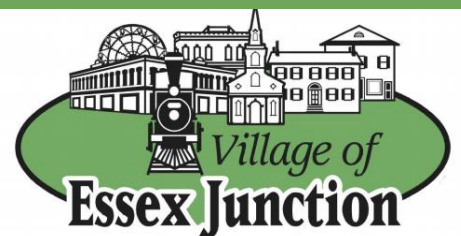
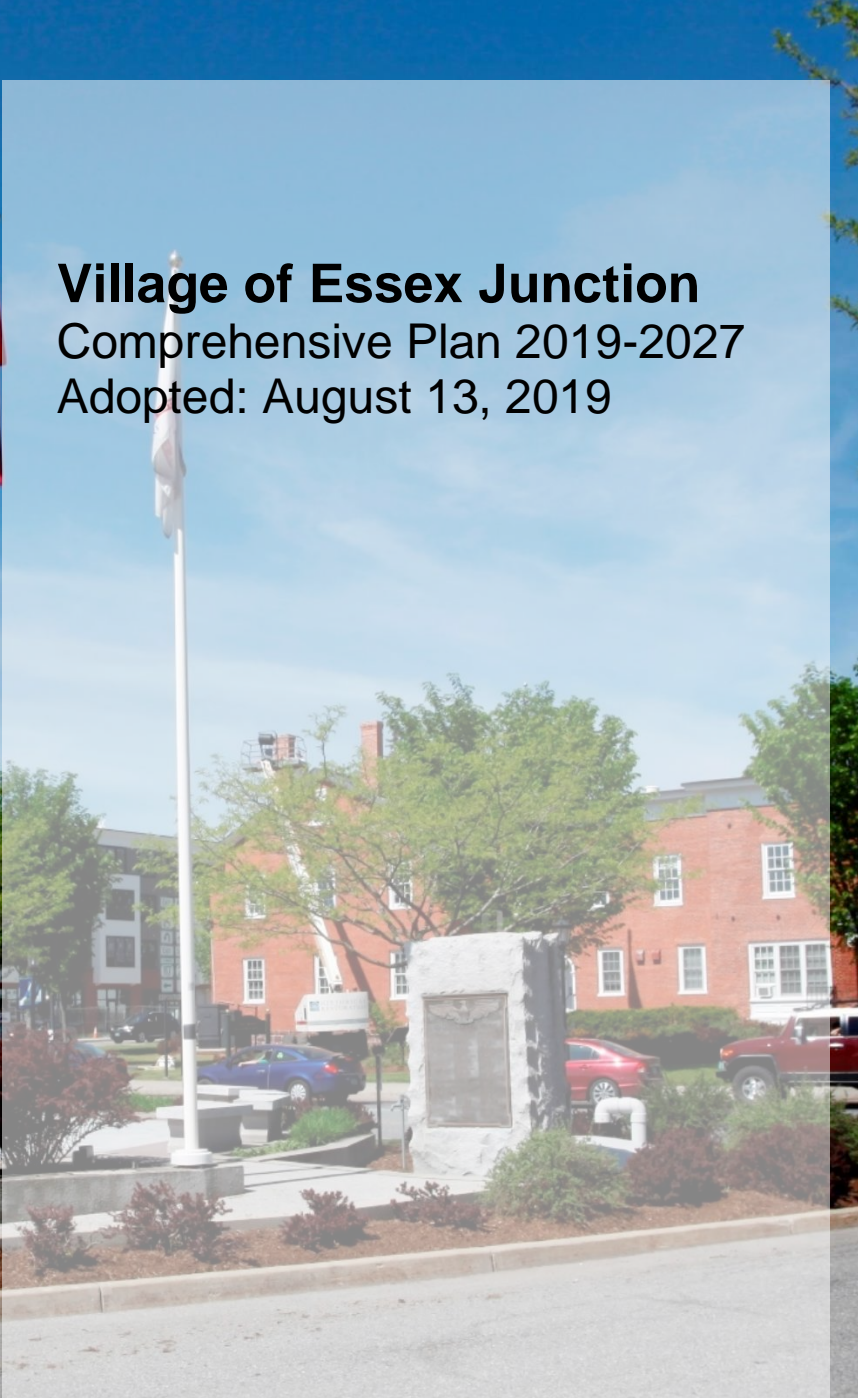




# **Village of Essex Junction**

## **Comprehensive Plan 2019-2027**

Adopted: August 13, 2019



**Village of Essex Junction  
Comprehensive Plan  
2019**

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Rick Jones, Public Works Superintendent  
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Wendy Hysko, Library Director  
Chris Gaboriault, Fire Chief  
Brad Luck, Recreation Director





2019-2027

# Comprehensive Plan

Core Values

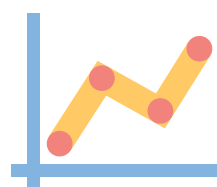


The **Essex Junction Comprehensive Plan** defines a comprehensive long-range vision for the community. It contains general goals and policies that guide decisions about the physical development or redevelopment of the community, and community issues more broadly.

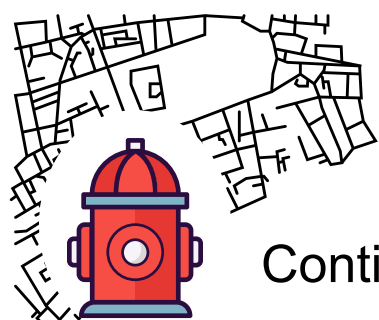
The following are highlights from the Plan, organized by **Heart and Soul** values to explain the breadth of issues this Plan addresses.



## Local Economy



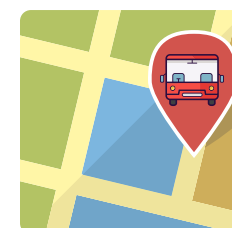
Engage in policies to make progress on the transit-specific strategies in the Economic Development and Vision Plan including:



Regional multimodal improvements



Freight and commuter rail service expansion



Transit-oriented development

Continue to invest in public infrastructure and manage public assets in collaboration with the Town.

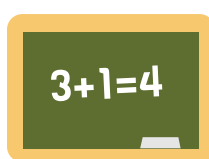


Work with the Town to implement the **Enhanced Energy Plan** to reduce energy consumption, generate more renewable energy, and reduce fossil fuel use in the heating, transportation and electricity sectors.

## Education



Students are educated by a rigorous, well-balanced, proficiency-based curriculum to achieve reading and math fluency by the end of grade 3 and to graduate with the skills to be successful.



Strengthen early childhood education so children are ready to thrive in school and businesses have a robust workforce to support the local economy.



## Health & Recreation



Integrate substance use prevention into our culture by working with Essex CHIPS and the school district to ensure youth are receiving healthy messages where they live, learn, and play.



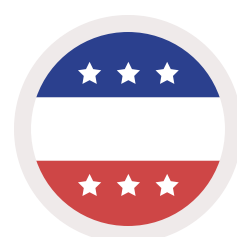
Offer programs and facilities to ensure residents of all ages and abilities have access to physical activity and healthy food choices.



## Community Connections



Maintain and enhance a culture that values diversity and offers a welcoming spirit.



Participate in local government and volunteer to stay connected and ensure all voices are heard.

## Thoughtful Growth



Reclaim space for people to create a high-quality pedestrian experience.



Create a governance structure and shared vision for the Village and the Town that enhances the unique characteristics of each.

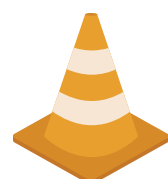


Continue to leverage the Village Center and Neighborhood Development designations to add diverse housing types and attract local businesses in these areas.

## Safety



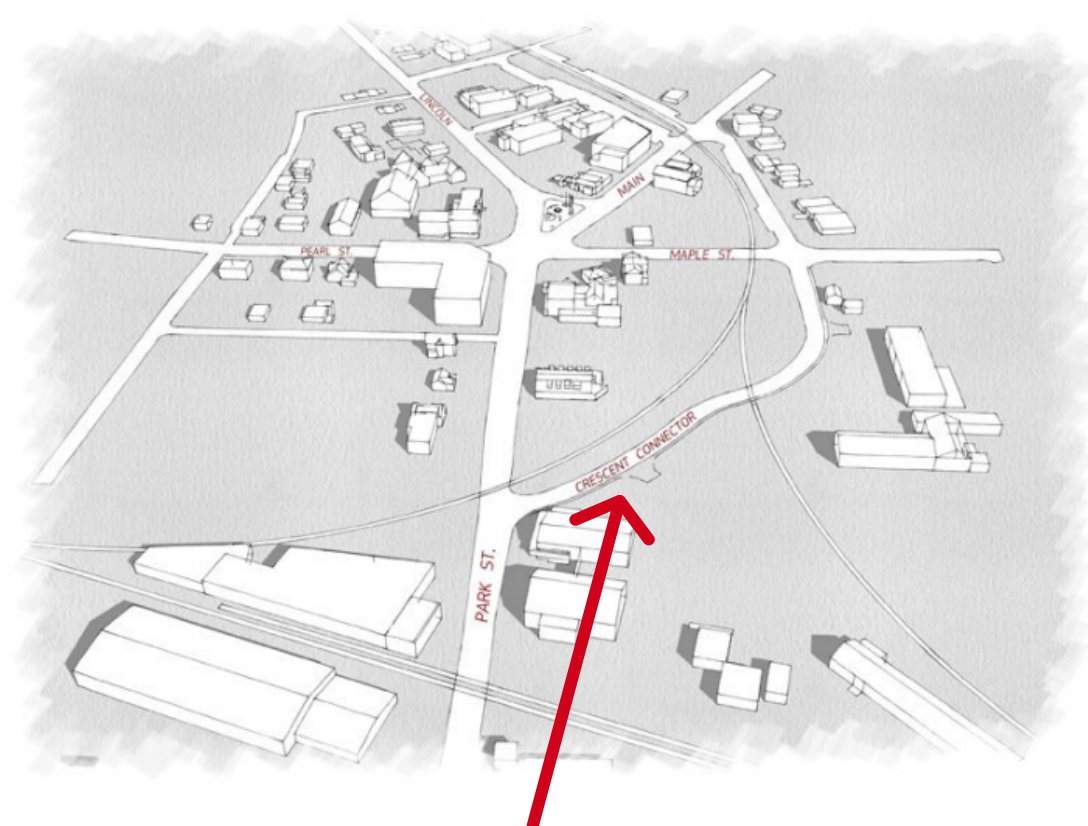
Calm traffic in the Village Center.



Proceed with Crescent Connector construction.



Improve access to and safety of bicycle and pedestrian facilities.



The **Connector Road** opens up six acres of underutilized land to development, while creating a way for traffic to avoid Five Corners. This road would improve traffic efficiency at Five Corners by 12%.



For more information and to view the full Comprehensive Plan, visit:

[essexjunction.org/departments/planning/complan/](https://essexjunction.org/departments/planning/complan/)



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#### ***Cover Photo Credit***

John Alden



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## Chapter 1. General Planning Background

### 1.1. What is a Comprehensive Plan?

A comprehensive plan is an official public document adopted by the local government to guide decisions about the physical development or redevelopment of the community. The comprehensive plan outlines how the Village wishes to develop in the next eight years.

A plan should be comprehensive, general, and long range.

- **“Comprehensive”** It includes all geographic areas of the community and all issues in the community which might affect growth-issues.
- **“General”** It establishes goals for the community's future. Emphasis is placed upon general policies which can lead to development of specific projects, plans or ordinances.
- **“Long Range”** – It looks beyond current issues to the problems and opportunities 20 years in the future.

However, in recent years, comprehensive plans have shifted from more general guides on community policies to a more specific strategic document that focuses on implementation and action and includes specific policies. The benefit of this type of comprehensive plan is that it is more results oriented and provides much more detail on how the goals and objectives will be reached. For these reasons this plan update will focus on both general policies and specific implementation.

### 1.2. Why Develop a Comprehensive Plan?

A Comprehensive Plan ("Plan") helps to manage or control growth and should represent a community's goals and aspirations for the future. There are three general justifications for development of a Plan.

1. To accomplish things the community **wants** to happen,
2. To avoid or prevent things the community **does not want** to happen, and
3. To accommodate things the community **expects** to happen.

A good Comprehensive Plan, with wide-spread public support, is the best mechanism available to manage change. A Comprehensive Plan is not a regulation but is a "guide" and a



source of information for local officials, citizens, and developers. It documents the historic development of the Village as well as the future aspirations of the community. Additionally, a comprehensive plan is used in state regulatory proceedings such as Act 250 and Section 248 applications.

### Act 250

Act 250 is a Vermont law that was passed in 1970 to give the state a measure of control over larger development projects. The Vermont Natural Resources Board oversees Act 250. As the NRB website says, “The Act 250 program provides a public, quasi-judicial process for reviewing and managing the environmental, social and fiscal consequences of major subdivisions and developments in Vermont.” Development projects that require Act 250 review in Essex Junction must obtain a land use permit from the NRB’s District #4 Environmental Commission. As part of the review process, projects need to meet the 10 criteria defined under 10 V.S.A. § 6086. Act 250’s Criterion 10 requires proposed projects to be “in conformance with any duly adopted local or regional plan or capital program”. Act 250 jurisdiction occurs for a variety of reasons but mainly, commercial projects on more than 10 acres of land and for residential projects with 10 or more lots.

### Section 248

Certain utility facilities, including electric transmission facilities, electric generation facilities, and some gas pipelines, are required to obtain a Certificate of Public Good from the Vermont Public Utility Commission (PUC). The Certificate of Public Good establishes that the facility will meet criteria defined under 30 V.S.A. § 248. Utility facilities and wireless telecommunication are statutorily exempt from local zoning regulation. The specific criteria related to municipal plans is the orderly development criterion. The PUC will determine if the proposed facility will not interfere with the orderly development of the region. The PUC will review whether an energy project meets the orderly development criterion based on the land conservation measures and specific policies contained in a duly adopted regional and municipal plan that has received an affirmative determination of energy compliance under 24 V.S.A. § 4352, unless there is a clear and convincing demonstration that other factors affecting the general good of the State outweigh the application of the measure or policy. A municipal plan that has received a positive determination is considered the jurisdiction’s enhanced energy plan. This plan is Essex Junction’s enhanced energy plan, see Appendix D.

## 1.3. The Planning Process

The Planning Process typically involves distinct and identifiable steps:

1. Generalized Goals: Broad statements regarding future development of the Village. Identification of those general topics which should be analyzed during the Planning

Process. This 2019 Plan update maintains the 2013 Heart & Soul community values. This plan also references the Thoughtful Growth in Action process and the Design Five Corners project

2. Inventory: Identification of existing physical, social, and economic characteristics of the Village.
3. Analysis: As a result of the inventory and the community's statements of goals, an analysis of the community's resources and opportunities was completed.
4. Implementation: Mechanisms to implement the plan were developed and include such items as zoning and subdivision ordinances, capital planning and budgeting, special projects and studies, and partnerships with community and regional organizations, etc.
5. Monitoring: Upon completion this Plan should be periodically monitored and updated to meet changing conditions or changing policies.

### 1.4. Statutory Authority

The Vermont Planning and Development Act Title 24 of the Vermont Statutes Annotated, Chapter 117, authorizes the Village to prepare and adopt a Comprehensive Plan. The identified purpose of the Act is to "encourage the appropriate development of all lands...in a manner which will promote the public health, safety, morals, prosperity, comfort, convenience, efficiency, economy and general welfare; and to provide a means and methods for the municipalities and regions of this State to Plan... and to implement those plans..."

### 1.5. Consistency with Adjoining Town and Regional Plans

The Village borders Essex Town to the north and west and South Burlington and Williston to the south and east. In general, the adjoining town plans have compatible land uses on joint borders. As this Plan is implemented, adjacent municipalities should be invited to comment on projects which may affect them. For example, this Plan includes goals aimed at improving the Village as a safe, walkable, and vibrant Village area - including appropriately managing the traffic in the Village.

Essex Town-Land uses along the border between the Village of Essex Junction and the Town are consistent, although the Town contains more business activities including industrial uses and larger portions of mixed use.

South Burlington- The border that Essex Junction shares with South Burlington is floodplain on both sides. Just beyond the floodplain land use is characterized by agriculture and a solar project. Across the Winooski River in South Burlington adjacent to the floodplain are



commercial/industrial and residential areas. Additionally, the Burlington International Airport lies across the Winooski River from Essex Junction.

Williston-The Winooski River serves at the immediate border between Essex Junction and Williston. In Essex Junction, just beyond the Winooski River land uses include floodplain, agriculture, residential, light industrial, and commercial. Just past the Winooski River in Williston the predominant land uses are light industrial and residential.

This Plan is generally consistent with the 2018 Chittenden County Regional Plan (entitled the ECOS Plan), which designates Essex Junction as an area planned for growth- including Center, Metro, Suburban and Enterprise planning areas. The Village Plan's emphasis on the Village Center District is consistent with the regional plan's strategy to encourage a majority (at least 80% of new growth) in areas that have higher density than surrounding areas, contain a mix of uses, have existing wastewater infrastructure, water, transit service, and walking/biking infrastructure.

### 1.6. Plan Format

The Village of Essex Junction used the standard planning process, as identified in Chapter 1. The Plan is divided into chapters. Chapter 2 defines the goals for the remainder of the Plan. Chapter 3 describes the history of the Village and current demographic trends with an eye toward the future.

The main body of the Plan is set forth in Chapter 4 which is divided into major Plan elements such as Transportation, Land Use, Housing, etc. Therefore, someone interested only in Transportation could look to that element of the Plan. Each Plan element includes:

1. Background information and research materials as necessary,
2. Discussion of major issues, and
3. Specific Goals and Objectives.

Chapter 5 discusses general implementation strategies. **The Planning Commission will evaluate and report on the accomplishments of each objective annually to ensure this plan is being successfully implemented.** More specific information may be included in the individual Plan Elements. Also included in this chapter is a discussion of Plan Monitoring and Review Policies.

Finally, the Appendices include information not included in previous chapters: Appendix A includes a list of historic resources, Appendix B includes Underground Storage Tanks, Appendix C includes the maps, and Appendix D is the Essex Community Enhanced Energy Plan.



## Chapter 2. Community Vision and Strategies

### 2.1. Community Values, Vision and General Goals

An important stage of any planning process is the identification of community values. The values are used in establishing a vision for the future and general community goals. Together they are used to identify what the community is striving to become or maintain as well as the challenges and opportunities it faces. They define the Plan and provide focus to the Planning Process. More specific goals and actions are identified in the chapters that follow.

#### Heart and Soul

In 2012 and 2013 both the Town of Essex and Village of Essex Junction engaged in an in-depth community conversation called Heart & Soul of Essex. Through Heart & Soul of Essex, the community was engaged in multiple ways to learn what the shared values are, and a better understanding of the community's collective hopes for the future was gained. Six values were established through 43 neighborhood conversations (involving almost 350 people who live or work in the community) and a survey completed by 540 people (including 352 people who had not previously participated in a Heart & Soul activity). **Heart & Soul identified six core values which are Education, Local Economy, Thoughtful Growth Health and Recreation, Community Connections, and Safety. Thoughtful Growth emerged as the most pressing issue in the community.** The six values are listed below. Each value is followed by the General Goals and Vision for the Village.

**Education:** Essex invests time, energy, and resources to ensure that our highly respected schools meet the needs of everyone in the community. We are proud to support learning that extends beyond the traditional classroom and includes the arts, athletics, and vocational instruction. Community programs, and libraries offer diverse and affordable opportunities that prepare residents of all ages for lifelong learning and for work in an evolving economy.

**Vision and General Goal:** To continue to provide Village residents with a **DIVERSITY** of vocational and educational opportunities, and cultural and recreational amenities to ensure lifelong learning for all.

**Local Economy:** Our residents contribute to a vibrant economy by working for and patronizing a diverse mix of businesses, from small, locally-owned enterprises to international corporations. We are committed to fostering an environment that produces a world class workforce and a strong economy for years to come.



**Vision and General Goal:** To recognize and enhance the role of Essex Junction's existing business and industrial base for both the local **ECONOMY** and the Chittenden County **REGION** as a major employment and transportation center.

**Thoughtful Growth:** We value wide-open spaces and tight-knit neighborhoods, rural roads and vibrant downtown streets. Essex is a place where we can enjoy a beautiful view, walk in the woods, and go out to eat without ever leaving town. We support a diverse housing mix, opportunities for business development and a transportation system with a variety of options including a connected network of walking and biking routes.

**Vision and General Goal:** To ensure a well-balanced and desirable **COMMUNITY** with a **DIVERSITY** of options to live, work and play. With a healthy and vibrant Village Center (aka **DOWNTOWN**) as the focal point including a full range of services and activities, surrounded by the Junction's highly valuable **NEIGHBORHOODS**, and connected with a network of walking and biking routes. This vision can only be reached by encouraging new development in commercial, industrial and multi-family districts within the Village while managing this new **GROWTH** with high standards to both protect and improve the **IDENTITY** of the Village's historic character, and to minimize **LAND USE** conflicts that may occur from infill and redevelopment of underutilized properties. Additional General Goals include: Cultivate public and private investment options for community improvements. Cooperate with adjoining communities to ensure quality development; and to protect the Village from negative impact of adjoining development. Minimize the total economic cost of providing housing, utilities, transportation and public facilities and services (aka **COST EFFICIENCY**).

**Health and Recreation:** We value public places for outdoor and indoor recreation for all ages and abilities. We treasure Indian Brook reservoir, Tree Farm Recreation Facility, neighborhood parks and the chance to connect by bicycle or on foot. We believe the design of the Village should support positive health behaviors and food access. Community institutions provide education and programs to support healthy lifestyles.

**Vision and General Goal:** Maintain an aesthetically attractive **URBAN ENVIRONMENT** that is sensitive to the **NATURAL ENVIRONMENT**.

**Community Connections:** Our deep connections with each other make Essex special. Neighbors help each other during good times and bad. We value diversity and welcome everyone. We build our sense of community at local events such as the Memorial Day Parade,



Annual Block Party and Winter Carnival. Our local newspapers and online forums give us plenty of ways to stay in touch. Residents participate in local government and volunteer.

**Vision and General Goal:** Encourage strong public PARTICIPATION in all public decisions affecting the development or redevelopment of the urban area.

**Safety:** Essex is a safe place where neighbors watch out for one another. We value an active, visible police force and strong fire and rescue services. Upgrades to our physical infrastructure will allow us to move about our community with comfort and security.

**Vision and General Goal:** Establish a network of walking and biking routes.

### Design Five Corners

The community values identified during the Heart & Soul process and follow-up public engagement were used to create a large-scale design and vision of the Village's future called Design Five Corners which focused on the potential future development of the Village Center. Three key takeaways were identified during this process. Future development and redevelopment in the Village Center should:

- 1) Maximize space in the Village Core
- 2) Calm traffic, and
- 3) Reclaim more space for people.

Several popular design elements were identified during this process and included central greenspace and pocket parks, buildings lining the streets, a pedestrianized Main Street, multi-story mixed-use buildings, and additional street trees.

Creating a place where people want to be is fundamental in revitalizing the Village Center. Pedestrian volumes at the Five Corners have been increasing since 2001 and traffic volumes have been relatively steady for the past 25 years. These factors indicate that conditions are good for implementing an approach towards the Five Corners consistent with the community values identified in the Heart & Soul and Design Five Corners processes. This approach is guided by the conceptual design presented in the Design Five Corners report. While this conceptual design cannot be implemented "as is" (the Village cannot mandate privately-owned developments), it can be used as a general template for evaluating proposed development with the values of the community.

A central piece of the implementation of the Design Five Corners is the development of the Crescent Connector to connect Main Street (VT15), Maple Street (VT117), and Park Street (VT2A). Several zones of opportunity for new public spaces become possible with the

development of the Crescent Connector. In addition, the creation of the Crescent Connector adds 29 new parking spaces in the Village Center.

The Crescent Connector will also make possible the closing of one leg of the Five Corners (Main Street). This is expected to decrease the average vehicle delay through the intersection by 40%, eliminate lost time (when no vehicles are passing through the intersection), increase the capacity of the intersection by 789 more vehicles per hour, and significantly decreasing the length of lines of vehicles waiting to pass through the intersection. The closure of Main Street will also decrease the distance (and number of lanes) that pedestrians will need to cross and allow for traffic to move concurrently with pedestrian crossing.

Creating a walkable environment in the Five Corners is consistent with the identified community values and can provide a competitive advantage to local businesses.

### Thoughtful Growth in Action

Thoughtful Growth in Action (TGIA) is a project that focused on exploring new approaches to planning governance structure in the Town of Essex and the Village of Essex Junction. The project stemmed from the belief, highlighted by the Heart & Soul of Essex project, that the community wants a shared vision that honors and builds on the unique characteristics of the Village and the Town outside the Village. Moving towards a shared vision, however, may be complicated by the current planning structure of two Planning Commissions and two Zoning Boards. TGIA developed a set of four recommendations for the Town of Essex Selectboard and Village of Essex Junction Trustees to consider:

Recommendation #1: Move to create a joint Planning Commission and two separate Development Review Boards.

Recommendation #2: Use a phased approach to structural changes.

Recommendation #3: Empower boards to establish a timeframe and work with staff to make a plan for transition.

Recommendation #4: Continue to explore and implement ways to improve public participation in planning.



## 2.2. Accomplished Objectives

The following is a list of planning accomplishments from 2014-2019:

- Completed the [Thoughtful Growth in Action Report](#) which explores new approaches to planning governance structures in the Town and the Village.
- Actions to accomplish the Design Five corners concept
- IBM site was acquired by Global Foundries.
- A collaboration between the Village and the Center for Technology Essex (CTE) developed a new curriculum for CTE that includes an Urban Tree Nursery.
- The Village Center District was designated a [Neighborhood Development Area](#) by the State of Vermont Department of Housing and Community Development.
- Through a joint effort, the Town and the Village were awarded a state grant to develop a phosphorus control plan to identify phosphorus reduction mechanisms.
- Trustees and Selectboard hire unified manager for both municipalities in 2018.
- Gained funding for the Crescent Connector Road, which will ease congestion at Five Corners.
- Visioning for the train station completed and an application for funded has been submitted.
- The Village received a Bronze Walk Friendly Community Designation due to its sidewalk coverage, Safe Routes to School Program, excellent pedestrian plan, and regional coordination.
- The Village and the Town collaborated on bike/walk studies for Pearl St. and Main St.
- Successfully encouraged investment in the Village Center, for example Park St senior housing and the mixed-use building at 4 Pearl St.
- Responded to residents' desires and encouraged to a coffee/bakery to locate in the Village Center.
- Completed traffic calming improvements and bike lanes on Pearl Street from West Street Extension to Champlain Valley Expo.
- The Village approved a 300,000 sq. ft. light industrial master plan for the Champlain Valley Technology and Innovation Park campus on Maple Street to allow for more diversity in uses.
- Construction completed on a new police station
- The Vermont Land Trust, with funding assistance from the Village, purchased development rights on 271 acres of the Whitcomb Farm in March 2014. Additional development rights were purchased on approximately 143 acres in 2015.
- A 2.2 MW solar project was constructed on the Whitcomb Farm.

## 2.3. The Planning Challenge: Toward 2027 and Beyond

Essex Junction is a dynamic and largely developed community with a good mix of residential, commercial, and industrial development. It has desirable neighborhoods, accessible parks, and open space areas, and established downtown and commercial centers. Portions of its commercial areas can be classified as mature urban with underutilized properties that present opportunities for redevelopment and renewed investment. Therefore, the planning challenge for Essex Junction is to manage growth, encourage reinvestment in the existing urban environment, protect existing neighborhoods and ensure that redevelopment or new development enhances the vitality and "Village" character of Essex Junction.

Land use goals that the Village has set for itself will be detailed in the chapters and sections that follow. However, the most important issues that are being grappled with today will define the priorities for Essex Junction for the coming eight years.

### **Goal 1: Assist and work with existing businesses to stay and grow in Essex Junction.**

Objective 1.1 Encourage and assist new businesses and clean industries to invest in Essex Junction.

Objective 1.2: Maintain a favorable business climate in Essex Junction.

Objective 1.3: Engage in policies to make progress on the transit specific strategies in the Town's Economic Development and Vision Plan including #4 (regional multi-modal improvements), #10 (freight rail service expansion), and #12 (transit-oriented development).

Objective 1.3: Continue efforts to revitalize the Village center and attract business through public investment in infrastructure.

### **Goal 2: Promote thoughtful growth.**

Objective 2.1: Ensure that new development and rehabilitation efforts enhance and reinforce the existing architecture, design and layout along major arterials and historic neighborhoods.

Objective 2.2: Encourage mixed-income infill housing within existing developed areas in the commercial and multi-family districts.

