic and Recreational Resources Bellows Falls & Saxtons River Rockingham, Vt.

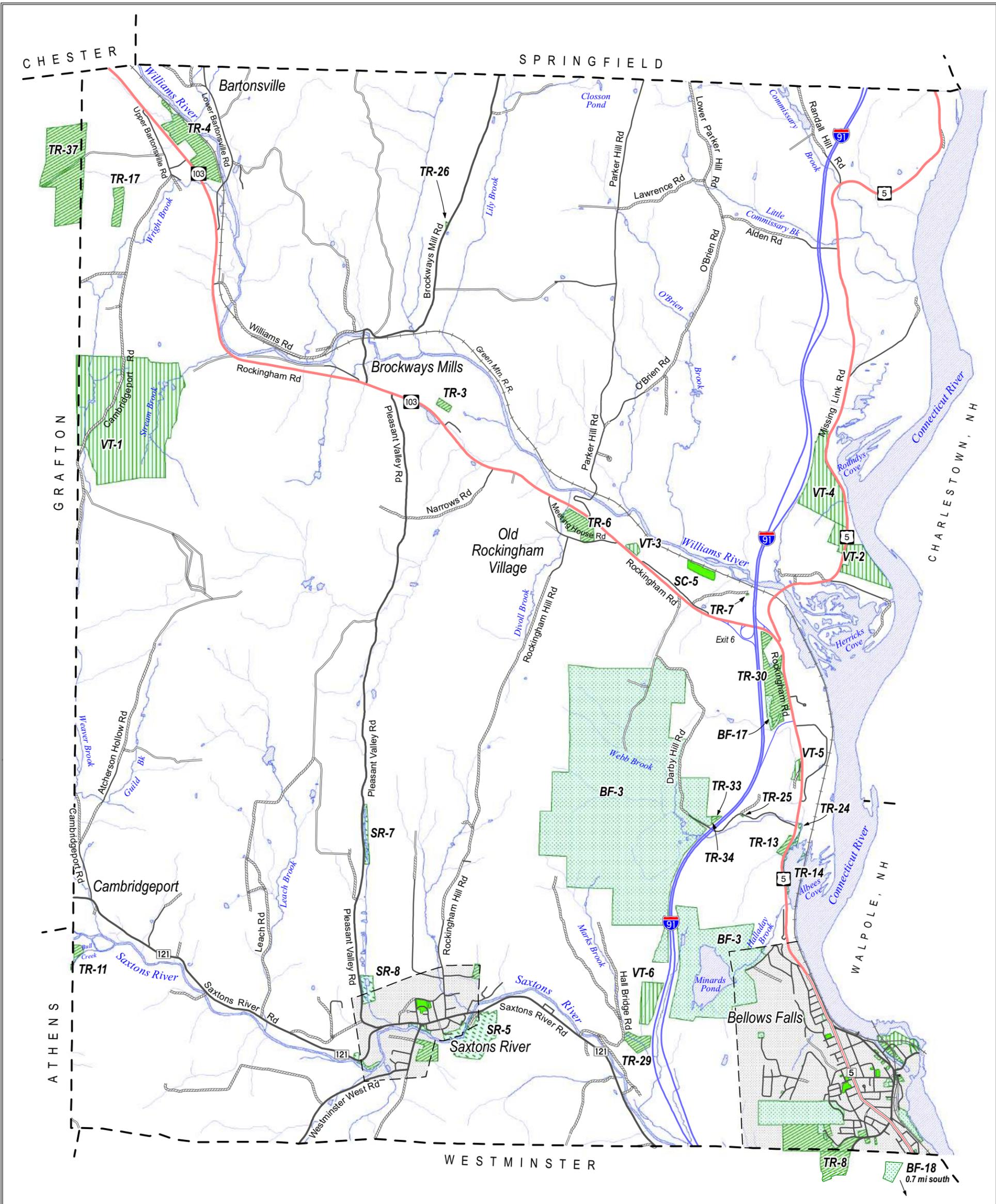
2024 Town Plan



<ul style="list-style-type: none"> Scenic sites Recreation sites Scenic areas Recreation areas Ct. River Scenic Byway 	<p>Recreation Sites & Areas</p> <ul style="list-style-type: none"> R1 Municipal playground R2 Saxtons River Rec. Area, Inc. R4 Lighted ski rope tow R6 Saxtons River Elementary School R7 Central Elementary School R8 Wells Street playground R10 Vt. Academy indoor skating rink R13 Senior Center R16 Saxtons River Park R17 Great River Hydro fish ladder R18 Middle School R19 Oak Hill trails & pump track R20 Community gardens R21 Hetty Green Park R22 Brown Fuller Memorial Park R23 Riverfront Park 	<p>Data sources:</p> <ul style="list-style-type: none"> - Scenic sites and areas were delineated by the Town of Rockingham and digitized by WRC from Vt. orthophotos. - Recreation sites and areas were delineated by the Town of Rockingham and digitized by WRC from 1:5000 Vt. orthophotos.
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<p>Scenic Sites & Areas</p> <ul style="list-style-type: none"> S4 View N. from Griswold Dr. S5 View N. from jct. of Rockingham & Atkinson Sts. S18 Ct. River Scenic Byway S19 Byway Waypoint Welcome Center 	<p>Figure 10</p> <p>139 Main St • Suite 505 • Brattleboro, VT 05301 (802) 257-4547 www.windhamregional.org</p>
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Scale 1:12,000



Publicly Owned or Leased Land

- State of Vermont Land
- Bellows Falls Land
- Saxtons River Land
- School District Land
- Town of Rockingham Land

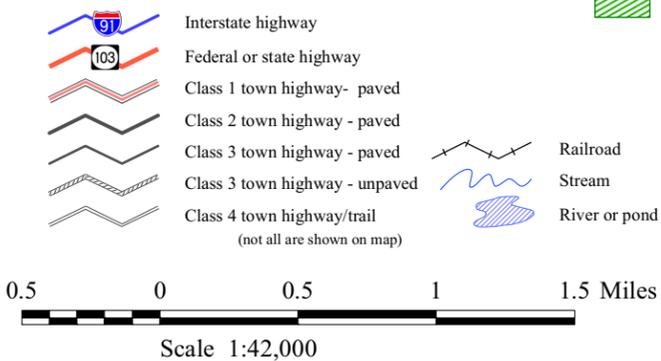
- State of Vermont Properties**
- VT-1 Dorand State Forest
 - VT-2 Missing Link Wildlife Mgt. Area
 - VT-3 State Highway Garage
 - VT-4 Missing Link Wildlife Mgt. Area
 - VT-5 Vacant Land - Rockingham Rd.
 - VT-6 Fish and Game Land
- Bellows Falls Village Properties**
- BF-3 Water Treatment Facility and Watershed
 - BF-17 Water Storage Tank
 - BF-18 Rockingham/Westminster Recycling Ctr
- Saxtons River Village Properties**
- SR-5 Woodland (Horan Forest)
 - SR-7 Trout Ponds
 - SR-8 Recreation Area

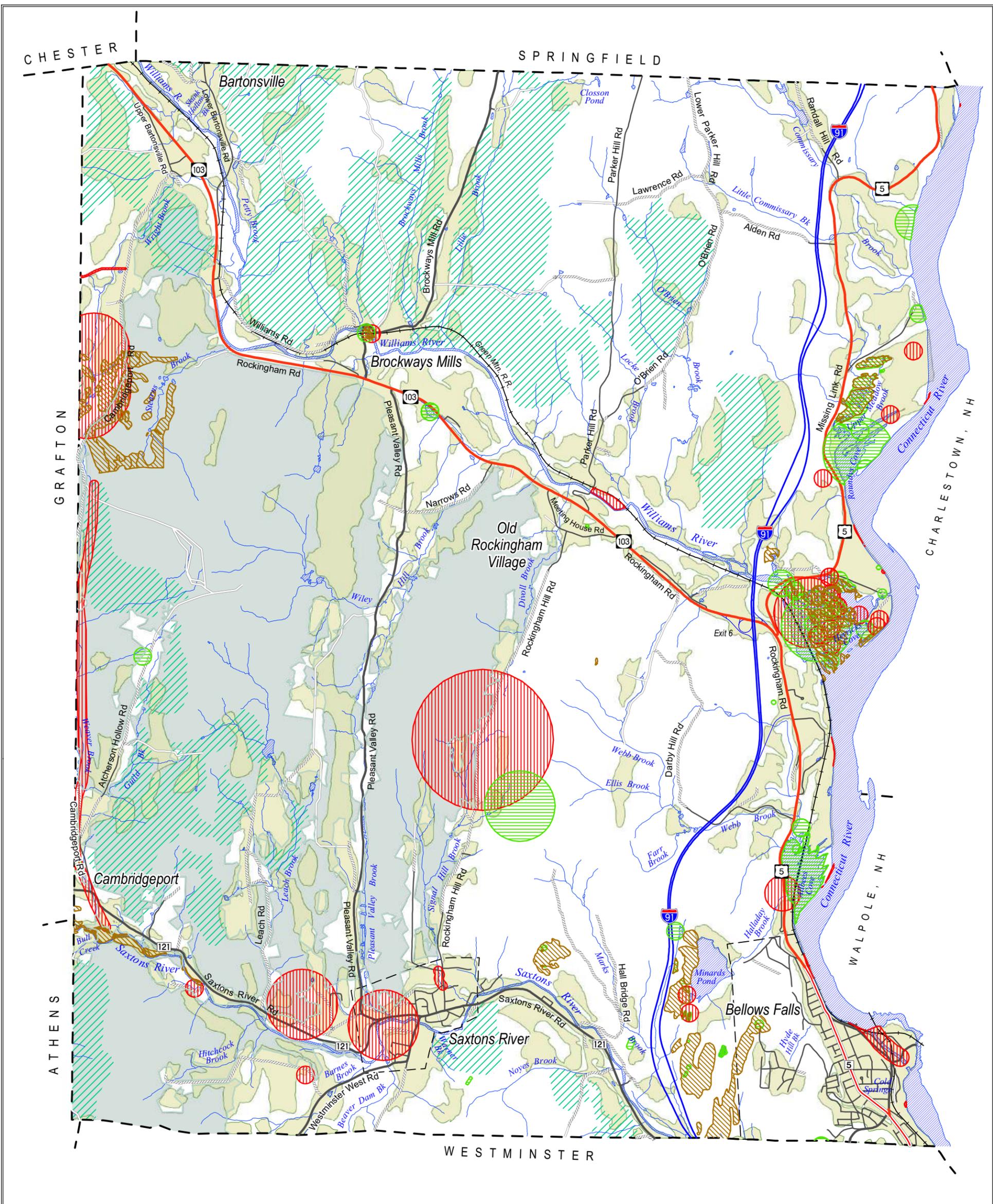
- Town of Rockingham Properties**
- TR-3 Town Highway Garage
 - TR-4 Town Gravel Pit
 - TR-6 Rockingham Meeting House
 - TR-7 Golden Hill Rd turn-around
 - TR-8 Oak Hill Cemetery
 - TR-11 Cambridgeport Cemetery
 - TR-13 Land - opposite setback
 - TR-14 Setback - water/land
 - TR-17 Land - off Cambridgeport Rd.
 - TR-24 Land - opposite Darby Hill Rd.
 - TR-25 Land - leased out
 - TR-26 Land - Brockways Mills Rd.
 - TR-29 Land - Hall Bridge Rd.
 - TR-30 CRT facility
 - TR-33 Land - Darby Hill Rd.
 - TR-34 Land - Darby Hill Rd.
 - TR-37 Rockingham Town Forest

- Rockingham School District Properties**
- SC-5 Land

Rockingham, Vt. 2024 Town Plan

Data sources:
 - Information on town owned and leased lands were provided by the Town of Rockingham. Parcel boundaries are from Vermont standardized parcel data, last updated 2018.
 Note: Tax sale lands and municipal lands located outside the Rockingham Town limits are not shown. See text of Town Plan.





Forestry & Wildlife Resources

- Interstate highway
- Federal or state highway
- Class 1 town highway - paved
- Class 2 town highway - paved
- Class 3 town highway - paved
- Class 3 town highway - unpaved
- Class 4 town highway or legal trail (not all are shown on map)
- Railroad
- Private roads not shown
- Highest priority interior forest block
- Deeryards
- High Quality Woodland Soils
- Stream
- River or pond

- Listed, rare or uncommon animal
 - Listed, rare, or uncommon plant
 - Significant natural community
- (listed = federal or state-listed endangered or threatened)

Figure 13



Rockingham, Vt. 2024 Town Plan

Data sources:

- High productivity forest soils are those soils with a Forest Productivity Class of Site I. These classes are based on the productivity of the land for forestry. Each class includes a range of potential productivity per acre per year. Site I soils are the most productive at greater than >85 cubic feet per acre per year. Data for this came from VGIS soils data, digitized from 1:20,000 orthophotos as part of the Windham County Soil Survey.

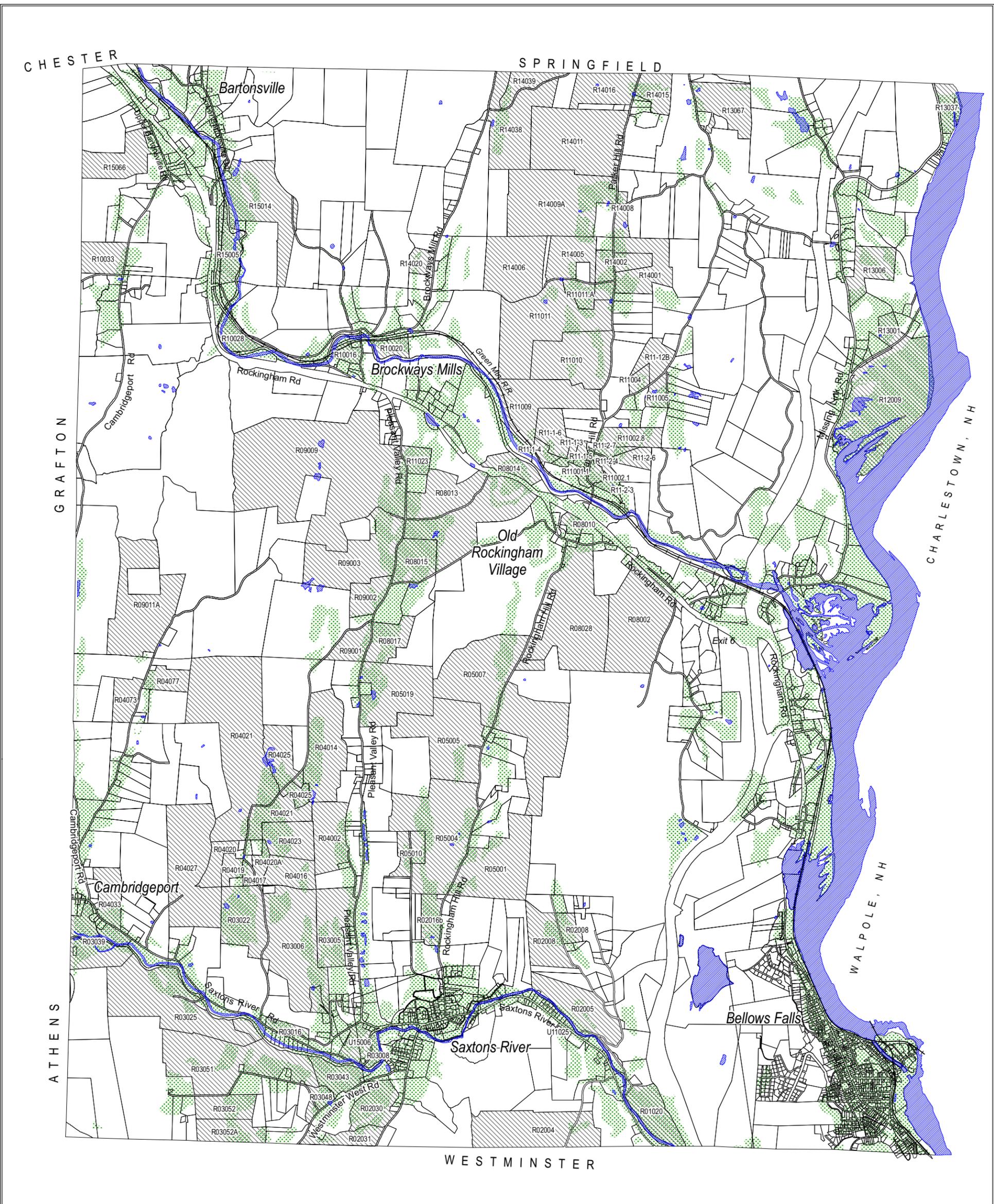
- Natural Heritage data are from VT Dept. of Fish and Wildlife, Nongame and Natural Heritage Program's Natural Heritage Inventory Database. This includes data on Uncommon, Rare, Threatened and Endangered Species and Significant Natural Communities. Data current to spring 2023.

- Deer wintering areas are taken from the VGIS data layer DEERWN. They were delineated by VT ANR, Department of Fish and Wildlife onto 1:24000-1:25000 scale topographic maps. Digital data released in March 2022 were used.

- Highest priority interior forest blocks are from the Vermont Conservation Design by the Vermont Agency of Natural Resources.

0.5 0 0.5 1 1.5 Miles

Scale 1:42,000



Agricultural Lands

Rockingham, Vt. 2024 Town Plan

-  Primary agricultural soils
-  "LESA" Parcel
-  Parcel line, 1992 data
-  Railroad
-  River or pond

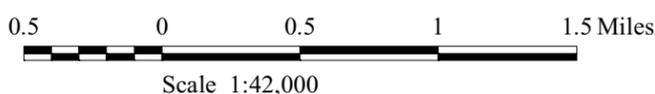
Data sources:

- Agricultural lands are based on a 1990 Agricultural Land Evaluation and Site Assessment (LESA) report which inventoried ninety-seven parcels, and Prime Agricultural lands from the Windham County Soil Survey, dated 1987.
- Parcel boundaries are taken from 1:5000-based AutoCad data developed by Russell Graphics, Corning, NY in 1992. The locations of these boundaries are approximate, and any errors in the data have not been corrected.
- Soils data was derived from the 1987 USDA Natural Resources Conservation Service County Soil Survey (VGIS data layer S0nnnnnnn). These soils qualify as Primary Agricultural Soils under Act 250. Soil boundaries were digitized from 1:20,000 orthophotos from the Windham County Soil Survey.