Objective 2.3: Promote the redevelopment of underutilized properties in the Transit Oriented Development (TOD) and Village Center District.

Objective 2.4: Continue improvements in the public realm for a high-quality pedestrian experience.

Objective 2.5: Continue efforts to preserve and rehabilitate existing historic structures through state and federal funding programs and incentives; and encourage private investment for the same.

Objective 2.6: Continue to work with the community through a charette process to develop design standards for the Downtown.

Objective 2.7: Work with the Town of Essex to implement the Housing Needs Assessment and Action Plan to increase the stock of homes affordable to residents earning up to and including 80% of area median income.

**Goal 3: Continue improving access to and safety of bicycle and pedestrian facilities, and public transit. Support the work of the Bike-Walk Advisory Committee.**

**Goal 4: Implement projects that will move traffic more efficiently while making the Village a more welcoming place for all modes of travel.**

Objective 4.1: Implement the Connector Road project.

Objective 4.2: Consider pedestrianization of Main Street.

Objective 4.2: Consider implementation of the Design Five Corners Project.

**Goal 5: Establish policies and manage the Village budget and assets to enhance and ensure the continuation of the high quality of life Village residents, businesses and visitors' value.**

Objective 5.1: Increase the ratio of light industrial/commercial uses to residential uses.

Objective 5.2: Investigate additional sources of revenue.

Objective 5.3: Keep budget increases within the rate of inflation.



Objective 5.4: Continue to investigate and implement, when appropriate, shared services between Village and Town governments.

Objective 5.5: Think strategically about Village owned assets to maximize the benefit to the public.

Objective 5.6: Consider reinstating funding to the land acquisition fund.

Objective 5.7: Work with the Trustees and the Essex Town Selectboard on appropriate and feasible consolidation models regarding asset management and services for Essex Junction and Essex Town.

## Chapter 3. History with an Eye Toward the Future

Prior to development of specific recommendations for the future, it is important to examine the trends of the past. This Chapter reviews the historic development patterns within the Village and identifies recent current statistical trends. Historic development patterns and current trends largely dictate future growth patterns. Many of the Goals and Objectives within this Plan are influenced by these trends.

### 3.1. Historical Development Patterns

Early growth in Essex Junction was focused in the vicinity of Hubbell's Falls of the Winooski River, with some agricultural settlement occurring north of the mills. A few structures remain which represent this early growth. A brick house built by Ezra Slater, Sr. at the corner of Park and South Streets is representative of this early settlement. Lincoln Hall, constructed about 1820 as a tavern, is another example of early Village growth.

Probably the single most important influence on growth patterns in Essex Junction was the arrival of the railroad in December 1849. At that time, the crossroads in Essex Township was named Painesville, in honor of the Vermont Central Railway President, Charles Paine. Concurrently, the Vermont and Canada Railroad was being constructed and a railroad junction was formed. Burlington passengers were forced to switch trains at the Junction. Thus, the name Essex Junction began to appear, and in the early 1890's the name was officially changed. The nucleus of the Village Center began to form around the railroad junction. Early buildings included additions to the Stevens Tavern, the Central House Hotel at Central Street and Railroad Avenue. The first church was erected by the Methodists and Congregationalists in 1866.

Another major influence on development patterns within the Village was the early street pattern. The basic network of streets was formed by 1869. Thus, at this early date the "Five Corners" of Main, Maple, Park, Pearl and Lincoln Streets was already established.

By 1880, Essex Junction had displaced Essex Center as the principal Village in the Township. Numerous shops and stores were in existence. In 1892, The Village obtained a Charter from the Vermont Legislature as the Incorporated Village of Essex Junction. In 1890, Essex Junction had a population of 1,141, surpassing the 1,062 residents in the remainder of Essex Township. During the late 1880's and first half of the 1900's, development continued to occur within the Village. Of note was the arrival of the automobile, and the beginning of traffic conflict at the "Five Corners".

The third major event to greatly influence the development of Essex Junction was the arrival of IBM in 1957. The Village population rose from 2,741 in 1950 to 5,304 by 1960. Corresponding with the population and employment growth was the demand for public and commercial services. Businesses began to expand along Pearl Street while residential development proceeded at a rapid pace.

These historic trends had a significant effect on current growth patterns. The railroads still limit the efficiency of the street network. The five major streets intersecting at "Five Corners" create heavy traffic congestion. Some relief from traffic congestion occurred after the first section of the Circumferential Highway opened in 1993; however, traffic levels have since reached pre-circumferential numbers. Pedestrian volumes at the 5 Corners have been increasing since 2001 and traffic volumes have been relatively steady for the past 25 years. Traffic associated with Village Schools appears to have a significant impact on congestion in the morning as more parents seem to be driving their kids to school. Reasons for the increase in school related traffic could be the breakdown of the neighborhood school system, the lack of busing or safety concerns. Thus, historic growth patterns limit and direct the planning effects within the Village today.

### 3.2. Historic Resources

In addition to the specific buildings identified above, there are other important historical resources within the Village. The following inventories of historic sites exist within Vermont:

- The state's Division for Historic Preservation has been inventorying historic buildings since the 1970's and the information is found in the Vermont Historic Sites and Structures Survey. The statewide survey identifies and documents historic properties and sites yielding or likely to yield archeological and anthropological information. The Essex Junction inventory is dated 1984. The inventory includes concentrated developments in groups, identified as districts - where additional information about a district's overall character and development is provided. There are 12 districts, and 2 complexes (Whitcomb Farm and the Champlain Valley Fair) in Essex Junction. There are 205 buildings identified in total within the 12 districts and the Whitcomb Farm complex. The inventory then lists 71 buildings- some of these buildings are the same as those within the districts and others are outside of those districts. Altogether there are a total of 244 historic sites on this survey. These resources are listed in Appendix A and mapped on Map 2.
- There is also a State Register of Historic Places, a designation given after review by the Vermont Advisory Council on Historic Preservation. This designation is largely honorary only – though, under Act 250 review, listed sites are presumed to meet the definition of "historic site" under Criterion 8 for review of development applications and are thus

considered in the decision of whether to issue a permit. While the State works to digitize the resources on the registry there appears to be some discrepancy in data on what sites in Essex Junction are listed.

- The Division for Historic Preservation also administers the National Register of Historic Places in Vermont. The national register is the nation's list of historic and archeological properties worthy of preservation. The criteria for inclusion are the same for the National and State registers. National register designation makes properties eligible for federal and state tax credits and offers some protection from federally funded, licensed, or permitted projects that would harm them. However, it does not restrict what an owner may do to his property, including tearing it down. Sites listed on the National Register are automatically listed on the State Register. While the State & National Parks work to digitize the resources on the registry there appears to be some discrepancy in data on what sites in Essex Junction are listed.

Appendix A provides an overview of these three inventories, the criteria for inclusion, the protections provided, the benefits received and the sites within Essex Junction. As the Village prepares for the future, these historic resources will be analyzed and prioritized to determine which structures should be preserved.

### 3.3. Recent Trends

Sound, reliable background data is a prerequisite for any long-range planning. It provides necessary background information and provides insight for the future. However, the comprehensive plan should be more about shaping the future to meet community objectives than trying to respond to social, demographic and economic trends, which are difficult to predict. This section provides some general statistical data to establish any major trends. In many cases, additional information is provided in the individual Plan elements.

### Population Growth and Demographics

Historical growth rates for Essex Junction, Chittenden County and Vermont are provided on Table 1. As indicated by the Table, substantial growth occurred during the 1950's and 1960's, concurrent with growth at IBM. Since 1970 the growth rate has slowed. Within Essex Junction, the slowing of the growth rate can be attributed to several causes.

1. Employment at IBM had been consistently reduced
2. Global Foundries has reduced its workforce
3. There is limited vacant land available for new residential development.
4. Family sizes have been declining locally, following a national trend to smaller families. In addition, there are an increasing number of older households.



However, in the last ten years the rate of population growth in Essex Junction has increased. The most recent population count (2010) indicated 9,271 people living in Essex Junction. This is a 7.92% increase from 2000. Essex Junction grew more quickly from 2000 to 2010 than it did from 1990 to 2000, however this is still lower than previous decades.

New Census data will be available after the 2020 Census is completed. To identify changes in population in the years between censuses, the Census program recommends using data from the Census Bureau's Population Estimates Program. The Census Bureau's Population Estimates Program produces official population estimates for Essex Junction shown in Table 2. According to these estimates, the population for the Village in 2017 was 10,691 which represents a 14% percent increase from 2011. It is not anticipated that this growth will adversely impact the provision of services to the local community.

**Table 1 Population Growth 1990-2010**

Year	Village of Essex Junction	% Change	Chittenden County	State of Vermont
1900	1,141		39,600	343,641
1910	1,245	9.1	42,447	355,956
1920	1,410	13.25	43,708	352,428
1930	1,621	14.96	47,471	359,611
1940	1,901	17.27	52,098	359,231
1950	2,741	44.18	62,570	377,747
1960	5,350	94.81	74,425	389,981
1970	6,511	21.92	99,131	444,732
1980	7,033	8.0	115,534	537,361
1990	8,396	19.38	131,761	562,758
2000	8,591	2.3	146,571	608,827
2010	9,271	7.9	156,545	626,011

Sources: U.S. Census; Vermont 2000, Vermont Dept. of Health, January 2002

**Table 2 Population Estimates (2011-2017)**

Year	Population Estimates
2011	9,338
2012	9,477
2013	9,651
2014	9,832
2015	10,065
2016	10,386
2017	10,691

Source: US Census Bureau Population Estimate Program

Over the last 20 years, the average household size in Essex Junction has been declining. It has gone from 2.57 people in 1990, to 2.48 people in 2000, and to 2.39 people in 2010. Household size has further dropped to 2.34 (+/- .11), according to the 2013-2017 American Community Survey 5-Year Estimates. Additionally, the number of households with individuals under 18 has decreased and continues to do so. In 2017, ACS estimates indicate that 29.9% of households had children under 18. This is down from 31.6% in 2010, 30.9% in 2000, and 52.3% in 1990.

It is also helpful to understand the demographics of Village residents prior to development of specific recommendations for the future. The data below includes the age (Table 3) and race (Table 4) of Village residents in 2010. Additional information can be found throughout the chapters in this Plan, the U.S. Census website, and at [housingdata.org](https://www.housingdata.org).

**Table 3 Population by Age (2017)**

	<b>Total Estimate</b>	<b>Margin of Error</b>	<b>Percent Estimate</b>	<b>Margin of Error</b>
<b>Total Population</b>	10,132	+/-32		
<b>AGE</b>				
<b>Under 5 years</b>	544	+/-158	5.4%	+/-1.6
<b>5 to 9 years</b>	616	+/-150	6.1%	+/-1.5
<b>10 to 14 years</b>	671	+/-164	6.6%	+/-1.6
<b>15 to 19 years</b>	567	+/-173	5.6%	+/-1.7
<b>20 to 24 years</b>	1,024	+/-277	10.1%	+/-2.7
<b>25 to 29 years</b>	513	+/-156	5.1%	+/-1.5
<b>30 to 34 years</b>	707	+/-208	7.0%	+/-2.1
<b>35 to 39 years</b>	736	+/-182	7.3%	+/-1.8
<b>40 to 44 years</b>	657	+/-140	6.5%	+/-1.4
<b>45 to 49 years</b>	769	+/-194	7.6%	+/-1.9
<b>50 to 54 years</b>	965	+/-216	9.5%	+/-2.1
<b>55 to 59 years</b>	646	+/-168	6.4%	+/-1.7
<b>60 to 64 years</b>	383	+/-103	3.8%	+/-1.0
<b>65 to 69 years</b>	523	+/-123	5.2%	+/-1.2
<b>70 to 74 years</b>	206	+/-91	2.0%	+/-0.9
<b>75 to 79 years</b>	202	+/-96	2.0%	+/-1.0
<b>80 to 84 years</b>	334	+/-133	3.3%	+/-1.3
<b>85 years and over</b>	69	+/-46	0.7%	+/-0.5

Source: 2013-2017 American Community Survey 5-Year Estimates

*Table 4 Race (2017)*

	Estimate	Margin of Error	Percent
<b>Total:</b>	10,132	+/-32	100.0%
<b>White alone</b>	8,905	+/-365	87.9%
<b>Black or African American alone</b>	203	+/-125	2.0%
<b>American Indian and Alaska Native alone</b>	0	+/-15	0.0%
<b>Asian alone</b>	719	+/-344	7.1%
<b>Native Hawaiian and Other Pacific Islander alone</b>	0	+/-15	0.0%
<b>Some other race alone</b>	51	+/-56	0.5%
<b>Two or more races:</b>	254	+/-159	2.5%
<b>Two races including Some other race</b>	0	+/-15	0.0%
<b>Two races excluding Some other race, and three or more races</b>	254	+/-159	2.5%

Source: 2013-2017 American Community Survey 5-Year Estimates, Margin of Error is not available for percent estimates. Caution should be taken when using data with a high margin of error.

### 3.4. Future Trends

Vermont Statute requires that all plans shall be based upon surveys of existing conditions and probable future trends and shall be made in light of present and future growth and requirements (24 VSA §4302). Forecasts and projections are two types of methods for developing future demographic trends. The following includes a projection from the VT Agency of Commerce and Community Development; and a forecast from the Chittenden County Regional Planning Commission.

The VT Agency of Commerce and Community Development developed population projections from 2010 to 2030 in August 2013. These projections use US Census data as the basis for calculations; and mortality, birth rate and migration rate data from 1990 to 2010 as factors. It is important to note that projections are not predictions – "projections assume that conditions that occurred in the past will continue into the future". Therefore, projections can be a helpful planning tool, but with the understanding that they may not be accurate. The projections include two scenarios based on different migration assumptions – Scenario A is based on migration rates during the 1990s, and Scenario B is based on migration rates during the 2000s. The projection report states:

"In Vermont, there is a relationship between the national economy and the direction and magnitude of migration. During the 1990s (Scenario A), the national economy was generally

healthier than during the 2000s (Scenario B) and Vermont saw greater rates of net in-migration. As a result, Scenario A using 1990s migration rates generally, show higher populations than Scenario B using the migration rates of the 2000s."

**Table 5 Population Projections (2010-2030)**

Scenario A					Scenario B				
	2010 Census	2020	%change from 2010	2030	% Change from 2010	2020	%change from 2010	2030	%change from 2010
Essex	19,587	20,556	4.90%	21,138	7.90%	20,074	2.50%	20,057	2.40%
Chittenden County	156,545	165,690	5.80%	171,718	9.70%	161,812	3.40%	162,967	4.10%

Source : *Vermont Population Projections- 2010-2030*, August, 2013. Ken Jones, Ph.D., Economic Research Analyst, Vermont Agency of Commerce and Community Development and Lilly Schwarz, Community Based Learning Intern, Montpelier High School. Developed with the assistance of a Population Project Review Committee.

The Chittenden County Regional Planning Commission's population forecast is a different approach from the projection described above because it does not solely rely on past trends. The forecast also involves complex modeling and statistical approaches to estimate future growth. Like projections, a forecast is a planning tool to assist with decision making. Additionally, CCRPC's forecast provides future employment and housing estimates which can be found here: <https://www.ccrpcvt.org/our-work/our-plans/ecos-regional-plan/>.

While the projections and forecasts were not calculated for Essex Junction, they were calculated for Essex and can be found in Table 6. Currently, the population of Essex Junction represents roughly half of the population of Essex Town as a whole.

**Table 6 Population Forecast**

	2015	2020	2025	2030	2035	2040	2045	2050
Essex	20,946	21,599	22,137	22,577	22,895	23,103	23,464	24,020
Chittenden County	161,382	165,803	169,580	172,596	174,764	176,179	178,927	183,172

Source: Chittenden County Regional Planning Commission



## Chapter 4. Comprehensive Plan Elements

If this Comprehensive Plan is to accurately address the goals and aspirations of the Village, formal and specific guidelines for growth must be developed. These guidelines must be general enough to encourage innovative solutions to problems but be specific enough to focus the actions of the Village in a consistent, workable planning approach.

Another key ingredient of a successful Comprehensive Plan is a clear, concise physical development plan. This Plan will direct and manage the future physical growth and redevelopment of the Village. It encourages orderly, planned growth and represents the community's vision for the future. While it is not possible to identify all issues or satisfy all concerns, the plan is intended to strive for a reasonable balance between competing interests.

The Plan Elements as presented in this Chapter are, therefore, the most important sections of this Plan. They are the engine that will drive the future of Essex Junction. Although each element is presented in a format to be used individually, it should be recognized that they are interdependent. The goals, objectives and maps in each functional element should be adhered to if the overall plan is to remain viable. A companion document to this plan is the Land Development Code (LDC). The LDC is one of the ways the goals and objectives are implemented to achieve the aspirations of the Village.

The remaining sections of this plan are divided into separate Plan elements. Each individual Plan Element contains the official, adopted policies of the Village of Essex Junction.

## 4.1. Energy

To align this plan with the State of Vermont's Comprehensive Energy Plan goals, the Village and the Town of Essex developed a joint enhanced energy plan. The enhanced energy plan, found in Appendix D, is the Essex Community's plan for shifting away from fossil fuels to renewable sources of energy in the transportation and heating sectors, increase energy efficiency in all sectors and site additional renewable energy generators.

The Comprehensive Energy Plan aims to reduce total energy consumption per capita by 15% by 2025, and by more than 33% by 2050; to weatherize 25% of all homes by 2020; and to reduce greenhouse gas emissions from within the state to 50% of 1990 levels by 2028, and to 75% of those same levels by 2050. The challenges set forth in the Comprehensive Energy Plan are not easily met.

The energy plan describes how the Essex Community intends to act to implement the state energy goals outlined above. Meeting these goals will require ambitious action to transform the way the Essex Community uses, stores, and produces energy.

The following transformations are needed for the Essex Community as the most likely pathway to meet these goals by 2050, given current technologies:

- Establish enough renewable energy generation sites to generate between 211,386 to 353,629 MWh of electricity.<sup>1</sup>
- Increase electric vehicles to 89% of passenger vehicles registered in the Essex Community.
- Fuel 96% of heavy-duty vehicles with biodiesel or other renewable carbon free fuel sources.
- Weatherize 100% of homes and 38% of commercial and industrial establishments.
- Heat 60% of homes with electric heat pumps and 14% of homes with wood.
- Heat 38% of businesses with electric heat pumps and 11% with wood.

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<sup>1</sup> The renewable energy target is expressed in MWh because the target is intended to be technology neutral. The Essex Community's target takes into account both electricity used in the commercial, industrial, and residential sectors. The target is modeled based on population and electricity usage. The Essex Community makes up 43% of electricity used in Chittenden County; therefore, the community's target is among the highest in the County.

## 4.2. Agriculture and Community Forestry

Agriculture is alive and strong in Essex Junction as evidenced by conservation of the Whitcomb Farm, a waitlist for community garden plots, restaurant participation in the Vermont Fresh Network, and Farm to School.

The Whitcomb Farm provides many valuable resources to the Village, including productive agricultural land. The Whitcomb Farm also promotes agriculture education, open space, recreation and wildlife habitat. The Whitcombs and the Village also benefit from the farm's utilization of treated biosolids from the Waste Water Treatment Plant as fertilizer. Additionally, a 2.2 MW solar project was installed on the Whitcomb Farm in 2014 which contributes to the Village's renewable energy generation target. See the Essex Community Energy Plan for more information regarding energy.

The Village Trustees provided the Whitcomb Farm with a three-year tax break in 2011, securing public recreation on the property and supporting the Whitcomb's efforts to conserve the land. In addition, the Village voted to use \$20,000 of the land acquisition fund toward the Vermont Land Trust's purchase of development rights from the Whitcomb Farm. This resulted in 414 acres being protected from development and will keep it as a working farming in perpetuity.

In addition to the Whitcomb Farm, the importance of local agriculture to the residents of the Village is evidenced by:

- Restaurants have joined the movement by participation in the Vermont Fresh Network;
- The Village Recreation and Parks Department also run a Community Garden Program with approximately 150 garden plots at the West Street Garden and the Meadow Terrace Garden (and there are waitlists for use of these plots). The Department also hosts gardening classes;
- The Village adopted a chicken ordinance to allow homeowners to have chickens in their backyard. As of March 2019, 9 chicken permits have been issued; and
- Essex Westford School District is committed to providing the best in nutrition and overall wellness education for students of all ages, their families, and the surrounding community.

Just as agriculture is important to the residents of the Village, so is community forestry. The benefits of a healthy and robust community tree canopy are extensive. The International Society of Arboriculture, names the following (plus many more) benefits:

- Environmental benefits include climate control by moderating the effects of sun, wind and rain; improve air quality by removing carbon from the atmosphere and storing it in biomass and soils (a process called carbon sequestration); conserving water by intercepting water, storing some of it, and reducing stormwater runoff and the possibility of flooding; and providing wildlife habitat and food.
- Social benefits include providing privacy, emphasizing views, or screening out objectionable views.
- Economic benefits include energy cost savings as trees can provide shade thereby lowering summer air conditioning bills, and trees can protect structures from wind thereby lowering winter heat bills; increase property values; and can help encourage patronage to downtown retailers.

### HELPFUL RESOURCE

The Vermont Urban & Community Forestry Program has developed a Vermont Tree Selection Guide to help select the appropriate tree based on the purpose of the planting, site conditions, type of maintenance needed and best tree species for long term success. The guide includes a tree selection worksheet and a tree list to help select the appropriate tree – there is a printed version as well as a searchable online database that can be found here:

[www.vtcommunitytrees.org](http://www.vtcommunitytrees.org).

Essex Junction received a 2013 Tree Steward Award from the Vermont Urban & Community Forestry Council for taking tremendous strides to improve the condition and quality of trees in the Village. This includes the completion of a tree inventory, passing a tree policy, and planting 22 trees in the Village Center in a two-year period prior to the award. The award recognizes the collaborative effort among multiple Village departments and volunteers. In addition, the Village Trustees established a Tree Advisory Committee in 2013 that works with the Village Tree Warden to promote the improvement and preservation of a healthy environment as it relates to public trees. The committee provides a mechanism for the planting, maintenance, protection and removal of trees on public streets, parks and Village-owned properties.

This Comprehensive Plan is required to meet the State planning goals established under Title 24 §4302(c). These goals include "to encourage and strengthen agricultural and forest industries." It is clear that the Village is meeting this goal for their agriculture industry. While, there is not much of a traditional forestry industry within the Village to encourage and strengthen, the Village continues to encourage awareness and good forestry practices for its urban trees and community forest.



## Agriculture and Community Forestry Goals

**Goal 1: Continue to support the Whitcomb Farm in their conservation efforts.**

**Goal 2: Support value-added agricultural businesses to ensure Village residents have access to fresh healthy foods.**

Objective 2.1: Work with the community to re-establish the Farmer's Market.

Objective 2.2: Hold farm-to-table community events to benefit local organizations and residents.

**Goal 3: Continue support of the Community Garden Program, home gardening and micro-farming.**

Objective 3.1: Continue to offer incentives for developments that include community gardens and/or allow residents to have home gardens on common land.

Objective 3.2: Strengthen language in zoning regulations to protect topsoil during construction so that yards are more suitable for gardening.

Objective 3.3: Utilize the Chittenden Solid Waste District's materials to educate households on the food scrap ban from the landfill, that will be in effect in 2020.

Objective 3.4: Develop a method to donate excess food from community gardens.

Objective 3.5: Encourage the practice of edible landscaping.

Objective 3.6: Inventory and designate additional public space for community gardens (including roof tops and wall gardens).

**Goal 4: Establish a Tree Management Plan to improve and maintain the community tree canopy within public parks and rights-of-way.**

Objective 4.1: Increase the Village tree canopy with thoughtful planning, planting and maintaining of trees on public spaces or intruding into/onto public spaces.

Objective 4.2: Educate residents on the value of the urban forest.

### 4.3. Business/Economic Development

Essex Junction continues to be a strong employment center for large and small, service oriented, retail, and manufacturing enterprises. As the host community for Global Foundries the Village has a proven track record of developing business partnerships that last. The following strengths combine to make Essex Junction a great place to locate and/or invest in a business:

- The Village is strategically located within the region and has the infrastructure to support new businesses and business expansion. The Village is a transportation hub, with close access to Interstate 89 and Vermont Routes 15, 2A, and 117, and Burlington International Airport. In addition, the Village is working towards the construction of the Crescent Connector- a Circ alternatives project that will help to mitigate traffic at Five Corners and open areas of underutilized land in the designated Village Center to development. The downtown transportation terminal is a major stop for Amtrak and for Green Mountain Transit which provides county-wide public transportation.
- The Village has a variety of old and new, large, and small business properties. The historic Village Center and Pearl Street commercial corridor have had multimillion dollar, federally funded restorations, and redevelopment. In addition to Global Foundries, the Village is home to the Center for Technology, Essex, which is Vermont's largest secondary technical education facility and the Champlain Valley Exposition, Vermont's largest indoor and outdoor exposition center.
- There are approximately 225 small businesses in Essex Junction, according to the Village's March 2019 List of Businesses.
- Agriculture is an important industry in Essex Junction as evidenced by conservation of the Whitcomb Farm, a waitlist for community garden plots, restaurant participation in the Vermont Fresh Network, and the Farm to School program. More information can be found in the Agriculture & Community Forestry section.
- The Village maintains an inventory of existing businesses and available properties to help connect new or expanding businesses with local resources and building space. The inventory of businesses can be found on the Village of Essex Junction website (<http://www.essexjunction.org/business/list/>).
- The Village has adequate sewer capacity for new development.
- The Village has a [Commercial Tax Stabilization Policy](#) intended to encourage economic development, diversify the tax base, enhance the street scape and provide long-term growth in the Grand List and help maintain the vitality of the Village of Essex Junction's commercial business district. Any for-profit or non-profit corporation, partnership,

cooperative, or proprietorship that is existing, locating or expanding in a commercial zone in the Village of Essex Junction may be eligible for tax stabilization.

- Essex Junction has a State designated Village Center District which provides tax credits for a variety of building repairs and improvements.
- Village staff works with the Essex Town Economic Development Commission to address Town wide economic development needs and services.
- The Village maintains a fair and balanced permitting process that supports local businesses and new investment.
- Numerous housing units have been added to the Village downtown making Essex Junction a great place to live near employment.
- Village residents live in comfortable, friendly neighborhoods all within walking distance of the Village downtown. The Village continues to increase the number of sidewalks and other facilities to support bike and pedestrian travel, making it easier for residents to visit downtown businesses.
- The schools are consistently ranked among the best in the state.
- In addition to Global Foundries, many Essex Junction residents are employed by the University of Vermont, the University of Vermont Medical Center, Saint Michael's College, General Dynamics, and the State of Vermont.
- Heart & Soul participants identified the Local Economy as a community value -the residents' value working at and patronizing the diversity of businesses in the community and are committed to fostering an environment that produces a world-class workforce and a strong economy for years to come.
- In addition, the Village Center and the Pearl Street commercial corridor have been designated as a Center Planning Area in the Chittenden County ECOS Plan, which is intended to be a regional center or traditional downtown that serves the County and beyond and contains a mix of jobs, housing, and community facilities.

Essex Junction does face business and economic development related challenges. One important challenge is ensuring the provision of adequate municipal services while minimizing tax increases. Also, Essex Junction's retail sector faces competition from growth in outlying surrounding communities, as well as online retailers. To this end, it is important to support existing business, encourage new light industrial and commercial development and investigate additional sources of revenue.

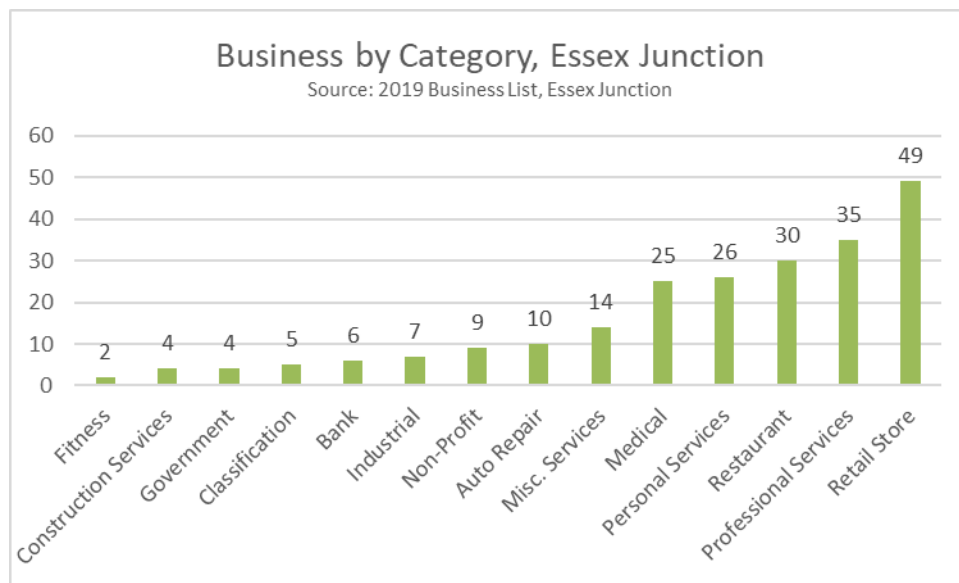
While the location of Essex Junction at the confluence of three major highways, Five Corners, is a strength of its economic profile, managing the traffic associated from both local and regional commuters is also a challenge. The ability to maintain and grow the economic base is balanced with the need to plan for commuter and local traffic, maintenance, safety and law

enforcement. Other direct impacts are felt within residential neighborhoods as commuters use residential streets to avoid Five Corners. The Village has been proactive at providing multi-modal facilities in the downtown to provide alternatives to commuting via single occupancy vehicles. In addition, the Crescent Connector will help mitigate traffic at Five Corners.

### Employment

As indicated in Figure 1, there are a variety of businesses within Essex Junction, totaling 226 business. This variety is a significant factor in attracting people to the Junction and maintaining the economic vitality of the area, especially given the high number of restaurants and retail stores. The largest private employers in Essex Junction include Global Foundries, Flex-A-Seal, Vermont Systems Inc., and PayData Workforce Solutions (2017/2019 Vermont Business Magazine). Information about large employers can be found in the Essex Town Plan along with specific information from the Essex Economic Development Vision and Plan, 2010.

*Figure 1 Business by Category, Essex Junction*



While the number of employees is not included in the Essex Junction Business List, the VT Business Magazine's Business Directory reports employment. That is also not a complete dataset as the information is self-reported by businesses that choose to provide the information, however that database does include full time employees if provided by the business.



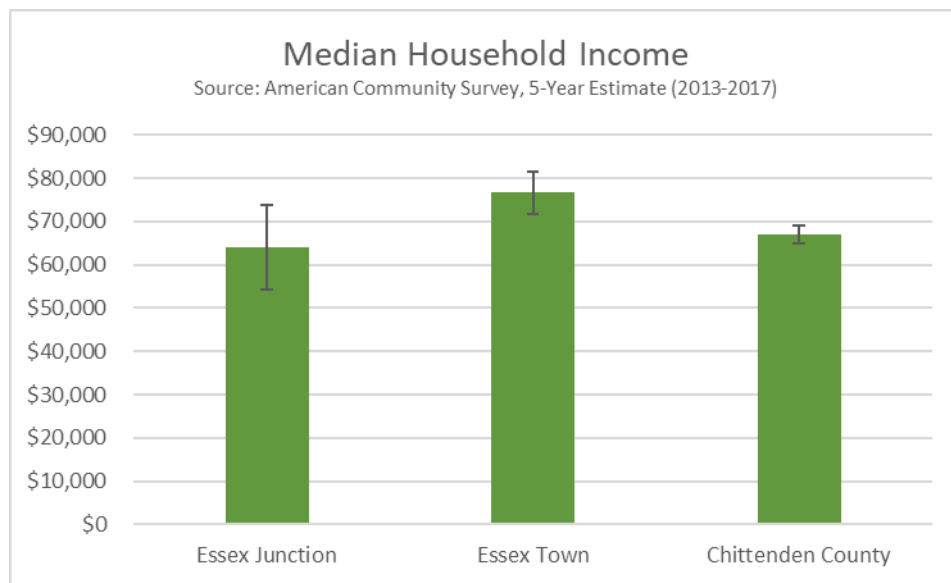
## Income Characteristics and Labor Force

An important factor in the economic health of any community is the local household income level. The income level within any community directly affects a community's health in the following areas:

- 1) Tax base to support the provision of needed community services such as streets, sewer and water facilities, libraries, etc.;
- 2) Type and cost of housing, particularly the availability of affordable housing;
- 3) Types and number of businesses and services available; and
- 4) Ability to attract and maintain a solid commercial and industrial economic base.

Figure 2 compares financial characteristics of Essex Junction households to those of the county. The median household income in Essex Junction is lower than Chittenden County and Essex Town, indicating that households in Essex Junction may earn relatively less than households in surrounding communities.

*Figure 2 Median Household Income*



The 2017 total Labor Force- the population, aged 16 and over, which is employed or unemployed, including those in active military duty- for the Town of Essex is estimated at 12,504. The 2017 annual unemployment rate for the Town of Essex (Essex Junction data is not available) was 2.2%- slightly lower than the County's rate of 2.3%, and the State's rate of 3.0% (Source: Annual Unemployment Rate, Not Seasonally Adjusted from the Local Area

Unemployment Statistics program produced by the VT Department of Labor, Economic & Labor Market Information). While Vermont still holds one of the lowest unemployment rates in the country, we are vulnerable to a lack of market diversification- as seen by the challenges faced when Global Foundries has layoffs. This further supports the goals of this plan to support, grow and diversify Essex Junction's local economy.

### Village Center and Park Street Areas

The Village Center and Park Street area is the community's traditional business center and home to numerous local businesses and retail shops. The Village is striving to capitalize on this business center and encourage development that will enhance the environment. Specifically, the Village is encouraging the development of market rate residential development, encouraging the diversification of the mix of non-residential land use, attracting new business, marketing vacant retail properties, and working to redevelop underutilized properties. The creation of the Crescent Connector is an example of this vision, as it will revitalize underused property and enhance the Village environment. The continuing viability of the Village Center as a community focal point is an important consideration in this Plan.

The Design Five Corners Project includes a proposal to reconfigure the 5 Corners Intersection by closing a portion of Main St. and creating a pedestrian marketplace that embraces the economic value of walkability. Walkable communities put people on the street, which supports the local business environment and increases its appeal. When shops are clustered together, foot traffic visitors are encouraged to visit multiple neighboring stores and, most importantly- locals became repeat customers. This benefit is strengthened by ensuring that pedestrians feel safe and comfortable when they walk. Communities that are walkable, safe for pedestrians, and offer amenities like pocket parks, bike lanes and well-maintained sidewalks tend to be more desirable to individuals and businesses alike.

### Pearl Street Business

The Pearl Street business corridor is an important part of Essex Junction's business and retail sector. There are significant differences in the types of businesses located at the Village Center and those along Pearl Street. The Pearl Street corridor contains a variety of local retail and service oriented businesses, including two shopping centers, the Champlain Valley Exposition (CVE), fast food restaurants, numerous other businesses and residential uses. New higher density housing has been introduced and the streetscape was upgraded in 2011 which has helped and will continue to sustain the adjacent local businesses.

Reports reveal that Essex Junction businesses serve primarily the local market and are facing competition from recent retail and office developments in surrounding communities. The

Village plans for an economic strategy that capitalizes on the economic impact of CVE fair and non-fair related events, and works with property owners to develop underutilized sites for residential and mixed-use development.

### Tourism

The cultural resources found in the Village are part of the economy. Since 2002, the Village has been one of twenty-two communities of the Lake Champlain Byway designated by the Vermont Transportation Board. The byway supports projects that balances the promotion, preservation, enjoyment, and stewardship of the Byway's intrinsic resources primarily scenic, outdoor recreation, and historic resources. The Village has worked with the Byway to install outdoor interpretative panels and a large informational kiosk and provided information about the Village's intrinsic resources for inclusion in the Byway's brochures and on the [Byway's website](#).

### Innovation and Entrepreneurial Development

The Chittenden County ECOS Plan states the need for opportunities to nurture the entrepreneurial environment and provide support systems for new startups. Business incubator spaces are a key ingredient to fostering innovation and entrepreneurial development. Incubator spaces can attract a technologically skilled workforce by offering networking opportunities and infrastructure (such as broadband and marketing) at a smaller scale. These are critical resources for new business which spur economic growth and bring entrepreneurs together. [Excelerate Essex](#), an innovative co-working space providing various amenities and essentials to modern professionals is an asset to the Village.

### Champlain Valley Exposition Fairgrounds

CVE is a major year-round events venue. CVE is strategically located close to the Village Center and on a main road, which creates opportunities for local business to capitalize on the influx of people to the Village for CVE events. Public Village representatives should participate in the planning of any changes to the present use, or to the present master plan, as this will affect both the surrounding residents and the entrance into Essex Junction. Any new Master Plan or changes to the existing Master Plan should emphasize mixed use with a base of light industry and commercial uses. In addition, the Village should carefully consider and encourage businesses that support the events at CVE such as hotels and restaurants.

### Global Foundries

Essex Junction maintained a strong employment base since IBM located within the Village 1957. In 2014, IBM paid Global Foundries to take over the site. Global Foundries is Vermont's

second largest private employer and has a major economic impact on the local, regional, and state economies. While Global Foundries has decreased in size, they remain the employment "anchor" in Essex Junction, as well as within the surrounding communities. The demand for commercial and professional services is largely the result of Global Foundries.

Prior to Global Foundries acquiring IBM, the site was renamed the Champlain Valley Technology and Innovation Park (Innovation Park) and a master planning process was completed to attract additional businesses to the site. The intent of the master plan is to develop 300,000 square feet of Light Industrial space on Maple Street to diversify and attract more employers. Diversification on this site will help the Village, Region and State to continue to concentrate investment in this area and increase employment opportunities. The plan's first piece, a new headquarters for the Essex Police Department, was already completed. The Village should support development and infrastructure policies and investments that meet the needs of Global Foundries and other Innovation Park businesses, but also minimize impacts on the local residents.

### Implementation Strategies from the Town's Economic Development and Vision Plan

The Village Planning Commission endorses the implementation strategies of the Town's Economic Development and Vision Plan and should engage in policies to make progress on the strategies as opportunity arises. The Village is particularly interested in maximizing success in the transit specific strategies as identified in #4 (regional multi-modal improvements), #10 (freight rail service expansion), and #12 (transit oriented development). The Essex Selectboard asked the Economic Development Committee (EDC) to prioritize the 13 implementation strategies that were identified in the 2010 Economic Development and Vision Plan: Essex, Vermont prepared by BBP and Associates. Many of the strategy recommendations are resource expansive and intertwined, and as a result, were prioritized by the EDC with the goal of maximizing the potential effectiveness of strategies within the human and fiscal resources available. The following list shows the strategies ranked in priority order, from highest to lowest, as summarized and/or amended by the EDC:

1. Major Roadway Improvements- The Town is encouraged to engage actively in infrastructure improvement projects, such as completion of the Circ Highway, VT Route 15 corridor improvements, and VT Route 117 improvements, along with the Crescent Connector, (in the Village).
2. Strategic Industrial Park Evaluation- The evaluation, with regards to the Town's two industrial parks, should enable a better understanding of what is working, what is not, and what is next.

3. Government Service Retention and Expansion -The focus would be on the retention of current government services and the attraction and expansion of Federal and State government services, along with the development and submittal of projects that may not be feasible without appropriations from other governmental sources.
4. Regional Multi-Modal Improvements - Multi-modal projects can improve both the economic climate and the quality of life in Essex, with a focus on local projects.
5. Marketing Program -A marketing program should define an Essex brand, modes to present that brand, and identify niches the Town seeks to occupy (such as outdoor recreation, "green businesses," food commerce, and technology).
6. Champlain Valley Technology and Innovation Park- Communications should be established and maintained with the businesses here that better enable local government and the community to understand site opportunities and future plans and challenges.
7. Infill Development- Infill should be facilitated where appropriate, with care taken to preserve the character of neighborhoods and surrounding areas.
8. Business Visit/Assistance Team -A pilot program should be established to test the value of reaching out to existing Town businesses on a regular basis.
9. Business Development Data Center- Collecting and updating data on business status and infrastructure is resource intensive, with the costs outweighing potential benefits.
10. Freight Rail Service Expansion- Further investments in freight rail infrastructure can have a positive effect the Town's ability to attract business, as well as providing opportunities for expanded passenger rail access and service.
11. Local Education Resource Promotion - Promoting the high caliber local school system should be incorporated into a marketing program.
12. Transit-Oriented Development (TOD)- The Town should remain vigilant in its search for TOD opportunities and flexible in its response.
13. Green Entrepreneurial Center- A low priority, given the estimated price (\$5.3 million) to build a green incubator space.

The EDC believes housing, particularly affordable housing, is a critical component of an economic development strategy, though it was not included in or attached to any of the 13 implementation strategies.

## Business/Economic Development Goals

**Goal 1: Assist and work with existing businesses to stay and expand within Essex Junction. Assist and work with new businesses to invest in Essex Junction.**



Objective 1.1: Maintain a favorable business climate in Essex Junction.

Objective 1.2: Encourage the development of a diverse array of residential units in the Village Center and Pearl St. Districts.

Objective 1.3: Consider performing market studies or other effort to identify and attract businesses to the Village.

Objective 1.4: Work with officials at Global Foundries, as well as the other businesses located at Innovation Park campus, to meet their future development needs. Develop a plan for diversifying the Innovation Park property.

Objective 1.5 Encourage opportunities for bandwidth improvements.

Objective 1.6: Work with [Excelerate Essex](#) to support efforts to create a culture and environment that encourages entrepreneurs and their start-ups (i.e. co-working spaces, technology training, maker & hacker spaces).

Objective 1.6: Work with Essex Economic Development Committee to help identify underutilized structures in the Village and assist in matching the landowners with business prospects.

### **Goal 2: To increase the Village's relationship with the local business community.**

Objective 2.1: Look for strategic opportunities to work with business and property owners on economic development.

Objective 2.2: Work closely with regional businesses through active membership in such organizations as the Greater Burlington Industrial Corporation.

Objective 2.3: Encourage Village membership on key and regional committees involved with business expansion and economic development. Continue to work with the Essex Economic Development Commission, and the CCRPC.

Objective 2.4: Promote the Village as a destination for shopping, services, and tourism. Provide mechanisms for increased communication between the business community and Village Officials.

Objective 2.5: Continue to work with the Town and Essex Economic Development Commission on the implementation strategies from the Economic Development and Vision Plan: Essex.

**Goal 3: To provide mechanisms for efficient and timely review of development applications.**

Objective 3.1: While maintaining environmental standards, ensure that the local codes do not inhibit or prohibit local development.

Objective 3.2: Continue to provide an application checklist of all requirements for each stage of review.

**Goal 4: To preserve and enhance the appearance and historical character of the Village of Essex Junction.**

Objective 4.1: Maintain Design Review in the Village Center.

Objective 4.2: Design publicly financed improvements to preserve the character of the Village Center.

Objective 4.3: Establish local historic districts or other mechanisms to preserve existing residential structures of significant historic village character along major arterials and in historic neighborhoods.

Objective 4.4: Continue streetscape and landscaping efforts to attract private sector investment.

## 4.4. Open Space/Recreation/Public Health

Open Space bolsters local economies, ensures residents have opportunities for physical activity, preserves significant natural resources, provides recreational opportunities, and guides growth into appropriate areas. Through the Heart & Soul project residents put great value in their public places for outdoor and indoor recreation for all ages and abilities. Residents treasure Indian Brook Reservoir, neighborhood parks and the chance to connect by bicycle or on foot. This section describes the protection and management of these valued open spaces as follows: local parks, schools and recreational facilities that provide extensive active recreational opportunities; urban amenities such as sidewalks and plazas. Additionally, this section discusses the link between the health of the population on the design of the community in which people live, work, and recreate.

### Local Parks, Schools and Recreational Facilities

The provision of parks and open space for active and passive recreation is an essential and treasured urban function. The 2007-2016 Essex Junction Recreation and Park Master Plan identified all park lands within the Village and determined that there is sufficient parkland to serve Essex Junction's residents. The plan also noted significant natural areas in close proximity to the Village including the Indian Brook Reservoir in the Town of Essex.

Within Essex Junction, the management of the parks, recreation programs and facilities are the responsibility of the Village. In 2017 the Essex Junction Recreation Program governance transferred from the school district back to the Village. This includes the management of all three of Essex Junction's formal parks along with all the school properties that contain the majority of active recreation facilities within the village. A full-time Recreation Director administers the program. A Recreation and Park Master Plan for 2007-2016 sets the vision, goals and implementation of future recreation projects and park maintenance.

Essex Junction's existing parks and open space include the following (See Map 3):

- A. Stevens' Park: 8.2-acre neighborhood park designed for passive, nature-oriented activities. Designed walking/jogging trail system (also used by bikers).
- B. Cascade Park: 10-acre neighborhood park designed for active recreation use. Youth baseball field; three (3) tennis courts; one (1) basketball court; one (1) mini-basketball court; one (1) established play equipment area; one (1) picnic pavilion; parking lot for 18 vehicles.

- C. Maple St. Park: 38-acre Community Park, designed for active recreation use. Facilities include one (1) lighted baseball field, two (2) lighted tennis courts; one (1) lighted basketball court; three (3) picnic pavilions; two (2) outdoor swimming pools with bath house;; two (2) multi-purpose fields; two (2) Little League baseball fields; a trail system; one (1) skatepark; one (1) bike park; (1) Gaga Ball Pit; low level playground activity with established play equipment; and parking lot for 128 vehicles.
- D. Essex Community Educational Center: 93-acre site housing high school complex. Outdoor facilities include: multi-use stadium; all weather running track; one (1) baseball diamond; one (1) football field; four (4) lighted tennis courts; 400-meter track; and parking lot for 370 vehicles.
- E. Albert D. Lawton Intermediate School: 33.5-acre site housing middle school building. Outdoor facilities include: One (1) baseball field, one (1) soft ball field, four (4) multi-purpose field areas, parking lot for 110 vehicles.
- F. Fleming School: 5.44-acre site that houses elementary school complex. Outdoor facilities include: one (1) basketball court; high intensity playground area; one (1) youth baseball field, multi-purpose play area; parking lot for 301 vehicles.
- G. Hiawatha School: 15.65-acre site that houses elementary school complex. Outdoor facilities include: one (1) youth baseball field; two (2) multi-purpose fields; low level playground activity area.
- H. Summit Street School: 3.7-acre site that houses elementary school complex. Outdoor facilities include high intensity playground area; large open space area.
- I. Park Street School: 1.29-acre site that houses alternative school building. Outdoor facilities include low-level playground activity area.
- J. Parizo Farm Property: 7.73 acres adjacent to the Hiawatha School.
- K. Fairview Farms: 10 acres owned by the village; currently natural area open space.
- L. Whitcomb Heights: 9 acres designated natural area open space.
- M. Community Gardens: Essex Junction Recreation and Parks organizes two community gardens with over 100 garden plots.

- a. The Meadow Terrace Garden is our organic site and is located next to the Center of Technology, Natural Resources Building.
  - b. The West Street Garden is located at 111 West Street, on State of Vermont property.
- N. Tree Farm Recreational Facility: 99.1 acres of green space including 13+ soccer fields which are home to a variety of soccer tournaments and the space is available to community members for dog walking, kite flying, and bike riding.
- O. Other Available sites: There are several facilities owned by other agencies which provide recreation opportunities to Village Residents:
- i. Indian Brook Park: 577 acres, Town of Essex- Natural Park. Outdoor activities
  - ii. Winooski Valley Overlook Park: 4 acres, Winooski Valley Park District- Natural area
  - iii. Sixty-eight Acre Park: 58 acres, Town of Essex- natural area.
  - iv. Pearl Street Park: 14 Acres, Town of Essex- Active, athletic Park
  - v. Champlain Valley Exposition Fairgrounds: North of Pearl Street

At Essex Junction Recreation & Parks (EJRP), significant improvements have taken place over the past several years to accomplish master plan goals and meet community needs. A Head of Grounds and Facilities Maintenance was hired to oversee the maintenance and operations of the parks and facilities, a maintenance plan is in place for the athletic fields and playgrounds, several fields at Maple Street park have been irrigated, a court resurfacing schedule has been established, there is new signage at each of the three Village parks, a Bike/Walk Advisory Committee was established by the Village Trustees, the skate park at Maple Street Park was constructed, the Essex Dog Park was built at 111 West Street, the Bike Park at Maple Street Park was constructed, and new garden plots were added at the Community Gardens at 111 West Street.

The only pieces of the recreation master plan related to facilities that are not yet implemented include building two sand volleyball courts at Maple Street Park, and further investigating the need for more indoor recreation space, including an indoor swimming pool. Maple Street Park has some space constraints for accommodating sand volleyball courts.



In 2009, the vote for a previously established one cent (\$.01) tax on the municipal grand list to support the Recreation and Parks Capital Replacement Reserve Fund failed. In a subsequent vote, \$75K was approved by taxpayers to support the fund. Since 2009, the annual vote continues to be on the question of \$75K and has been approved. The difference between the one cent (\$.01) on the grand list vs. the \$75K results in \$25K less investment each year. With increasing demands on programs, parks, and facilities, more capital funding will be required to maintain and enhance parks and facilities, especially as the building and pools both age.

### Other Urban Amenities

Essex Junction also puts great value in its downtown public streetscape, comprehensive sidewalk network, off-road bike-paths, and several quiet residential neighborhoods where biking and walking are a common form of recreation. Heart & Soul participants identified these resources as vital to Health, Safety, Thoughtful Growth and Community Connections.

Essex Junction has invested significant resources towards the revitalization of its historic downtown in the Five Corners over the last five years. A major piece of that effort has been public streetscape and open space improvements. The annual Village Block Party has been a huge success but requires the closing of Railroad Avenue. Noticeably absent in the downtown is a village green, a symbol of the New England Village. As proposed, the Design Five Corners Project and resulting reconfiguration of the Five Corners intersection would create a village green immediately adjacent to Main St.

The Transit Oriented Development (TOD) Zoning District along Pearl Street encourages the provision of passive outdoor spaces such as a plaza or green in redevelopment projects. Sidewalks and urban street trees are critical components of open space in an urban area. They help to connect residents with the larger open spaces, and help to create a walkable, welcoming downtown.

In the more urban areas of the Village, such as the Village Center and Transit Oriented Development District, wider sidewalks will be required on new streets along with benches and pedestrian amenities. The



Village has widened sidewalks as part of the Main Street and Railroad Avenue Streetscape Projects, and Park Street as part of the Essex Junction Redevelopment Project.

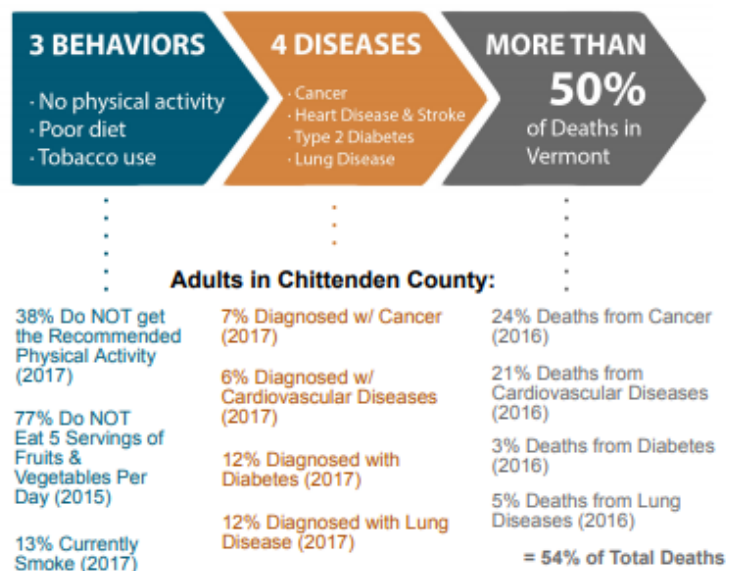
In addition, the Village tree planting program to replenish and maintain trees in the Village right-of-way is an essential component of the urban open space infrastructure. This work of the Village Tree Advisory Committee is discussed further in the Agriculture & Forestry section. Bike paths are also critical components of urban open space. See the Transportation element for more information on bicycle/pedestrian infrastructure.

### Public Health

To further the Heart & Soul value of health and recreation, the Village places importance on the health of its residents and understands that health is inextricably linked to the design of the community in which people live, work, and recreate. A change in only three behaviors (activity, diet, and smoking) can have a major influence on health. Many efforts are underway to keep Vermonters healthy to prevent chronic disease and lower health care costs. These include the [Vermont Department of Health's 3-4-50 campaign](#) as shown here with statistics from Chittenden County, although not available Essex Junction data would not be statistically different.

Essex Junction is an active participant in addressing the 3 behaviors identified above. Essex Junction Recreation and Parks provide recreational experiences for all ages and promote lifelong health and wellbeing through camps, facilities, youth sports, and adult/senior fitness classes. [Essex CHIPS](#) also is working to maintain and improve the health and wellbeing of the community through substance use prevention. For example, Essex CHIPS works with law enforcement on Rx drug take back initiatives, empowers youth to use their voice to influence positive changes in the community, and provides resources to parents on substance use prevention. There is no “one size fits all” approach to creating a community that supports and advances healthy youth. Youth are impacted by messages they receive in the community. These messages come in the form of advertising, the presence of alcohol/tobacco at community events, or the number of locations

**A change in only three behaviors can have a major influence on the health of Vermonters.**



that sell products intended for adult (21+) use. It is essential to consider strategies in the built environment to ensure that substance use prevention is the norm.

### Open Space/Recreation/Public Health Goals

**Goal 1: Support the Essex Junction Recreation Department in providing a wide range of recreation and leisure opportunities for all residents of the Village.**

Objective 1.1: Continue regulations which require the dedication of usable park lands and open spaces as a requirement of major development approval.

Objective 1.2: Support the implementation of the 2007 Essex Junction Recreation and Park Master Plan.

Objective 1.3: Encourage increasing the annual funding of the Recreation Capital Replacement Reserve Fund to one cent (.01) of the municipal grand list.

Objective 1.4: Encourage implementation of a recreation impact fee to create a fund to support future community park and facility needs.

**Goal 2: Create urban open spaces.**

Objective 2.1: Encourage the provision of plazas and other urban outdoor areas in major redevelopment projects in the Village Center and Transit Oriented Development Districts.

Objective 2.2: Require pedestrian and bicycle amenities in the creation of new development and public streets in the Village Center and Transit Oriented Development Districts.

Objective 2.3: Consider implementing the Design Five Corners Project including the creation of a village green.

Objective 2.4: Encourage or require the preservation of open space in new residential developments. Allow for innovative design in the preservation of open space through clustering and design techniques.

**Goal 3: Work in collaboration with Essex CHIPS and the school district to integrate healthy choices and substance use prevention into the culture of the Village.**

## 4.5. Natural Environmental Resources

The natural resources base within, and adjacent to a community, are important factors to consider for several reasons. First, they may limit, or direct the type of development which will occur. Second, they contribute to the quality of life within the community. Third, they provide opportunities to preserve important environmental areas. Finally, they provide important recreational opportunities for residents. The safe, attractive, and efficient utilization of land is largely dependent upon these important natural resources. These resources all contribute to the identity of the Village as a desirable place to live and work. Residents value these resources as reflected in the Heart and Soul values, particularly Health & Recreation and Thoughtful Growth. Map 1 and Map 11 identify several important natural resources within the Village, briefly described below. Protection of these resources are listed here and in several other sections throughout the Plan.

### Watersheds and Rivers

It is useful to start a natural resources discussion with watersheds, as an integrated watershed approach to the protection of land and water resources is key to ensuring fresh, clean water, habitats, and healthy natural resources. There are two basin level watersheds in Essex Junction -the Winooski River and direct discharges to Lake Champlain (Indian Brook discharges in Mallets Bay). The two waterways passing through the Village, Indian Brook and Sunderland Brook, feed these larger basins. These rivers serve as habitat for fish and wildlife, as natural flood control features, and as an attractive scenic feature. Erosion control and stormwater management are important measures to restore and protect these resources. The Resiliency and Utility sections of this plan describes the measures that the Village is taking on this front. In addition, the Vermont Department of Environmental Conservation's Winooski's River and Northern Lake Champlain Direct Tactical Basin Plans provide more detailed information on the health of these watersheds as well as strategies to protect high quality water and to improve degraded water resources. The discussion on floodplains and river corridors in the Resiliency Section contain further detail on the mechanisms to protect river systems and property/infrastructure from flooding and erosion.

### Wetlands

The development on or near wetlands is strictly regulated. Wetlands provide a natural habitat for animals and preserve natural areas (described in more detail in the following section). They also serve important ecological functions including storm water runoff purification and ground water recharge. The wetland areas identified by the Vermont Significant Wetlands Inventory are indicated on Map 1. It should be noted that there may be additional wetlands that are not currently mapped.