Figure 14



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9 Flood Resilience

9.1 Objectives

The following objectives are the Town Plan's obtainable targets for applying the Maintain | Evolve | Transform vision.

- Protect the natural environment and minimize risk to natural habitat, property, and people.
- Develop municipal planning and transportation policies that provide for the long-term protection of the floodplain from incompatible development, land uses, and transportation infrastructure.
- Incorporate 'green' flood protection that requires leaving upland woodlands, vernal pools, wetlands, streams, riparian buffer zones, and rivers to be undisturbed.
- Support property owners in the floodplain when they attempt to improve their existing buildings in a flood-resilient manner.

9.2 Maintain | Evolve | Transform

Flood Resiliency is divided into these three distinct categories. Community planners use a Maintain | Evolve | Transform vision to focus attention on planning priorities and define the degree of change required.

Maintain: Natural resources or public policies that must be maintained without change.

- Flood plains, river corridors, riparian buffers, wetlands, and upland forests
- Land use and transportation policies that mitigate flood risks to natural habitat, property and people

Evolve: Incremental changes that should take place to improve flood resiliency.

- Retrofitting or relocating residential housing presently located in flood-prone areas
- Zoning regulations for development in or near flood-prone areas
- Zoning bylaws reflecting flood standards and stormwater management

Transform: Fundamental changes that must take place to improve flood resiliency.

- The process by which flood data is gathered and shared with residents.

9.3 Recommendations

These recommendations are how planners expect to implement the Flood Resilience objectives and Maintain | Evolve | Transform vision.

- Revise the flood zoning bylaws to reflect current flood standards by updating the flood hazard area zoning bylaws for consistency with more recent state models and recommendations. Consolidate flood hazard zoning bylaws into a unified bylaw covering all development and subdivision.
- Advocate for remapping the 2007 Federal Emergency Management Agency (FEMA) flood zone maps for improved accuracy.
- Update flood hazard area zoning. Analyze major rivers and map known flood hazard areas and improve local knowledge of inundation and fluvial erosion hazards. Fund river corridor mapping using the latest Vermont Stream Geomorphic Assessment protocols on the Williams, Saxtons, and Connecticut Rivers and incorporate those corridors into zoning.
- Relocate, remove, or upgrade residential housing located in flood-prone areas. Participate in grant and loan programs that help finance improvements to buildings susceptible to flood damages and prioritize historic and residential building improvement projects.

- Monitor Vermont Emergency Management and the National Weather Service communications and utilize the municipal website to record and track local emergency responses to flood events. Ensure town residents receive up-to-date information during storm and flood events.
- Maintain the Hazard Mitigation Plan, the Town Road & Bridge Standards Policy, the Highway Construction Specifications Policy, the Road Work, Stormwater Connections, and Highway Access Policy, the Class 4 Highways and Trails Policy, and Highway Acceptance Policy.
- Amend zoning regulations that currently allow development in or near flood-prone areas and define these areas for protection or low-density non-residential development.
- Amend zoning bylaws that incentivize property owners to process stormwater on-site.
- Amend zoning bylaws to include model standards for floodplain and wetlands management that restrict new development and substantial redevelopment within these protected areas.
- Certify planning staff as floodplain managers by the Association of State Floodplain Managers.
- Address the flooding from Griswold and Hyde Roads
- Examine the use of “Check Dams”

9.4 Background

The most probable hazard event in Rockingham is flooding. Flooding is a natural process that would not be a problem if we did not live adjacent to waterways. Efforts to control flooding, such as channelizing streams and armoring stream banks, divert floodwaters downstream. Eventually, flooding becomes unmanageable. The main issues are:

- Construction of buildings and infrastructure within flood-prone areas.
- Transportation infrastructure, including bridges and culverts, that artificially constrain waterways.
- Tree removal, soil compaction, and construction of impervious surfaces.
- Inadequate stormwater management.

Flooding occurs for a variety of reasons. Before the spring thaw, the frozen ground and bare trees render rainfall and snowmelt almost entirely stormwater runoff. During summer storms, the ground can absorb rainwater but not the high-intensity, short bursts of rain, especially not during wet cycles when the ground is already saturated. Climate change amplifies the frequency and intensity of major storms. It has also intensified the cycle of increasingly wet or dry conditions when saturated or parched soils cannot absorb more rainwater.

There are two main types of flooding: inundation and fluvial erosion. Inundation flooding results from an overabundance of water overflowing onto normally dry land. Inundation flood hazards are shown on maps managed by FEMA. Fluvial erosion is the erosion or scouring of riverbeds and banks during peak flood conditions. Fluvial erosion occurs when a river or stream becomes hydrologically unstable and jumps its bank to widen its current channel. Fluvial erosion can be a slow, gradual process or occur in one quick but catastrophic event. Fluvial erosion areas are harder to define and difficult to map.

Tropical Storm Irene in 2011 resulted in severe flooding and fluvial erosion. The Saxtons River crested at 20 feet (nine feet above flood stage), and the Williams River crested at 18 feet (ten feet above flood stage). Irene caused approximately 5 million in total damages to town-owned transportation infrastructure. This is in addition to the millions of dollars Vermont paid to repair transportation infrastructure and what property owners paid out in repairs. Irene was remarkable because it impacted New England. However, Irene is one of a dozen storms that have caused similar damage over the last ten

years. Most recently, in July 2021, a rain event caused millions of dollars in damages to Windham County, VT, and Cheshire County, NH. Those rainfall totals equaled Irene's records but garnered less attention because of their smaller impact range.

National Flood Insurance Program

The Town enrolled in the National Flood Insurance Program in 1980. This publicly subsidized insurance program compensates property owners who incur flood damage. As of 2022, there are 13 active NFIP policies in Rockingham. These policies have a total value of 3 million. Four claims have been filed in Rockingham since 1980, with a total payout of less than 300k. Of the 153 flood-prone buildings, only 8% carry flood insurance coverage. The low percentage is because flood insurance is a separate insurance policy that is expensive and only covers catastrophic losses.

In 2021, FEMA introduced a new rating system that includes more flood risk variables such as flood frequency, flood types, and distances to surface water. For four decades, homeowners only had to be concerned about whether their property was in the flood plain. This new system takes in much more data and assigns flood risks independently of the maps. It is unknown how this will impact residential properties.

Flood Plains

FEMA mapped the Town's floodways and floodplains in September 2007. Those maps are available online through the FEMA Flood Map Service Center. The Vermont Agency of Natural Resources Atlas has a better mapping platform that shows flood areas with other data, such as streets, satellite imagery, parcels, zoning districts, and natural resource protection areas.

A floodplain is an area expected to flood during significant storm events. FEMA distinguishes between 100 and 500-year floodplains and states there is a 1% or 0.2% chance of annual flooding for these areas respectively. Over the last 20 years, local officials have genuine cause to believe the 100- and 500-year flood plains are not accurate representations of actual flood risk. In Vermont, 65% of flood damage occurs outside the mapped flood zones, twice the national average.

River Corridors

To address fluvial erosion hazards, the Vermont River Management Program has mapped river corridors along rivers and streams with drainage areas larger than two square miles. Creating a river corridor is a technical mapping exercise using topographic maps, hydrological models, and natural or man-made constraints. A river corridor aggregates scientific predictions about a river's movement or meanders over time. Once mapped, the river corridor shows the entire land area that these future river locations could impact. At the watershed scale, river corridor maps are essential planning tools to guide development away from fluvial erosion hazards.

The Vermont Department of Environmental Conservation encourages the use of river corridor maps to regulate land use, raising concerns. Map errors of 50 - 100 feet are undetectable at scale but would significantly impact one property owner's backyard. Until the accuracy of river corridor mapping is improved, it is not an appropriate zoning tool. There are geomorphic assessment protocols used to map river corridors in the field. Increasingly, river scientists employ Lidar data for further improvements. If a property owner's development rights are at stake, it is vital to maintain high data standards –restricting development in river corridors or allowing development in safe areas. River corridors should be included in the flood zoning bylaws only after the maps are more accurate.

Roads

Vermont requires all municipalities to obtain a Municipal Roads General Permit that will require improved stormwater management on road segments in proximity to rivers and streams and at risk of erosion. Rockingham has approximately 13 miles of roads that are affected by this requirement.

The town has a Road & Bridge Standards Policy, a Highway Construction Specifications Policy, a Road Work, Stormwater Connections, and Highway Access Policy, a Class 4 Highways and Trails Policy, and a Highway Acceptance Policy. These policies cover a range of flood-related issues that control stormwater on private property before entering the town-controlled transportation system. The policies also serve to establish minimum standards for the town and developers when building transportation infrastructure to be flood resilient. Along with local land use regulations, these policies are critical tools to mitigate flood hazards at the town level.

Stormwater

Developed areas in town have experienced localized flooding due to inadequate stormwater infrastructure. Runoff overwhelms the existing stormwater system during major storms and floods roads, property, and buildings. That polluted stormwater is then transported to waterways, reducing water quality. As of 2022, the Williams River and Saxtons River are listed in Vermont's Stressed Waters List. If water quality continues to degrade, these rivers will be reclassified as impaired waters under the federal Clean Water Act. That legal designation triggers additional regulations that would burden town staff and developers.

Hazard Mitigation Plans & Projects

Flood risks to life and property can be reduced or eliminated through hazard mitigation and river corridor planning. The following plans are included in the town plan by reference.

- 2022 Rockingham Hazard Mitigation Plan
- 2016 River Corridor Plan for the Williams River in Rockingham, Chester, and Andover
- 2016 Tactical Basin Plan for the West, Williams and Saxtons Rivers and adjacent Connecticut River Tributaries
- 2010 River Corridor Plan for the Saxtons River Watershed
- 2008 Connecticut River Corridor Management Plan

Rockingham has little transportation infrastructure that falls in the category of being repeatedly damaged during flood events. The major exception is the Hyde Hill drainage area that impacts properties along Hyde Street, Russell Street, and Laurel Avenue. Every time there is a significant rainstorm, town staff must monitor this area to ensure the culverts and drains do not fail and flood the neighborhood. It is necessary to detain stormwater before it enters Hyde Brook and reduce peak flood levels that overwhelm the stormwater system.

Town Regulations

Land use regulations can influence development in flood-hazard areas. The Town uses a Flood Hazard Area Zoning Bylaw to regulate development. The town's regulations comply with federal requirements that mandate flood-proofing for new construction and for existing buildings that are substantially improved. The town does not regulate development in the Vermont river corridors. The town chooses to wait until better data is available using Lidar imagery.

The Zoning Bylaws do not include standards for development to locate away from wetlands or surface waters. This is unusual, and most Vermont towns that have zoning require a minimum setback of 50 feet

from waterways. The maintenance or establishment of riparian buffers provides a safety buffer for flooding, preserves habitat along rivers and streams, and improves water quality.

Financial incentives

The Vermont Emergency Relief and Assistance Fund matches Federal Public Assistance to repair public infrastructure damaged after federally declared disasters. Under this system, the federal government pays 75% of eligible costs, and then the 25% match is shared by Vermont (7.5%) and Rockingham (17.5%). To incentivize towns that maintain a current Local Emergency Operations Plan and transportation policies, Vermont evenly splits the 25% match (12.5%). Given that flood events can cause millions of dollars in damages, the Town must maintain these necessary plans and standards to meet the preferential match requirement or risk significant financial loss.

10 Education

10.1 Objectives

The following objectives are the Town Plan's obtainable targets for applying the Maintain | Evolve | Transform vision.

- Promote school and town government collaborations.
- Support opportunities for alternative educational experiences.
- Encourage investments in school buildings and related infrastructure.
- Prioritize town infrastructure investments that support school facilities and operations.
- Improve the safety of walking and bicycling routes to schools.
- Promote improvements in housing and reduce the inventory of substandard housing.
- Reduce redundancies in municipal government and seek improved service coordination.
- Improve transportation facilities for improved vehicle and school bus safety.

10.2 Maintain | Evolve | Transform

Education is divided into these three distinct categories. Community planners use a Maintain | Evolve | Transform vision to focus on planning priorities and define the degree of change required.

Maintain: Schools and educational institutions must be preserved for future generations.

- Schools in Saxtons River and Bellows Falls Villages

Evolve: Incremental changes that should take place to improve schools and educational opportunities.

- Housing policies to allow more young families with children to relocate to Rockingham
- Elementary school playgrounds used by the schools and increasingly by the general public.
- Town and WNESU administrative and program collaborations
- Zoning revisions to allow private childcare providers to operate in more zoning districts.
- Alternative educational opportunities for children who need a non-traditional educational experience.
- Educational partnerships with local businesses
- Vermont Academy collaborations with the town and area businesses
- Identify and address educational gaps between what is offered and what is missing.
- Promote the use of educational facilities for public use.

Transform: Fundamental changes must occur to improve schools and educational opportunities.

- WNESU Early Childhood Learning Center facility
- Bellows Falls Union High School buildings, general grounds, and sports fields
- Non-profit organizations that provide additional educational and training opportunities
- Opportunities for students to learn about personal finance, college, and career development, including educational experiences teaching practical skills
- Increase opportunities for experiential learning for all students.

10.3 Recommendations

These recommendations are how planners expect to implement the Education objectives and Maintain | Evolve | Transform vision.

- Provide municipal government job shadowing and internships for Rockingham students.
- Allow the schools to use town resources for special events and programs. Coordinate school functions and educational programs using the Bellows Falls Opera House and Rockingham Recreational Department.

Provide financial and logistical support to nonprofit organizations focused on training and placing

Bellows Falls Union jobs.

- Advocate for Rockingham, Grafton, Athens, and Westminster to adopt and enforce rental housing codes to support the housing needs of all students served within the WNESU district
- Develop academic and athletic partnerships with businesses to facilitate student learning outside the classroom.
- Partner with the Vermont Academy on campus upgrades to the buildings, grounds, and public water system. Work directly with school officials to secure grants to support campus modernization projects.
- Support the establishment of a freestanding facility for the WNESU early education center.
- Encourage WNESU to open its facilities and events for public use and benefit.
- Advocate for changes in Vermont funding formulas to avoid disincentivizing tuition students transferring from the high school to a career center.

10.4 Background

The education chapter examines school facilities and explores how the community impacts schools and vice versa. The Windham Northeast Supervisory Union (W NESU) is educating children and developing plans that document goals and outcomes. The town's business is different and focuses on the community's future development. The town plan will not recreate educational statistics unless there is a specific community development interest to advance. State law requires the town plan to address how the community's future development will impact the schools.

Post-secondary and higher education institutions do not get examined in the town plan. Adult learning is important, but these institutions reside outside Rockingham and are beyond the town's capacity to influence.

10.5 Public Schools

The Town of Rockingham is in the school district called the Windham Northeast Supervisory Union (W NESU). W NESU operates two elementary schools that only serve Rockingham students. W NESU also includes an early education center, a middle school, and a high school that serves Rockingham, Grafton, Athens, and Westminster students.

Central Elementary School (CES)

This school educates Pre-K to 4th-grade students and operates an after-school program. The school is in Bellows Falls Village, a 4.2-acre campus with the main school building, ancillary storage buildings, minimal parking facilities, and a playground. In the 2021-2022 academic year, 152 students attended CES, with even numbers enrolled in each grade level. The school operates below its maximum capacity; administrators have estimated CES could enroll approximately 250 students.

The CES building (1954) and playground are well-maintained and meet the needs of students. The school underwent a renovation to add classrooms in 2006. CES's main challenge is transportation. Parent drop-offs and pick-ups occur along the school frontage on School Street Extension. School Street Extension is also where school bus drop-offs and pick-ups occur. School traffic gets routed through Oak Street, Church Place, and School Street Extension. School Street Extension was converted to a one-way road decades ago but is still not wide enough to accommodate all this activity. The adjacent Atkinson Street (US Route 5) and School Street Extension intersection is a significant safety concern, and the

inefficiencies create traffic congestion every morning and afternoon. Addressing traffic congestion and safety issues could increase walking and bicycling to school.

The Bellows Falls Union High School (BFUHS)

The union high school educates students from 9th to 12th grade. The school is in the Town of Westminster and is situated on a large 190-acre campus that includes the main school building, playing fields, and ancillary support buildings. There are 314 students enrolled.

The BFUHS building (1971) is an open-space concept that is a unique design for a high school. The building has reached a point in its life cycle where it requires increasing maintenance and upkeep. Playing fields are dated and need to be upgraded. The access road, a Class 3 public highway, and parking lots have deteriorated to a condition where full-depth reconstruction is required. The school has federal funding, but mainly locally raised taxes pay for school repairs and upgrades. School officials report the priority projects are:

- Full-depth reconstruction of the .28-mile access road and parking lots
- Building renovations:
 - Repair and upgrade of the HVAC system
 - Renovation of all Science Labs
 - Renovation and upgrade of equipment in the Wood Shop
 - Renovation of auditorium
 - Repair of Roof
 - Renovation of Tennis Court surface
 - Renovation of track located at the football field

Bellows Falls Middle School (BFMS)

The middle school educates students from 5th to 8th grade. The school is in Bellows Falls Village on two small parcels totaling 1.2 acres and includes the main school building and a small area for outdoor recess. BFMS has limited parking options, including on-street parking on Cherry Hill, School Street, and Church Street and some parking at the Hetty Green municipal parking lot and the former administrative offices parking lot (land owned by the St. Charles Catholic Church). In the 2021-2022 academic year, 231 students attended BFMS, with the highest enrollment numbers in the 7th and 8th grades. Administrators have estimated that BFMS could handle approximately 400 students.

The BFMS building (1926) was renovated in 2013, and the Cherry Hill Street outdoor recess space was created in 2016. Additional outdoor green space is still a need. The building and grounds are well-maintained and will meet student needs for the foreseeable future. The school is embedded in a thickly settled residential neighborhood, the transportation and parking options are limited, but there are few options for any significant improvements.

Saxtons River Elementary School (SRES)

The elementary school educates students from kindergarten to 4th grade and operates an after-school program. The school is in Saxtons River Village and is a 4.5-acre campus that includes the main school building, playing fields, and an unpaved parking lot. In the 2021-2022 academic year, 77 students attended SRES, with even numbers of students enrolled in each grade level. Administrators have estimated that SRES could handle approximately 110 students.