## Wildlife Habitat/Connectivity & Forest Integrity

Considering Essex Junction is a growth area, this plan calls for promotion of vegetative landscaping in new development projects and municipal improvement projects to manage storm water, protect water quality and air quality, increase carbon sequestration, establish urban place making and wildlife habitat. Secondly this plan calls for protection of forest blocks, wildlife connectivity resources and crossings/corridors, surface waters, riparian areas, and other significant habitats (e.g. wetlands) from development and fragmentation, especially along the undeveloped parts of the Winooski River and the Indian Brook. These resources are further described below in the context of the Agency of Natural Resource's Vermont Conservation Design (VCD) Project.

The Essex Junction landscape is mostly a developed urban core which, for wildlife, presents highly fragmented and isolated backyard, woodlot, wetland, and streamside environments marked by a strong human presence. This type of habitat is home to wildlife species that can live near roads, houses, industry, people, and their pets.

Much of the land that was forested has been developed within the Village. The State of Vermont abandoned its tree nursery operation on Old Colchester Road and has sold the property to the Village and Town for recreational use. Other heavily forested areas are located on the Whitcomb Farm. Maintaining the forested areas on the Whitcomb Farm along the Winooski River is particularly critical for wildlife habitat and flood protection.

Vermont's Act 171 calls for the protection of "forest blocks" to maintain current biological diversity and allows for wildlife to move throughout their natural habitat. The Village relies on the VCD project's highest priority and priority landscape, species, and community components to identify areas of important ecological function. Use of VCD will inform decision making regarding identification of locations most suitable for development and those on which to focus conservation efforts. Considering some of these areas are in developed neighborhoods of the Village, the community will work to ascertain local choices for protecting the functional forest network identified in the VCD project to support species and to connect habitats. Areas of ecological significance, mapped on Map 1, include highest priority and priority components found at both the landscape and species/community scale. These areas are described below.

- **Landscape Scale Components** are identified at a larger scale than species specific habitats. Landscape scale components are areas of land that need to remain healthy and intact to provide plants, animals, and natural resources the best chance of survival over time. These landscape scale components consist of interior forest blocks, connectivity blocks, riparian wildlife connectivity, surface water and riparian areas, and various physical landscapes.

Because a fully functional landscape includes all components, all areas are amassed and given a ranked status being either priority or high priority. The ranking and location of the landscape components found in Essex Junction are mapped on Map 1 and the State's [BioFinder](#).

- **Species and Community Scale** represents lands and waters highly important for maintaining individual species or groups of species that contribute to Vermont's biodiversity. Similar to landscape-scale priorities, the dataset was created by assigning a priority status to numerous components, then amassing these components so that a location appearing as "highest priority" on any component appears as "highest priority" on the map. Highest priority components include rare species, rare natural communities, wildlife, wildlife crossing, and class 2 wetlands. Priority components include uncommon species.

As Map 1 shows there are a number of these habitat locations - most, but not all, are associated with the Winooski River, Indian Brook, Sunderland Brook, and the tributaries that feed them. The intact floodplain forest in the Winooski Valley Park District's Woodside Natural Area is significant because this type of forest is uncommon in Vermont as most have been cleared for agriculture. Efforts to protect these habitats and species are critical to protecting and preserving Vermont's heritage and can include conservation, restoration, and management plans. In summary, significant wildlife habitat includes those natural features that contribute to the survival and/or reproduction of the native wildlife of Essex Junction.

## Scenic Views

Although there are many outstanding view sheds within the Village, three areas have been particularly identified. First, in the northeasterly section of the Village, between Upper Main Street and the Countryside development, is the highest point within the Village. Spectacular views of Mount Mansfield and the Adirondack Mountains are visible from this location. Second, the river crossing on Park Street provides views of the Winooski River and serves as a scenic entrance to the Village. Third, along the westerly end of Pearl Street there are spectacular views of the Winooski River Valley.

## Agricultural Areas

The Village is fortunate to have an active farm still in existence. The Whitcomb Farm is in the southwest sector of the Village and has been actively farmed by the Whitcombs since 1879. The Vermont Land Trust, with funding assistance from the Village, purchased development rights on 414 acres of the Whitcomb Farm in March 2014. See the Agriculture section for more details.



Primary Agricultural soil classifications are another important natural characteristic within the Village, particularly as they pertain to prime-ag soils. While the State of Vermont considers primary agricultural soils in its review of proposed developments under Act 250/Section 248 and development potential may be may limited, or require mitigation of these soils, it is not the intent of Village to protect primary agricultural soils from development. Mitigation and protection of primary agricultural soils in the Village does not seem appropriate in an urban environment because agriculture is not feasible on small parcels isolated from more intact agricultural areas. However, the Village is supportive of its community garden plots and existing agricultural activities at the Whitcomb Farm.

### Sand & Gravel

There are no sand and gravel operations or resources in the Village.

### Thrust Faults

As noted in the 2016 Essex Town Plan, there are two thrust faults running southeast to northwest through the southwest quadrant of the Tow, near Lost Nation Road and VT Route 2A. (and therefore, in the Village). These are described in the 2016 Essex Town Plan as follows: " No record of movement along the faults exists, so seismic danger seems minimal. A deep layer of porous carbonate sits beneath the fault, allowing ready movement of water and facilitating the aquifer recharge process." Analysis of these areas should be considered in order to determine how properties along the thrust faults should be managed.

### Landslide

The Vermont Geological Survey conducted an inventory of instability features that could result in a landslide. There were no mapped instability features in Essex Junction.

### Air Quality

Outdoor air pollution in significant concentrations can raise aesthetic and nuisance issues such as impairment of scenic visibility; unpleasant smoke or odors; and can also pose human health problems, especially for more sensitive populations like children, asthma sufferers, and the elderly. While Chittenden County's air quality meets current National Ambient Air Quality Standards (NAAQS), we are close to the limits for ground-level ozone. The non-attainment level for ozone is .07 (ppm). Ozone levels should not exceed this amount. In 2018, Chittenden County's level of zone was .06 (ppm). As of 2018, Chittenden County's particulate matter measured 5.8 micrograms per cubic meter; while the non-attainment level is 12.0 micrograms per cubic meter. We are also subject to pollution from the mid-west that we cannot control. If

the NAAQS are revised to be more stringent – or air pollutant levels increase – so that we exceed the NMQS, additional and costly environmental regulations will apply to our region (Source: Chittenden County ECOS Plan and the Agency of Natural Resources).

### Climate Change

Temperature and precipitation records for the latter half of the 20th century show that Chittenden County's climate has changed: winters became warmer and summers became hotter. Lake Champlain freezes over later and less frequently, and the growing season lasts longer. While it is unknown exactly how future climate trends will specifically affect Chittenden County, precipitation throughout the northeast is projected to increase as much as 10 percent over the century. Climate model forecasts for the Northeast US predict that during this century temperatures will continue to increase, as will extreme heat days and heat waves. Scientists overwhelmingly agree that changes in climate worldwide are a result of human activities, mainly the burning of fossil fuels. Current and predicted changes in climate will have broad implications for environmental quality, natural communities, public health, built environment, and local economy. The regional greenhouse gas emissions inventory determined that 1,193,000 metric tons of carbon dioxide equivalents were generated in Chittenden County in 2010. This amount is approximately 16% of the state's 2011 greenhouse gas emissions. Transportation accounts for 48% of county emissions; heating fuels account for 38%.

Climate change mitigation and adaptation measures are varied and include many strategies the Village is already undertaking for other reasons -for example, the Village's efforts to increase sidewalks and bike paths will provide residents with an alternative mode of transportation that does not produce greenhouse gas emissions. The Chittenden County Regional Planning Commission's *Creating a Climate for Resilience: Chittenden County Regional Climate Action Guide* identifies priority regional strategies and actions, and provides guidance on actions for interested municipalities, employers, and individuals. The Guide includes actions for both reducing the ways we contribute to climate change (climate mitigation) and to adapt in ways that make us more resilient to a changing climate (climate adaptation).

## Natural Environmental Resource Goals

### Goal 1: Preserve the natural beauty indigenous to Vermont within the Village of Essex Junction.

Objective 1.1: Maintain regulations which encourage the preservation of trees in new development.

Objective 1.2: Implement a program of selective planting of trees on private property adjacent to existing road right-of-ways.

Objective 1.3: Promote and actively participate in an annual tree planting program.

Objective 1.4: Consider protection of the outstanding view sheds identified in this Plan through amendments to the Land Development Code.

### Goal 2: Continue protection of existing natural resources identified in this section.

Objective 2.1: Continue to enforce stormwater treatment standards in the Land Development Code to improve water quality in impaired waters and to minimize non-point source water pollution from new development.

Objective 2.2: Continue to require retention of vegetation or effective re-vegetation of areas vulnerable to erosion.

Objective 2.3: Continue to work with the Center for Technology Essex to develop a nursery to raise street trees for the Village and Town.

Objective 2.4: Continue incentivizing growth in the areas planned for growth, so that development pressures on natural resources and open spaces are lessened.

Objective 2.5: Ensure protection of the Village's significant wildlife habitat as identified by the Vermont Conservation Design's highest priority and priority landscape and species/community components identified on Map 1 by inventorying the resources, determining their current level of protection, and if necessary, define them and establish standards for protection of them in the Land Development Code.

Objective 2.6: Analyze the thrust faults to determine how properties in these areas should be managed for protection of aquifer recharge and minimizing undue property damage.

### **Goal 3: Reduce greenhouse gas emissions contributing to climate change and adapt to become more resilient to a changing climate.**

**Objective 3.1:** Engage in climate mitigation strategies to reduce the region's contribution of greenhouse gases. For example, continue to implement policies that promote investment in transportation options that reduce emissions - such as sidewalks and bike lanes; and implement programs to increase urban forest canopy.

**Objective 3.2:** Engage in climate adaptation strategies to help individuals, businesses and communities be able to withstand and bounce back from - or even take advantage of- the impacts of climate change. For example, prepare and maintain plans for emergency operations, emergency response, business continuity and business recovery.

## 4.6. Natural Hazards Resiliency

As of July 1, 2014, municipal plans are required to include a flood resiliency goal and element. The requirements include identification of flood hazard areas, the river corridor and designation of those areas to be protected. These could include floodplains, river corridors, land adjacent to streams, wetlands, and upland forests, to reduce the risk of flood damage to infrastructure and improved property. This Plan calls for avoiding new development in these areas and eliminates exacerbation of flooding and fluvial erosion, encourages protection and restoration of these areas, and plans for flood emergency preparedness and response by recommending policies and strategies to protect these areas and mitigate risks.

Identification of the floodplain, and, river corridor and the areas to be protected are described in this section below, and are mapped on Map 1, and Map 11. Additionally, the Village and Town joint [All Hazards Mitigation Plan](#) (AHMP) developed in conjunction with the Chittenden County Regional Planning Commission (adopted in 2017) also identifies the most significant hazards for Essex and Essex Junction. See the discussion of these hazards below.

### Flood Plain

Floodplains are those areas that are under water during periods of high flow. For regulatory purposes the floodplain consists of the Special Flood Hazard Area and the Floodway - as identified by the Federal Emergency Management Administration (FEMA). The Special Flood Hazard Area, depicted on Map 11, is the area subject to a 100-year flood in any given year and is the area where the National Flood Insurance Program's (NFIP) floodplain management regulations must be enforced and the area where the mandatory purchase of the flood insurance applies. Thus, while on average such lands flood once every 100 years, floods can and do occur more frequently. The Floodway means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than one foot at any point. The floodway is the area where the fastest moving and most destructive floodwaters will flow during the 100-year flood. Thus, while all land within the floodplain will be wet during a 100-year flood, the most damage to property and loss of life will occur in the floodway.

Essex Junction protects its flood plain through flood hazard zoning regulations which limits the amount of damage by limiting the amount of development and fill in flood plains. These development regulations also present opportunities to maintain natural open spaces. The largest designated flood plain lies adjacent to the Winooski River. The second area is located in the northern section, along Indian Brook, from the northeast corner of the Fairgrounds across Lincoln and Main Streets to the easterly boundary of the Countryside subdivision.

### River Corridors

River Corridors are areas where a river or stream naturally moves to establish equilibrium, plus adjacent land to provide “wobble room” for the river’s movement. River Corridors are a relatively new term, and protection of these areas is not required by the State, but is strongly encouraged and incentivized through the [State’s Emergency Relief Assistance Fund \(ERAF\)](#); and ANR regulates development in these areas that go to Act 250.

When federal disasters are declared, towns may receive assistance money from the ERAF to help cover the 25% of damage repair costs not covered by FEMA. Towns that protect river corridors (and meet the other four ERAF requirements) will be eligible for a lower share of the match requirement for these funds. Essex Junction currently has an “interim” eligibility (aka “early adopter”) because they protect streams and rivers through setback requirements. However, in the future the ERAF rule is anticipated to change and will likely require municipalities to regulate development in these areas in order to receive the best ERAF match in accordance with the [Vermont Department of Environment Conservation’s regulatory framework](#) summarized here:

- i. Adopt a River Corridor overlay for all streams and rivers draining greater than two square miles.
- ii. Adopt a river corridor setback for small streams as part of their flood hazard/river corridor bylaws. The setback must be a minimum of 50’ from top of bank for streams with a watershed area between 0.5 and 2 square miles. The setback shall be regulated as the River Corridor for streams draining between 0.5 and 2 square miles.
- iii. Adopt a minimum regulatory requirement for River Corridors that are at least as restrictive as those outlined in the ANR Model River Corridor bylaws in effect at the time of adoption.

While Essex Junction currently has regulations for the flood hazard area, it does not have regulations to protect the River Corridor. For the health of the river systems, protection of property and maintaining the best ERAF match in the future, the Village should review the [CCRPC online river corridor map](#) to understand the location of the river corridor boundary; work with the state to make sure it is accurate; and develop land use regulations to protect these areas.



## All Hazard Mitigation Planning

The CCRPC worked with member municipalities to prepare the 2017 Chittenden County Multi-Jurisdictional All Hazard Mitigation Plan. While the AHMP includes much more detail on these hazards, issues identified regarding natural hazards include:

- Natural hazards include severe winter storms, flooding/erosion, severe rainstorm, extreme temperatures, and wildfire.
- "Parts of Essex Town and Essex Junction lie downstream of the Essex Dam #19, which is the only high-hazard dam located in Chittenden County. Green Mountain Power, which owns the dam, has mapped the area that would be inundated in the unlikely event of a dam failure. Inundation maps are routinely reviewed and updated to identify new developments that might be affected by inundation. The emergency action plan for the dam is updated annually and provided to appropriate first-responder organizations."
- The AHMP identifies two critical facilities (The Center for Disaster Management and Humanitarian Assistance defines critical facilities as: "Those structures critical to the operation of a community and the key installations of the economic sector.") associated with Green Mountain Power in the floodplain in Essex Junction. However, as Map 11 shows there are actually three critical facilities in the floodplain, including Essex Rescue.
- As of 2019, there are 5 residences and three commercial/industrial structures, including Essex Rescue, located within the 100-year floodplain in Essex Junction.
- Map 11 maps all structures, including bridges and culverts, in the floodplain. As of 2019, 28 structures are within the River Corridor, 10 structures are in the Special Flood Hazard Area, and 7 structures are within both. 24 road segments are within the river corridor, 14 road segments are within the special flood hazard area, and 14 road segments are within both.
- The AHMP finds that while existing structures in the floodplain are at risk, Essex Junction participates in the NFIP and has zoning bylaws to regulate development in designated flood hazard areas. These zoning requirements mitigate flood hazards to future structures. Additionally, the Village also regulates development near other waterbodies and wetlands. As a result, little to no development is likely to take place in hazard areas. These zoning requirements effectively mitigate damages from flood and erosion hazards to future structures. Through the Village's proactive policies on flooding risk, the Village receives a higher rate of reimbursement in declared disasters and property owners are eligible for discounted flood insurance rates via the State's Emergency Relief and Assistance Fund (ERAF). However, as described above, the Village only has interim status for River Corridor protection

and will need to follow the State's requirements in the next few years to make this permanent.

- The capabilities of the Department of Public Works to mitigate flood impacts on municipal roads are considered adequate, except for a potential breach of the Indian Brook Reservoir Dam.

The AHMP also identifies several actions the Village is taking to address these concerns. For example, the Village has an Emergency Operations Plan that provides direction for emergency preparedness and response planning; the Village maintains a culvert inventory and works to upgrade and maintain these culverts through the Capital Improvement program; and the Land Development Code protects these areas through the following mechanisms: Floodplain regulations in accordance with the National Flood Insurance Program; Low Impact Development (LID) is required of all developments. Applicants must demonstrate why LID is not possible before being granted access to the Village stormwater system. Review of all development within 200' of any waterway, floodplain or wetland. A 15 foot or more undisturbed buffer must be maintained adjacent to streams -this may be increased based on flood plain profile, slope of the land or other conditions. A 50-foot setback is considered above the high-water mark of the floodplain for stream meandering, flooding, or other natural processes. It is the objective of these standards to promote the establishment and protection of heavily vegetated areas of native vegetation and trees along waterways in order to reduce the impact of stormwater runoff, prevent soil erosion, protect wildlife, and fish habitat and maintain water quality.

- The 2017 AHMP set forth two Categories of Mitigation Actions for implementation from 2017 to early 2022. These are "Category A: Improve capabilities of existing road and stormwater management infrastructure to address identified vulnerable infrastructure" and "Category B: Operate an effective stormwater management system." Implementation of the various projects detailed in the Village's AHMP will further improve flood resiliency.

Goal 1 below calls for maintaining and expanding on these flood resiliency efforts.

## Natural Hazards Resiliency Goals

**Goal 1: Avoid new development in floodplains, river corridors, and land adjacent to streams, wetlands, and upland forests; eliminate the exacerbation of flooding and fluvial erosion; encourage protection and restoration of these areas; and plan for flood emergency preparedness and response.**

Objective 1.1: Continue to enforce the flood plain regulations to protect flood prone areas and minimize fluvial erosion.

Objective 1.2: Monitor the area south of Cascade Street that is not currently regulated by the flood plain regulations to determine if additional flood or erosion protections are needed.

Objective 1.3: Plan culvert replacements for any undersized culverts in conjunction with roadway improvements.

Objective 1.4: Review the All Hazard Mitigation Plan on a regular basis and follow-up and report progress on action steps.

Objective 1.5: Continue annual certification and update of the Local Emergency Management Plan.

Objective 1.6: Adopt a river corridor overlay in the Land Development Code which includes the mapped river corridor and small streams with a drainage area of 0.5 sq.mi. to maintain the natural function of waterways including fluvial equilibrium and natural erosion processes, and to protect public/private property.

## 4.7. Education and Child Care

The Village of Essex Junction is centrally located and has ready access to numerous colleges and universities including the University of Vermont, Champlain College, St. Michael's College and Burlington College. These facilities provide varied opportunities for residents of the Village. The public-school system in the Village of Essex Junction is administered by the Essex Westford School District (EWSD), which unified the former Essex Town School District and Chittenden Central Supervisory Union beginning on July 1, 2017.

In the Village of Essex Junction, the EWSD encompasses three elementary schools, one intermediate school, one high school, and one regional vocational-technical center serving Cabot, Hazen Union, People's Academy, Trinity Baptist, U-32, BFA Fairfax, BFA St. Albans, Burlington HS, Champlain Valley Union HS, Colchester HS, Essex HS, Harwood Union HS, Lamoyille Union HS, Middlebury HS, Mount Abraham HS, Missisquoi Valley Union HS, Milton HS, Mount Mansfield HS, South Burlington HS, Stowe HS, Vergennes HS, and Winooski HS.

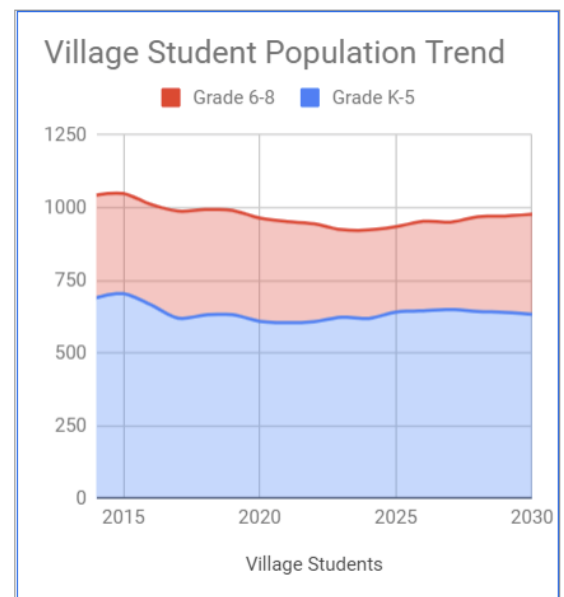
Management, including planning, of the Essex Westford School District, is by a 10-member school board whose members are elected from the public at large, four of whose members are elected by the Village, four of whose members are elected by the Town of Essex (outside of the Village), and two whose members are elected by the Town of Westford. The EWSD Board's functions include fiscal responsibility and the setting of school policies and standards.

### Childcare

The availability of high-quality early childcare and prekindergarten for families is widely considered a critical component of a healthy community. Not only is high-quality childcare and early education an essential part of a community's social infrastructure, supporting such supports and opportunities for children is considered an important economic development strategy.

The Essex Westford School District is dedicated to quality implementation of Act 166, the State's law requiring school districts to partner with high quality and prequalified prekindergarten programs. This law is designed to provide 10 hours of free high-quality prekindergarten and EWSD provides for over 300 three and four-year-old children across the communities of Essex Junction, Essex Town, and Westford. In addition to partnering with private providers across Chittenden County and beyond, each of the elementary schools (Essex Elementary School, Hiawatha Elementary School, Summit Street School, and Westford

*Figure 3 Village Student Population Trend*



Elementary School) provide school-based prekindergarten programs serving an additional 95 children.

Essex Junction Recreation and Parks is considered one of the private providers serving EWSD children in prekindergarten in our community and is a prequalified provider and is, therefore, able to provide the 10 hours of free prekindergarten under Act 166. There are also home providers and other childcare centers within our three communities providing services to many of our community's children. For a full updated list of licensed and prequalified child care and prekindergarten programs by town of location, please visit <http://www.brightfutures.dcf.state.vt.us> On this website, you can search the present child care providers by town to understand the most updated licensed and quality providers in your community along with other important data related to early care and education in our community.

**EWSD Vision Statement:** Growing hearts and minds for a better today and tomorrow: every day, every way, everyone.

**Theory of Action:** When we deepen our commitment to each other and to continuous growth for everyone, then our practices create equitable, authentic, inclusive learning experiences that benefit all students.

**Values and Aspirations:** EWSD is a place where....

- Each student is an engaged and inspired learner.
- Each student is challenged by a rigorous, well-balanced, proficiency-based curriculum.
- Each student has access to personalized learning and opportunities to pursue individual interests and curiosities.
- Each student is prepared for success in college or further study and for employment in a fulfilling career.
- Each student cares about and has the knowledge to care for their own health, wellness, and maintains balance.
- Everyone belongs, has a role, contributes, feels safe, demonstrates gratitude, and is respected.
- Each individual is recognized and accepted for his/her uniqueness and beliefs, there is value in every voice, and everyone communicates honestly and respectfully.
- Each student is supported by highly qualified and caring educational leaders, educators, and staff.
- Growth-mindset is fostered throughout the system.
- Student voice is valued, and aspirations are cultivated.
- Each member is a contributing global citizen who respects the diversity, seeks to understand different perspectives, acknowledges and values differences.

**Measurable Outcomes:**

- Every student will read on grade level by the end of grade 3.

- Every student will achieve and maintain math fluency of basic facts by the end of grade 3.
- Every student will graduate with the skills to be successful in college or further studies and for employment in a fulfilling career.
- Every student in grades 7 - 12 will have meaningful Personalized Learning Plans.
- Every student develops transferable skills across content areas.
- Student voice is prevalent through our system and every student has access to be engaged in leadership activities within our schools and district.
- Each student experiences a culture where independence, responsibility, and accountability are fostered and respected.
- Each student is physically active and has access to healthy food choices.

### Education Goals

**Goal 1: Provide opportunities for access to quality education for all segments of the population and promote full use of all facilities.**

Objective 1.1: Encourage the use of Village and school facilities during evening and weekend hours for adult education, educational workshops, and career development programs.

**Goal 2: Cooperate and coordinate with the School District in providing enrollment projections within the Village.**

**Goal 3: Encourage alternative access to all educational facilities through the use of sidewalks, bike paths and mass transportation as appropriate.**

**Goal 4: Maximize use of all public facilities, Village and School, by utilizing the facilities for community and service organizations during off-peak hours.**

**Goal 5: Promote an elementary school safety program to increase awareness of bicycle and pedestrian safety issues. Continue participation in Vermont's Safe Routes to School Program.**

**Goal 6: Continue to allow childcare facilities and home daycares in all zoning districts that permit schools as well as all residential zoning districts.**



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## 4.8. Utilities/Facilities

Community facilities and utilities are provided by the Village, Town or other quasi-public entities for the health, benefit, safety, and enjoyment of the general public. They include wastewater disposal systems, public water supply, stormwater management, solid waste disposal/composting/recycling, utilities, library services, fire protection, police, and rescue services. Careful planning is essential for community facilities and services if they are to meet local goals for future growth and sustainability. While, these utilities and facilities are necessary for helping the Village maintain all the Heart & Soul values, they are particularly important to the Safety value. Other infrastructure like roads and sidewalks are discussed in more detail in the Transportation section.

### Water Distribution System

The Village of Essex Junction receives its water from the Champlain Water District (CWD). CWD is a water wholesale company that maintains a network of distribution pipes and meters throughout the communities that they service. Water enters the Village through three main master meters controlled by CWD. Water leaves the Village through one meter. With Global Foundries as a major water user, water into the Village is over 5.5 MGD (Million Gallons per Day). Village users consume 0.75 MGD the balance of the water passes through the system with bulk water billing managed by CWD and water to Global Foundries managed by the Village.

The high volume of water that passes through the community makes the Essex Junction water system one of the largest in the state by hydraulic volume. This high volume of water is good for water quality. With large volumes of water and meters out of the Village of Essex Junction direct control, accurate wholesale billing and acute monitoring of the distribution system for leakage is very important for rate stability.

The Water Department purchased a leak detection system for constant monitoring of the water system for leaks. Twice annually, unaccounted for water or water loss is calculated as part of the residential billing cycle. The Village continues to maintain water loss at low level, well below industry norms.

The residential section water distribution system in the Village of Essex Junction consists of a high-pressure system and low-pressure sections. The majority of the Village is serviced off the low-pressure system. The high pressure system services a section located in the northeast corner of the Village, this area consists of all Countryside Development, Corduroy Road, Vale Drive, Mason Drive, Kiln Road, the west end of Brickyard Road, Acorn Circle, the

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west end of Briar Lane and the west end of Woods End Drive. The high-pressure system also provides water to the Town of Essex at two locations in this area. As noted earlier, water is obtained through the Champlain Water District. Village residents are eligible to vote on measures to expand the District services.

Presently, most of the water main transmission lines are sufficient with some exceptions. There are areas within the Village where looping the mains would result in improved fire protection and circulation. Other sections of the Village contain water mains that are under sized by today's public water supply and fire protection standards. The Water System capital plan prioritizes the identified system deficiencies. All capital plans are working documents subject to modification due to changing priorities and opportunities to modify schedule to combine projects.

The Village has sufficient major transmission lines available to serve future development (Map 8). Extension of these mains to serve new development will be the responsibility of developers and must be done to the municipal standards. The Village Water Distribution Map is updated annually and is available at the Village Office, Public Works, Wastewater Treatment Facility. The maps are now in GIS format.

### Stormwater Drainage System

The Village of Essex Junction is a regulated Municipal Separate Storm Sewer System (MS4) under the EPA and State of Vermont Phase 2 stormwater permit process. The Village is regulated as the population density exceeds 1,000 persons per square mile. The Village began participation in this program at its inception in 2002. As required by law, the community is required to comply with six program areas.

1. Public Education and Outreach on stormwater
2. Public participation/involvement in stormwater management and decision making
3. Illicit discharge detection and elimination
4. Control of construction site stormwater runoff
5. Control of post construction runoff
6. Municipal pollution prevention and good housekeeping

The Village has implemented all required permits related to stormwater. All systems are inspected at minimum, once annually after snow melt, twice a year as specific permit conditions apply.