The SRES building (1915) and grounds are well-maintained and meet the needs of students. The school underwent a renovation to add classrooms and office space in 2006. There are no immediate plans for renovations or building upgrades.

WNESU Early Education Center

The early education center provides pre-school experiences for children aged 3-4. The Early Education Center operates from the Central and Westminster Elementary Schools. Families qualify for 10 hours per week of public-funded schooling but can elect to increase their hours at their own expense. This program is essential for working families who need childcare and want educational opportunities for their children. WNESU has consistently provided early educational opportunities since the program's inception in 2002.

Childcare or daycare services are available for children aged three months to five years old. Families cannot depend on the few licensed childcare providers operating in Rockingham or neighboring towns. The absence of private alternatives greatly amplifies WNESU's early education center's critical role for families with young children. The child can also transition back and forth more efficiently from WNESU's daycare to the more structured WNEUS early education classroom.

10.6 Private Schools

Compass School

Compass School located in Westminster, was founded in 1999 as an alternative to the area schools. Compass school focuses on children who are not thriving in traditional educational settings and require an alternative to "public school rules." In 2022-2023, Compass School has 76 children enrolled in middle and high school grades.

Saxtons River Montessori School

The Montessori School offers part-time and full-time sessions for children aged 3-10. The school is in Saxtons River Village, a converted multiple-family residential house on a half-acre property. Established in 1991, the school is relatively small, with two teachers and one support staff member. The school offers an important alternative for families who desire a specialized teaching experience for their children.

Vermont Academy (VA)

This private preparatory boarding school educates students from 9th to 12th grade. The school is in Saxtons River Village on a 31-acre campus and includes several educational, housing, and support buildings, playing fields, and other recreational facilities. The school is a significant economic engine for Saxtons River Village. In 2015, Rockingham town officials worked with the VA to get the circa 1876 school listed on the National Register of Historic Places. The school takes its preparatory mission seriously and enjoys an enviable record of most, if not all, students going on to attend 4-year colleges. For 2022-2023, enrollment was 200 students, although the school has a peak capacity enrollment of 230-240 students. Of those enrolled, 75% are full-time students who live on campus, and 25% are defined as day students from Walpole, Brattleboro, Rockingham, Keene, and Ludlow.

Vermont Academy is looking to modernize its buildings and physical plant. The town must partner with the Vermont Academy on these renovation projects, particularly with the public water system that benefits many Saxtons River properties. Vermont Academy has prioritized collaborations with the Bellows Falls Union High School and wants to engage local businesses for student research projects and internships. School administrators are open to engaging the community to participate in special events such as trail bicycle rides or the use of the observatory.

Kurn Hattin Homes for Children

Located in Westminster, Kurn Hattin is a residential home and school for children ages 5-15 whose families are experiencing a period of need or instability. Kurn Hattin was founded in 1894.

10.6.1 Technical Centers

River Valley Technical Center (RVTC)

RVTC is a technical school and career center that educates high school and recent high school graduates in various technical specialties. The school is in Springfield and accepts students from WNESU and neighboring districts. When Rockingham students attend RVTC, a percentage of their tuition is transferred to the center. RVTC has recently begun offering training and educational opportunities for all school grades with after-school programs as diverse as robotics and computer science, criminal justice, and babysitting. As RVTC continues to grow and evolve, it will significantly expand the educational opportunities available to Rockingham students. For the 2022-2023 academic year, 20 students from BFUHS attend RVTC.

Windham Regional Career Center (WRCC)

WRCC is another technical school and career center that educates high school and recent high school graduates in various technical specialties. The school is located in Brattleboro and accepts students from southern Windham County and Cheshire County school districts. RVTC is the primary vocational-technical school for Rockingham's students, but students are also eligible to attend WRCC. In the 2022-2023 academic year, 5 WNESU students attend WRCC.

10.7 Alternative Educational Experiences

BF Trades

BF Trades is a work-based training partnership that brings children out of the classroom and into the workplace. The primary mission of this organization is to pair Rockingham students with area employers for apprenticeship opportunities in mechanical, electrical, carpentry, and general contracting services. BF Trades seeks to support area employers who are challenged to find qualified employees. Several recent initiatives are:

- Student job shadowing - short-term experiences so students can observe different positions and gauge their interest and suitability for that type of work.
- Student internships – part-time work assignments with the Town of Rockingham or other area employers to give students training opportunities and to develop their work experience.
- Community garden cooperative – a real-world experience planning, designing, building, and maintaining a community garden and civic park in Bellows Fall Village.

Alternative Education Program (AEP)

AEP is designed to meet the needs of students who are not successful in the traditional high school setting and reduce the number of high school dropouts, help students earn a diploma, and better prepare students to enter the world of work or continued education.

Vermont Virtual Learning Cooperative (VTVLC)

VTVLC facilitates online courses for students statewide. All classes are taught by licensed Vermont educators currently employed with a Vermont school. Students can take one course or earn a diploma through VTVLC's Collaborative Diploma Program.

Homeschooling

In the 2022-2023 school year, 27 WNESU children were homeschooled. This represents the entire school district and not just the Town of Rockingham.

Charter Schools

In Vermont, there are no charter schools. Technically, Vermont children can attend New Hampshire charter schools in adjacent school districts, but these schools focus on New Hampshire children.

10.8 Educational trends

The Town Plan does not attempt to analyze trends within individual schools. WNESU schools have changed over the years rendering data comparisons difficult. Enrollment increases or decreases could be related to school closures, transferring 5th grade to the middle school, or adding pre-K students from the early education center to the elementary schools.

The Vermont Education Dashboard data repository is the primary informational resource and shows how individual school data mirrors the WNESU data. WNESU is also in line with trends for Rockingham students. Rockingham has 55% of the school district's overall population and, in 2022-2023, had 61% of enrolled students. Unlike the other towns in the school district, Rockingham is the primary influence in the WNESU school district.

In the 2021-2022 academic year, the total enrollment for all WNESU schools was 1,058. For the last twenty years, enrollment has steadily and consistently declined by 22%. It is clear from the historical enrollment peaks in the 1950 and the 1970s, along with recent enrollment declines, that community development is not constrained by school capacity.

Across various testing metrics, WNESU underperforms academically as compared to the statewide averages. WNESU also has 2-3 times the average number of students requiring special support services using 504 plans or Individual Education Plans (IEPs). As identified by school administrators, many of these children live in substandard rental housing in Bellows Falls. Substandard living arrangements compromise a student's ability to achieve their full potential academically and athletically. Substandard rental housing is addressed in the housing chapter. Lack of high-quality 0-5 care is another contributing factor. Rockingham should strive for a healthy population with a range of socio-economic backgrounds. A diverse culture is essential to raising families and their children out of poverty and into higher living standards.

BFUHS strives to prepare students for post-secondary options and college and career readiness. In 2022, 41 students (62%) will be attending a 4-year college or university; 4 students (7%) will be attending a 2-year or technical school; 14 students (21%) will be entering the workforce; 6 students (10%) are undecided, and 0 students will be joining the military.

10.9 Housing

One of the primary concerns is that many of the district's children lack adequate housing. School administrators report that in the hierarchy of needs, students who live in substandard housing are challenged in school. Simply put, children who are worried about their basic needs cannot prioritize learning. Administrators note these issues are not new and often reflect generational cycles of poverty. The housing chapter covers these issues in more detail. Still, housing is also cited in the education

chapter because of its identified role in determining student outcomes. School administrators report this as the most acute problem in Rockingham schools.

10.10 Financial trends

In 2023, the per-student tuition rate is approximately \$21k for WNESU K-12 and \$18k for RVTC. Over the last five years, the costs of educating children have increased by 40%, consistent with trends across Vermont.

WNESU schools are well-maintained and managed. However, BFUHS will require significant life cycle investments over the next 10-20 years to its buildings, playing fields, and other associated infrastructure. These capital improvements should not be confused with routine maintenance and upkeep funded by the operations budget.

Historically, the Vermont Academy has been a consistent economic asset to this community requiring little to no town investment. National trends and reports indicate that educational institutions such as the Vermont Academy are in an increasingly competitive academic market. The town expects to do more to support the Vermont Academy before there is a crisis or emergency need. In 2022, the highest priority for the Vermont Academy is its physical plant and getting its buildings and campus modernized.

10.11 Safe Routes to School

Walking and biking to and from school should be easy, safe, and convenient for children. Previous generations preferred walking or bicycling to school because it gave them regular physical activity, social opportunities, and limited independence. Once a child gains some autonomy by walking or bicycling to school, they can visit the public library, convenience stores, and civic institutions after school.

Safe Routes to School initiatives help the environment by mitigating traffic jams and curbing vehicle-based air pollution. Safe Routes to School examines safety issues and other pitfalls compromising a child's ability to commute to school safely.

From 2016 to 2019, Bellows Falls Middle School participated in the Safe Routes to School initiative. Safety Routes to School should be revisited for the Middle School and extended to Central and Saxtons River Elementary Schools.

School officials document how children are transported to school, and in 2022-2023 they reported.

2022-2023	Pedestrians	Bicyclists
Bellows Falls Middle	18	4
Bellows Falls Union High	3	0
Central Elementary	25	15
Saxtons River	13	0

10.12 Collaborations

There have been increasing collaborations between town and school officials. Examples include hosting school functions at the BFOH (turning the clock tower to Terrier Purple), assigning a student commissioner to the Rockingham Planning Commission, and hosting several municipal government internships. These partnerships can include joint administrative support for IT computing services, facilities and building management partnerships, and jointly upgrading parks and transportation

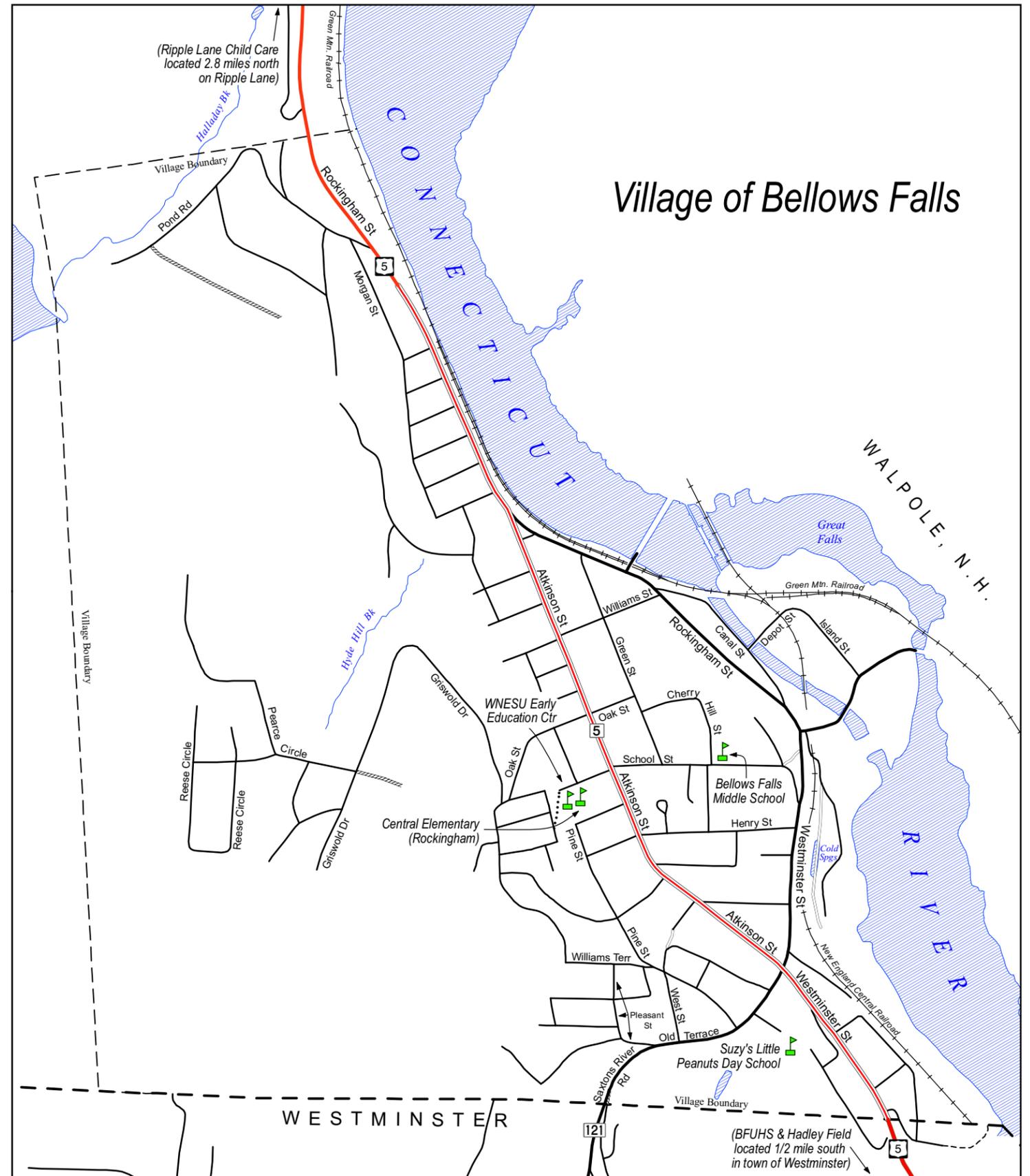
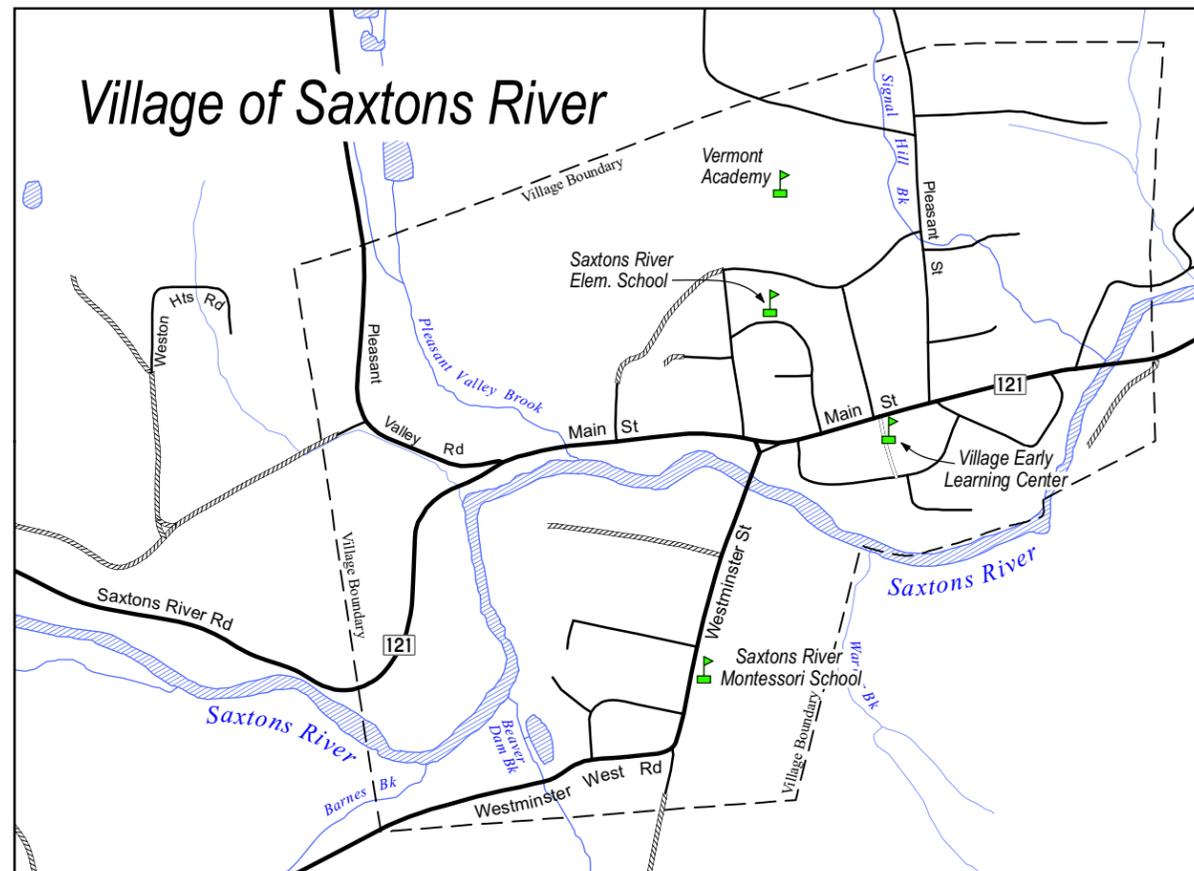
infrastructure. These partnerships can reduce expenses and increase efficiencies. The town and school, working together, have also been more competitive for state and federal grants.

School officials can engage local businesses for student learning. For example, Flex Fitness has certified strength and conditioning trainers who work with student-athletes. Strength trainers have specialized skills to help athletes improve at their chosen sport and avoid or recover from injuries. This is just one example. Town officials have repeatedly encountered a range of local businesses, all eager to engage our schools to recruit employees.

Rockingham, Grafton, Athens, and Westminster share a school district and can partner to advance areas of common interest. During the pandemic, that might include town health officers working collaboratively with other town health officers because we aim to keep students healthy and safe. Safe Routes to School and other community initiatives could be started in Rockingham but extended to other towns and their schools. Inspecting and enforcing rental housing codes in every town may help school children succeed without these life stresses. Each town has its unique administrative structure, which makes collaboration difficult. Long-term, town officials can benefit from working together.

Educational Facilities Bellows Falls & Saxtons River Rockingham, Vt.

2024 Town Plan



Educational Facility

- Interstate highway
- Federal or state highway
- Class 1 town highway - paved
- Class 2 town highway - paved
- Class 3 town highway - paved
- Class 3 town highway - unpaved
- Class 4 town highway (not all are shown on map)
- Legal town trail
- Private road/drive
- Railroad
- Stream
- River or pond

Data sources:

- Educational facility locations were digitized by WRC from 1:5000 Vt. orthophotos. Data are current to 2024.

Figure 15



Scale 1:12,000

11 Municipal, Health & Human Services Facilities

11.1 Objectives

The following objectives are the Town Plan's obtainable targets for applying the Maintain | Evolve | Transform vision.