The Village of Essex Junction falls within the Winooski River (Basin 5) and the Northern Lake Champlain Direct (Basin 8) watersheds and has three waterways passing through the

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community; the Winooski River, Indian Brook and Sunderland Brook. These waterways are impaired due to stormwater flow contributions. TMDL's (Total Maximum Daily Load) establish the allowable flow capacity for all contributing sources at a level necessary to attain the applicable water quality standards. The State of Vermont plans for water quality protection, maintenance, and enhancement through the Winooski River (Basin 8) and the Northern Lake Champlain Direct (Basin 5) Tactical Basin Plans. Essex Junction's stormwater management permit, wastewater collection system, and zoning regulations align with the implementation actions of the tactical basin plans, as well as flow restoration plans for Indian Brook and Sunderland Brook.

A Municipal Separate Storm Sewer (MS4) Phase 2 General Permit (3-9014) was issued to the Village of Essex Junction in 2013. This permit requires the Village to improve the water quality of its stormwater impaired watersheds (Indian and Sunderland Brooks) which we share with the Town of Essex. As a result, the two communities formed the Joint Stormwater Committee (JSWC) to coordinate efforts needed to meet permit requirements. The JSWC is also working to address stream flow restoration planning requirements aimed at reducing the flow and restoring it closer to attainment or predevelopment flows (the TMDLs will be incorporated into this work).

Two Flow Restoration Plans (FRP) were filed in 2017 with the State Department of Conservation, one for Sunderland Brook and for Indian Brook. These plans set forth potential projects and measures to be implemented to meet flow restoration targets by December 5, 2032.

The Village of Essex Junction has historically maintained its stormwater infrastructure to a higher standard than most communities. This ongoing maintenance and management of these stormwater assets will further ensure water quality at a value price for the community.

Future infrastructure investments should utilize modern approaches to stormwater management, such as Green Stormwater Infrastructure (GSI). GSI is a component of a municipal stormwater system that is designed to reduce flow and volume and improve overall water quality. Rather than relying entirely on removing runoff via underground pipe systems directly to waterways, Green Stormwater Infrastructure intercepts, holds, slows down, and treats stormwater as close to its source as possible. By bringing parts of natural hydrologic systems into streets, Green Infrastructure can replicate natural mechanisms that reduce or slow down the flow of stormwater and allow it to be cleaned by plants and soil. The Vermont Green Streets Guide is a valuable resource for the Village to plan for and implement green infrastructure in the built environment. The Design Five Corners project

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proposes to close a portion of Main Street to vehicles and develop several green spaces that could be utilized as Rain Gardens (a form of Green Infrastructure). As currently envisioned, these areas total roughly 2,000 square feet and may be able to absorb the runoff from 12,500 square feet of pavement along Main St., which would reduce the amount of stormwater that flows into the municipal system.

## Wastewater Collection System

The Village of Essex Junction continues to maintain and improve its sewage collection system. These improvements included replacement of the High School Pump Station as well as ongoing sewer line and manhole sealing. The goal of our work is to preserve hydraulic capacity and to ensure the sanitary sewer system continues to provide this essential service for the protection of public health. The community continues to process improvements within capital plan updates.

Presently, the sewer transmission mains within the Village are adequate for the present flows. The gravity sewer system in the Village consists of many different types of pipe used for transmission mains (concrete, vitrified clay, asbestos cement, PVC, cast iron and HOPE). There are over 16,000 feet of concrete sewer main in the Village (Map 7). Some of this pipe has been in use for more than 60 years and is beginning to show signs of deterioration where the soil conditions are poor. Major improvement in the condition of pipe was accomplished using federal stimulus funds and eliminating the significant need to rehabilitate substantial sections of sewage collection infrastructure. This concrete pipe will eventually need rehabilitation over the next 20 years. High priorities for evaluation continue to be the major transmission lines as well as lines under main roadways. Assessment uses a standardized pipeline assessment protocol. Recent infiltration and inflow field work will aid in prioritizing where future improvements should be focused. The entire system is in good standing.

Sewer mains are readily accessible to all areas of the Village. Detailed Wastewater Collection System Maps are updated annually and are available at the Village Offices, Public Works, and the Wastewater Treatment Facility. Extensions of lines are the responsibility of the developer. The use of septic systems for future development is not necessary. There is adequate capacity to accommodate the few remaining septic systems still within the Village today.

## Wastewater Treatment Capacity

The wastewater facility was upgraded to advanced secondary treatment in 1985. Since then the Wastewater Treatment Facility has completed two upgrades for the Towns of Williston

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and Town of Essex. The current facility capacity is rated at 3.3 Million Gallons per day. In 2014, a comprehensive facility refurbishment was completed. The participating communities have a set allocation that is controlled under the Three-Party Agreement on Sewage Treatment (as amended). All three communities track their connections and reserve capacity individually. Periodically the wastewater facility checks with the three communities for reserve capacity updates in accordance with the governing Three-Party Agreement.

Total flow from the three communities serviced is at an average daily volume of 1.9 million gallons per day. Wastewater flows will vary based on weather conditions. Long term flow profiles relate to development patterns in the communities served. Capital planning with long term rate stability planning will maintain the viability of the infrastructure long beyond its design life.

## Pump Stations

Within the Village, there are seven sewage pump stations. Sewage flows by gravity in lower lying areas to a central collection point. There it is collected in a wet well (storage tank) then pumped under pressure to the Wastewater Treatment Facility. The Old Colchester Road pump station (AKA High School pump station) was replaced in 2012 with a completely new pump station.

## Sludge

The generation of Biosolids (or sludge) is a natural by-product of Wastewater treatment. Biosolids quality and production have always been a priority in Wastewater Facility operations. Increased regulation and scrutiny by State and citizens point out the need for education and outreach. The management of Biosolids is accomplished by a cooperative effort with the Chittenden Solid Waste District (CSWD). This consortium effort uses a subcontractor under contractual agreement with CSWD for management of this organic byproduct of the wastewater process. Dry weight basis is a parameter used as a standard in the industry for measuring and tracking the efficiency of various processes. We currently produce 350 dry tons of solids per year. Where the solids generated are in a liquid slurry form, the facility uses gravity thickening and high solids dewatering by centrifuge to maximize process efficiency. A thickened feed Biosolids at 5% solids is dewatered to greater than 28% solids. Where sludge management costs are on a wet ton basis, the more water squeezed out of the Biosolids, the more efficient the disposal cost. Dryer Biosolids results in more solids removal per ton from the dewatering operation. Liquid and dewatered solid recycling of biosolids is also performed on permitted local farms when it can be

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accomplished in coordination with weather and crop management objectives of the participating farmers.

Staff and CSWD continue to evaluate the most cost-effective and environmentally sound methods of treating biosolids, especially with a focus on removing phosphorus from member wastewater treatment plans. CSWD brokered 15.360 wet tons of sewage sludge in FY18, 6.5% more material than FY17. Planning involves a long-term evaluation of flexibility, high solids production and long-term viability of any process selected. Presently, the use of subcontractor services accomplished this objective for the facility without capital improvement.

### Solid Waste Disposal

The Town of Essex formerly operated a municipal landfill off VT Route 2A. By law, the landfill was closed. The closed landfill remains on the list of active Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) sites (EPA Superfund sites) with a low rank priority relative to its potential to be a risk to the general public. The site -which operates under an Administrative Closure Order issued in November, 1992, and in effect until 2013 is tested twice yearly and will be monitored for the foreseeable future. The Village is a member of the Chittenden Solid Waste District (CSWD) which handles disposal of the County's. The former Town landfill is now serving as a transfer station for the district with drop-off and storage facilities. CSWD also has identified the need for and is in the process of developing a regional landfill site. The Essex Town Plan indicates that the Town firmly believes that the RPD-1 District and the abutting 1-1 District are inappropriate locations for a regional landfill. The Town is unalterably opposed to a landfill in these districts.

CSWD has established a range of programs and facilities to manage waste through reduction, diversion, and proper disposal. A State law passed in 2012 (Act 148) bans disposal of certain recyclables (effective July 1, 2015), yard debris and clean wood (effective July 1, 2016), and food scraps (phased in over time) from disposal. Residents and businesses in CSWD have been required to separate yard debris and recyclables from waste destined for disposal since 1993. The additional bans on food scraps and clean wood will have a significant impact on waste diversion in Chittenden County. In calendar year 2017, residents, businesses, and institutions in Chittenden County diverted over 171 million pounds of recyclables, organic materials, and special wastes, and over 196 million pounds of construction and demolition debris from the landfill. However, in this same year, the amount of municipal solid waste (MSW) increased by 8% as compared to 2016. A large portion of the increase is likely a result of an improved economy. The tonnage of



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construction and demolition (C&D) disposed decreased by 11.1%, lowest amount since 1993 when tracking of C&D waste began. The continued decrease in C&D disposed can be credited to the availability of private and public C&D recycling facilities. The estimated recovery rate for mandatory recyclables, or, the portion of recyclables diverted from landfill disposal, rose to 69.1% in calendar year 2017, a slight increase over calendar year 2016. The combined MSW and C&D diversion rate, which is the percentage of material generated that is kept out of the landfill, was 61.6%, up from 61.2% in 2016. Additionally, Green Mountain Compost saw continuation of the trend of ever-increasing food scraps being diverted for composting. FY18 totals were 14% higher than FY17, (CSWD Annual Report 2018).

## Communications

Essex Junction is generally well served by modern communications services and facilities. Cellular phone service, internet and telephone service is available throughout the Village through several providers. Broadband technology is widely available throughout Chittenden County. The Department of Public Service reports that in Essex Town and Essex Junction, 97% of locations are served by 25/3 broadband and 99% are served by 4/1 broadband, which is the state's definition (as of 12/31/2018). 0.9% of locations are considered underserved. The federal definition of fixed broadband service is 25 Mbps download/3 Mbps upload. It will be important to ensure that the County and the Village remain on par with other urban areas in the realm of number of service providers, service tiers, and affordability as the technology is constantly improving and we must keep up.

## Vermont Gas Systems

Natural gas service is provided upon request. Expansion follows development. The following areas currently are not yet served: Whitcomb Farm area on the Westerly portion of South Street

## Green Mountain Power

Green Mountain Power (GMP) supplies electricity to the Village by means of the hydroelectric plant on the Winooski River. Adequate power is available to serve new growth within the Village.

The provision of all public utilities is regulated by the State and Federal governments. Service to Essex Junction is adequate at present, and for the foreseeable future. However, the Village should continue to monitor these services and participate in public hearings on all projects which may have an impact within the Village.

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## Underground Storage Tanks (UST)

Directly associated with the use of energy is the safe storage of fuels. Although regulated by the State of Vermont, it is important for emergency planning purposes to be aware of the location of the storage facilities. Within Essex Junction, the State of Vermont reports that 50 UST's located on 14 separate sites are registered and regulated. The average UST in the Village is 6,390 gallons and is 22.6 years old. Almost all of the tanks are made of steel, none have double liners, and only 10% report an electronic monitoring system. The Village owns two tanks for diesel fuel at the Public Works facility. A list of underground storage tanks is included in Appendix B.

## Public Buildings/Offices

Local, state, and federal governments are acknowledging the benefits of having public buildings located in historic downtowns and village centers. Public buildings increase the daytime population in an area through its employees and those visiting the offices. The increase in daytime employment and activity from public offices helps keep the downtown vibrant and businesses healthy. In addition, public buildings in downtowns give opportunities for the reuse of important historic buildings and give employees and visitors access to increase transportation choice by being located in a pedestrian friendly area that is accessible by public transportation. For the reasons described above, the state and federal government both have policies requiring them to give priority consideration to locating public buildings in downtowns and village centers.

The Village Center has several public buildings including the Essex Junction Municipal Offices, the Brownell Library, the Fire Department, and the Winston-Prouty Federal Building. The Essex Town Municipal offices are located within a half mile from the Village Center.

## Brownell Library

The Brownell Library building was built in 1926. A historical assessment will be undertaken to determine needed repairs and a plan for implementing those repairs. Both the assessment and the plan for repairs will take into consideration the necessity of avoiding jeopardizing the historical nature of the building. The Brownell Library has developed a Strategic Plan for 2014-2019. The following is a very brief summary of the Plan, for further information please refer to the Brownell Library Strategic Plan: 2014-2019 which can be found here: <http://www.brownelllibrary.org/>. The Strategic Plan provides background information on the library and a needs assessment (including information from two surveys conducted in 2012 to assess patron opinion about library collections and services, and to gauge areas where the library should grow in the future). The Plan identifies the following 4 strategic areas, also known as Service Responses, in which to concentrate the work of the

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library for the next eight years. It is important to note that these Service Responses match some of the Community Values that were identified by Heart and Soul of Essex - the Library Planning Committee felt strongly that providing consistency and articulating congruence between organizations would strengthen all our efforts.

#### 1. Education

Create opportunities for lifelong learning and exploration and respond to societal changes with information to help people manage and improve their lives.

- a. Offer diverse programming opportunities incorporating a variety and range of literacy skills.
- b. Collaborate with local schools to support and extend educational offerings in the community.
- c. Train and sustain a friendly, creative, and knowledgeable staff to engage with library users in all manner of activities throughout the library and beyond.
- d. Help patrons with evolving technologies in a welcoming environment.
- e. Develop and maintain a collection reflecting community interests and needs that includes ongoing points of view and responds to changing interests and demographics.

#### 2. Community Connections

Nurture community spirit in a safe, collaborative, and comfortable space. Improve existing space to meet patrons' needs.

- a. Engage community members in the development and implementation of programming.
- b. Increase publicity and awareness of library services and programming.
- c. Increase outreach efforts to reach underserved populations.
- d. Collaborate with other libraries in all areas of library services, with emphasis on the Essex Free Library.

#### 3. Health and Recreation

Support healthy minds and bodies and stimulate imagination.

- a. Partner with local initiatives and organizations to enrich community involvement in health and recreation.
- b. Expand our presence and access outside the building.
- c. Provide services and materials to promote healthy minds and bodies.
- d. Help patrons access health and recreation resources.

#### 4. Local Economy

Support the efforts of individuals and groups dedicated to improving the economic vitality of Essex Junction and its residents.

- a. Collaborate with organizations groups and individuals working to improve the community's economic climate.

- 
- b. Develop spaces, resources, and trainings to support small businesses and start-ups.
  - c. Support financial literacy for all ages.
  - d. Provide resources concerning job opportunities and career changes.
  - e. Pursue funding opportunities for special projects and initiatives.

## Senior Center

The Senior Center is located at Five Corners in the white annex of the Village Office Building. It is the mission of the Essex Junction Senior Center to be a friendly gathering place for people 50 years of age and older. Programs are provided to promote physical, intellectual, and social well-being and enhance dignity, self-worth and independence. Programs include exercise, games, activities, and volunteer opportunities. The center also handles reservations for the Senior Van.

## Teen Center

The Essex Teen Center is run by [Essex CHIPS](#) at 2 Lincoln Street provides a safe space for middle school student to engage with peers and positive adult role models. Trained CHIPS staff and volunteers are on-site to supervise and organize events, field trips, activities, and prepare healthy snacks. The Essex Teen Center is open to middle school students who attend Albert D. Lawton and Essex Middle School and is FREE to attend.

## Fire Department

The Essex Junction Volunteer Fire Department surveys and reviews all development proposals within the protection area and plans for fire protection equipment needs appropriately.

Currently, the Fire Department operates two pumpers and one pumper/ladder: one pumper is a heavy rescue unit, and one is a utility truck. The ladder truck is new as of 2014 and is 43.5' to accommodate taller buildings in the Village. If the Village were to develop all the existing property within the Department's protection area, based on the 1998 survey and subsequent development proposal reviews, the current level of equipment would be sufficient.

In addition to equipment and building needs, a major issue to be reviewed is the role of the Fire Department in Fire Prevention. The lack of any full-time personnel limits the department's capability to aggressively promote Fire Protection programs. Also, the ability to inspect structures and access fire exposure is limited by lack of personnel. Consideration should be given to creating a limited full- time Department as a first response team and for

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initiating fire exposure and fire prevention programs. The adoption of a Building Code for single-family dwellings should also be analyzed as a part of an overall fire exposure and fire prevention program.

The Fire Department recommends consideration of a new fire station in the near future. Demographics in fire service point to a change in the length of service individuals provide and retention of volunteers has been challenging. To fill positions individuals may need to be recruited from outside Village limits. To do that, the Fire Department would want to model a program similar to Essex Rescue, where you have duty shifts available and individuals can be housed on-site. The current station lacks dorm facilities and showers, needed to accommodate shift work. The goal is to have a fire station in place in 5 - 7 years.

## Police

The Town of Essex Police Department was formed in 1980 to serve both the Town of Essex and the Village of Essex Junction. The Department is overseen by the Police Chief who is appointed by the Town Manager. In 2014, the department had 33 full-time officers, including 27 sworn officers (1 IT/ officer position shared with the Town), four dispatchers, one administrative assistant, and one records clerk. The department also had five (5) part-time officers, one part-time dispatcher and one part-time administrative assistant.. The officer to population ratio in Essex is 1.3 officers per 1,000 residents. The national average is 2.0 officers per 1,000 residents. Neighboring communities have the following officer to population ratios: Burlington (2.1), Colchester (1.6), South Burlington (2.1), Williston (1.9) and Winooski (2.2).

The demand for police services including patrol, motor vehicle enforcement, bicycle safety training, investigation, crime prevention and court preparation has stretched the department's resources to the limit. The new police facility at 145 Maple Street, which opened in the fall of 2014, will allow staff to provide services more efficiently. Staffing limitations, however, will restrict expansion of the services provided by the police department.

Because of limited staffing levels, the Police Department has sought to proactively deter crime by forming partnerships in the community. The police and community benefit from programs such as Neighborhood Watch, robbery seminars, neighborhood meetings, and youth drug and alcohol prevention programs.

In addition, the Essex Community Justice Center (CJC) has been growing in its capacity to address low-level crime and conflict since its inception in 2003. The CJC is a community

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organization where citizens can work together to prevent crime, resolve conflicts, and render justice in areas that are most important to them. It is a means for the community to take responsibility for its quality of life by collaboratively using the principles of restorative justice (2016 Essex Town Plan).

## Rescue

A private, nonprofit corporation, Essex Rescue, Inc. was organized in 1971 as a professionally trained, volunteer emergency medical service. The squad provides emergency medical treatment and transportation in Essex, Jericho, Underhill, and Westford. A staff of approximately 50 volunteers, four full-time paramedics, and an executive director respond to 9-1-1 calls 24 hours a day, 365 days a year. Essex Rescue has a community advisory board with Selectboard-appointed representation from each of the covered towns.

Funding for Essex Rescue's operating budget comes from patient and insurance billings, member town contributions, private donations, and a subscription plan that allows residents to pay an annual fee in lieu of any bills not covered by insurance. The four member towns pay less than 5 percent of the squad's annual operating funds, and Essex Rescue wants to have funding from the member towns equalized on a per capita basis. Essex Rescue values its volunteer labor at more than \$250,000 a year. Essex Rescue owns its primary station near the Essex Community Educational Center in the Village of Essex Junction. The building sits on leased land, in a 100- year floodplain, with a 99-year lease that will expire in 2070. The squad also deploys an ambulance out of the Underhill-Jericho Fire Station on VT Route 15 in Underhill. Because emergency call volume has increased to more than 2,000 responses per year, Essex Rescue is exploring options for various response models, including additional station sites (2016 Essex Town Plan).

## Utilities/Facilities Goals

**Goal 1: Provide a Village infrastructure system that adequately ensures the availability of potable water, disburses storm and ground water runoff, reduces pollutants, and disposes of sanitary wastes in a manner which ensures community health and is environmentally sound.**

Objective 1.1: Maintain public works specifications utilizing prudent and reasonable technology to ensure adequate infrastructure systems. Include adequate designs to allow for peak usage and control peak flows.

Objective 1.2: Implement Asset management plans through capital projects that upgrade existing water, stormwater and sanitary sewer systems to insure long term rate stability.



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Objective 1.3: Utilize the available sewer capacity in a manner which will provide the most benefit to the Village of Essex Junction.

Objective 1.4: Continue to provide improvements or extensions to existing infrastructure systems without undue financial burden to the Village.

Objective 1.5: Maintain the existing infrastructure systems for maximum life and use.

Objective 1.6: Ensure new developments have adequate services.

Objective 1.7: Continue to identify existing areas where deficiencies in the systems occur and could potentially have a detrimental effect on safety, health, or the environment.

Objective 1.8: Consider leasing on a more permanent basis basic sewer capacity in excess of potential development in the Village.

Objective 1.9: Continue to implement stormwater discharge standards in the Land Development Code to encourage responsible management of stormwater runoff.

Objective 1.10: Review the Winooski River (Basin 8) and the Northern Lake Champlain Direct (Basin 5) Tactical Basin Plans to identify any additional implementation actions necessary to reduce stormwater pollutants and volume.

Objective 1.11: Review the Indian Brook and Sunderland Brook Flow Restoration Plans to identify forth potential projects and measures to be implemented to meet flow restoration targets by December 5, 2032.

Objective 1.12 Support and implement green street design along streets, in parking lots, and in other types of development to maintain and enhance water quality.

**Goal 2: Participate in Public Utility Commission hearings and to encourage the continued provision of a high quality of public utility services to the Village.**

Objective 2.1: Encourage utility companies to provide high quality services to all areas of the Village as new development occurs.

Objective 2.2: Require public utilities to maintain their corridors, to remove all existing poles as part of pole replacement projects in a timely manner, and to fix damage to Village infrastructure resulting from utilities construction projects.

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**Goal 3: Provide the community with the best possible sidewalks for the purpose of pedestrian travel at the most reasonable cost.**

Objective 3.1: Establish a prioritized capital improvement plan for upgrading sidewalks.

Objective 3.2: Continue to maintain assessments and inventory on all sidewalks including handicapped accessibility, length, width and deficiencies (heaving, drainage).

**Goal 4: Continue to provide all Village segments with the best fire protection.**

Objective 4.1: Actively recruit volunteers for the Fire Department and consider the need for a new fire station to assist in recruitment and retention efforts.

Objective 4.2: Consider establishing a limited full-time Fire Department.

Objective 4.3: Consider adopting building and life/safety codes.

**Goal 5: Provide a high level of Library Services to Village residents for their enjoyment and information, with particular emphasis on education, community connections, health and recreation, and the local economy.**

Objective 5.1: Create opportunities for lifelong learning and exploration and respond to societal changes with information to help people manage and improve their lives.

Objective 5.2: Nurture community spirit in a safe, collaborative and comfortable space.

Objective 5.3: Support healthy minds and bodies and stimulate imagination.

Objective 5.4: Support the efforts of individuals and groups dedicated to improving the economic vitality of Essex Junction and its residents.

Objective 5.5: Historic assessment of the Brownell Library structure will be done in the next eight years.

**Goal 6. Maintain existing public buildings and municipal functions in the Village Center unless their function warrants an alternative location. To encourage other public entities to give priority consideration to the Village Center for their public building(s) unless the function warrants an alternative location such as the wastewater treatment plant or public works garage.**

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**Goal 7. Continue to provide the Village with the best police protection.**

Objective 7.1: Decrease the amount of time vacancies remain open.

Objective 7.2: Increased staffing to address the crime rate and the increase in traffic.

Objective 7.3: Greater community participation in crime prevention efforts.

**Goal 8. Continue to explore funding options for burying power lines in core commercial districts and ensure that all new developments site utilities underground.**

## 4.9. Housing

The availability and quality of housing are important determinants of a community's quality of life. One of the six community values determined in the 2013 Heart & Soul project was Thoughtful Growth. Participants of the project described Thoughtful Growth in a variety of ways; two are relevant to housing: A balance of housing, business, and the preservation and maintenance of a variety of open spaces, including forests, trails, parks and recreation fields; and a variety of housing options including affordable housing. A major component of this Plan is to ensure that these aspects of Thoughtful Growth are met through maintenance of existing housing and development of new housing. This section is intended to be a summary of the Town of Essex and Village of Essex Junction Housing Needs Assessment and Action Plan. The housing needs assessment was in draft form at the time this plan was prepared. The purpose of the housing needs assessment is to study current and projected trends in home availability and affordability as well as identify existing barriers to ensuring residents of the Village and Town have access to housing.

### Total Housing Stock

In the Village, new home development has shifted from single-family, owner-occupied homes to multi-family, renter-occupied dwellings, likely due to the gap of rental housing availability, a restricted supply of undeveloped land, and a new focus on infill development in the community. Also, conversations with permit applicants indicate that many current homeowners are downsizing and moving into units with lower property maintenance obligations.

*Table 7 Owner Households*

Owner households	2000	2017	2017 MOE	Avg. Annual Change	% Change per Year
Chittenden County	37,292	40,980	+/- 628	231	0.62%
Essex	5,418	6,029	+/- 274	38	0.70%
Essex Junction	2,425	2,643	+/- 214	14	0.56%

\*MOE for this ACS estimate is too high to confirm a statistical difference between 2000 and 2017

**Table 8 Renter Households**

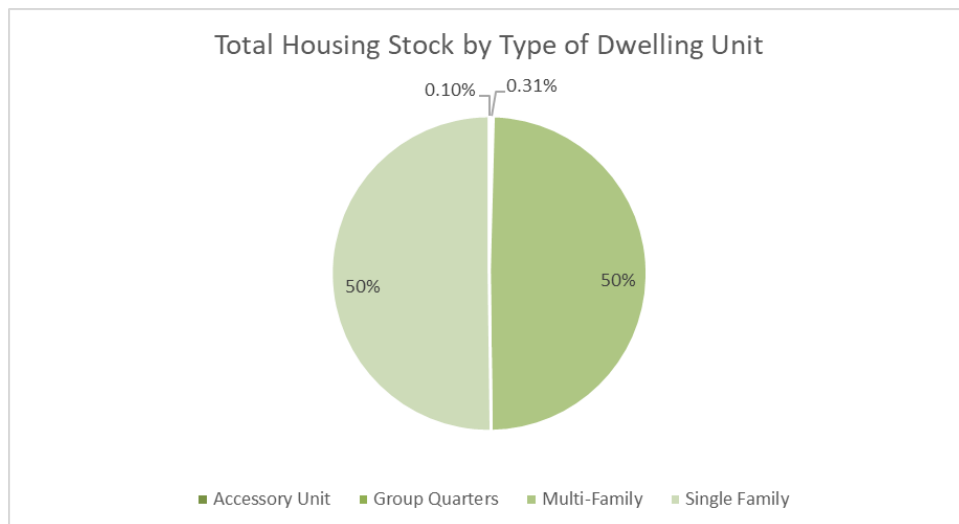
Renter households	2000	2017	2017 MOE	Avg. Annual Change	% Change per Year
Chittenden County	19,160	23,926	+/- 707	298	1.55%
Essex	1,595	2,660	+/- 234	67	4.17%
Essex Junction	984	1,672	+/- 204	43	4.37%

**Table 9 Type of Housing Unit**

Dwelling Units (as of 2017)	Single- family	Multi-family	Accessory	Total	Households (2017)	Households MOE
Essex	5,047	3,752	11	8,870	8,689	+/- 233
Essex Junction	2,254	1,969	1	4,262	4,315	+/- 200

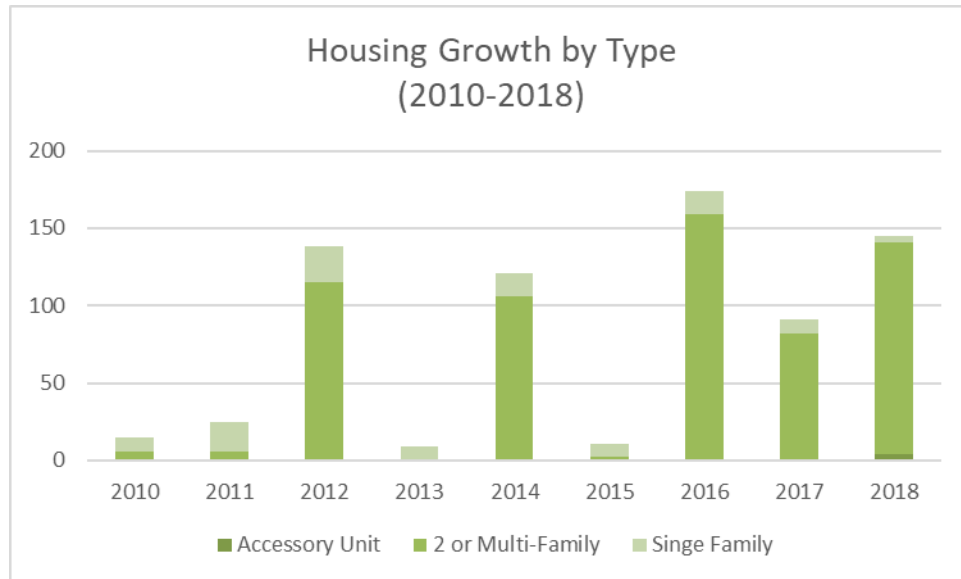
The existing housing stock in Essex Junction is mixed. As seen in Table 8 and Figure 3, the type of housing is evenly split between single family detached dwellings and multi-family dwellings. The Village has seen a decline in the development of single-family detached housing over the last twelve years which could be linked to a diminished land base, and since 2008, financing constraints brought on by the recession. The increase in higher density multi-family housing was made possible by zoning changes put in place in 2000.