- Prioritize facility improvements in all municipal buildings and grounds.
- Support recreational opportunities using public-private partnerships.
- Develop clear policies for transportation and municipal services.
- Seek improved coordination for all public safety services.
- Maintain and improve access to health and human services.
- Develop an effective communications system for Rockingham residents.
- Advocate for cell service throughout the town.

11.2 Maintain | Evolve | Transform

Facilities & Services are divided into these three distinct categories. Community planners use a Maintain | Evolve | Transform vision to focus on planning priorities and define the degree of change required.

Maintain: Sustaining facilities & services in their current form.

- Bellows Falls and Saxtons River wastewater treatment plants
- Bellows Falls water treatment plant
- Rockingham cemeteries
- The Greater Rockingham Area Services (GRAS) community health center

Evolve: Incremental changes to improve facilities & services

- Fire Department's coordination or consolidation
- Rockingham Recreation Department
- Rockingham Highway Department
- Information Technology, Website, and Digital facilities

Transform: Fundamental changes needed to sustain or improve facilities & services.

- Bellows Falls Opera House restoration and maintenance
- Bellows Falls Opera House events management
- Youth-focused municipal facilities and services
- Cell service in the western parts of town

11.3 Recommendations

These recommendations are how planners expect to implement the Utilities & Facilities objectives and Maintain | Evolve | Transform vision.

- Develop an Opera House engineering and architecture restoration management plan that schedules repairs and restoration.
- Support Rockingham Entertainment Development LLC (RED), an independent organization that manages movies, live events, and theatrical productions in the main theater of the Opera House.
- Increase program offerings at the Recreation Department, so the building is used full-time. Create a communications strategy to promote the recreation department, public lands, outdoor trails, public meetings, and workgroups.
- Maintain an active collaboration with Greater Rockingham Area Services (GRAS) and the Town of Rockingham by co-sponsoring grants to fund facility improvements, integrating GRAS in

municipal planning work, and collaborating to address substandard housing and at-risk populations.

- Partnering with the WNESU and Greater Falls Connections, develop a youth center for after-school and summer programs in Bellows Falls.
- Continue to assess the community's fire service needs, develop recommendations for consolidating services, and improve coordination and communication between the three independent fire departments.
- Support the Rockingham Meeting House graveyard conservation committee and commit local funds to preserve and maintain all cemeteries.
- Support the construction of new cell towers in rural Rockingham to expand cell phone coverage for all residents.

11.4 Background

This chapter reviews public and private utilities and facilities that provide essential services for Rockingham residents. Community facilities and services are provided for public health, benefit, safety, and enjoyment. Community facilities and services significantly impact the town's ability to change and grow.

By law, the town plan reviews essential services in detail and provides information necessary to determine service capacity. The town's future depends upon the availability of these services, and planners must understand where deficiencies exist and address them before proposing or allowing new development.

In Rockingham, community facilities and services essentially meet the needs of today and projected needs for the future. This is an enviable position as Rockingham has few practical limitations that could restrict changes in land use zoning or other development projects.

Some deficiencies are covered in this chapter. They range from a need to better coordinate existing services, identifying areas of town missing critical infrastructure, and acknowledging that key town assets have aged and must be repaired.

11.5 Municipal Facilities & Services

Rockingham Highway Department

The Rockingham Highway is responsible for maintaining all town-owned public roads and streets. The Highway Department operates out of two separate highway garages. The Village highway crew works from the Blake Street Garage in Bellows Falls. The Town Highway Crew works from the VT Route 103 garage (shared with the Rockingham Volunteer Fire Department). The Highway Department is staffed by a Highway Superintendent, a foreman for each garage, and nine highway support staff. No major capital projects are planned for the highway garages, although annual maintenance and building upgrades happen annually. There is a yearly appropriation to replace or upgrade vehicles and equipment. The town also maintains a larger equipment fund to save money for future purchases while paying loans for previously purchased equipment.

The town maintains a Road Surface Management System (2018) and a culvert inventory and assessment database (2019). This information assists town officials in planning for paving and culvert replacement projects. These inventories are updated every five years or as needed. The town must maintain highway management tools, so transportation projects are chosen based on objective criteria and needs such as

road conditions and traffic volumes. By reference, the Rockingham Road Surface Management System (2018) and the Culvert Inventory (2019) are incorporated into this town plan.

Towns must have a strategic plan to stabilize road drainage and restrict the erosion of road material into surface waters. Vermont's Municipal Roads General Permit aims to reduce stormwater-related erosion on town roads. The Vermont Clean Water Act requires municipal permitting. By reference, the Greater Rockingham Area Stormwater Master Plan (2022 or the latest version) is incorporated into this town plan.

The following municipal policies governing transportation are referenced in the town plan.

- Town Road and Bridge Standards (2022 or the latest version)
- Road Work, Stormwater Connections, Highway Access (2022 or latest version)
- Class 4 Highways and Trails (2022 or the latest version)
- Highway Construction Specifications (2022 or the latest version)

The Transportation Chapter covers the Highway Department and the transportation system in more detail. There are no known transportation constraints to future development.

Rockingham Recreation Center

The Rockingham Recreation Center, at 10 Playground Road in Bellows Falls, provides the community with a healthy place to socialize and play games while being physical at the same time. The center has three playing fields, two basketball courts, two tennis courts, hiking trails, a playground with a pavilion, a swimming pool, and an indoor recreational space. The Recreation Center is adjacent to 40 acres of town forest land.

The Rockingham Recreation Center hosts a community garden at the bottom of the town ski slope. The 'Garden on the Hill' serves 12 households that grow vegetables and flowers. Gardeners are renters or homeowners with little land. Garden fencing is used during the season and removed during the winter for the ski tow.

The Rockingham Recreation Center has a part-time director and seasonal staff to manage the facilities and programs. The operating budget averages 170k, which is offset by 26k in revenues. In addition to the Recreation Center, the recreation staff manages.

- The Wells Street Playground in Bellows Falls includes a little league field, basketball court, playground, and picnic area.
- The Saxtons River Recreation Area at 75 Pleasant Valley Road includes a swimming pond, basketball court, playground, picnic area, and a soccer field.

Rockingham residents have access to other recreation areas, including:

- The Central Elementary School Playground in Bellows Falls is open after hours for public use.
- Minard's Pond and the Bellows Falls Watershed District off Pond Road is a 228-acre conservation area with a network of hiking trails.
- Herrick's Cove is a 190-acre recreational area located at the confluence of the Williams and Connecticut Rivers. Great River Hydro owns the property but makes it available to the public.
- The Adams Grist Mill and Poet's Seat riverside park off Mill Street is a 7-acre recreational area that abuts the Connecticut River.

The recreational facilities meet the community's need for outdoor recreation. There is limited availability for indoor recreation and especially indoor spaces for young and adolescent children. A high community priority has been reestablishing a youth center for after-school and summer programs.

Rockingham Free Public Library

The Rockingham Free Public Library, founded by the Rockingham Library Society in 1799, is located at 65 Westminster Street in Bellows Falls. The building was constructed in 1908 as one of 4 'Carnegie libraries in the State of Vermont. While a town facility, the library is independently governed and managed separately from the municipal government. Rockingham taxpayers annually support the library, but revenues are also raised from individuals, businesses, and other organizations. The library offers a typical range of services and reading materials consistent with other small-town libraries.

Bellows Falls Opera House

The Bellows Falls Opera House, constructed in 1926, is located at 7 Square in Bellows Falls. The building is divided by the opera house, town offices, and commercial retail spaces. The main theater and front foyer are dedicated to movies, live events, and theatrical productions. The 2nd and 3rd floors have administrative offices, and local boards and community groups use the lower theater for public meetings. Two storefronts are leased to retail or restaurant-style businesses. The opera house was renovated in 2006, and the town is paying bond payments for those improvements until 2026.

As the town contemplates the Opera House's 100th anniversary, its recognized building conditions have deteriorated, and significant renovation projects are needed. Town staff lack the capacity to evaluate the building and prioritize a list of capital projects to address needed repairs. Town officials maintain the building, but projects often come from deferred maintenance or outright failures. An example is the aging rubber membrane roof that is continually repaired when leaks form. The membrane is past its life cycle and must be replaced.

The roofing, deteriorating brick walls, and windows are creating liabilities that, if not addressed now, will result in more costly repairs later. The year 2026 marks the Opera House's 100th anniversary. To look forward to another 100 years, town officials can create a comprehensive building and facilities management plan that schedules repair and restoration work.

Water Services

Rockingham has the Bellows Falls Water Department that supplies public water to Bellows Falls Village, west to Gageville (north Westminster), south to Kissel Hill and Bellows Falls Union High School, and north to the Rockingham Industrial Park. The Water Department is staffed by a Chief Operator and two operators and is supported with 10% time from municipal administration. The water department is an enterprise fund, meaning the customer pays for costs through user fees. There are approximately 2000 service connections, and water demand ranges between 300-500k gallons per day. The system has a maximum capacity of 1 million gallons per day and a storage capacity of 2 million gallons. Minard's Pond supplies the water. The pond is protected by a 227-acre watershed strictly regulated by the Vermont Department of Health and the U.S. Environmental Protection Agency. The Bellows Falls water treatment plant was constructed in 1990, and no significant renovations are planned. Water service lines are replaced or upgraded according to a capital improvement program. Total operation costs (minus capital projects) average 550k per year, and infrastructure improvements vary widely from 250k- 1 million annually.

Private water systems include the Vermont Academy, the Warner Center, and the Northshore Mobile Home Park. Outside of these service areas, people rely upon private groundwater systems, including drilled wells or spring-fed water connections.

Wastewater Services

There are two wastewater plants - Bellows Falls Village and Saxtons River Village. People rely on private septic systems to treat their wastewater outside these service areas.

The Bellows Falls Wastewater Plant serves the village and includes parts of northern Westminster and the US Route 5 corridor to the Rockingham Industrial Park (comparable to water services). In addition, sewer service lines cross at the Vilas Bridge, serve parts of Walpole, and then re-cross the Connecticut River into Westminster along VT Route 123. The sewer department processes approximately 500k gallons per day. The capacity of the sewer plant is 1.4 million gallons per day. The wastewater plant had a 9.8 million dollar upgrade in 2018, and there are no plans for additional plant improvements. The system, comprising 4 pump stations and sewer lines, is regularly repaired or upgraded. The most recent change was in December 2020, when the sewer plant incorporated a sludge dryer system that renders the sludge product into pellets. The sewer plant averaged 420 tons of waste shipped to the Newport, VT landfill for 60k. The sewer plant now produces fertilizer pellets that local farmers use. Total operation costs (minus capital projects) average 750k per year, and infrastructure improvements are funded by municipal bonds with an average of 800k debt service annually. Debt service will remain high until the 6.82-million-dollar sewer plant bond payments end in 2038.

The Saxtons River Village Wastewater Plant serves the village and Vermont Academy. The wastewater plant processes approximately 35k gallons per day with a total capacity of 100k gallons per day. The wastewater plant was completely rebuilt in 2017 at a total cost of 2 million dollars. There are no plans for additional plant improvements.

The Bellows Falls Sewer Department is staffed by a Chief Operator and three operators and is supported with 10% time from municipal administration. The Bellows Falls sewer department is an enterprise fund, meaning customers pay for costs through user fees. Bellows Falls is contracted to manage the Saxtons River Sewer Plant.

The sewer plants have sufficient capacity to support development in their service areas. Development will continue to be constrained in areas relying on private septic systems. The land areas designated for future growth are within public wastewater treatment service areas. Land areas designated to remain rural are all located in areas that rely upon septic systems.

Solid Waste Services

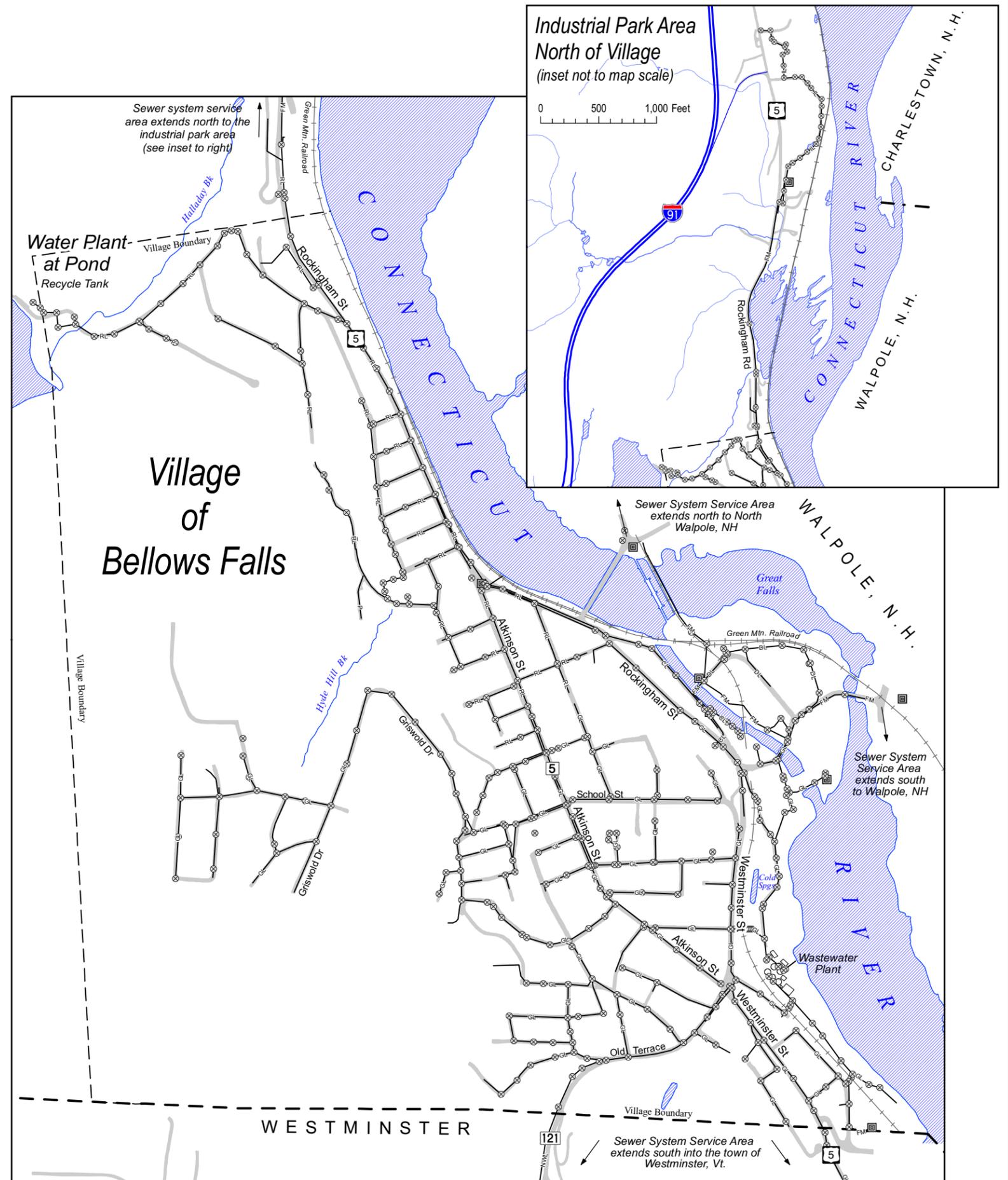
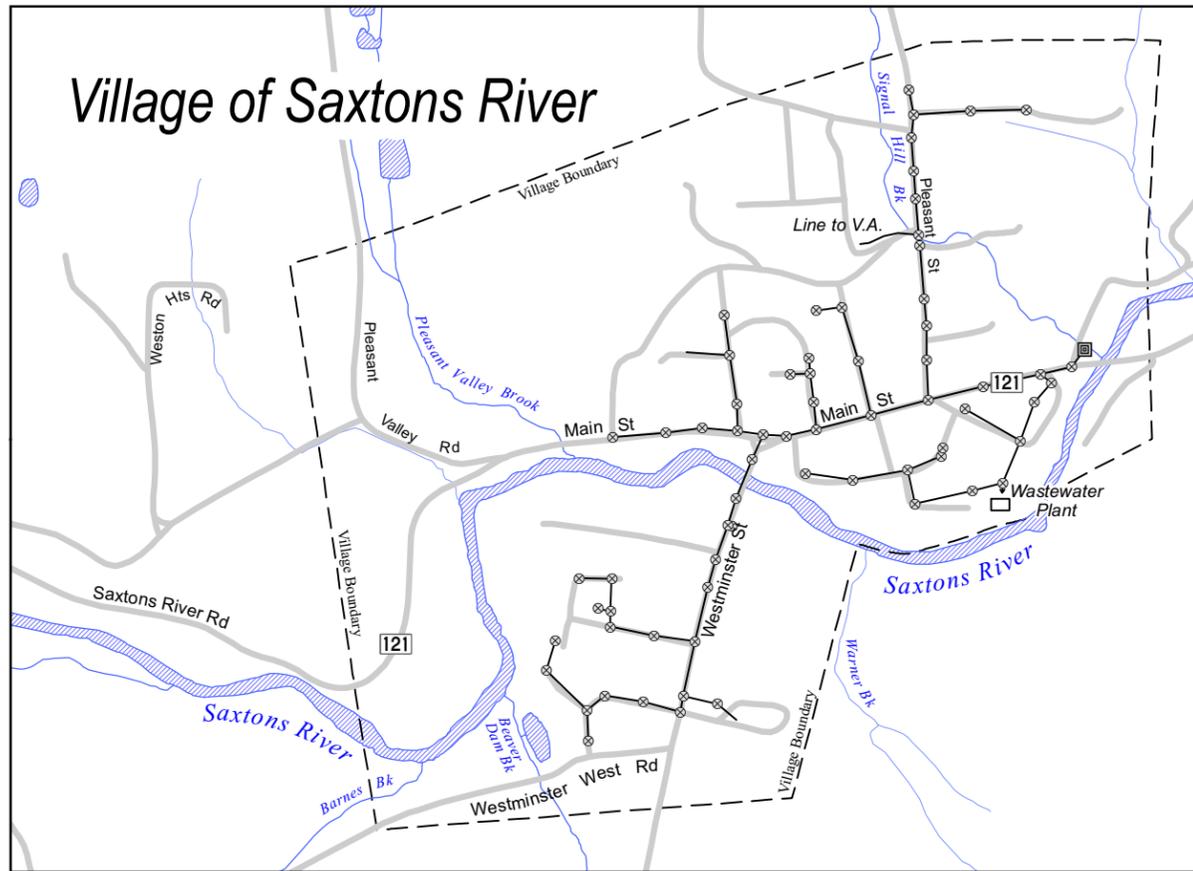
The Rockingham-Westminster Solid Waste and Recycling Drop-Off Facility is a town-managed transfer center located at 7446 US Route 5 in Westminster. For over 30 years, the facility has been operated and certified as a small-scale (<400 tons per year) recycling drop-off center. The 40'x60' storage building and two storage sheds are the only buildings on the property. A recycling compactor (2017) and a trash compactor (2018) are protected with framed roofs. There are separate dumpsters for metal, construction, and demolition waste. There are designated areas for tires, household furniture and appliances, and brush disposal. In 2022, the Rich Earth Institute expanded its Brattleboro urine reclamation program and operates an on-site urine recycling depot. The 7.1-acre facility sits atop the old village dump (closed in the 1970s). The 'dump' was covered by approximately 18-36 inches of clean fill. The general fund supports the transfer station but has revenues from user fees and recycled goods.