**Figure 4 Total Housing Stock**



Between 2010 and 2018, the Village saw more multi-family residential development than single family development, as seen in Figure 4.

**Figure 5 Housing Growth**



## Population and Households

The population in Chittenden County has grown steadily and therefore the population in the Village and the Town (including the Village) has grown as well. More than half of the new growth has been within the Village of Essex Junction, which has grown significantly faster than the county average. The growth in population has also increased the number of households and the demand for housing.

The average household size in 2017 was 2.38 persons per household. This number has gone down over the last 30 years, but now seems to be stabilizing. In 2017, there were 4,315 households which is an increase of an average of 57 units per year since 2000.

**Table 10 Number of Households**

Number of households	2000	2010	2017	2017 MOE	Avg. Annual Change	% Change per Year
Chittenden County	56,452	61,827	64,906	+/- 552	528	0.94%
Essex	7,013	7,887	8,689	+/- 233	105	1.49%
Essex Junction	3,409	3,875	4,315	+/- 200	57	1.66%



**Table 11 Average Household Size**

Average Household Size	2000	2016	2016* MOE	Avg. Annual Change	% Change per Year
Chittenden County	2.47	2.35	+/- 0.02	-0.01	-0.30%
Essex	2.62	2.44	+/- 0.07	-0.01	-0.43%
Essex Junction	2.48	2.38**	+/- 0.11	-0.01	-0.25%

\*Margin of error for this ACS estimate in 2017 is too high to confirm a statistical difference at each geographic area, but comparisons were valid for 2016 for the county and Town of Essex.\*\*Margin of error for this ACS estimate is too high to confirm a statistical difference; however, actual counts from the 2010 Census resulted in a comparable household size of 2.38.

## Housing Demand

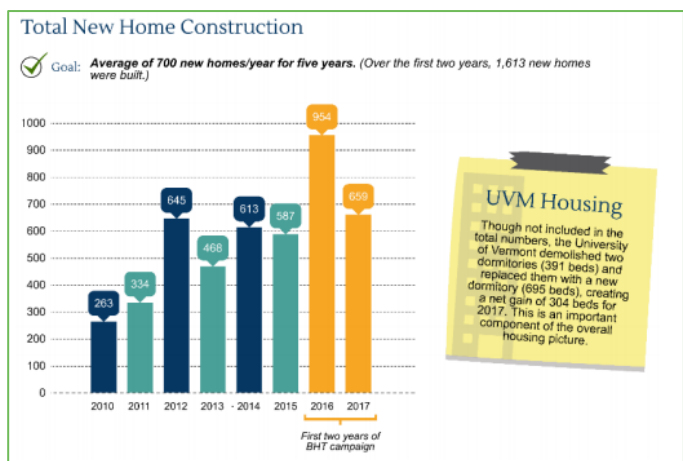
The Village has seen approximately 728 new units constructed between 2010-2018, according to the CCRPC Housing database. This new construction is helping to address a regional housing shortage. The rental vacancy rate for areas outside of Burlington and Winooski has remained below the healthy vacancy rate. A healthy vacancy rate is presumed to be 3 to 5% for the region, however the high end is likely to be a good balance of available units and occupied units.

Adding housing units in areas planned for growth, like the Village, is the most efficient way of meeting the unmet need-rather than continuing to sprawl and spread our infrastructure costs across a greater geographic area. Therefore, the current level of density allowed in the areas planned for growth is effective, however changes may be needed to ensure the scale, quality and design of the higher density and infill structures is what the community would consider "thoughtful growth". In addition, it is important to note that the State Land Use planning goal includes the following: "Intensive residential development should be encouraged primarily in areas related to community centers, and strip development along highways should be discouraged."

Considering these needs the Village is working to encourage a diverse range of housing including single family housing and to a greater degree in the last few years, multi-family housing as reflected in Figure 4.

From a Chittenden County perspective, the Building Homes Together campaign finds strong

**Figure 7 Total New Construction,  
Chittenden County**



**Figure 6 Affordable Housing Goal,  
Chittenden County**



demand for new housing construction and new affordable homes. The goals and results within the first two years of this five-year campaign are included here in these infographics.

## Housing Cost and Affordability

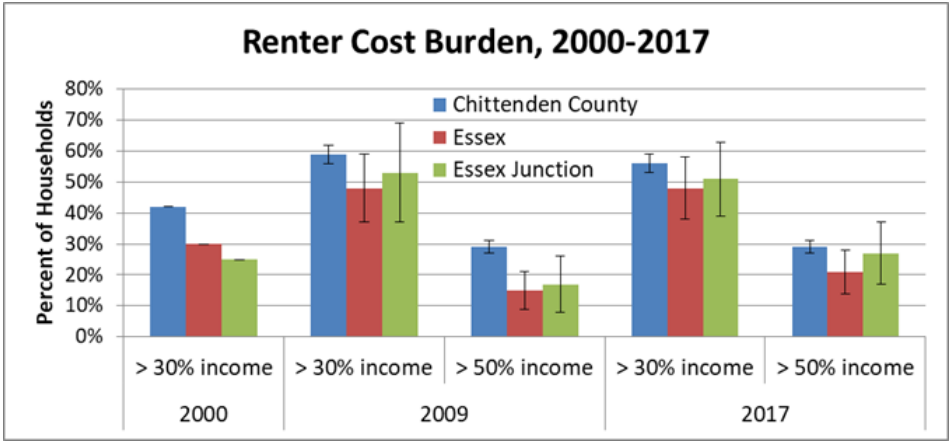
Housing growth is important not only as a mechanism to provide housing that is affordable to all segments of the population, but also important for economic stability and business retention and growth. Essex Junction businesses rely primarily on residents to support their businesses. This section looks at the affordability and cost of both the rental and homeownership market.

Gross rent refers to the amount that renters pay for their housing and any utilities or fuels associated with the rental. Median gross rent is the 50th percentile of gross rents across a community (with 50% paying more than the median and 50% paying less). Rents are consistent across the county, Town, and Village, but all have risen significantly higher than inflation has over the last 17 years – the average annual rent increase ranges from 3.53% to 4.23%.

Households that spend more than 30% of their income on housing are considered “cost-burdened.” These households often have difficulty affording food, transportation, healthcare, and other necessities. Cost-burdened households also are unlikely to be able to save for the future or emergencies, support dependents, or contribute significantly to the economy with their limited disposable income.

In general, cost burden among renters in the area has risen over the last 17 years. By 2017, around half of renters paid more than 30% of their income on rent, and between a quarter and a third paid more than 50% of their income on rent.

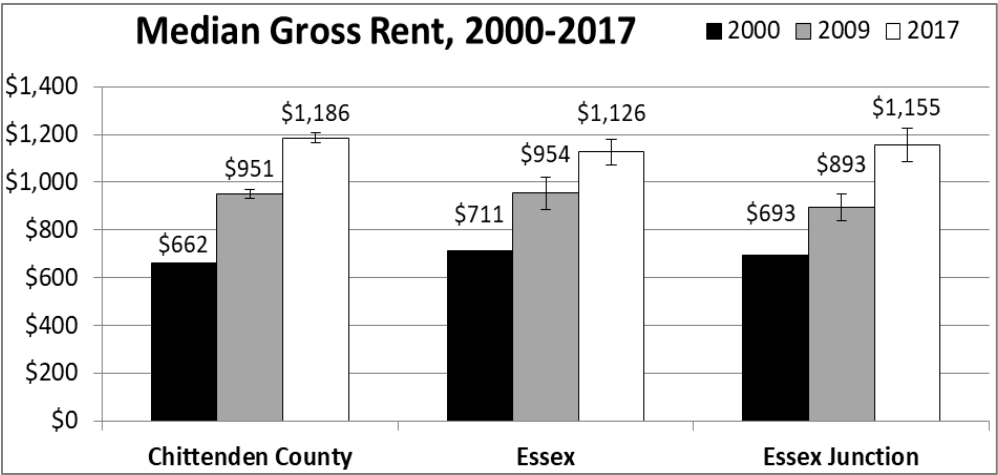
*Figure 8 Renter Cost Burden, 2000-2017*



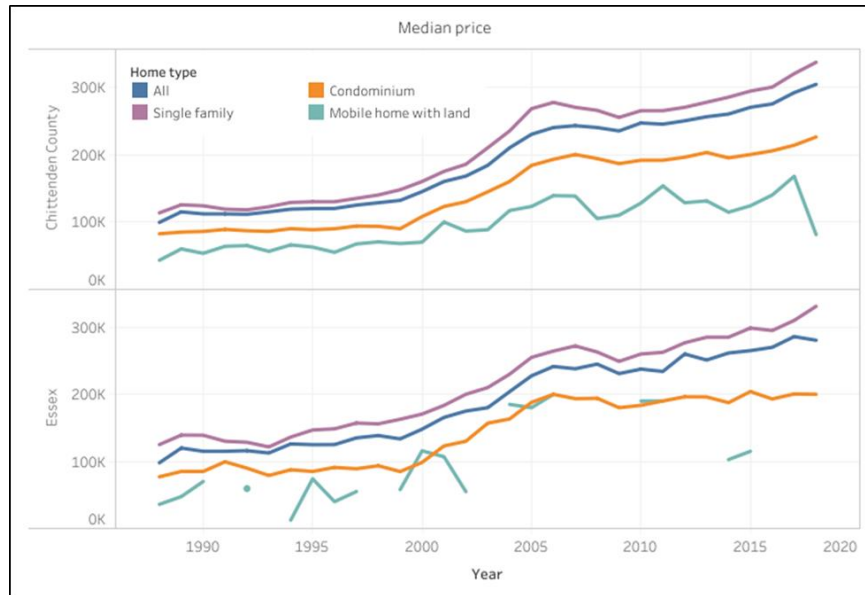
\*Note: Comparison of estimates for Essex Town between 2000 and 2009 is not statistically significant due to high MOEs.

Home prices have steadily risen in Essex and Chittenden County over the last two decades, with only a small dip during the recession with an immediate rebound. Economic forecasts predict a recession in the next year or so, but given the market trends in the last recession, it is unlikely that home prices will decrease significantly, and likely will only continue to increase. When broken down by home type, single-family homes are mainly driving the increase in home price, while condominium sale prices are steadier, especially in Essex. There are not enough mobile home sales to provide reliable data (many mobile homes are rented rather than owned), but they have generally followed sales trends for other home types.

*Figure 9 Median Gross Rent*

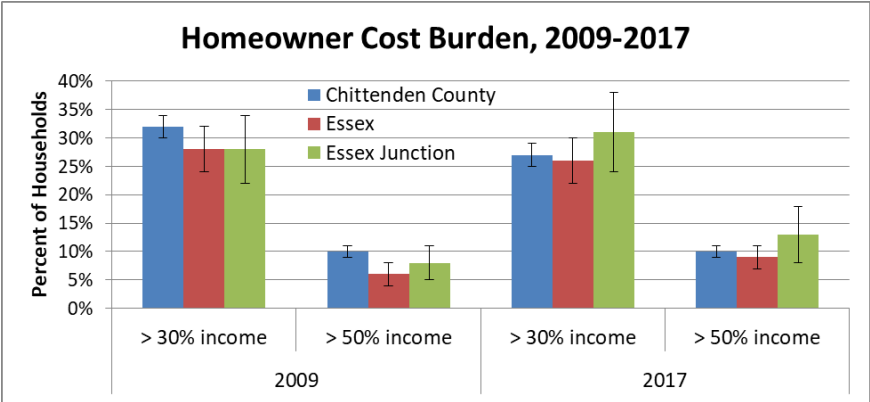


**Figure 10 Median Home Price**



Though not as high as renter cost burden, homeowner cost burden in the area is still significant – nearly a third of homeowners in the county, Town, and Village pay more than 30% of their income on housing. Around 10% of those in the county and Town pay more than half of their income on housing, but in the Village, that is true for 8-21% of homeowners. Furthermore, the number of homeowners with >30% cost burden has decreased at the county level since 2009, but the number with >50% cost burden has increased within the Town (other comparisons between 2009 and 2017 are not statistically significant). This could be partly because home prices have risen, while incomes for area residents have not kept pace. Another possible explanation is that the limited savings of cost-burdened renters forces them into a low down-payment on their first home, which results in a higher mortgage than they would prefer. In either case, the root cause is a misalignment of household incomes and homeownership costs.

**Figure 11 Homeowner Cost Burden**



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## Housing Creation

In 2016, the village center district received designation as a neighborhood development area by the State of Vermont Department of Housing and Community Development. State designation of neighborhood development areas (NDAs) provides state permitting exemptions for qualified mixed income housing, tax benefits, and limitation on appeals for residential development. These benefits will encourage developers and municipalities to help increase the creation of new homes within walking distance of shops, jobs, services, and schools.

Beyond the affordable units mentioned previously, newly constructed residential developments do not have a requirement to build permanently affordable housing as the Village does not have an inclusionary provision in the Land Development Code to require a portion of dwelling units be affordable. The Village does focus on issues within their control that affect the affordability of housing including housing densities, permitting, and redevelopment. Through these efforts the Village will work to ensure that this growth is done in a thoughtful manner so that the existing neighborhood fabric will remain. For example, the Village will consider zoning incentives for pocket parks and other open space amenities in housing and mixed-use projects; and the Village will work to ensure that housing is located in areas with existing and planned support services. It appears the Village's decision to increase housing density has had a positive impact on housing growth; however continued efforts for affordable housing is needed.

Since the neighborhood development designation, 95 market rate units have been developed in this area including 5 Corners apartment building. 5 Corners is a 51 unit building centrally located at the Five Corners intersection and is a major step towards enhancing and maintaining the vibrancy of the Village.

The Village has proactively addressed the need for affordable housing through zoning amendments and State incentive programs. The following projects are a snapshot in time and reflect a number of these efforts. The following projects in the Village and the Town have been built using public funding which would require the housing to be affordable:

### A NOTE ABOUT “AFFORDABILITY”

The term “affordable” is used in a variety of contexts and can be very confusing. Generally, housing is affordable to a person if the housing costs are 30% or less of their income. Federal and state housing programs use this definition when determining affordable rents and home purchase prices. Typically, these programs offer housing subsidies for households earning 60% or less of the area median income. Refer to [Vermont Housing Finance Agency \(VHFA\)](#) for more information about housing affordability.

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- 24 units at Village Haven at Roscoe Court
  - 30 units at Monarch Apartments
  - 19 units of senior housing at Whitcomb Terrace
  - 65 units of senior housing at Whitcomb Woods
  - 330 units at Cedar's Edge Apartments
  - 44 units at Essex Town Center
  - 49 units at Hawk's Meadow Apartments
  - 48 units at Town Meadow Senior Housing

## Other Housing Issues

In addition to concerns regarding the balancing of the demand for housing versus regulating the impacts of new housing development, there are a variety of other housing issues within the community including:

- 1) Building/fire codes
- 2) Multi-family conversions
- 3) Special needs housing
- 4) Historic preservation
- 5) Energy conservation
- 6) Housing Affordability
- 7) Preservation of neighborhood character.

All these issues are important considerations within this Plan. Many of these issues are included in other Plan sections. Some issues require further analysis to determine the appropriate solutions. Specific strategies are included in the Goals section of this element.

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## Housing Goals

**Goal 1: Provide a variety of housing opportunities for all present and future residents of the Village of Essex Junction while creating and preserving quality residential environments and existing neighborhood characteristics.**

Objective 1.1: Permit innovative development strategies including commercial/residential developments, zero-lot lines, and transfer of development rights where appropriate and after special review.

Objective 1.2: Promote adherence to and enforce the State's energy building and fire codes for housing.

Objective 1.3: Promote adherence to state energy standards and consider energy conservation standards and alternate energy resources in all future codes. Encourage development in established growth areas.

Objective 1.4: Provide a mechanism within the LDC to encourage the creation of new affordable housing.

Objective 1.5: Maintain allowance for density bonuses in the residential zoning districts for the construction of affordable housing.

Objective 1.6: Allow high density housing in major commercial areas and maintain the Residential-2 small lot single family zoning designation to allow for affordable housing.

Objective 1.7: Identify funding to compile a rental registry and rental inspection program.

Objective 1.8: Consider zoning changes to encourage pocket parks and other public urban open space amenities.

Objective 1.9: Work with the Town of Essex to implement the Housing Needs Assessment and Action Plan to increase the stock of homes affordable to residents earning up to and including 80% of area median income.

**Goal 2: Cooperate with surrounding communities, private developers, and nonprofit developers to jointly create affordable housing and senior housing.**



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**Goal 3: Continue to provide adequate sites in residential areas or areas of residential character for special needs housing.**

**Goal 4: Encourage private and public property owners of historically significant structures to maintain the historic integrity of the structures.**

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## 4.10. Transportation

Transportation is an important issue to the Village of Essex Junction. The "Five Corners" intersection presents one of the difficult traffic management problems. The location of the railroad tracks adds to the complexity of the problem. In addition to factors within the Village, growth in adjacent communities result in traffic increases throughout the Village.

The Village street network is essentially a grid of interconnected streets, dead end streets make up only a small portion of local streets. The state highways of Route 15, Route 2A and Route 117 provide the only vehicular connections into and out of the Village. Therefore, they carry significant amounts of non-destination and local traffic. The interconnected street system allows for alternate routes to the same destination, thereby giving users of the network options for getting from point A to B. The interconnected local street system reduces congestion on major arterials but increases the negative impact on local residential neighborhoods and cut throughs should be discouraged. Continuing to maintain the interconnected street network and connect streets in new developments is a central transportation policy within the Village and on-going planning is needed to discourage the use of neighborhood roads to avoid five corners.

The complexities of the transportation network described above require a coordinated transportation planning effort within the Village. There are no single, simple solutions available. It is necessary to develop a multi-stage, multi-modal approach to transportation planning. Included is the street network, bicycle lanes, public transit, the possibility of commuter rail, shared use paths, sidewalks, and the implementation of the Design Five Corners project to pedestrianize a short section of Main Street, this will redirect Route 15 traffic around the Village Center. In addition, public safety is an important consideration in all potential improvements. Such a multi-modal approach can lead to an improved, cost-effective and energy-efficient transportation network.

### Streets

With the exception of the Crescent Connector, the primary roadway network within the Village has already developed. As new development occurs, the extension of the existing local street network will be constructed by developers. The primary issue, therefore, is increased traffic management, particularly for non-destination traffic. The influence of the first phase of the Circumferential Highway, completed in 1993, was clearly seen in reduced traffic volumes and accidents for 1995. Since then, 5 Corners traffic volumes have been relatively steady for the past 25 years. Five Corners Traffic levels through the Five Corners are considerable as the table below reveals. The table shows the average annual daily traffic

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(AADT) for state highways that intersect there. Many of these trips do not start or end in the Village and are considered non-destination traffic. New developments in adjacent communities such as in Taft Corners in Williston contribute to the higher volumes as motorists from these communities pass through Five Corners to access employment, education, and services.

**Table 12 Five Corners AADT**

Route	2010	2015
VT 117 (Maple St)	8,000	8,200
VT 15 (Main St.)	11,600	10,300
VT 15 (Pearl St.)	11,500	11,300
VT 2A (Lincoln St.)	7,200	7,800
VT 2A (Park St.)	16,300	17,000

Source: Agency of Transportation, Annual Average Daily Traffic Reports, some values are estimates

Due to the growth in non-destination traffic, the Village supports alternative routes between adjacent communities along with an additional crossing over the Winooski River. Non-destination traffic is a threat to the vitality of the Village Center where the emphasis needs to be on local access, pedestrian mobility and safety, and aesthetics. Increased vehicular capacity is in direct conflict with these Village Goals and therefore is not supported to the extent it would involve additional vehicle lanes and road widening.

Safety is another major concern. The state highways of Route 15, Route 2A and Route 117 all carry significant amounts of non-destination traffic through Essex Junction. The high number of curb cuts along with the size and location of curb cuts contributes to safety issues, particularly on roads with more than two lanes such as portions of Park Street near the Five Corners. Access management is therefore an important consideration of this plan.

While the Five Corners intersection itself is not a High Crash Location (HCL) Intersection, there are two HCL Sections that pass through Five Corners via VT Routes 15 and 2A. The HCL report is a statewide document produced by VTrans and the latest version encompasses the years 2012-2016. Of the five legs, only Maple Street (VT-117) is not designated an HCL. See Map 4 for these HCLs.

An important new roadway, the Crescent Connector, impacting the Five Corners will be developed. This project, which has been designed and is slated to begin construction in 2019 will link VT RT 2A south of the Five Corners northwest to Maple Street (VT RT 117) and continue across on a reconstructed Railroad Street connecting to VT RT 15. This new facility will improve traffic flow, provide additional parking, and provide for safe walking and biking

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through the area. The Crescent Connector will also make possible the closing of one leg of the 5 Corners (Main Street). This is expected to decrease the average vehicle delay through the intersection by 40%, eliminate lost time (when no vehicles are passing through the intersection), increase the capacity of the intersection by 789 more vehicles per hour, and significantly decrease the length of lines of vehicles waiting to pass through the intersection. The closure of Main Street will also decrease the distance (and number of lanes) that pedestrians will need to cross and allow for traffic to move concurrently with pedestrian crossing. While, on average, six vehicles park on Main Street in the area to be closed, several new spaces are expected to be added along Railroad Avenue.

An additional CIRC Alternatives project in Essex Junction includes Pearl Street improvements from the Post Office Square intersection to the Five Corners intersection. Essex Junction has made numerous improvements to Pearl Street over the past several years including completing a "road diet" project that created three travel lanes and bike lanes. These bike lanes extend from West Street to the Champlain Valley Exposition. Improvements considered in this study would complement those other improvements and further advance Pearl Street as a multimodal corridor.

The Design Five Corners Project, which began in 2014, collected extensive public input and guidance to develop a conceptual approach to redesigning the Five Corners intersection. The complicated nature of the current Five Corners intersection has created excess traffic congestion and detracts from Essex Junction's Village Center. The pending construction of the Crescent Connector may make it possible to close one leg of the Five Corners intersection, due to the improved traffic circulation. The Design Five Corners Project proposes to close Main St. between the intersection and Railroad Ave. Converting the current five-way intersection into a four-way intersection may make traffic circulation more efficient due to reduced delays. This, in turn, increases the intersection's capacity. Calculations included as part of the Design Five Corners report indicate that reconfiguring the intersection will allow nearly 790 more vehicles per hour to pass through Essex Junction.

## Sidewalks/Bike Paths

Essex Junction currently has 35.3 miles of sidewalk and 1.5 miles of shared use paths to maintain. The provision of sidewalks and bicycle lanes and shared use paths within the Village are important transportation goals. The Bike/Walk Advisory Committee exists to advance a friendly neighborhood community where bicycling and walking are encouraged. The Bike-Walk Advisory Committee has adopted the following vision statement: "Essex Junction strives to be recognized as a friendly village of connected neighborhoods and destinations in which convenient and safe bicycle and pedestrian facilities are integrated into a seamless and accessible year-round transportation system. This system will promote

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the enjoyment and health of all citizens, a more vibrant local economy, and a cleaner environment."

Cost and the efficient expenditure of tax dollars on sidewalks is a major consideration to maintaining the existing network. The policy for the number of sidewalks varies depending on the road function and density. Sidewalks will be constructed and maintained in the future in accordance with the following standards:

The Village will not actively remove sidewalks but would do so in association with a street or sidewalk reconstruction project. Several areas of the Village in low density neighborhoods would see the eventual removal of sidewalks on one side of the street if the existing walk is no longer serviceable. On some major arterials, sidewalks would be added. The emphasis of the sidewalk plan and policy is to maximize resources while improving connections.

Also, as proposed, the Design Five Corners Project significantly improves pedestrian safety and circulation at the intersection. With reduced vehicle delays, there is also a reduction in delays for pedestrians. Additionally, with the reconfiguration to a 4-way intersection the actual distance as well as number of lanes pedestrians must cross is reduced, making for a much more pedestrian-friendly environment.

In 2015 the Town of Essex and Village of Essex Junction adopted the [Essex/Essex Junction Bicycle Pedestrian Plan](#) to identify gaps and unmet needs in the existing walk/bike network, create strategies to meet those needs, and recommend implementation and funding options for the Village and Town to consider. The plan included input from the public, Local Motion and Village Walk Bike Committee, and incorporated current trends and practices for walk/bike facilities that are safe and accommodating. The existing and future bicycle and pedestrian networks are summarized on Map 6.

### **Future Pedestrian Network**

Map 6 shows the proposed future pedestrian network. The proposed network primarily fills gaps in the existing sidewalk system and provides shared use path and trail connections in appropriate contexts and locations.

### **Future Bicycle Networks**

In order to serve the widest range of riders, two networks are proposed in the Bicycle Pedestrian Plan: 1) the Direct Route Network for the more confident riders, which will primarily consist of bicycle lanes on the routes that will provide the most direct travel; and 2) the Neighborhood Network, intended to serve the less confident riders who are willing to

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ride in the right circumstances. This network provides shared use paths or shared use with traffic on low volume/low speed neighborhood streets and will by necessity involve somewhat more circuitous travel around major corridors and hubs.

Establishing the Neighborhood Network will include a variety of small and large projects, ranging from new shared use paths to traffic calming and wayfinding on local streets. The core of this Neighborhood Network will be “bicycle boulevards,” which are low volume/low speed neighborhood streets that connect other network segments that may be shared-use paths, bicycle lanes, or cycle tracks. See the Bicycle Pedestrian plan for the map of the two bicycle networks.

In addition to infrastructure investments, the Plan also includes an “infrastructure toolbox” featuring modern infrastructure designs, as well as walk/bike program and management options, to address bicycle and pedestrian needs and gaps. Some of these include intersection/crosswalk treatments, traffic calming devices, wayfinding, and enforcement.

Projects in the Plan are divided into four categories to assist in further planning and implementation:

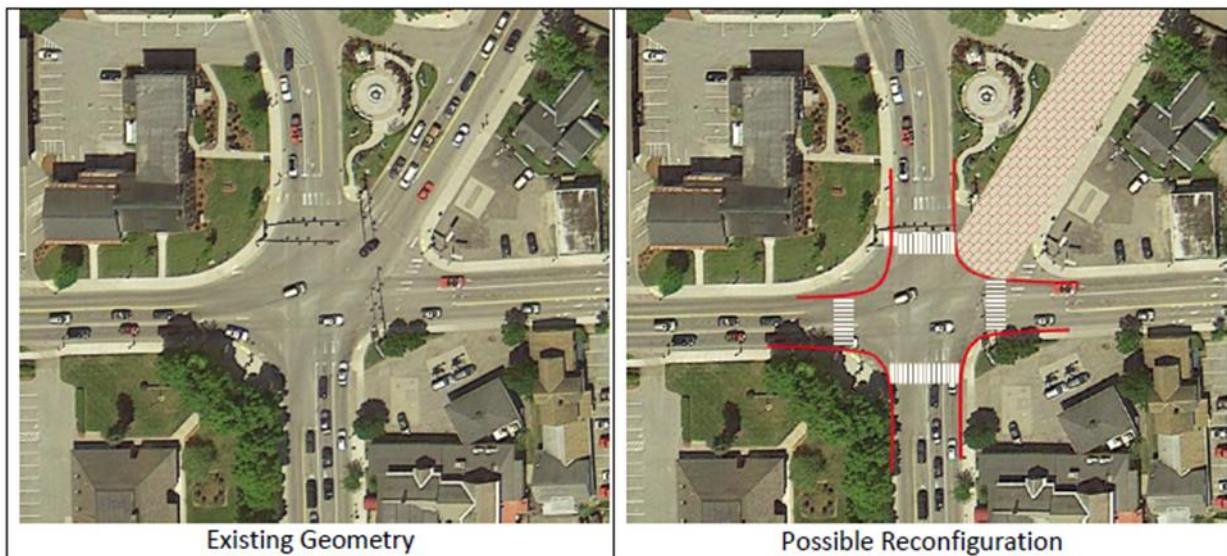
- Big Ticket Projects – these are higher cost or more complex infrastructure investments that will require some state or federal funds.
- Lower Cost Projects – these are simpler or lower cost projects that may be more suitable for local funding, or public/private funding by developers. These may be “bumped up” to Big Ticket Projects if further planning indicates higher than anticipated costs, which are beyond the scope of local funding.
- Long Term Concepts – these are some of the far-reaching projects that will need more consideration and study but should be considered in overall Town and Village planning.
- Ongoing Programs and Activities – there are many opportunities for coordination between the Town and Village for activities such as wayfinding and joint planning.