Sewer Service Area Detail

Bellows Falls & Saxtons River

Rockingham, Vt.

2024 Town Plan



- Pumpstation
- ⊙ Sewer manhole
- Sewer lines
- CL Canal Street pump station
- IL Industrial Park line
- NWL North Westminister line
- RL Rockingham Street Pump Station
- GL Gravity flow line
- DL Depot Street line
- FM Forcemain
- P Private line

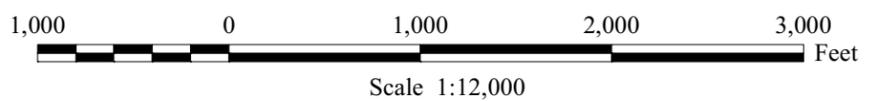
Data sources:

- Bellows Falls sewer lines and associated attributes are from data from the Dufresne Group, current to 2020, taken from surveys, site plans/engineering drawings, and local knowledge.
- Saxtons River sewer lines and associated attributes digitized by Town of Rockingham based on road centerlines and town utility maps.

Figure 17

WINDHAM REGIONAL COMMISSION

139 Main St • Suite 505 • Brattleboro, VT 05301
(802) 257-4547 www.windhamregional.org



Despite years of significant financial losses and recent changes in the value of recycled goods, the transfer station is making progress. In 2022, the facility had 174k in revenue to offset the 239k expenses.

Solid waste management facility certification is required every ten years (10 V.S.A. § 6605). The facility was last certified in 2017. The Town must maintain a current Facilities Management Plan as part of this certification process. The facility, if properly managed, will meet the needs of Rockingham residents for the foreseeable future.

Rockingham is a Southern Windsor/Windham Counties Solid Waste District member. The district's Solid Waste Implementation Plan, as most recently adopted, is incorporated into the town plan by reference. By belonging to a solid waste district, Rockingham is meeting its obligation under state law to plan for the community's solid waste disposal needs.

Cultural Facilities

The Rockingham Meeting House, built in 1787, is located at 11 Meeting House Road in Rockingham. Once called the Old North Meeting House or First Church in Rockingham, this colonial-style meeting house is an extraordinarily unique and historic building. The Rockingham Meeting House is on 4 acres of land it shares with the town's original burial ground. The building, constructed within ten years of Anglo-American colonial settlement in Rockingham, is listed on the National Register of Historic Places and declared a National Historic Landmark. Rockingham's Certified Local Government (CLG) program manages the maintenance and operations of the building. By tradition, the Rockingham Selectboard hosts one summer meeting at the meetinghouse.

The Bellows Falls Waypoint Welcome Center, built in 2003, is located at 17 Depot Street in Bellows Falls. The center is part of the Connecticut River Scenic Byway system of visitor or waypoint centers that operate along the Upper Connecticut River in New Hampshire and Vermont. The building's architecture was uniquely designed to reflect the town's rail and transportation history. These architectural details are a narrative for a time when Bellows Falls was defined by railroads and was a transportation hub with one of the longest arch bridges in the United States. The waypoint center is staffed by the Greater Falls Chamber of Commerce and has meeting space for community groups and organizations.

The Bellows Falls Historical Society and the Frank Adams Grist Mill

The Bellows Falls Historical Society operates an education center and museum at a storefront on 31 Westminster Street. The Historical Society has actively spearheaded a restoration effort for the Frank Adams Grist mill using a combination of charitable donors and the services of area businesses. The gristmill was closed in 1961, and the original equipment and machinery were left preserved on site. The Historical Society's long term goals are to stabilize the building and improve public accessibility.

The Bellows Falls Train Station

In 2022, Rockingham voters approved the town's purchase of the train station located on the Island. This station, the 2nd stop along Vermont's Amtrak intercity rail service line, is a one-story brick building in significant need of restoration. The Development Office is developing a management plan to renovate the building and secure a private business to share space and operating costs. The Development Office has secured federal funds to start a renovation and operations plan. They are also working with Vermont state officials to create a permanent lease arrangement that secures the town's rights to operate the train station for the foreseeable future.

Bellows Falls Fish Ladder and Visitors Center

The Nature Museum at Grafton is a nonprofit organization that operates the fish ladder and visitor center at the Great River Hydro dam. The fish ladder is open to the public Fridays and Saturdays during the summer months. The fish ladder was constructed in 1982 as part of a conservation project to reintroduce salmon into the upper Connecticut River. Connecticut River dams built in the late 1800s and early 1900s blocked fish passage, and combined with industrial pollution, wild Atlantic salmon disappeared. Recent inventories of salmon along the Connecticut River indicate small populations are getting re-established.

Public Cemeteries

Rockingham has five town-owned and operated cemeteries. These include the Oak Hill Cemetery, Restland Cemetery, Saxtons River Cemetery, Rockingham Meeting House Cemetery, and Cambridgeport Cemetery. Restland Cemetery does not have additional capacity and is considered inactive. All other cemeteries have additional capacity via unused lands or space reallocation (i.e., filling in roads). Rockingham has sufficient cemetery capacity to last for the foreseeable future.

The cemeteries must be managed and maintained, including summer lawn maintenance and active restoration of headstones, fencing, and other cemetery artifacts. The Rockingham Meeting House Cemetery enjoys a cadre of civic leaders and volunteers who restore monuments, headstones, fencing, and the property's historical views. The other cemeteries lack equal attention, and this volunteer model can be exported to the other cemeteries.

11.6 Public Safety Facilities & Services

Police Department

Bellows Falls has a full-service police agency with a police chief, ten full and part-time officers, and a dispatcher. The department's operating budget averages \$1.1 million annually, which includes personnel, vehicles, equipment, and after-hours dispatch services with the Windham County Sheriff. The Police Department shares a building with the Bellows Falls Fire Department. In 2021, the Police Department responded to 3100 calls and made over 200 arrests, primarily in the village but also in Rockingham and Walpole (under VT-NH mutual aid).

The Saxtons River Village employs the Windham County Sheriff for six hours per week. The Vermont State Police cover the Town of Rockingham in a limited capacity.

Police services are scaled to the public's stated needs and appear adequate for the present and future needs of the community.

Fire Departments

Three fire departments operate independently within Rockingham.

- The Bellows Falls Fire Department operates as a municipal department with an annual budget. They share a building with the Bellows Falls police department at 170 Rockingham Street.
- The Rockingham Volunteer Fire Department is an incorporated non-profit organization that raises money privately and receives municipal funding. They share a building with the Rockingham Highway Department off VT Route 103.
- The Saxtons River Fire Department is an independent organization with no formal incorporation and raises money privately and receives municipal funding. They share a building with the Saxtons River Trustees at 44 Main Street.

These three departments have had varying levels of cooperation and collaboration over the last few decades. The departments will respond to calls, share materials and equipment, and host multi-department training sessions. Proposals to officially merge or create formal agreements that promote collaborations have been universally rejected by the departments. In 2022, these discussions restarted. The primary catalyst is that all three fire departments are constrained by building deficiencies, limited availability of volunteer firefighters, and available funds for upgrading vehicles and equipment. There are justifications for merging or, at a minimum, consolidating firefighting functions. As all three departments rely upon town funds to operate, the town should recognize its fiduciary responsibility to invest its resources wisely and, when possible, eliminate redundancy. Consolidation or coordination is also essential when applying for state and federal grants because grants are typically awarded based on department size and call volume. If the three departments applied for grants together, they would be more competitive.

In 2022, the three fire departments had approximately 35-40 active volunteer firefighters who responded to over 500 calls. Fire service levels are adequate, with no known constraints to future development. The community's priority is discussing how fire services for the community can be better coordinated among the three fire departments and to eliminate redundancies whenever possible.

Local Hazard Mitigation Plan

By reference, the Local Hazard Mitigation Plan for the Town of Rockingham (2022 or the latest version) is incorporated into this town plan.

Ambulance Services

Emergency medical response and transport are provided through private and public services. Golden Cross Ambulance is a private company that provides ambulance services and direct bills patients. They have a garage located at 7778 Route 5 in Westminster. All three fire departments can provide emergency medical response and lift assistance.

11.7 Private Facilities & Services

Electricity Infrastructure

Green Mountain Power is the electric utility serving Rockingham. Three-phase power is available in Bellows Falls, Saxtons River, the VT Route 103 corridor, Upper Bartonsville, and Cambridgeport Roads. Three-phase power is necessary to support commercial and industrial businesses and community net-metered and utility-scale renewable energy projects. All other electric infrastructure is covered under the Energy Chapter. Electric utilities are not a constraint on development.

Telecommunications Infrastructure

Two telephone companies provide landline phone and high-speed internet service in Rockingham – Consolidated Communications and Vermont Telephone Company. Comcast provides cable television and internet service along major road corridors. A surprising number of areas, typically north of VT 103, still rely on cable and not fiber networks.

There are only a few telecommunication towers in Rockingham and on Fall Mountain in Walpole, NH. Cell coverage is unreliable west of the Interstate. Rural Rockingham's lack of cell service reduces housing values.

11.8 Healthcare & Human Facilities and Services

Healthcare providers operate outside Rockingham and include the regional providers Springfield Hospital in Springfield, VT; Cheshire Medical Center in Keene, NH; and the Brattleboro Memorial Hospital in Brattleboro, VT.

The Health Center at Bellows Falls is owned and maintained by Greater Rockingham Area Services (GRAS). Historically, the health center was a full-service hospital. Greater Rockingham Area Services (GRAS), a nonprofit organization, manages the facility and grounds to fulfill its mission of leasing space to healthcare and social service providers who serve the local community's needs. The healthcare providers at the health center are the satellite operations of Springfield Hospital and North Star Health. Services include primary and pediatric care, inpatient and outpatient mental health services, physical therapy, and a walk-in clinic. Additionally, GRAS leases space to:

- Health Care & Rehabilitation Services (HCRS) offers evaluation and treatment of substance abuse, long-term mental health family and children's issues, and emergency crisis teams.
- FrontLine Foundations of North America, a nonprofit corporation, offers an outpatient program for veterans and first responders focusing on post-traumatic growth and resiliency.
- FACT TV, which is a non-profit public access station.
- Greater Rock Fitness is a health and wellness gym with fitness programs and exercise classes.
- Meeting Waters YMCA and Suzy's Little Peanuts Day School also lease space in an additional building on the GRAS campus.

Many of the non-profit organizations that serve Rockingham residents request annual appropriations from the town. In 2022, town voters approved contributions totaling about 92k to these providers. A few notable organizations are:

- The Parks Place Community Resource Center in Bellows Falls provides access to various health, education, employment, social justice, and human service programs.
- The Our Place Drop-In Center in Bellows Falls is a community meal site and operates a food pantry.
- The Bellows Falls Area Senior Center offers services and activities for seniors, serves lunch on weekdays, and coordinates the Meals on Wheels program.
- The Women's Freedom Center in Brattleboro includes Rockingham in its Windham County and Southern Windsor County service area. The Women's Freedom Center addresses issues of violence and abuse, providing women with access to mental health services.

12 Rockingham's Energy Chapter

This chapter is designed to meet Vermont Statutes 24 VSA, section 4352 c Enhanced Energy planning requirements.

For the purposes of this chapter, energy is defined as usable power that is derived from fuel sources such as transportation fuel, heating fuel, electricity generation sources, etc. Vermonters use a variety of fuel sources to meet their energy needs, all of which present tradeoffs regarding societal and environmental concerns. Most of that energy is imported—all the petroleum that is used for transportation and heating, for example, is imported from outside the state, and much of that from outside the United States. Most of Vermont's hydroelectric power is imported from Canada. The only fuels that are not imported to Vermont are locally grown wood used for heating, and small amounts of locally produced

[1]

wind, hydroelectric, and solar power.

This chapter will concentrate on the effective use of our energy to achieve a localized climate that reduces greenhouse gas emissions and enhances the sequestration of carbon. Toward this end, Rockingham will act locally to fully support Vermont's two energy initiatives and goals: Vermont's Comprehensive Energy Plan of 2016 and Vermont's Global Warming and Solutions Act of 2020.

Vermont's Comprehensive Energy Plan of 2016 - Goals:

- Reduce total energy consumption per capita by 15% by 2025, and by more than 1/3 by 2050
- Meet 25% of the remaining energy need for renewable sources by 2025, 40% by 2040 and 90% by 2050
- Three end-use sector goals for 2025: 10% of transportation energy comes from renewable resources (electric/biodiesel), 30% of building heating costs come from renewable energy, and 67% of our electric power is from renewable resources

Vermont's Global Warming and Solutions Act of 2020 – Greenhouse Gas Reduction Goals

- Not less than 26% from 2005 greenhouse gas emissions by January 1, 2025 pursuant to the State's membership in the United States Climate Alliance and commitment to implement policies to achieve the objectives of the 2016 Paris Agreement;
- 50 not less than 40% from 1990 greenhouse gas emissions by January 1, 2030 pursuant to the State's 2016 Comprehensive Energy Plan; and
- If practicable using reasonable efforts, 75 not less than 80 percent from 1990 greenhouse gas emissions by January 1, 2050 pursuant to Vermont's 2016 Comprehensive Energy Plan.

The following Objectives and Action Steps were formatted to comply with the guidelines proposed by

the Windham Regional Commission in accordance with technical assistance under Act 174

12.1 Objectives

The following objectives are the Town Plan's obtainable targets for applying the Maintain – Evolve – Transform vision and with a particular focus on environmental and climate justice.

- **Conservation and Efficiency:** Rockingham will reduce total energy use according to State guidelines by promoting energy conservation and efficiency measures and shifting towards renewable energy sources.
- **Reduce Transportation Energy Demand:** Rockingham will work to reduce transportation energy demand by reducing single-occupancy vehicle use and encourage use of renewable (EVs) or lower-emission energy sources for transportation.
- **Maximize land use pattern:** Rockingham will promote appropriate land use patterns, development densities, and types of development that collectively result in the conservation of energy and reduction of greenhouse gas emissions.
- **Promote Regenerative Agriculture Practices:** Encourage the distribution of information to homeowners and farmers on regenerative agricultural practices using multiple marketing approaches.

Maintain | Evolve | Transform

Maintain energy assets or policies that must be maintained and preserved for future generations. We have not changed for decades and should not change these policies, practices at any time in the conceivable future.

- Work directly with the Selectboard, Planning Commission, Development Review Board, and Conservation Commission to promote energy conservation and renewable energy generation in their processes. The role of the Energy Coordinator is to encourage and support awareness programs for energy conservation and renewable energy generation.
- Support programs for weatherization of new and existing dwellings, especially for the low and moderate-income rental housing in Bellows Falls, Saxtons River, and Bartonsville Villages.
- Encourage and support awareness programs on energy conservation and the availability and use of renewable and alternative fuels.

Maintain the Town's historic settlement pattern of thickly settled villages and hamlets and open landscapes.

- Apply the Ruling of the Public Utility Commission's Ruling 5.100 and 5.103 for Preferred Site location of Construction and Operation of Net-Metering Systems.

Evolve : Energy assets or policies that should change in ways that retain our original focus but are adapted to acknowledge the realities of a 21st economy.

- The Town's Energy Committee formally a sub-committee of the Rockingham Conservation Committee, has been reconstituted under the direction of the Energy Coordinator and reports directly to the Town Manager and works directly with the Planning Commission, Development Review Board, and the Conservation Commission.
- Minimize the need for automobile dependence.
- Promote industrial scaled development along the existing rail line to support the use of freight rail.
- Encourage any potential commercial generation facilities to be within those areas identified as preferred sites. At these sites, support renewable energy generation including biomass using local wood supplies, solar, geothermal, and hydro-power sources.
- Support the preference of small-scale active and passive solar installations, specifically on rooftops, rather than larger scale ground mounted utility installations.
- Actively discourage any renewable energy generation facilities in the Known Constraints areas and work cooperatively with developers who attempt to construct renewable energy generation facilities in a way that redirects their goal.

Transform: Energy assets or policies that have proven to be obsolete and fundamentally in need of improvements. It might have made sense decades ago, but modern realities demand that we innovate to maintain relevance in a 21st-century economy.

- Rockingham will demonstrate leadership by example and promote renewable energy generation and energy conservation. The Town shall pursue energy conservation and renewable energy generation projects for all town properties, facilities, and vehicles.
- Promote a shift away from single-occupancy vehicle trips implementing land use regulations that promote walking, bicycling, public transportation, and carpooling.
 - Promote the construction of high-density rental housing and encourage the continued repurposing of older housing stock for rental housing by promoting energy efficiency and renewable energy improvements.
 - Limit development in the least accessible areas of town.

- Promote land use and conservation policies that protect forest blocks, habitat corridors, agricultural lands, and headwater watersheds.
 - Support and encourage renewable energy generation facilities and/or biofuel production on the farms and the housing associated with the farm. The design of these facilities should complement existing agricultural operations and remain clearly subordinate to the principal occupation of farming.
- Encourage the distribution of information to homeowners and farmers on regenerative agricultural practices using multiple marketing approaches.
- Explore the potential for fuel switching for the municipal buildings.
- Develop an Energy Plan updated yearly that identifies target dates, accountability, and measures of success.

Action steps for each of these policy decisions follows. The Goals/Policy/Action Steps were formatted to comply with the guidelines proposed by the Windham Regional Commission in accordance with technical assistance under Act 174.

12.2 Rockingham Energy Action Steps:

While the following is an itemization of energy goals and policies, it is the considered opinion of the Energy Committee that the highest priority be given to improving building energy efficiency and durability. In so doing, we must remember that energy efficiency and water and vapor management be given equal intensity when undertaking new construction or remediation in design and construction.

It is also incumbent upon the town's leadership to continue aiding homeowners, renters, landlords, and business owners to find access to capital to embark on these projects.

13 Conservation and Efficiency

Goal: Rockingham will reduce total energy use according to State guidelines by promoting energy conservation and efficiency measures and shifting towards renewable energy sources.

Policy #1: The Town's Energy Committee formally a sub-committee of the Rockingham Conservation Committee, has been reconstituted under the direction of the Energy Coordinator and reports directly to the Town Manager and works directly with the Planning Commission, Development Review Board, and the Conservation Commission.

Membership will include with the Energy Coordinator as

- Chair: 1 member of the Selectboard
- 1 member of the Conservation Commission
- 4 community members
- 1 student

Policy #2: The Energy Coordinator and Committee, appointed by the Selectboard, will work directly with the Selectboard, Planning Commission, Development Review Board, and Conservation Commission to promote energy conservation and renewable energy generation in their processes. The role of the Energy Coordinator is to encourage and support awareness programs for energy conservation and renewable energy generation.

1. The Energy Committee will undertake planning studies for identifying and promoting renewable energy projects on municipal lands and buildings.
2. The Energy Committee will provide resources to residents on energy conservation, efficiency, and renewable fuel options. These resources can include information that is available in the town offices or recycling center. It may also involve hosting special energy events and promotional activities in the town.
3. When relevant, the Energy Committee shall work with the Development Review Board and encourage energy conservation and renewable energy generation in all large-scale commercial and residential development projects.
4. The Energy Committee, in consultation with the Rockingham Development Director, will seek out available grants for the town and schools to implement energy conservation or generation projects. Emphasis is on renewable energy projects that are solar, geothermal, or heating using alternative and renewable heating fuels.

Policy #3: Support programs for weatherization of new and existing dwellings, especially for the low and moderate-income rental housing in Bellows Falls, Saxtons River, and Bartonville Villages.

1. The Town Planner shall work to make Landlords aware of state energy codes and resources for energy efficiency especially at times following apartment inspections
2. The Town Planner will encourage the retro-fitting of existing structures with energy saving measures such as air sealing, insulation, energy efficient windows, heating

equipment, energy efficient appliances, and practices addressing water and vapor management.

3. All permits for commercial improvement or new construction will meet the options to provide at least one level 2 charging facility on their property to facilitate electric vehicle use, and/or install solar panels, and/or design the heating system to use air-source heat pumps or other renewable energy systems, and/or where feasible ensure compliance to Vermont's CBES Energy Code.

3. The Energy Committee will increase public awareness of weatherization programs with an emphasis on targeted training programs for owners of rental housing.

4. During any zoning or subdivision permitting, the Town Planner shall inform homebuilders about the Vermont Residential Building Energy Standards (RBES).

5. The Town Planner will encourage contractors to file Vermont Residential Building Energy Standards (RBES) Certificates of Compliance upon completion of construction. In addition the Town Planner will make quarterly reports to the Energy Committee of contractor compliance to the RBES. While compliance is the law our current state statutes have no provision for enforcement.

6. In development review, the Town Planner will encourage the reduction of outdoor lighting by the use of energy-efficient lighting fixtures and motion-sensitive security lighting.

7. The Energy Committee will examine opportunities to provide home energy audits/visits for property owners so that they may take action to conserve energy and reduce related costs.

8. The Energy Committee, Town Planner, and members of the ad hoc landlord group will explore the adoption of an ordinance requiring Minimal Rental Housing Energy Efficiency Standards at point of sale.

9. The Energy Committee, and Town Planner will work with all professionals involved with the sale of a house (real estate agents, lawyers, and bankers) to ensure proper compliance to the Residential and Commercial Building Energy Standards.

10. The Energy Committee and Town Planner will encourage all home improvement and building contractors doing work in Rockingham to gain certifications that will promote high performance practices in weatherization.

11. The Energy Committee will undertake a communication strategy to inform homeowners how to select qualified contractors.

12. The Town website will have a folder devoted to energy conservation efforts and resources.

Policy #4: Encourage and support awareness programs on energy conservation and the availability and use of renewable and alternative fuels.

1. Promote switching to wood, liquid biofuels, biogas, geothermal, air sourced heat, solar and wind as fuel sources.
2. Promote other suitable technologies such as advanced wood heating systems and cold-climate heat pumps, or other energy efficient heating systems.
3. Update the Bellows Falls Village study on geothermal energy, promote the awareness and use of this unique energy resource.
4. The Energy Coordinator, supported by the Town, shall promote energy awareness curricula for students in the Saxtons River Elementary School, Central Elementary School, Bellows Falls Middle School, and Bellows Falls Union High School.
5. Encourage homeowners to address all matters of water and vapor management prior to energy efficiency measures of air sealing and insulation.

Policy #5: Rockingham will demonstrate leadership by example and promote renewable energy generation and energy conservation. The Town shall pursue energy conservation and renewable energy generation projects for all town properties, facilities, and vehicles.

1. The town will conduct energy audits on all town buildings and prepare an energy efficiency plan that establishes a baseline of energy use and then emphasizes energy reduction, reduction of greenhouse gas emissions, and efficiency with ongoing facility maintenance and renovation.
2. The Selectboard, working with a trained employee in building operations management, to set aside money each year in the annual budget for the installation of energy efficient equipment in town buildings.
3. Renovations of publicly owned buildings shall incorporate energy conservation and renewable energy initiatives.
4. The Energy Coordinator and the town staff having responsibility for building operations will provide training for building and equipment operations.
5. If a property maintenance supervisor is hired, he/she must attain the Building Operator's Certification.

A. Reducing Transportation Energy Demand

Goal : Rockingham will work to reduce transportation energy demand by reducing single-occupancy vehicle use, and encourage use of renewable or lower-emission energy sources for transportation.

Policy #1: Promote a shift away from single-occupancy vehicle trips implementing land use regulations that promote walking, bicycling, public transportation, and carpooling.

1. The Energy Coordinator will promote *Go! Vermont* (www.connectingcommuters.org) and examine ways to facilitate car and van pools and ride-sharing.
2. The Town will plan for a bicycling corridor between Bellows Falls and Grafton Villages to promote seasonal commuting and tourism. This will include prioritizing the design of road and bridge upgrades to enhance safety for bicyclists and motorists.
3. The Energy Coordinator will work with town officials to promote fuel efficiency and alternative technologies for highway vehicles and equipment.
4. Provide the opportunity for frequently in-town looped public transportation to increase residents' opportunities for employment, shopping, healthcare and visitors travel in our community. The intention is to identify local, commonly used transportation patterns and link the villages of Rockingham together with other public transit and rail while reducing the need for cars and additional future parking
5. Promote the installation of level 2 charging stations for all residential and commercial properties

Policy #2: Promote passenger rail or bus service and regional transit service to major transportation hubs and employment centers located in the Upper Valley, Claremont - Springfield, Keene -Brattleboro, and Springfield, MA.

B. Maximizing land use patterns

Goal 1: Rockingham will promote appropriate land use patterns, development densities, and types of development that collectively result in the conservation of energy and reduction of greenhouse gas emissions.

Policy #1: Maintain the Town's historic settlement pattern of thickly settled villages and hamlets and open landscapes.

Policy #2: Minimize the need for automobile dependence by promoting mixed use development

1. Allow for residential land uses in all commercial and industrial zoning districts. Emphasize mixed-use development in the Central Business Districts, and the Industrial District.
2. Promote mixed use development projects in the Central Business, Central Business Expansion, and the Industrial 14 zoning districts. Emphasize mixed uses for the redevelopment of all brownfield sites located in Bellows Falls.

Policy #3: Promote the construction of high-density rental housing and encourage the continued repurposing of older housing stock for rental housing by promoting energy efficiency and renewable energy improvements.

1. Re-examine residential zoning in Bellows Falls to create areas for high density rental housing which is close to major roadways and commercial land uses.
2. Encourage energy efficient improvements of older residential Victorian homes before they are converted to high density, energy efficient multi-family units.

Policy #4: Limit development in the least accessible areas of town.

Policy #5: Promote land use and conservation policies that protect forest blocks, habitat corridors, agricultural lands, and headwater watersheds.

Policy #6: Promote industrial scaled development along the existing rail line to support the use of freight rail.

Goal 2: The Town of Rockingham will locate areas appropriate for renewable energy generation based on resource potential and development constraints.

Policy #1: Encourage any potential commercial generation facilities to be within those areas identified as preferred sites. At these sites, support renewable energy generation including biomass using local wood supplies, solar, geothermal, and hydro-power sources.

Policy #2: Support the preference of small-scale active and passive solar installations, specifically on rooftops, rather than larger scale ground mounted utility installations.

Policy #3: Develop a set of criteria, based upon the guidance listed in “*Rockingham’s Preferred Locations*” section, to be used by the Selectboard, Planning Commission, and Windham Regional Commission for determining the preferred status of renewable energy generation sites.

Policy #4: Support and encourage renewable energy generation facilities and/or biofuel production on the farms and the housing associated with the farm. The design of these facilities

should complement existing agricultural operations and remain clearly subordinate to the principal occupation of farming.

Policy #5: Actively discourage any renewable energy generation facilities in the Known Constraints areas, as defined by the state of Vermont in Act 174, and work cooperatively with developers who attempt to construct renewable energy generation facilities in a way that redirects their goal.

C. Promote Regenerative Agriculture Practices

Policy #1: Encourage the distribution of information to homeowners and farmers on regenerative agricultural practices using multiple marketing approaches.

Supporting Narrative

In order to effectively evaluate where the town of Rockingham needs to go in terms of its greenhouse gas emissions and energy future, the community needs to understand how it is using fuel sources and generating electricity. We begin with an understanding of our current energy sources used within the town: electricity, propane gas, gasoline, diesel fuel, fossil heating oil, kerosene, wood, solar, wind, hydro, coal and geothermal. A more simplified measure of our town's energy expenditures reveals the following:

Heating – The long cold winters require significant energy to heat homes and other buildings in the town. The issues are significantly compounded by our older, poorly insulated housing stock. In addition, a lack of compliance to Vermont's Energy Code by home building contractors contributes to ongoing heat loss.

Transportation – Transportation energy costs are considerable, often nonnegotiable expense for residents who commute to work, travel for shopping and recreational activities, or travel as part of their business.

Electricity – Today's mechanical technologies increasingly rely on electricity to operate within the home. Consequently our electricity consumption is expected to increase. This is especially true when more car owners transition to electric vehicles and more buildings are heated and cooled with electricity because of the installation of cold climate heat pumps, heat pump water heaters, and improved HVAC ventilation systems.

13.1 Energy and the Local Economy

The cost of energy in Rockingham, including residential, commercial, and governmental use for heating, electricity and transportation was estimated to be \$17,241,262 million in 2014. This translates to a \$3,448 per resident annual expense.

Whereas energy is a major local expense, the two hydroelectric dams in town are a great economic and recreational asset. Dams are a significant energy generator, and contribute to the town's tax base. The hydroelectric plant in Bellows Falls has a capacity of 40,800 kW and is owned by Great River Hydro, which operates other dams along the Connecticut River. A smaller scale hydroelectric facility is located on the Williams River in Brockways Mills with a capacity of 500 kW and is owned by Ampersand Brockways Mills LLC.

This Energy Chapter should be used to improve economic prosperity, comfort, and health for the residents of Rockingham as well as do our part in meeting the State's energy goals. The town can accomplish this by primarily reducing energy costs through energy conservation and by a diversification and localizing of energy sources. However, it is important to acknowledge that a transition away from fossil fuel will have a negative impact on the town's three fossil fuel companies. They provide jobs for over 120 employees, donate to the town's activities and nonprofits, provide in-house training, are a source of instructors for the trades, and contribute to the tax base. A just transition away from fossil fuels must include job training and transition for these important members of our working community.

While we understand the disruption such a transition will cause. We need to recognize that a vast majority of the money spent on energy leaves the state. Reducing the use of energy sources from outside the town, increasing energy conservation, and sifting to locally produced power such as solar and locally source biofuels can improve household financial security and invest in our local economy.

13.2 Energy and the Environment

While Rockingham can do little to shift the broader state or national policies, we can do our part to decrease energy usage and increase local power generation and the sequestration of carbon dioxide.

Lowering emissions from greenhouse gases is the main focus of the Rockingham Energy Chapter. The other part of the solution is to sequester more carbon through enhancing natural processes of the carbon cycle, that is, capturing carbon dioxide through photosynthesis. Two primary methods are to advance soil health and forest health. When we damage soil, carbon dioxide is released back into the atmosphere. Carbon sequestration is using plants, trees and grazing and farming practices to capture carbon and store in the soil. Bringing carbon dioxide back into the plants and put back into the soil and working with microorganisms is crucial to soil health and carbon sequestration.

Energy sources can be classified as infinite (e.g. solar), finite (e.g. heating oil), or renewable (e.g. wood). Every energy source has advantages and disadvantages, but because of the greenhouse gas emissions from fossil fuel use, the town will make all reasonable efforts to reduce fossil fuel consumption. Fossil fuel dependent energy systems are a significant cause of localized and global environmental damage.

From the point where the fuels are produced and refined, to the emissions generated during their use, fossil fuels contribute toward human induced climate change, related climate change disasters and ecological degradation. Reducing the use of fossil fuels, shifting to more environmentally sustainable energy sources, and apply regenerative agricultural practices will benefit the town's environment.

[2]

The conclusion of the Intergovernmental Panel on Climate Change states that natural systems around the world are being affected by regional climate changes, particularly temperature increases. These temperature increases are very likely the result of anthropogenic emissions of greenhouse gasses.

[3]

13.3 Rockingham's Current Energy Use

These energy use estimations provide a starting point for the town to develop energy policies. Energy use data is categorized into the following sectors:

1. Electricity
2. Transportation
3. Heating

Commercial and residential electricity is supplied by Green Mountain Power (GMP). Electricity consumption data from GMP was produced for each town in the state, and is the primary source of this information. This data separates the usage for both the residential and commercial or industrial sectors.

Commercial/industrial (inclusive of schools, municipalities and non-profits) businesses use half the electrical energy in Rockingham. In manufacturing companies, electricity is the greatest source of energy even though there are few manufacturing companies in Rockingham. Residential homes use the other half of electrical energy usage. These very different use profiles mean energy consumption and conservation strategies must be customized to commercial / industrial and to residential.

To translate this energy demand into dollar amounts, we can estimate a cost of \$0.1484 per kilowatt-hour based on energy costs. As shown below, the total cost of electricity in Rockingham was almost \$5 million in 2020.

13.3.1.1 Electricity Use in Rockingham [4]

Sector	KwH in 2017	Total Cost	KwH in 2018	Total Cost	KwH in 2019	Total Cost	KwH in 2020	Total Cost
Residential	15,449,328	\$2,292,680	16,121,234	\$2,392,392	15,752,033	\$2,337,602	16,134,025	\$2,394,289
Indust/Comm	16,690,107	\$2,476,812	17,068,440	2,532,956	17,809,937	\$2,642,995	16,748,682	\$2,485,504
Total	32,136,435	\$4,769,492	33,189,674	\$4,925,348	33,561,970	\$4,980,597	32,882,707	\$4,879,793

13.4 Current Transportation Use [5]

Rockingham is rural and that makes personal vehicles the primary source of transportation. Below are the calculations showing Rockingham's transportation fuel consumption for 2014.

Number of primary housing units in Rockingham	2177 housing units
Estimated number of fossil-fuel burning vehicles	3,772 vehicles
Estimate of the average annual number of miles traveled per vehicle	12,500 miles
Estimated annual miles traveled by Rockingham vehicles	47 million
Estimate of the average fuel economy	22 mpg
Estimated gallons of fossil fuel consumed annually	1,950,424 gallons
Regional cost per gallon (<i>Fall, 2017</i>)	\$2.39
Rockingham's estimated annual fossil fuel cost for transportation	\$4,569,454
Number of Btu's in a gallon of fossil fuel (<i>95% gasoline and 5% diesel</i>)	121,259
Estimated total annual energy consumption of internal combustion vehicles. (<i>In millions of Btu's</i>)	252,846

It is important to know, that based on information from the US Energy Information Administration (EIA) the amount of pounds of CO₂ emitted per million British thermal units from gasoline (not using ethanol) is 157.2 lbs. Using the above chart, our transportation emission equates to 39,772 pounds of CO₂ emitted by fossil fuel burning household vehicles per year. This does not take into account the number of hybrid and electric vehicles in Rockingham.

Current Heating Demand

To account for the different building types and their respective uses, the following estimates divide thermal energy demand by residential buildings (primary residence), seasonal, and commercial use (industrial building thermal demand is not included). The large majority of energy usage for heat is for primary residential homes. It should be noted that, although ‘Seasonal Homes’ account for 36% of the ‘Residential Homes’ in Rockingham, the Btu calculations assume 15% energy usage for a ‘seasonal home’ compared to a ‘primary residence’.

Fuel Type

	Bottled tank, or LP gas	Electricity	Fuel oil or kerosene	Coal	Biomass	Solar	Other: biodiesel, geothermal
Number of Owner-households heated by fuel type	102	42	935	14	162	8	13
Number of Renter-occupied households heated by fuel type	74	30	677	10	117	6	9

For residential building, it was assumed that average annual heating load per residence is 110 million Btu per year, for both space and water heating (Vermont state average). With 2177 primary housing units in the town, this equates to an estimated 239,470 MBtu annual total heat consumption. This translates to an estimated \$4 million spent in home heating in Rockingham during 2014 (roughly \$3 million from primary residence owners and \$1 million from owners of seasonal homes). Using EIA’s figure of 163.3 lbs of CO₂ emissions for 239,470 MBtus of diesel and heat fuel, this equates to 39,029 pounds of CO₂ emitted each year.