See Tables 3-5 in the Bicycle Pedestrian Plan for a list of projects in each category. Included in the Plan is the full Project List, a comprehensive spreadsheet with a complete list of projects and relevant information to guide implementation efforts.

When constructed the Crescent Connector will also be an important bicycle and pedestrian connection through the center of Essex Junction. Potential improvements for people walking and biking will reduce crossing distances, provide bicycle lanes, and bike boxes, and vehicle lane reassignments. There should be two bike networks for Five Corners: a Direct Route

Network using the state highway routes and the Crescent Connector with bicycle lanes or shared lanes, and a Neighborhood Network to provide routes around Five Corners for the less confident riders. These are shown on Map C on the Bicycle Pedestrian Plan.

In the longer term, the potential for closing Main Street between Five Corners and Railroad Avenue can be considered. This could initially involve temporary closure of this block as a demonstration “Festival Street” for pedestrian-focused special events, with permanent closure considered after evaluating the temporary closure. Closing this section of street would simplify the intersection operations and may improve traffic flow. The following graphics show the potential reduction in crossing distances that could result from intersection simplification.



## Parking

The Village provides public parking in the Village Center District via on-street parking and off-street lots. On-street parking is available throughout the Main Street and Railroad Avenue area of the Village Center along with two off-street parking lots on Ivy Lane and behind the Brownell Library. Off-street parking was added near the Park Street School and will be added adjacent to the Crescent Connector. See Map 12 for parking in the Village.

The draft 2019 Parking Study determined that the overall parking supply in the Village is adequate with a few existing areas of high demand during midweek/midday and in the evening. Parking next to the library and municipal buildings are often full during the day. A possible remedy to this is to park Village staff vehicles in local lots in close proximity to the



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Village offices. The lots by the Lincoln Inn are also in high demand on Friday evenings. The parking study suggests that other lots could be used to accommodate Friday night patrons.

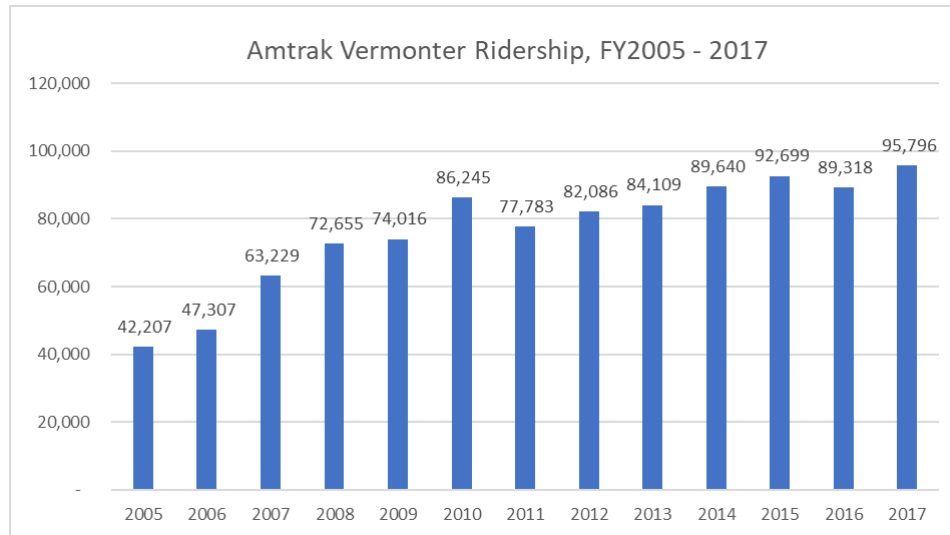
The need for parking was heavily considered as part of the Design Five Corners Project. Existing public parking in the Village Center should be preserved to the greatest extent possible. The proposed reconfiguration of the Five Corners Intersection will result in the elimination of 19 on-street parking spaces on Main St. between the intersection and Railroad Ave. However, the Crescent Connector, which is less than a 5-minute walk from Main St. will create 29 new parking spaces, resulting in a net gain of spaces within the Village Area. The improved pedestrian environment will make the experience of walking from parked vehicles to the heart of the Village a pleasant experience.

The provision of park and ride lots should be considered in the future based on regional needs.

## Public Transportation

The Village of Essex Junction is currently served by the only Amtrak terminal in Chittenden County. This intercity rail service consists of Amtrak's Vermonter Train, with Vermont stops in Essex Junction, Brattleboro, White River Junction, Montpelier, Waterbury, and St Albans. This service was established in April 1995 as a reconfiguration of the discontinued Montrealer train from Montreal to Washington, D.C. The Vermonter provides one inbound and one outbound trip daily. Southbound service to New York and Washington, D.C. originates at St. Albans in the morning, returning later in the evening. Of the Vermonter's 32 stops from Vermont to Washington DC, only New York City sees a higher level of passenger activity (in FY17 43,000 to Essex Junction's nearly 20,000). The following chart provides the most recent history of ridership on this service which is generally trending upward.

**Figure 12 Amtrak Ridership**



The State of Vermont has been pursuing other rail projects in the Chittenden County area. One is the extension of the current Amtrak service to Rutland on the Ethan Allen Express to Burlington. This service is expected to begin in 2021 or 2022 with potential impacts on Essex Junction ridership (Essex Junction to New York is one the Vermonter's top city pairs for ridership and revenue and the extended Ethan Allen Express will directly compete with the Vermonter for some of those riders). VTrans has also identified extending the Vermonter back to Montreal as one of their top priorities which would likely boost Essex Junction ridership, perhaps substantially, although VTrans current schedule for implementing this is 2026 according to the most recent Vermont Rail Plan. Another VTrans high priority is to upgrade the track between Essex Junction and Burlington through Winooski potentially leading to more traffic on that short rail segment. Lastly, commuter rail is a concept currently being explored to bring rail cars between St. Albans, Essex Junction, Burlington, and Montpelier.

Bus service is provided by [Green Mountain Transit](#) (GMT). In June 2019 GMT implemented the NextGen Service Plan which consolidated routes from three to two routes in Essex Junction to offer improved commuter service and to better connect the Village to Burlington and Williston. The Next Gen Service provides weekday daytime service including 20-minute headways most of the day on the Essex routes.

Support of the existing and improved public transportation system is important to accomplishing other community goals. Public transit access to places of employment and to major shopping centers may help to alleviate traffic congestion and can contribute economic development efforts. New development and redevelopment should consider

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public transit access early in the design process. To maximize the public resources already devoted to the existing public transportation system, consideration should be given to locating new facilities along or in close proximity to public transportation routes. GMT seeks coordination with municipalities on focused development along transit corridors with pedestrian-oriented design. Other issues important to GMT include the consideration of bus stops and passenger shelters when developing new facilities or re-developing properties. GMT's service helps support Essex Junction's land use plan, just as Essex Junction's land use plan helps support improvements to the GMT service through higher density and mixed uses in the Village. The Village should continue to work with local representatives to encourage the GMT Board to pursue these issues. GMT is managed by a Board of Commissioners with one representative from the Town of Essex.

## Air Pollution/Energy Conservation

Air pollution, energy conservation and land use are important transportation issues. Increased use of public transit and bikeways will reduce pollution, primarily greenhouse gas emissions, and save energy. Therefore, these benefits should be considered when any improvements to the transportation network and land use changes are considered. The elimination of cars is not possible, but the elimination of unnecessary trips and increasing transportation options are an important first step. Reducing wait time and thus vehicle idling at congested locations' such as the Five Corners through design improvements such as pedestrianizing a short section of Main Street while enabling vehicles to move more efficiently thorough the Village Center is an important component of any policy that aims to reduce air pollution and increase energy conservation.

## Transportation Goals

**Goal 1: Implement projects that will move traffic more efficiently while making the Village a more welcoming place for all modes of travel.**

Objective 1.1: Provide alternate routes for non-destination traffic.

Objective 1.2: Do not support capacity increases on state highways in the Village that involve additional vehicle lanes.

Objective 1.3: Emphasize local access, public transit, bicycle facilities, pedestrian safety and access, and aesthetics in future streetscape projects.

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Objective 1.4: Reduce idling at the Five Corners intersection by implementing the Design Five Corners Project, which proposes the pedestrianization of a short section of Main Street to create a crossroads intersection.

Objective 1.5: Redirect Route 15 to Susie Wilson Road and Route 289 to reduce non-destination traffic in the Village.

**Goal 2: Monitor, evaluate and implement traffic management practices on a continuing basis.**

Objective 2.1: Monitor annual traffic counts and accident data.

Objective 2.2: Review all development proposals to minimize traffic and pedestrian safety concerns.

Objective 2.3: Where feasible, reduce the number and size of non-conforming curb cuts during development review

Objective 2.4: Encourage the use of joint access driveways and shared parking lots when physically possible.

Objective 2.5: Monitor the timing and sequence of all traffic lights to optimize traffic and pedestrian safety.

Objective 2.6: Cooperate with adjoining communities to develop strategies to minimize traffic increase within the Village resulting from development beyond the Village limits.

Objective 2.7: When possible, avoid dead end streets. Connect new streets into the existing street network from at least two points.

Objective 2.8: Request that neighboring communities require major development proposals to include traffic impact analysis at the Five Corners and that traffic analysis be submitted to the Village for review.

Objective 2.9: Study and consider options for managing traffic at the high crash locations near the Five Corners indicated on the Transportation Map. Implement the Village Sidewalk Plan and Policy.

Objective 2.10 Implement the Town of Essex/Village of Essex Junction Bicycle and Pedestrian Plan and the Chittenden County Active Transportation Plan

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### **Goal 3: Facilitate the use of sidewalks as a viable transportation alternative.**

Objective 3.1: Review all development proposals for the efficient use of sidewalks.

Objective 3.2: Consider alternative standards for sidewalks based upon location and potential usage.

Objective 3.3: Encourage school age children to walk or ride a bike to school to reduce traffic congestion.

Objective 3.4: Encourage enrollment in the Vermont Safe Routes to School Program.

Objective 3.5: Utilize all traffic calming techniques and strategies available.

### **Goal 4: Review and implement parking strategies consistent with other planning purposes.**

Objective 4.1: Encourage quality site design and landscaping for all new parking lots.

Objective 4.2: Encourage bus and pedestrian access to all parking facilities.

Objective 4.3: Develop long-term strategies for parking demand within the Village Center.

Objective 4.4: Review all parking requirements and develop revised parking requirements which may include off-site parking, or other alternatives.

Objective 4.5: Cooperate with adjacent communities to locate commuter facilities in or in close proximity to the Village.

Objective 4.6: Consider policies to require or encourage the installation of bicycle parking racks at major activity centers such as shopping centers and employers.

### **Goal 5: Promote and implement strategies to encourage the use of bicycles as alternate transportation modes.**

Objective 5.1: Consider bicycle access in the review of all development proposals.

Objective 5.2: Consider the construction or signage of bicycle lanes on all future street construction projects.

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Objective 5.3: Pursue the use of Federal and State funding for construction of shared use paths and bicycle lanes.

Objective 5.4: Include shared use paths as a component of the Capital Budgeting process.

Objective 5.5: Implement the recommendations of the Essex Bicycle Pedestrian Plan.

Objective 5.6: Encourage the donation of land, labor and monies for the implementation of the shared use paths identified in the Bicycle and Pedestrian Plan.

**Goal 6: Encourage increased usage of the public transportation system.**

Objective 6.1: Cooperate with GMT to increase access to bus routes including higher frequencies during peak hours.

Objective 6.2: Encourage the use of bus turn-offs and shelters on major streets.

Objective 6.3: Encourage the State of Vermont to develop tax measures which support alternative transportation and reduce pressure on the local property tax.

Objective 6.4: Cooperate with GMT to encourage education programs on the benefits of using public transportation.

Objective 6.5: Continue to support seniors and disabled transportation programs.

**Goal 7. Cooperate with the State of Vermont to locate air quality monitors at the Five Corners.**

Objective 7.1: Require applicants with potential emissions to obtain necessary state or federal permits prior to any local approvals.

Objective 7.2: Work with state and regional officials to ensure the uniform enforcement of all air Pollution Standards.

**Goal 8: Cooperate with state and regional entities pursuing efforts to establish potential commuter rail service and an international passenger rail connection to Montreal that will go through Essex Junction.**

Objective 8.1: Support appropriate upgrades to the existing station and the surrounding areas to meet future needs.

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## 4.11. Land Use

The livability and viability of any urban area are largely dependent on the pattern of land uses within the community. Transportation efficiency (and safety), the accessibility of various activities (i.e. shopping, entertainment, etc.) and the quality of residential neighborhoods are determined in many cases by land use patterns. The land use element is thus a "vision" for future development or redevelopment within the community. The vision in this Plan reflects the Heart & Soul values identified by the residents - with emphasis on Thoughtful Growth. This Plan supports the Thoughtful Growth value by calling for continued accommodation of tight-knit neighborhoods, a vibrant downtown, diverse housing options, and a transportation system that includes a path network for pedestrians and bicyclists.

This Plan supports other Heart & Soul values, as well. The Local Economy will be supported by a healthy infrastructure and locations for existing and future businesses. The emphasis on tight-knit neighborhoods will foster Community Connections. Well-marked bike and pedestrian lanes will encourage Safety by allowing residents to comfortably and securely navigate the community. Parks and trails will help provide a basis for Health and Recreation, in addition to the community's largest open spaces in the Town.

In addition, this Plan helps support the larger regional land use goals by concentrating new growth in areas already developed, and thereby helping to minimize sprawl and protect the more rural areas of the County for working lands and environmental resources. Specifically, the Chittenden County ECOS Plan includes the following strategy: Strategy 2: Strive for 80% of new development in areas planned for growth, which amounts to 15% of our land area. The ECOS Plan takes a high-level view of the land area in the County and therefore considers Essex Junction in its entirety to be a growth area. However, the concept is similar at a smaller scale within Essex Junction where the Village Center, surrounding mixed use, commercial and industrial districts are areas planned for growth; the surrounding residential areas are intended to remain at similar densities; and the Whitcomb Farm and public parks are protected (or in the process of protection) from future development. This Plan also identifies several steps to ensure that new growth is done in a manner that will create safe and inviting streetscapes, vibrant commercial and residential opportunities, and respect of the Junction's historic fabric. For example, the Plan calls for an enhanced community discussion and design charrette to develop design standards for the Village Center and surrounding areas.

This section first describes the existing characteristics throughout the Junction, and then describes the future land use goals and the specific regulations in place to achieve those goals. The goals also describe changes to the existing regulations where needed.



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## Existing Land Use

The existing generalized land use pattern within the Village is indicated on Map 9. This existing land use pattern will, to a large degree, direct the future land use pattern. An analysis of the existing land use pattern leads to the identification of several areas with distinct characteristics. Chapter 3 also provides a detailed summary of historic development patterns within the village. These generalized areas are discussed individually below:

### Village Center

While Lincoln Hall dates from the early nineteenth century (it was originally built as an inn), most of the buildings in the commercial center of the Village date from the late nineteenth and very early twentieth centuries. In the commercial core of the area, the buildings are typical turn-of-the-century commercial types. They are built to the front sidewalk lines and cover a very high percentage of their sites. Frequently, they share common walls with their neighbors. On the front facades their first floors contain glazed storefronts which add to the pedestrian sense of the area.

The buildings are predominantly two-story structures with a pronounced horizontal frieze below the cornices. The cornices tend to be heavily decorated with brackets, dentils, etc. In addition, the larger buildings (which tend to be brick) have a strong horizontal band at the second-floor level. Visually, this gives the buildings a horizontal orientation which adds a sense of scale to the area.

The wood frame buildings (such as those on the east side of Main Street) do not, or no longer, have this decorative treatment, and have vertical orientation and a somewhat different scale. This is partially mitigated by the fact that the lower floors have glazed store fronts and the tops of the store windows form a horizontal visual element.

In summary, the principal architectural features which create this area's sense of scale and identity are as follows:

1. Zero front yard setback and high site coverage.
2. Glazed storefronts on the first floor.
3. Flat roofs with a strong horizontal frieze below cornices.
4. Strong horizontal band at second floor level.

Moving out slightly beyond the commercial core of the area, the architecture changes significantly. Most buildings in this area were constructed as residences during the same period as the commercial structures, but the prevailing residential styles at the time were variations on Victorian. Thus, the residential buildings tend to be two-and-one-half story

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structures with gabled roofs, frequently with ell and other protrusions forming complex roof forms. Where still present, roof shingling patterns are quite decorative. Many of the buildings are oriented with gable ends towards the street. The facades of these residential structures reflect considerable decoration, with porches, decorative arches and supports, cutaway bay windows with brackets, eave brackets and cornices. Finally, the buildings tend to be set back with lawns between them and the street, and have lawns separating them from their neighbors. Some of these structures have been converted to non-residential use while retaining their original architectural appearance.

In summary, the architectural features which make this area unique in the center of the Village are as follows:

1. Modest lawn separating the buildings from the street and from each other.
2. Complex facades with porches, projecting windows, ell, and ornamentation.
3. Complex roof forms with steep pitches, gables, and dormers.

Even though the commercial and residential buildings date from roughly the same era, the different architectural treatments created a distinct delineation between what was the original commercial portion of the Village and the residential area surrounding it. While many of the old residences are now used for commercial activities, these areas remain qualitatively different from the commercial core of the Village.

In most cases there is no parking between the buildings and the street, and this adds considerably to the intimacy and pedestrian orientation of the Village Center.

The Junction also benefits from a Village Center Designation and Designated Neighborhood Development Area (NDA), the boundary is included on Maps 9 and 10. With the Village Center Designation building owners, lessees and the municipality are eligible for the following benefits: historic tax credits; facade improvement tax credits; code improvement tax credits; priority consideration for HUD, CDBG, and Municipal Planning Grants; priority site consideration by State Building and General Services when leasing or constructing buildings; and the option to create a special assessment district to raise funds for both operating and capital expenses to support specific projects in the designation. This designation provides the Village and building owners with assistance in maintaining and restoring historic structures, thereby preserving the historic fabric of the Village- a goal identified in numerous chapters and sections of this Comprehensive Plan. The State designation of the Center as a neighborhood development areas (NDAs) also provides incentives and regulatory benefits for housing developers and municipalities to help

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increase the creation of new homes within walking distance of shops, jobs, services, and schools.

The designated Village Center District credits are best suited if used as part of a holistic 'package' approach of both private and public investment. The Village Center has recently seen private investment with the development of the Five Corners mixed use building.

During times of economic constriction investment in public infrastructure attracts private investment. Up to now the Five Corners traffic has been a disincentive to private investment - people avoided the area rather than sought it out. The potential to make the Village Center more pedestrian friendly via a short pedestrian section, along with the Connector Road, will alleviate private investment concerns. With the energy that is evident in the Village Center, current and future property owners have expressed interest in the tax credits made available through this designation.

The designated Village Center is a critical component of the Village's new proactive urban design approach to land use and transportation management. Urban regeneration without the designated Village Center benefits will be extremely unlikely. The historic Village Center has many buildings that need Code updates if they are to be developed including new sprinkler systems, emergency access, facade improvements, etc.

The recent rebuilding and upgrade of 8 Railroad Avenue is an example of an improvement that would not have happened without the designation credits. Many of the other buildings in the Center are under long term ownership and only now are investors looking at properties with an eye to sustainable development, both environmentally and fiscally. The recent development of 51 apartments and street level stores at Five Corners is another example of investment and residency coming back into the center to make the Center vibrant once again.

In the future, there may be some benefit in extending the Village Center Designation down the Pearl Street District. In addition, the Junction could build upon the Village Center Designation with a Growth Center Designation which would provide the landowners and municipality with additional benefits to support growth within the Village, and possibly the Innovation Park.

### **Summit Street to Five Corners**

This area has maintained a residential character. Although some residential structures have been altered for business purposes, much of the original structural detail remains.

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Commercial conversions are limited to low traffic volume professional offices. The northerly side of Pearl Street along this section of Pearl Street contains single family homes of traditional and historic value. These structures are worth protecting against conversion to office or apartment uses. This section of Pearl Street should be rezoned to R-2 District.

### **Pearl Street from Summit to Willeys Court**

This area is typified by intense commercial development with multiple curb cuts. There is a mixture of building types, colors, materials, and signs. The more recent construction is dominated by increased landscaping and more efficient site design which stands in marked contrast to the older structures. The only area of significant historic value is the Champlain Valley Exposition Fairgrounds which is dominated by open space and significantly different types of structures.

### **Susie Wilson Road to Willeys Court**

This area is dominated by conversions to small businesses, professional offices, and apartments.

### **Indian Acres Area**

This area is dominated by well-maintained single-family dwellings on small lots. Several properties have been converted to duplexes or dwellings with accessory apartments.

### **Warner Avenue Area**

This neighborhood has maintained a single-family residential character.

### **Prospect Street Area**

This neighborhood has a mix of structures, some of historical significance. Some multi-family units and duplexes have been established. Several large residences help establish a unique character to the neighborhood.

### **Village Center Neighborhood**

The areas adjacent to the Village Center have been in transition. There is a mix of single family, duplex, and apartment dwellings. Many lots are large enough to be subdivided. The type of development which has occurred in this area may lead to pressure for further single-family conversions. Consider zoning changes to distinguish these residential and low intensity commercial areas from the core commercial areas in the Village Center District.

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### **Brickyard Area**

This area is dominated by multi-family and condominium development. There is no vacant land available for future development.

### **Countryside and Rivendell**

Both of these areas are dominated by newer residential structures on large lots. Virtually no multi-family conversions have occurred.

### **Park Street Corridor**

This area has been in a state of transition. Properties nearest the Five Corners have been converted to multi-family and commercial development. Property south and west of South Street has maintained a single-family residential character with the presence of several large older homes. The east side of the corridor has seen substantial conversion to multi-family and two-family dwellings.

### **Maple Street Corridor**

Properties from the Five Corners to Mansfield Avenue have been in transition with several conversions to duplexes. From Mansfield Avenue to the Village limits, and single-family residential character has been maintained. This area is zone R-2 and no more multi-family units are permitted.

### **Main Street Corridor**

Lower Main Street to the Village Center has largely converted to multi-family and two-family dwellings. Some dwellings are commercial or are used for home occupations. The upper portion of Main Street, particularly the westerly section, is primarily residential, and should remain as such because a primary goal of the plan is direct growth to the Village Center and commercial and multi-family areas.

### **Lincoln Street Corridor**

This area has several large lots, a mix of uses including residential, commercial, offices and public/quasi structures.

### **Fairview Farms**

A relatively new residential area, with 99 lots and 10 acres open space.

### **Whitcomb Heights**

276 residential units have been built on the original Whitcomb Farm. The Vermont Land Trust, with funding assistance from the Village, purchased development rights on 360 acres

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of the Whitcomb Farm in 2014 and 2015. The Whitcomb Farm is also the location of a solar array project.

## Future Land Use

Essex Junction faces the challenging task of planning in a mostly developed community. The issues that face the community today are complex and have been detailed throughout this Plan. The Future Land Use Map (Map 10) is the fundamental element of the overall Comprehensive Plan. It represents the proposed distribution of land uses within the Village.

The Future Land Use Map generally follows existing patterns of development but may allow for greater densities and building heights in certain core mixed-use zoning districts to realize the necessary energy, social community, and village investment goals needed to enhance the vibrancy of the Village core. The Plan calls for proper design so that the increase in density and height does not feel out of character with the existing fabric of the Village. This approach should be guided by the conceptual design presented in the Design Five Corners report. While this conceptual design cannot be implemented “as is” (the Village cannot mandate privately-owned developments), it can be used as a general template for evaluating proposed development with the values of the community.

Equally important as the Land Use Map are the individual Plan elements. These establish guidance and details necessary to achieve desired changes. The interdependence of these elements cannot be over-emphasized in that all must be consistently adhered to if the plan is to remain viable. Thus, the Land Use Map is not just a physical depiction of desired land use but is the culmination of detailed analysis of all factors related to the future growth and development of Essex Junction.

This Plan Element encompasses three major sections:

- 1) Land Use Goals: The Land Use Goals provide general guidance to the development of future land use categories. They establish the context in which future land use categories and the Future Land Use Map are developed.
- 2) Land Use Categories: The Land Use Categories provide specific guidance to interpreting the Future Land Use Map. They establish the intent of the various mapped area. For specific information about these land use categories see the [Land Development Code](#).
- 3) Future Land Use Map -The Future Land Use Map represents future land use patterns for the Village. It is the key document necessary for the creation of Zoning District Boundaries.

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## Land Use Goals

**Goal 1: Provide sufficient locations within the Village to accommodate a variety of land uses including public, quasi-public, residential, retail, commercial and industrial uses.**

Objective 1.1: Consider redefining zoning district boundaries of the Village Center to address differences in land development patterns between the core commercial areas and the residential neighborhoods.

Objective 1.2: Encourage the development of a variety of residential units in the Village Center and Pearl Street Districts.

Objective 1.3: Study the purchase of key properties in and around the Village Center for public use.

Objective 1.4: Encourage a mix of land uses and mixed-use buildings to enhance the streetscape and add value aesthetically, economically, and socially to the Village Center.

**Goal 2: Promote responsible residential growth and encourage the growth and maintenance of quality residential areas.**

Objective 2.1: Conserve open space/agricultural land for future generations.

**Goal 3: Mitigate negative impacts of contiguous but different land uses.**

**Goal 4: Ensure that quality land planning and structural design occur in all commercial and industrial areas in a manner compatible with surrounding architecture.**

**Goal 5: Coordinate land use decisions with associated public infrastructure needs including streets, sidewalks, bicycle paths, drainage, water, sewer, schools, recreation, and other public needs.**

**Goal 6: Provide mechanisms which encourage innovative development while maintaining the existing urban character of the Village.**

Objective 6.1: Consider overlay districts and development agreements and enact design review to achieve innovative development.



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Objective 6.2: Consider the inclusion of visuals within the Land Development Code to make the design standards clear for developers and residents. Engage the public in development of these visuals to gain consensus on design standards for the Village.

Objective 6.3: Promote use of the Village Center Designation and Neighborhood Development Area benefits.

**Goal 7: Coordinate development with adjoining communities.**

Objective 7.1: Initiate communication with surrounding communities to discuss development impacts on land use and planned compatibility.

**Goal 8: Coordinate needed public improvements with the development review process.**

**Goal 9: Prevent development of land which is environmentally unsuitable for construction.**

**Goal 10: Design new street layouts to minimize both overall street length and the quantity of site grading required. When possible connect new streets through to existing streets to increase connectivity.**

**Goal 11: Place a high priority in development review on pedestrian and vehicle access and safety.**

**Goal 12: Protect and enhance sensitive and important areas.**

Objective 12.1: Develop design review criteria for main corridors which are entry points into Village.

Objective 12.2: Analyze and prioritize historic resources to determine which sites and structures should be preserved. In the Village Center the preservation of historic structures should be considered in conjunction with the purpose of the Village Center which is to be the core for ongoing revitalization that will improve the community's vitality

Objective 12.3: Consider zoning changes or historic district overlay to preserve existing residential structures of significant historic character along major arterials and in historic neighborhoods. In the Village Center the preservation of historic structures should be considered in conjunction with the purpose of the Village Center which is to be the core for ongoing revitalization that will improve the community's vitality.

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## Land Use Categories

Residential 1: To provide areas for large lot single family residential dwellings and accessory residential uses.

Residential 2: To provide areas for high-density single-family dwellings and accessory residential uses.

Professional Office Overlay: To provide development of office buildings within areas of existing offices, and as designated on the Future Land Use Map.

Multi-family Residential 1: To provide areas for multi-family residential (townhouses, condominium, and apartments with 4 or more units) and accessory residential uses.

Multi-family Residential 2: To provide areas for construction of new multi-family residential dwellings and accessory residential uses.

Multi-family Residential 3: To provide areas for low density multi-family dwellings and accessory residential uses.

Transit Oriented Development: The purpose of the Transit Oriented Development District (TOD) is to encourage development that supports a variety of transportation options including public transit (bus, rail), walking, biking, and the automobile.

Multi-Family/Mixed-Use 1: The Multi-Family/Mixed-Use-1 District is intended to allow high density multi-family development along low intensity commercial uses along major transportation and public transit corridors. High density, mixed use developments and affordable housing with parking below grade or on the first floor of the building are encouraged. Development in this district should support alternative modes of transportation, while accommodating the automobile. Developments within this district should be designed in such a way as to build upon the village character found in the core areas of the Village.