The two primary sources for heating in Rockingham are fossil fuels (86%) and wood (13%), which make up almost all of Rockingham’s heat energy sources. Wood is an abundant, locally grown energy source. Many residents employ firewood providers who live and work in our community and contribute to the

local economy. While the transport and retail businesses benefit from fuel sales and delivery, all the extraction and production of fossil fuels occurs outside of our community and state.

Our data sources identified 149 commercial buildings in Rockingham. It is estimated that the average heating load of these establishments is 726 MBtu per year per building, which is consistent with the state average of 700 MBtu to 750 MBtu per year, per building. Based on these numbers, we estimate that commercial establishments use approximately 108,175 MBtu per year in Rockingham and emit 17,453 lbs of CO2 per year.

Total Energy Costs

In sum, Rockingham pays a significant amount in energy across the three use sectors. The total estimated cost to the town for electricity, heating, and transportation is roughly \$17 million per year. There are significant financial incentives for the town to move toward energy efficiency, on behalf of both the residents and its business owners.

13.5 Rockingham Energy Summary [6]

	Total Energy Consumption	Total Energy Expenditure	Total CO2 Emissions
Electricity	32,882,707 Kwh	\$4,879,793.00	Unknown
Heating	347,545 MBtu		56,953 lbs
Transportation	252,846 MBtu	\$4, 569,454.00	39,722 lbs
Total	602,911		96,675 lbs

Additional technical supporting data can be found in the complementary report that accompanies this chapter.

[1] Windham Regional Commission's Regional Plan – Energy Chapter)

[2] UN's IPCC and the World Meteorological Organization

[3] Unless otherwise indicated, data for this report was supplied by the Windham Regional Commission

[4] Data provided by Green Mountain Power; Industrial/Commercial includes municipal buildings, schools, and nonprofits

[5] Transportation fuel use includes intra and inter-state visitors

[6] Electricity is based on 2020 GMP data, transportation on 2017 data and heating is based on 2014 data. The later 2 are from WRC.

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Transportation – Transportation energy costs are considerable, often nonnegotiable expense for residents who commute to work, travel for shopping and recreational activities, or travel as part of their business.

Electricity – Today's mechanical technologies increasingly rely on electricity to operate within the home. Consequently our electricity consumption is expected to increase. This is especially true when more car owners transition to electric vehicles and more buildings are heated and cooled with electricity because of installation of cold climate heat pumps, heat pump water heaters, and improved HVAC ventilation systems.

Energy and the Local Economy

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The conclusion of the Intergovernmental Panel on Climate Change¹ states that natural systems around the world are being affected by regional climate changes, particularly temperature increases. These temperature increases are very likely the result of anthropogenic emissions of greenhouse gasses.

Rockingham's Current Energy Use²

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To translate this energy demand into dollar amounts, we can estimate a cost of \$0.1484 per kilowatt-hour based on energy costs. As shown below, the total cost of electricity in Rockingham was almost \$5 million in 2020.

¹ UN's IPCC and the World Meteorological Organization

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Electricity Use in Rockingham³

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It is important to know that based on information from the US Energy Information Administration (EIA) the amount of pounds of CO₂ emitted per million British thermal units from gasoline (not using ethanol) is 157.2 lbs. Using the above chart, our transportation emission equates to 39,772 pounds of CO₂ emitted by fossil fuel burning household vehicles per year. This does not take into account the number of hybrid and electric vehicles in Rockingham.

Current Heating Demand

To account for the different building types and their respective uses, the following estimates divide thermal energy demand by residential buildings (primary residence), seasonal, and commercial use (industrial building thermal demand is not included). The large majority of energy usage for heat is for primary residential homes. It should be noted that, although 'Seasonal Homes' account for 36% of the 'Residential Homes' in Rockingham, the Btu calculations assume 15% energy usage for a 'seasonal home' compared to a 'primary residence'.

Fuel Type

	Bottled tank, or LP gas	Electricity	Fuel oil or kerosene	Coal	Biomass	Solar	Other: biodiesel, geothermal
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³ Data provided by Green Mountain Power; Industrial/Commercial includes municipal buildings, schools, and nonprofits

⁴ Transportation fuel use includes intra and inter-state visitors

For a residential building, it was assumed that average annual heating load per residence is 110 million Btu per year, for both space and water heating (Vermont state average). With 2177 primary housing units in the town, this equates to an estimated 239,470 MBtu annual total heat consumption. This translates to an estimated \$4 million spent in home heating in Rockingham during 2014 (roughly \$3 million from primary residence owners and \$1 million from owners of seasonal homes). Using EIA’s figure of 163.3 lbs of CO2 emissions for 239,470 MBtus of diesel and heat fuel, this equates to 39,029 pounds of CO2 emitted each year.

The two primary sources for heating in Rockingham are fossil fuels (86%) and wood (13%), which make up almost all of Rockingham’s heat energy sources. Wood is an abundant, locally grown energy source. Many residents employ firewood providers who live and work in our community and contribute to the local economy. While the transport and retail businesses benefit from fuel sales and delivery, all the extraction and production of fossil fuels occurs outside of our community and state.

Our data sources identified 149 commercial buildings in Rockingham. It is estimated that the average heating load of these establishments is 726 MBtu per year per building, which is consistent with the state average of 700 MBtu to 750 MBtu per year, per building. Based on these numbers, we estimate that commercial establishments use approximately 108,175 MBtu per year in Rockingham and emit 17,453 lbs of CO2 per year.

Total Energy Costs

In sum, Rockingham pays a significant amount in energy across the three use sectors. The total estimated cost to the town for electricity, heating, and transportation is roughly \$17 million per year. There are significant financial incentives for the town to move toward energy efficiency, on behalf of both the residents and its business owners.

Rockingham Energy Summary⁵

	Total Energy Consumption	Total Energy Expenditure	Total CO2 Emissions
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Heating	347,545 MBtu		56,953 lbs
Transportation	252,846 MBtu	\$4, 569,454.00	39,722 lbs
Total	602,911		96,675 lbs

Additional technical supporting data can be found in the complementary report that accompanies this chapter.

Rockingham’s Potential for Power Generation

Energy resources available in Rockingham include wood, ethyl levulinate, methane digesters, wind, solar, geothermal, and hydro energy. Not all of these resources are currently being accessed. They are listed to acknowledge potential use. There is significant data available to make informed decisions about solar, and hydro energy , but there is less data available in regards to wood and geothermal energy. Rockingham’s most used local renewable energy resource is wood.

Energy Mapping

The maps included in this chapter were developed by the Windham Regional Commission GIS data that modeled resource potential for solar and wind energy, identified potential constraints on renewable energy development, and created an energy potential map.

⁵ Electricity is based on 2020 GMP data, transportation on 2017 data and heating is based on 2014 data. The later 2 are from WRC.

Solar Resources

The Solar Resource Map indicates that the Town of Rockingham has good solar resource availability . The town supports solar facilities that are properly cited according to the Preferred Locations.

Total acres available for prime solar (with no constraints)	1,191
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Figure 1 Zoomable map of existing solar photovoltaic sites (please wait for layers to load)--
<https://www.vtenergydashboard.org/energy-atlas/maps/rockingham-solar-energy-sites>

Rockingham’s 2021 total solar electric generating capacity was 1,742Kw in 57 arrays, from the VT Energy Dashboard at <https://www.vtenergydashboard.org/statistics>, of which 1,000 kW comes from the two recently built commercial arrays on Ski Bowl and Jackson Roads. This is about the same total solar generating capacity as Putney, but Chester has 3,200 kW, Westminster has 4,300 kW, Springfield has 6,700 kW, and Brattleboro generates 9,400 kW, so we could generate a lot more.

Wind Resources

The Wind Resource map indicates that the western, unpopulated parts of Town are the only possible locations having continuous acreage available for commercial or residential wind. There is actually no potential for industrial scaled wind energy. Residential or small-scale wind turbines have potential, but for most of our residents wind energy is simply not a viable energy alternative. We have one wind turbine in town at Vermont Academy, but it has not been maintained so it no longer operates.

Total acres available for residential wind (with no constraints)	367
Total acres available for small commercial wind (with no constraints)	29
Total acres available for utility wind (with no constraints)	0

Rockingham’s Preferred Locations

Rockingham encourages locally-sourced power generation facilities to support existing and proposed land use policies and supports community and economic development.

Rockingham promotes power generation development in locations that are previously disturbed and do not offer significant opportunities for future development. These areas may include former gravel pits, former and existing parking lots, and landfills. Consideration should be given to these under-utilized and previously disturbed areas that exist within the areas modeled to have prime resource potential (see Energy Maps), and do not conflict with existing and proposed land uses.

Areas of special consideration should be all publicly owned lands and buildings. Solar is a particular asset that can directly supplement the electric power requirements of municipal facilities. Solar sited on public lands also provides an educational value for citizens and landowners considering solar power generation.

Another area that is highly desirable are lands located on or adjacent to agricultural and forestry lands. Rockingham understands it must work to preserve its agricultural heritage and primary agricultural soils and facilitate commercial agriculture. While energy generation must be clearly subordinate to agricultural land use, reducing energy costs will bolster existing farms. Effective land use planning can promote energy conservation. Targeting new development toward areas located close to the community's major roads and existing settlements will minimize the energy consumed by residents commuting, and will reduce the energy required to deliver essential services to residents and businesses. All criteria must be met to be eligible for preferred site status for new solar arrays:

Proximity to Phase 3 power lines (for larger arrays)
Sited near the end of utility distribution lines, which helps support the electric grid
Locations where the equipment will be less visible, especially from public roads and by neighbors
On existing roads that are adequate for project construction & maintenance activities
Located on agricultural lands where renewable energy generation provides for the energy needs of the farm and the housing associated with the farm. Renewable energy generation must remain clearly subordinate to the agricultural operation
South facing slopes with low quality agricultural soils
Minimal harmful impacts on wildlife and habitat corridors
Located on reclaimed land such as gravel pits, brownfields, etc

13.6 Areas Unsuitable for Renewable Energy Siting: Known and Possible Constraints

There are many areas in town that have Known Constraints for energy development. Those areas include vernal pools, Class 1 and 2 wetlands, DEC River Corridors and/or FEMA floodways, National Wilderness Areas, and State-significant Natural Communities and Rare, Threatened, and Endangered species and are incorporated into the attached maps as Known Constraints.

The Possible Constraints are a set of data layers that don't necessarily exclude energy development but give a signal to potential developers and planners that more site analysis is required. These layers include steep slopes, hydric soils, FEMA Special Flood Hazard Areas, Protected lands, deer wintering areas, Vermont Conservation Design highest priority interior forest blocks, habitat connectivity, and agricultural soils. If generation facilities are proposed in these areas, careful attention is required in the siting of those facilities to ensure there are no adverse impacts.

There are three levels of Known and Possible Constraints: State, Regional, and local. Projects would have to abide by the known and possible constraints. However, there are no known local constraints. The Known Constraints and Possible Constraints do not prohibit the town's ability to reach the energy generation targets.

13.7 Rockingham’s Energy Targets and Conservation Goals

The Windham Regional Commission determined energy generation targets for each of their towns, based on both the resource availability in the town and its population. The resulting energy generation targets are an average between those two characteristics.

13.8 Energy Generation Targets

Rockingham should be generating approximately 4,239 megawatt-hours of power per year by 2050. This goal includes the following benchmark targets:

Year	Power Generation/Year
2017	722 MWh
2021 (present generation)	3,211 MWh
2025	1,178 MWh
2035	1,884 MWh
2050	4,239 MWh

Rockingham believes our 2050 power generation goal can be met through the installation of a series of solar photovoltaic panels. These figures are in addition to power generation from the dams which produce power at substantially higher rates and are better defined as super-regional facilities that do not count towards any one municipality. In order to meet the goal of 4,239 MWh of electricity 13.4 acres of solar photovoltaics will need to be installed. Green Lantern Solar estimates that 1 MW of solar on about 6 acres will generate about 1,900 MWh of power per year. This goes into 4,239 MWh 2.23 times; 2.23 times 6 acres equal 13.4 acres. Given Rockingham’s 2021 total solar electric generating capacity was 1,742Kw (1.742 MW) in 57 arrays, this equates to 3,309.8 MWh. This puts Rockingham well on our way to reach the 2050 goal.

While some projections are that 79% of the total required solar installations could be located on existing rooftops, we need to be more conservative. As far as rooftop arrays go, they are usually more expensive than ground-mounted arrays. While installers will install them as turnkey systems, investors often prefer to avoid them.

Energy Conservation Targets

To help inform the town’s policies on energy conservation measures, the town used the Windham Regional Commission’s analyses using an energy model created by the state. The energy model is used to reduce the amount of greenhouse gas emissions and increase the consumption of renewable energy to 90% of total energy consumption by 2050 (called the “90x50” goal).

The following tables illustrate how energy efficiency improvements can help achieve conservation goals. Additional state/federal funding for low-income weatherization will be needed to meet these goals since SEVCA has a long backlog and limited resources. In 2020 SEVCA only weatherized 16 homes.

In the fuel switching table, if we reduced our wood heat targets, due to air pollution or other concerns, we would need to add more heat pumps. In 2019, Rockingham had 80 heat pumps that had received Efficiency Vermont rebates, more than any other town in the county except Brattleboro (232 heat pumps). The danger in accelerating heat pump conversion, is that they should only be installed after the home has been weatherized. Premature installations lead to higher electricity costs, and less comfort.

Rockingham also had 3 automated wood heat projects. Data for how many high efficiency wood stoves have been installed are not in the Energy Atlas, and without proper insulation and air sealing they will only serve as space heaters.

Weatherization and Energy Efficiency Improvement Goals

Sector /Use	2025	2035	2050
Residential thermal			
% of municipal households to be weatherized	21%	41%	83%
Estimated # municipal households to be Wx	531	1037	2130

Weatherization and Energy Efficiency Improvement Goals (Continued)

Commercial thermal	2025	2035	2050
Percent of Commercial establishments to be weatherized	9%	16%	30%
Estimated # of commercial establishments to be weatherized	17	31	57

Residential and Commercial Heating Fuel Switching Goals

Sector/Product	2025	2035	2050
New high efficiency wood stoves	1582	1506	1504
New wood pellet /chip system	278	304	382
New heat pumps	493	973	1374

13.9 Transportation Conservation

Transportation-related efficiency strategies are important to implement. Transportation represents a significant portion of the town’s energy demand. Simple changes, such as ride-sharing, combining trips and using alternative public transportation will conserve fuel and reduce maintenance costs on our roads and vehicles. The town’s land use pattern, commuting for work, shopping, and recreation restricts transportation choices. Fuel efficient and electric vehicles will emit less pollution which is the primary strategy for reducing transportation energy demands. To accommodate the transition to electric cars more charging stations will need to be installed in public parking areas, and assist in ways to promote electric vehicle use. With the increase of working from home opportunities, business leaders need to encourage this option once the COVID-19 pandemic is over. Key changes in land use policy will be absolutely critical with a focus on sustainable villages that cultivate mixed uses of buildings, compact settlements, and infill development.

Transportation Fuel

Vehicle type	2025	2035	2050
Estimated new electric vehicles in Rockingham	340	2,404	5,076
Estimated new biodiesel-powered vehicles in Rockingham	520	996	1,724

13.10 Electricity Conversion

Electricity use is expected to increase due to a combination of more amenities, appliances, and motors being supplied by electric power. We have more things to plug in than ever before and that trend is expected to increase. Promoting electricity conservation will come from energy-efficient appliances, lighting, heating/cooling, and significant behavior change including shutting the power supply of many of our newer appliances, and finally improved weatherization.

Goals	2025	2035	2050
% of buildings to be upgraded	42%	68%	100%
Energy savings goals	4,423,900 MWh	7,229,300 MWh	10,574,200 MWh

Conservation and Efficiency Strategies

With total annual energy expenditures of approximately \$17,740,453, there is considerable opportunity for savings from various energy conservation and improved efficiency measures. Because most energy use in Rockingham is for private uses, savings would accrue primarily to business owners and residents. Public education is one of the most effective strategies to bring about savings through energy conservation and improved efficiency.

Most new construction in Rockingham is required to meet or exceed the Vermont Building Energy Standards (for both residential and commercial buildings) through the use of: air sealing, insulation, improved heating/ventilating systems, weatherproof windows and doors, and water and vapor management. Current building codes provide basic energy efficiency requirements for buildings; however, technology advancements have generated higher standards including passive house and net-zero energy construction. High performance building practices (practices that give

consideration to energy efficiency, indoor air quality, water management, air and safety) along with innovations in embodied carbon-responsive design and analysis need to be promoted. Efficiency Vermont's High Performance with Energy Star designation captures these elements in new Construction. Vermont's Residential and Commercial Building Codes need to be enforced.

LEED Construction (Leadership in Energy and Environmental Design) standards promote the use of natural, recycled and durable building materials as well as energy efficiency. These efficiency standards are also applied to landscaping advocating for native plantings that are low maintenance. While recognized as superior standards, the process is out of reach for most Vermonters and requires a fee for the formal designation.

H. 157 is currently in the House Ways and Means Committee. This bill will require the registry and voluntary certification of home improvement and building contractors. With passage, building professionals will need to stay abreast of the ongoing developments in processes, technologies, and products in their field. Consequently, continuous learning and certification will be expected. Homeowners and landlords need to select professionals who can demonstrate their commitment to the highest of trade and code standards and not rely on cost as a determining factor. Lowering the cost can often equate to poor work and "gaming" the system.

The siting, design, and construction of buildings strongly influences the amount of energy needed for heating as well as the amount of electricity needed for lighting. Proper subdivision design, building orientation, construction and landscaping provide opportunities for energy conservation such as less vehicular travel, and by designs incorporating passive solar space and domestic hot water heating, natural lighting, and photovoltaic electricity generation.

Energy savings can be realized by retrofitting existing buildings with insulation, sealing air leaks, refurbishing old windows, installing high-performance windows and doors, weather-stripping, upgrading to LED lights, and using energy efficient appliances, and managing water and vapor. Rockingham's older homes are less efficient than newer well-insulated ones. Renovating and weatherizing older homes can significantly improve their efficiency and durability, and should be Rockingham's highest priority.

Many of the historic older homes in Bellows Falls have been subdivided into apartments impeding energy efficient upgrades. Rather than heat the entire building with a central furnace, landlords install individual heating units and the tenants pay for their own heat. Ensuring that these older buildings are energy efficient requires improvements paid by the landlord that then lowers energy consumption and saves tenants money. As there is no incentive for landlords to invest, these buildings are largely left with inefficient heating units and little or no insulation. Insofar as the community continues to promote land use policies that allow these older homes to be converted into apartment units, there is little incentive for these buildings to meet Vermont Building Energy Standards energy efficiency. The town of Rockingham is currently developing a rental ordinance. That being said, the primary goal of the ordinance will be to protect public health and safety by enforcing the State of Vermont Rental Housing and Fire Safety Code. It would be advantageous to landlords to receive a report that not only identifies the habitability of the apartment, but also receive recommended resources for building upgrades and weatherization.

The Rockingham Energy Committee has made a concerted effort to address the weatherization needs of our low-income neighbors. For the past 3 years the Energy Committee has implemented the "WindowDressers" (WD) program to assemble inside insulating window inserts at community workshops, that make windows less drafty and save on fuel. In line with WD policy, we allowed customers to self-identify as "low income" and get up to 10 free inserts per year. For the last 2 years, we secured grants totaling close to \$4,000 per year to cover the costs of the free inserts. This allowed us to provide 307 free inserts over all 3 years to low-income customers. or 48% of the total built. This is much higher than the WD average. Currently, The Energy Committee is hosting a series of public weatherization forums and SEVCA will be delivering one of the programs. Greater Falls Connections has reviewed the entire Town Plan and has made recommendations about inclusivity.

13.11 Rockingham Commercial and Industrial Assistance through Efficiency
Vermont

	2017	2018	2019	Total
Total Commercial and Industrial Customers Served	28	58	24	110
Total Commercial and Industrial Projects	26	43	27	96
Small and Medium Business Walkthroughs	0	0	0	0
Cold Climate Heat Pump Installations	0	6	7	13
Heat Pump Hot Water Heaters	0	0	1	1
Wood Heating Installations	0	0	1	1

13.12 Greenhouse Gas Emissions and Drawdown Practices

If the goal of the Vermont Global Warming and Solutions Act is the reduction of greenhouse gas in our atmosphere, then we cannot overlook the scientific evidence of carbon sequestration through regenerative agriculture and forestry management as part of the solution. Biodiversity, increased biomass, and soil health are key ingredients to drawdown practices in which carbon is removed from the atmosphere and stored in the plants and soil. Applications of these principles apply to farmers as well as individual homeowners in which lawns can be minimized and replaced with deep rooted perennials, vegetable gardens, indigenous shrubs, and trees.

Programs to Support Rockingham's Energy Goals

Southeastern Vermont Community Action (SEVCA) is the service provider in Windham County that runs the Weatherization Assistance Program. Weatherization services, which include an energy audit, diagnostic tests, analysis and installation measures, are available at no cost to income-eligible homeowners and renters. SEVCA is also available to help in the event of a heating emergency. They can help purchase oil, kerosene, propane, or wood. In addition, they also work with electric companies in order to prevent disconnection and help negotiate payment plans. There are also reputable private weatherization companies and high performance building contractors in the area to assist with energy efficient/durability home improvement projects.

Efficiency Vermont is the State's provider of energy efficiency services. They provide technical and financial assistance to electrical consumers for the purpose of improving the efficiency of existing and new facilities. They also work with contractors to ensure the proper analysis and application of building practices.

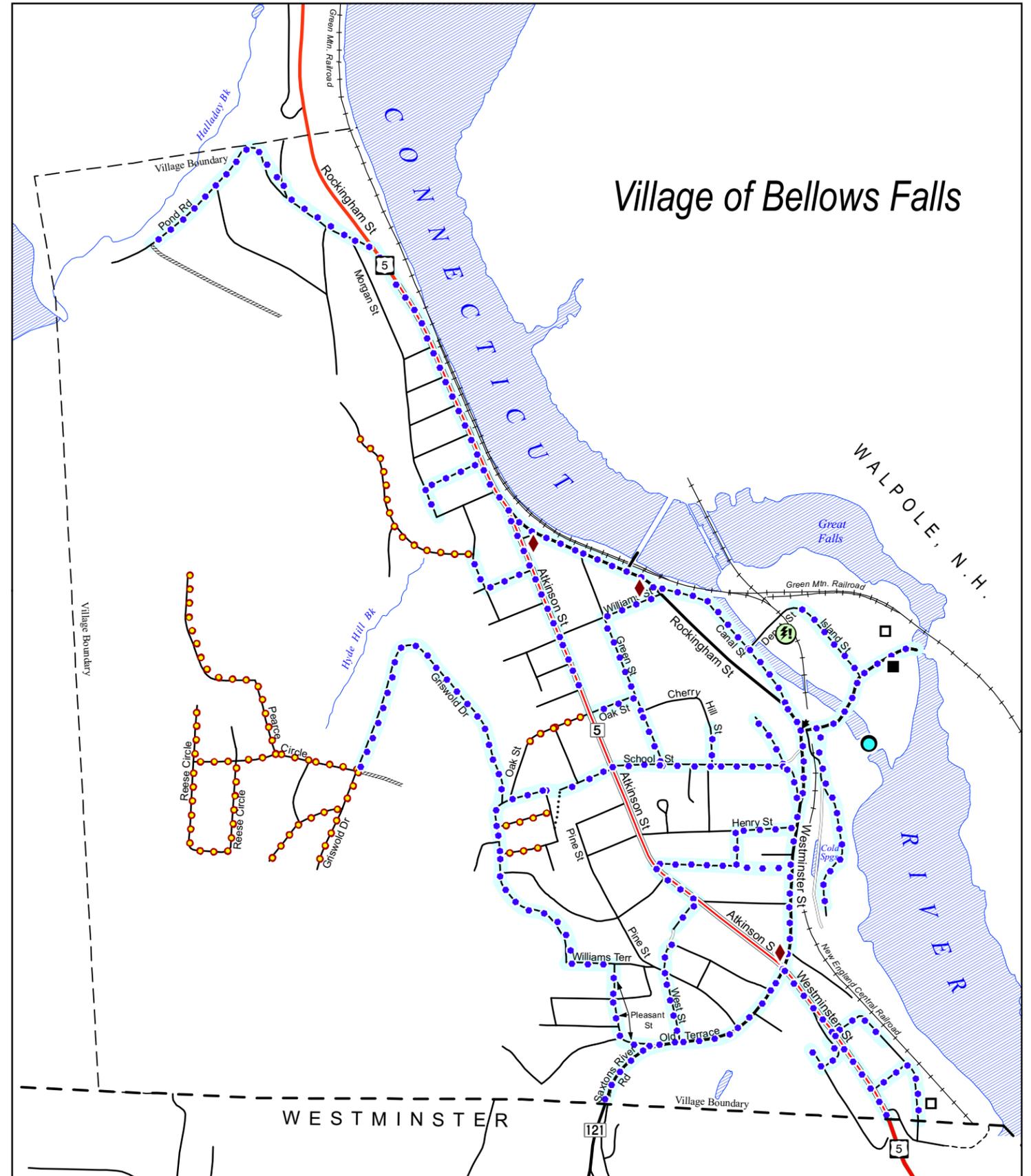
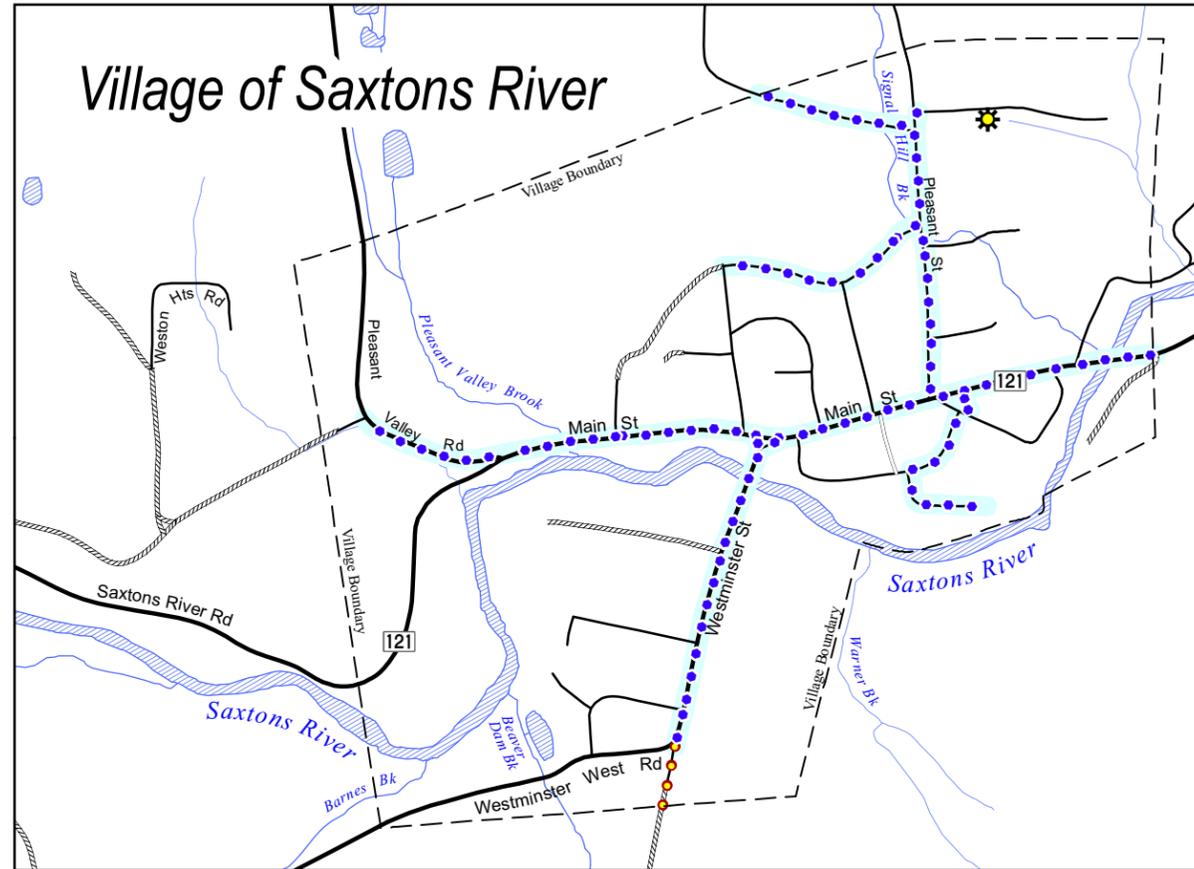
HEAT Squad, a service of NeighborWorks of Western Vermont, which offers energy audits and weatherization services in Rockingham.

ENERGY STAR Home Rebates are available for homes that meet strict energy efficiency guidelines set by the U.S. Environmental Protection Agency and U.S. Department of Energy. Efficiency Vermont provides free financial, design, and technical to help build an ENERGY STAR qualified home. Benefits of being an ENERGY STAR home include financial incentives such as product rebates; utility savings; higher resale value; increased comfort and air quality; and other environmental benefits.

Vermont Housing Finance Authority's Energy Saver Loan Program is administered by Windsor- Windham Housing Trust, this program offers low interest loan funding for homeowners for an energy audit and improvements specified in the audit.

Energy Resources Bellows Falls & Saxtons River Rockingham, Vt.

2024 Town Plan



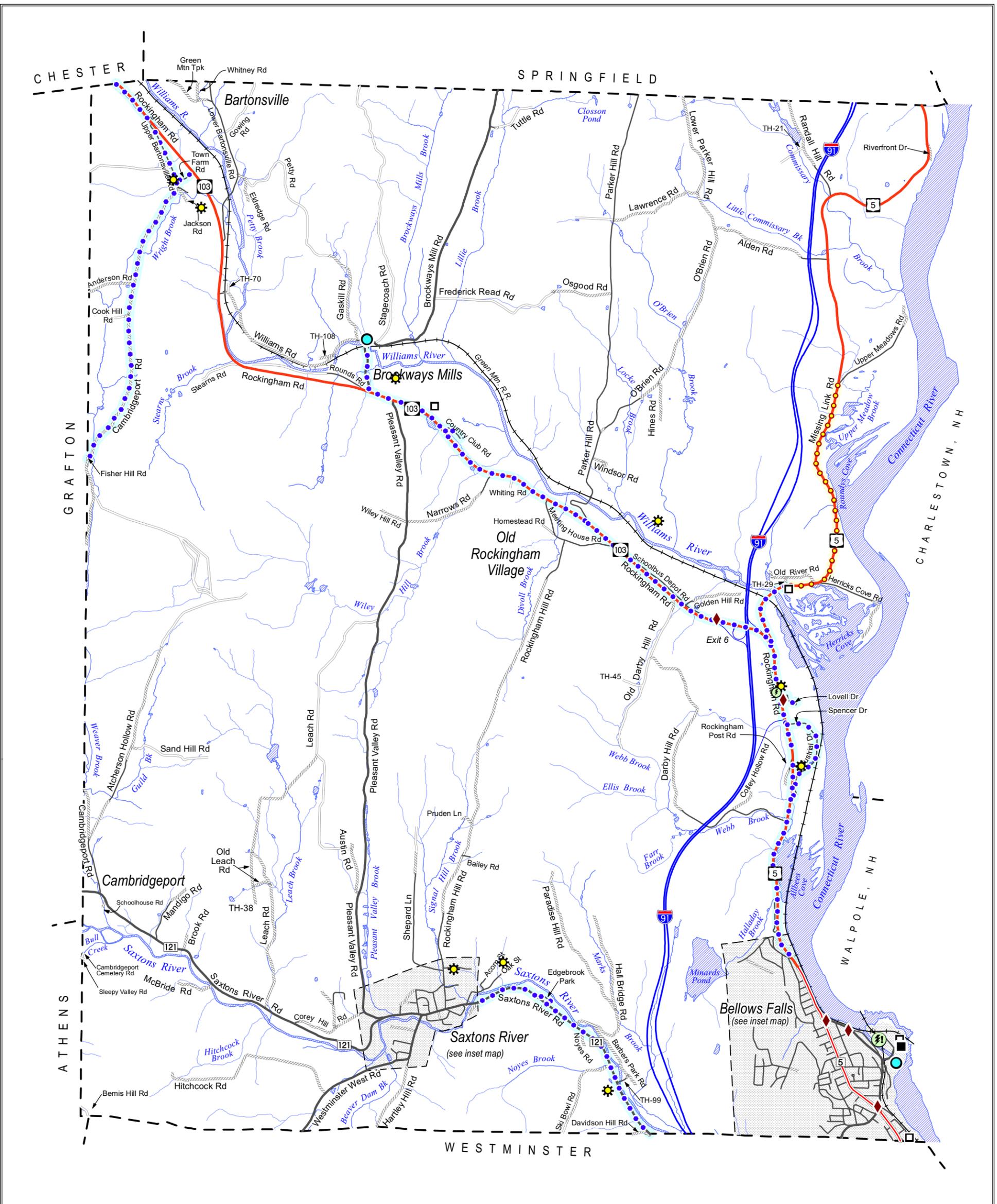
	Gas Station		Interstate highway
	Bulk Fuel Storage		Federal or state highway
	Solar installation > 15kW		Class 1 town highway - paved
	Hydroelectric Facility		Class 2 town highway - paved
	Sub Station		Class 3 town highway - paved
	EV Charging Station, level 2 and DC fast		Class 3 town highway - unpaved
	Two Phase Power		Class 4 town highway/trail (not all are shown on map)
	Three Phase Power		Private roads not shown
			Railroad
			Stream
			River or pond

Data sources:
 - Bulk fuel storage facilities, gas stations, hydroelectric facilities, EV charging stations, and electrical substations were identified by the Town of Rockingham. Site and locations were obtained by WRC using 1:5000 Vermont digital orthophotos and Rockingham's parcel data.
 - Solar installation data are from Green Mountain Power.
 - Information on two and three phase power service was provided by Green Mountain Power and digitized by WRC to follow public roads.

Figure 18

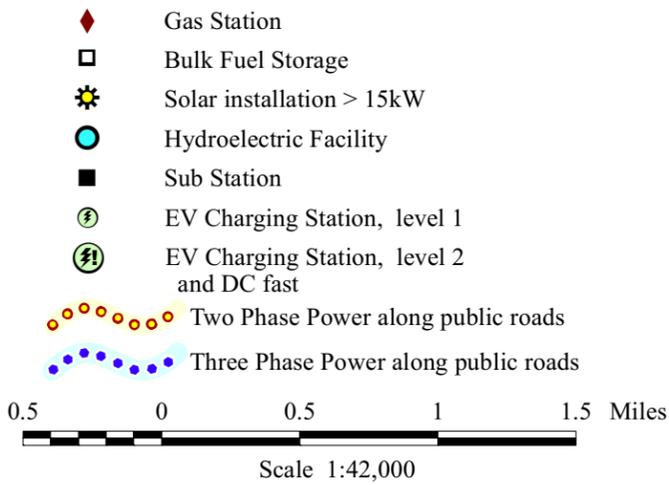
WINDHAM REGIONAL COMMISSION
 139 Main St • Suite 505 • Brattleboro, VT 05301
 (802) 257-4547 www.windhamregional.org

Scale 1:12,000



Energy Resources

Rockingham, Vt. 2024 Town Plan



- Gas Station
- Bulk Fuel Storage
- Solar installation > 15kW
- Hydroelectric Facility
- Sub Station
- EV Charging Station, level 1
- EV Charging Station, level 2 and DC fast
- Two Phase Power along public roads
- Three Phase Power along public roads
- Interstate highway
- Federal or state highway
- Class 1 town highway - paved
- Class 2 town highway - paved
- Class 3 town highway - paved
- Class 3 town highway - unpaved
- Class 4 town highway/trail (not all are shown on map)
- Railroad
- Stream
- River or pond
- Private roads not shown



Data sources:

- Bulk fuel storage facilities, gas stations, hydroelectric facilities, EV charging stations, and electrical substations were identified by the Town of Rockingham. Site and locations were obtained by WRC using 1:5000 Vermont digital orthophotos and Rockingham's parcel data.
- Solar installation data are from Green Mountain Power.
- Information on two and three phase power service was provided by Green Mountain Power Company and digitized by WRC to follow public roads.

Figure 19