Multi-Family/Mixed Use 2: The Multi-Family/Mixed-Use-2 District is intended to allow high density multifamily development along low intensity commercial uses along major transportation and public transit corridors. High Density, Mixed Use developments and affordable housing with parking below grade or on the first floor of the building are encouraged. Development in this district should support alternative modes of

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transportation, while accommodating the automobile. Developments within this district should be designed in such a way as to build upon the village character found in the core areas of the Village.

Village Center to provide a compact commercial center having a mix of commercial, governmental, cultural, and mixed-use buildings that are consistent with the purpose of a designated Village Center District, and a Neighborhood Development Area, both defined by the State of Vermont. The Village Center shall be the core for an ongoing revitalization that will improve the community's vitality and livability and the goal of having a Center that accommodates growth. Due to the historic nature of the residential neighborhoods surrounding the Five Corners area the design and layout of any new developments or infill projects shall acknowledge the importance of the existing streetscape and enhance the area through an architectural design and site layout that enhances pedestrian connectivity to adjacent properties. It is the intent of this district to allow as new structures only those structures which are designed and constructed to enhance the streetscape and add value aesthetically, economically, and socially to the Village Center.

Residential-Office: Provide areas for small office conversions of existing residential structures while maintaining residential type architecture.

Light Industrial: To provide areas for manufacturing, warehousing, research, and development.

Highway-Arterial: To provide areas for retail, wholesale, commercial, residential, service, and professional businesses while minimizing negative impacts due to increased traffic.

Mixed Use Commercial: To provide areas for mixed use development in locations that have adequate public infrastructure and compatible surrounding land uses. A mix of residential, retail and office use is encouraged.

Planned Exposition: To provide an area for special events and exposition facilities while minimizing adverse traffic, noise, and visual impacts. It is the intent of this district to encourage innovation in design and to encourage pedestrian, bicycle, and bus access to such events.

Planned Agriculture: To provide areas for active agricultural uses and provide mechanisms to ensure the long-term viability of agricultural uses. Prime agriculture or active farming land shall be preserved whenever possible through specific policies of the Village. Property used for agricultural purposes shall be deemed the predominant use of land and shall be

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protected from the adverse effects of urban developments. If development is to occur, the preservation of open space for agricultural or recreation purposes is important to the long-term environmental sustainability and quality of life in the district. Projects are reviewed on an overall project density basis to allow for the preservation of open space while achieving full build out. Open space networks and preservation of important natural resources should be integrated with new development in such a way as to allow for continued agricultural uses or emerging open space opportunities with responsible development.

Floodplain: To promote the public health, safety, and general welfare, to prevent increases in flooding and to minimize losses due to floods.

Open Space: To provide and maintain open lands within the Village and its neighborhoods, and to provide locations for public recreation and school facilities.

North Lincoln Street Overlay District: To allow land uses beyond those allowed by the underlying zoning district due to the fact that the properties within this district are not served by municipal sewer and property is relatively isolated.

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## Chapter 5. Implementation

In order to connect the vision, goals, and objectives of this plan with reality, it must be implemented. Action is required and funding is necessary. Therefore, a detailed implementation plan is a key component of the comprehensive planning process.

Implementation will occur through a mix of policy adoption, planning studies, regulatory changes, public/private partnerships, education, and capital projects. In many cases funding sources will be identified. Additionally, **The Planning Commission will evaluate and report on the accomplishments of each objective annually to ensure this plan is being successfully implemented.**

This chapter first describes an overview of finances for the Village; and then Table 13 lists the goals and objectives of the plan, the department that is primarily responsible for implementation, a timeline for implementation and potential funding sources. The timeline will be identified as follows:

- Short Term: 1-2 Years
- Mid Term: 2-3 Years
- Long Term: 4-5+ Years
- Ongoing: No definitive timeframe; may be ongoing policy

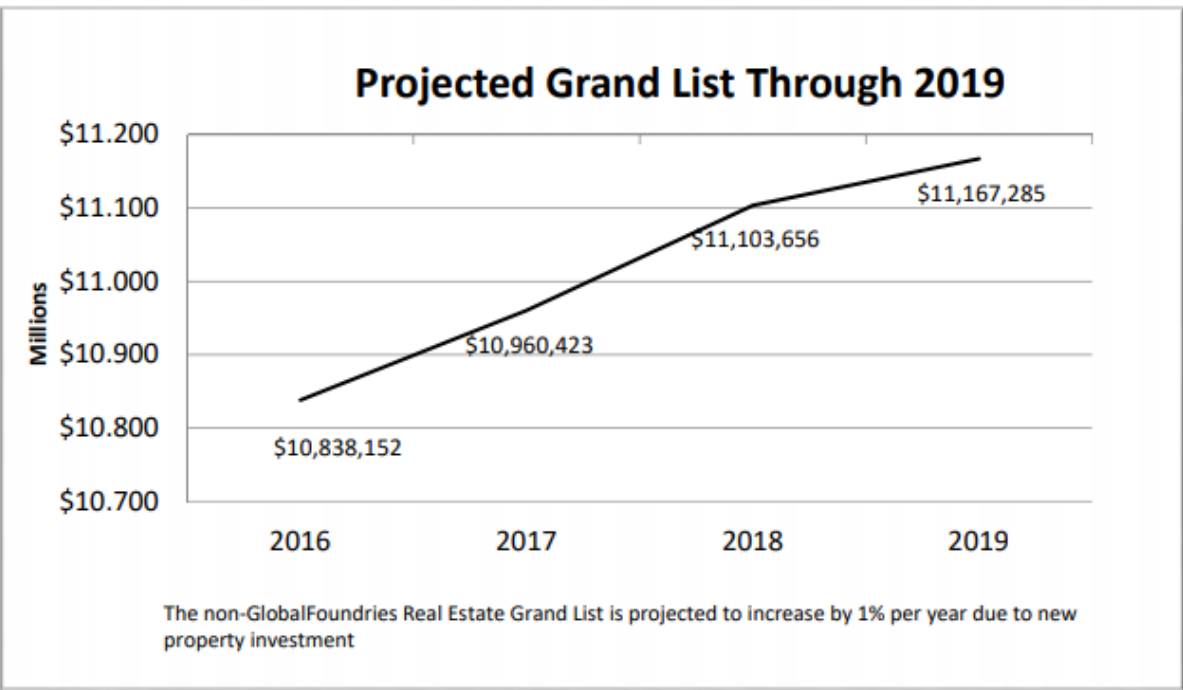
### 5.1. Government Finance

Local government is primarily financed through property tax revenue. Thus, consideration of the local tax effort is an important issue. It gives some indication of economic growth within the community as well as an indication of the community's ability to pay for improvements which may be required in the future. In addition, it is an important indicator of a community's ability to manage basic services while minimizing tax increases. Figure 9 provides detail on the health of the grand list. As indicated in the 2018 Village Annual report, the grand list is growing but the list of needed repairs is beginning to outpace the ability to pay for them without increasing taxes significantly beyond the rate of inflation. Therefore, any goals and objectives established in this plan should be weighed against the resources needed to accomplish the goal. For every goal and objective, the village should ask itself, "at what cost?" and whether adequate resources will support the initiative. Figure 11 and Figure 12 illustrate the distribution of the revenue collected and expenditures for the services provided by the Village to its residents and businesses through the General Fund.

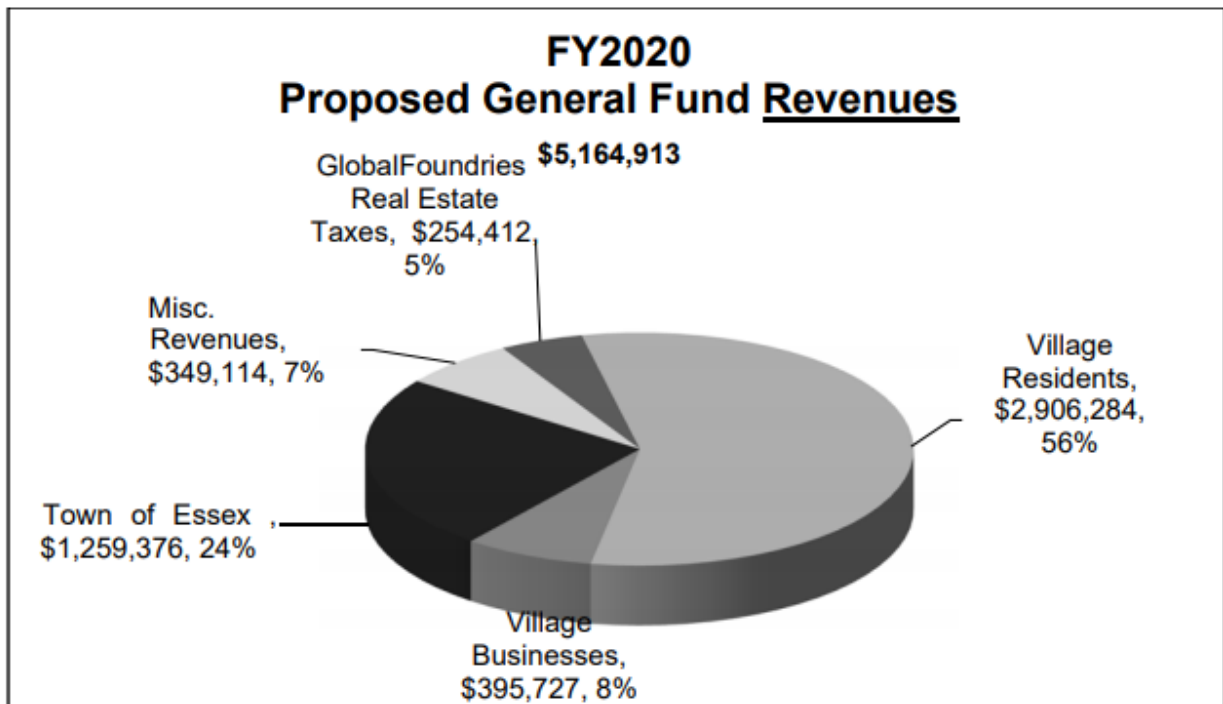
The Village is pursuing ways to reduce its budget by sharing services with the Town. The first step in the process was contracting with the Town to share the Town Manager position which was completed in 2018. Studies and efforts to share other services are under way. Ongoing collaboration with Essex Town continues to help keep costs under control and provide efficiencies throughout the community. The most significant example is the consolidated Highway budget. The Trustees believe this cost sharing approach for paying for essential municipal services throughout the Village-Town community is the right way to go and is building the foundation for a more stable and sustainable community. Sharing of positions and costs continue as the Assistant to the Manager, Town/Village Clerk, Buildings Manager and Recreation Communications Coordinator are all split between the Town of Essex and Village of Essex Junction in FY20.

It is important to note that the data included herein are for the Village of Essex Junction taxes only. Residents are also required to pay school taxes and Town of Essex taxes. Both the school system and Town are totally independent taxing agencies over which the Village has no control. Residents should contact the Town of Essex and the School District for information regarding their tax rates.

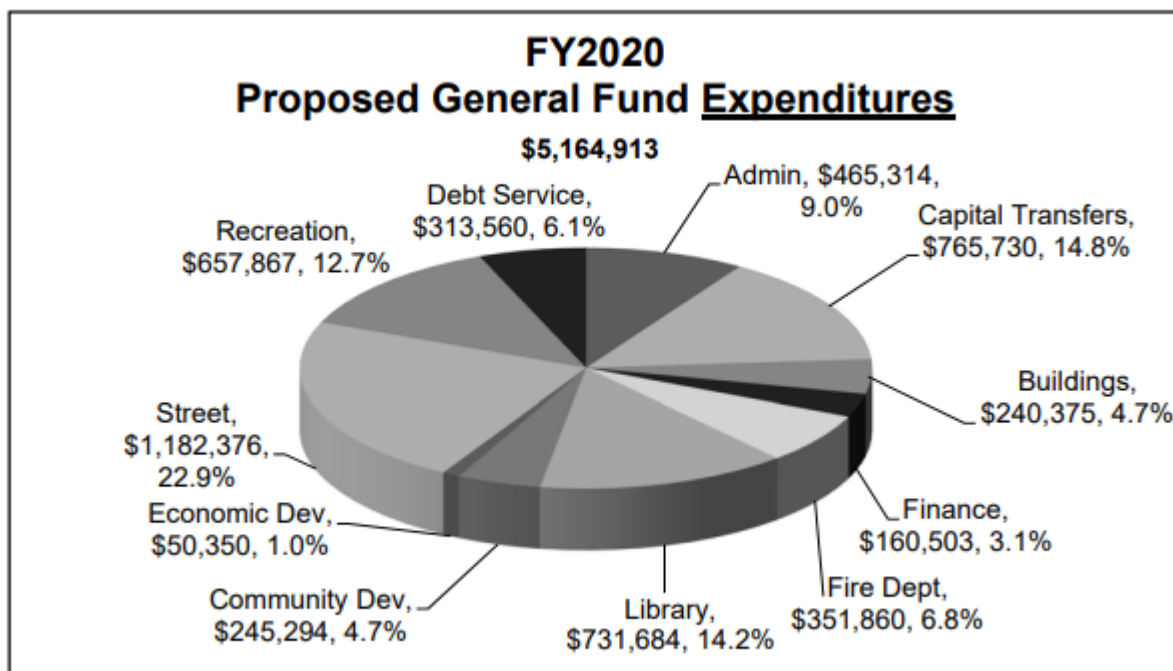
*Figure 13 Projected Grand List*



*Figure 14 Proposed Revenues*



*Figure 15 Proposed FY20 General Fund Expenditures*





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## 5.2. Funding Sources

### Local Funding

For current fund balances for the following programs please refer to the Annual Reports.

**Planning Department Budget - Other Professional Services:** These funds are used for general planning activities including matching grant funds, planning studies, and design assistance.

**Capital Fund:** The Village Capital Fund is used for public works projects including road and sidewalk reconstruction, village buildings, and streetscape projects.

**Economic Development:** The Village has an annual economic development budget which is used for the annual block party, and general economic development activities including market studies, marketing, business retention and other activities to support a thriving business community. The economic development component has been expanding to encourage private investment in the Village through outreach and education.

**Public Works Streetscape Budget:** The Public Works Department has an annual budget for streetscape improvements and maintenance. The money can be used for streetscape plantings as well as landscaping installation and maintenance, and includes funds allocated to the Tree Advisory Committee.

**Land Acquisition Fund:** The Village has a land acquisition fund. The fund was set up to purchase village properties for public use or economic development.

**Water and Wastewater Revenue Funds:** Funding may be available from the Water, Wastewater and Sanitation capital funds for capital projects involving sewer and water infrastructure.

**Village Owned Assets:** Think strategically about Village owned assets to maximize the benefit to the public.

**Regional/State/Federal Funding:** All grant funds are listed as of 2019.

**Municipal Planning Grants:** The Vermont Department of Housing and Community Development provides an annual planning grant program for municipalities to promote community planning, revitalization and development activities that maintain Vermont's land

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use goal of compact settlements separated by rural lands. In FY19 the maximum grant amount was \$22k with a 10% cash match required.

***Vermont Agency of Transportation:*** Transportation Alternatives: This program replaced the former Enhancement Grants Program. This annual grant program provides funding for scoping studies or construction of local transportation improvements. Applicants may apply for up to \$300k with a required match of 20% for construction projects, and 50% for seeping studies.

***Chittenden County Regional Planning Commission (CCRPC):*** The CCRPC annual work program (aka Unified Planning Work Program - UPWP) is the mechanism to achieve the vision, mission and goals for the region as outlined in the ECOS Plan ([www.ecosproject.com](http://www.ecosproject.com)) and also helps municipalities fulfill their local plans. The UPWP provides assistance for a range of project types including transportation and land use, transportation services, GIS and Data Development, and other non-transportation planning (emergency management, brownfields planning, technology planning). In addition, CCRPC manages the Transportation Improvement Program (TIP) which is a prioritized, fiscally constrained, and multi-year list of federally funded, multimodal projects in the region.

***Historic Preservation:*** There are three State historic preservation grant programs: Historic Preservation Grants for repair and maintenance of a historic building owned by a municipality or non- profit; Historic Preservation Barn Grants for repair and maintenance of historic agriculture buildings; and Certified Local Government grants to help municipalities integrate historic preservation concerns with local planning decisions. For more information visit: [http://accd.vermont.gov/strong\\_communities/preservation/grants](http://accd.vermont.gov/strong_communities/preservation/grants)

There are also Federal and State tax credit programs. For more information visit: [http://accd.vermont.gov/strong\\_communities/opportunities/funding/downtown\\_village\\_tax\\_credit](http://accd.vermont.gov/strong_communities/opportunities/funding/downtown_village_tax_credit). The specific credits available are listed here:

Buildings listed on the National Register of Historic Places are eligible for a 30% tax credit for qualifying rehabilitation projects (20% federal, 10% state). The funds may be used to improve accessibility, life safety or interior or exterior renovations.

A 25% building facade tax credit, which is not available for buildings eligible for the 30% tax credit above. The credit is available for buildings in the designated village center district. Maximum award of \$25k per building.

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A 50% code improvement tax credit to assist in bringing buildings up to state code, to abate hazardous materials or contamination. It includes a maximum award of \$12,000 for a platform lift, \$50,000 for sprinkler systems, \$50,000 for elevators, and \$25,000 for the combined costs of all other qualified code improvements, as well as costs for hazardous material abatement and contaminated sites redevelopment.

**Community Development Block Grants:** Grants are available for planning or implementation, but they must meet a national/state objective to serve persons of low or moderate income, address slums and blight or meet and urgent need. See [www.dhca.state.vt.us/VCD](http://www.dhca.state.vt.us/VCD) for more information.

**Safe Routes to School Program:** The Safe Routes to School Program provides funding and education to make it safer for children to walk to school. See: <http://saferoutes.vermont.gov/> for more information.

**Community Foundations:** There are a number of community foundations and other private grant funds that are available to municipalities. The Orton Foundation, who funded the Heart & Soul project, is an example.

Table 13 Implementation Schedule

The Planning Commission will evaluate and report on the accomplishments of each objective annually to ensure this plan is being successfully implemented.

Goal/Objective	Dept.	Timeline	Funding	Heart & Soul Values						ECOS Strategies							
				1. Local Economy	2. Health & Recreation	3. Community Connections	4. Education	5. Thoughtful Growth	6. Safety	1. Improve Economy	2. Concentrate Development & Infrastructure	3. Improve Water Quality and Safety	4. Protect Working Landscapes and Habitats	5. Increase Health and Personal Safety	6. Educate our Residents	7. Improve Efficiency of Financing and	8. Ensure Equity
-				①	②	③	④	⑤	⑥	①	②	③	④	⑤	⑥	⑦	⑧
Priority Goals for Next 8 Years																	
Goal 1: Assist and work with existing businesses to stay and grow in Essex Junction. Encourage and assist new businesses and clean industries to invest in Essex Junction.				①		③		⑤		①	②						
Objective 1.1: Maintain a favorable business climate in Essex Junction.	ALL	Ongoing	N/A	①		③		⑤		①	②						
Objective 1.2: Engage in policies to make progress on the transit specific strategies in the Town’s Economic Development and Vision Plan including #4 (regional multi-modal improvements), #10 (freight rail service expansion), and #12 (transit-oriented development).	P&Z, PW	Ongoing	State Funding, Capital Budget	①				⑤		①	②						
Objective 1.3: Continue efforts to revitalize the Village center and attract business through public investment in infrastructure.	P&Z, PW	Ongoing	State Funding, Capital Budget	①				⑤		①	②						
Goal 2: Promote thoughtful growth.								⑤		②							
Objective 2.1: Ensure that new development and rehabilitation efforts enhance and reinforce the existing architecture, design and layout along major arterials and historic neighborhoods.	P&Z	Ongoing	N/A	①				⑤			②						



Objective 2.2: Encourage mixed-income infill housing within existing developed areas in the commercial and multi-family districts.	P&Z	Ongoing	N/A	①					⑤			②						
Objective 2.3: Promote the redevelopment of underutilized properties in the Transit Oriented Development (TOD) and Village Center District.	P&Z	Ongoing	N/A	①					⑤			②						
Objective 2.4: Continue improvements in the public realm for a high-quality pedestrian experience.	P&Z, PW	Ongoing	State Funding, Capital Budget						⑤	⑥		②						
Objective 2.5: Continue efforts to preserve and rehabilitate existing historic structures through state and federal funding programs and incentives; and encourage private investment for the same.	P&Z	Ongoing	N/A						⑤			②						
Objective 2.6: Continue to work with the community through a charette process to develop design standards for the Downtown.	AD, P&Z	Short Term	General Fund			③			⑤	⑥		②						
Objective 2.7: Work with the Town of Essex on the development of the Housing Needs Assessment and Action Plan to increase the stock of home affordable to residents earning up to and including 80% of area median income.	P&Z	Short Term	N/A	①					⑤			②						
Goal 3: Continue improving access to and safety of bicycle and pedestrian facilities, and public transit. Support the work of the Bike-Walk Advisory Committee.					②				⑤	⑥		②				⑤		
Goal 4: Implement projects that will move traffic more efficiently while making the Village a more welcoming place for all modes of travel.	P&Z, PW	Ongoing	State Funding, Capital Budget		②				⑤	⑥		②				⑤		
Objective 4.1: Implement the Connector Road project.	AD, PW, P&Z	Short Term	State Funding, Capital Budget		②				⑤	⑥		②				⑤		
Objective 4.2: Consider pedestrianization of Main Street.	AD, PW, P&Z	Long Term	State Funding, Capital Budget		②				⑤	⑥		②				⑤		
Objective 4.3: Consider implementation of the Design Five Corners Project.	AD, PW, P&Z	Long Term	State Funding, Capital Budget		②				⑤	⑥		②				⑤		
Goal 5: Establish policies and manage the Village budget and assets to enhance and ensure the continuation of the high quality of life Village residents, businesses and visitors value.	ALL	Ongoing	N/A						⑤			②						⑦
Objective 5.1: Increase the ratio of light industrial/commercial uses to residential uses.	PZ	Ongoing	N/A	①					⑤		①	②						⑦

Objective 5.2: Investigate additional sources of revenue.	ALL	Ongoing	N/A						⑤			②					⑦	
Objective 5.3: Keep budget increases within the rate of inflation.	FN	Ongoing	N/A						⑤			②					⑦	
Objective 5.4: Continue to investigate and implement, when appropriate, shared services between Village and Town governments.	ALL	Ongoing	N/A						⑤			②					⑦	
Objective 5.5: Think strategically about Village owned assets to maximize the benefit to the public.	ALL	Ongoing	N/A						⑤			②					⑦	
Objective 5.6: Consider reinstating funding to the land acquisition fund.	FN	Midterm	N/A						⑤			②					⑦	
Energy																		
See Appendix D Enhanced Energy Plan																		
Agriculture																		
Goal 1: Continue to support the Whitcomb Farm in their conservation efforts.	P&Z	Ongoing	N/A	①	②						①		③	④				
Goal 2: Support value-added agricultural businesses to ensure Village residents have access to fresh healthy foods.	AD, P&Z	Ongoing	N/A	①							①							
Objective 2.1: Work with the community to re-establish the Farmer’s Market	AD, P&Z	Ongoing	N/A	①							①							
Objective 2.2: Hold farm-to-table community events	RC	Ongoing	N/A			③								④				
Goal 3: Continue support of the Community Garden Program, home gardening and micro-farming.	RC	Ongoing	N/A			③								④				
Objective 3.1: Offer incentives for developments that include community gardens and/or allow home gardens on common land.	P&Z	Midterm	N/A						⑤					④				
Objective 3.2: Strengthen language in zoning regulations to protect topsoil during construction so that yards are more suitable for gardening.	P&Z	Midterm	N/A						⑤					④				
Objective 3.3: Utilize the Chittenden Solid Waste District’s materials to educate households on the food scrap ban from the landfill, that will be in effect in 2020.	RC	Ongoing	N/A											③	④			
Objective 3.4: Develop a method to donate excess food from community gardens.	RC	Midterm	N/A			③												⑧
Objective 3.5: Encourage the practice of edible landscaping.	RC, P&Z	Ongoing	N/A		②										⑤			
Objective 3.6: Inventory and designate additional public space for community gardens	P&Z	Long Term	N/A			③						②		④				



Goal 4: Establish a Tree Management Plan to improve and maintain the community tree canopy within public parks and rights-of-way.	P&Z	Short Term	N/A							⑤			②		④				
Objective 4.1: Increase the Village tree canopy	P&Z	Ongoing	N/A						⑤				②		④	⑤			
Objective 4.2: Educate residents on value of the urban forest.	P&Z	Ongoing	N/A			③							②		④				
Business/Economic Development																			
Goal 1: Assist and work with existing and new business development in Essex Junction.	AD, P&Z	Ongoing	N/A	①									①						
Objective 1.1: Maintain a favorable business climate in Essex Junction.	AD, P&Z	Ongoing	Economic Development	①		③							①						
Objective 1.2: Encourage the development of a diverse array of residential units in the Village Center and Pearl St. Districts.	AD, P&Z, PW	Ongoing	N/A	①					⑤				①	②					
Objective1.3: Consider performing market studies to attract businesses	AD, P&Z	Ongoing	Economic Development	①									①						
Objective 1.4: Work with officials at Global Foundries, and other businesses location at Innovation Park to meet their future development needs.	AD	Ongoing	N/A	①									①						
Objective 1.5: Encourage opportunities for bandwidth improvements.	AD, P&Z, PW	Ongoing	N/A	①									①	②					
Objective 1.6: Work with Excelarate Essex to support efforts to create a culture and environment that encourages entrepreneurs and their start-ups (i.e. co-working spaces, technology training, maker & hacker spaces).	AD, P&Z	Ongoing	Economic Development	①									①						
Objective 1.7: Help identify underutilized structures in the Village and assist in matching the landowners with business prospects.	AD, P&Z	Ongoing	Economic Development	①					⑤				①	②					
Goal 2: Increase the Village’s relationship with the local business community.	AD	Ongoing	N/A	①		③							①						
Objective 2.1: Look for strategic opportunities to work with business and property owners on economic development.	AD, P&Z	Ongoing	N/A	①									①						
Objective 2.2: Work closely with regional business organizations	AD, P&Z	Ongoing	N/A	①									①						
Objective 2.3: Encourage Village membership on key local and regional committees involved with business expansion and economic development.	AD	Ongoing	N/A	①									①						





Objective 2.4: Promote the Village as a destination for shopping, services, and tourism.	AD, P&Z	Ongoing	Economic Development	①							①							
Objective 2.5: Continue work with the Town and Essex Economic Development Commission on the implementation strategies from the Economic Development and Vision Plan: Essex.	P&Z	Midterm	Municipal Planning Grant/Planning Budget	①		③					①							
Goal 3: Provide mechanisms for efficient and timely review of development applications.	AD, P&Z, PW	Ongoing	Public Works Streetscape	①				⑤			①	②						
Objective 3.1: While maintaining environmental standards, ensure that the local codes do not inhibit/prohibit local development.	P&Z	Ongoing	N/A	①							①		③					
Objective 3.2: Continue to provide an application checklist of all requirements for each stage of review.	P&Z	Ongoing	N/A	①				⑤			①	②						
Goal 4: Preserve and enhance the appearance and historical character of the Village of Essex Junction.	P&Z	Ongoing	Grants, Capital Fund	①				⑤			①	②						
Objective 4.1: Maintain Design Review in the Village Center.	P&Z	Ongoing	N/A	①				⑤			①	②						
Objective 4.2: Design publicly financed improvements to preserve the character of the Village Center.	P&Z, PW	Ongoing	Public Works Streetscape	①				⑤			①	②					⑦	
Objective 4.3: Establish local historic districts or other mechanisms along major arterials and in historic neighborhoods.	P&Z	Midterm	Municipal Planning Grant/Planning Budget	①				⑤			①	②						
Objective 4.4: Continue streetscape and landscaping efforts to attract private sector investment.	P&Z, PW	Ongoing	Public Works Streetscape	①				⑤			①	②						
Open Space /Recreation/Public Health																		
Goal 1: Support the Essex Junction Recreation Department in providing a wide range of recreation and leisure opportunities for all residents of the Village.					②	③		⑤	⑥		②					⑤		
Objective 1.1: Continue regulations which require the dedication of usable park lands and open spaces as a requirement of major development approval.	P&Z	Ongoing	N/A		②	③		⑤	⑥		②					⑤		
Objective 1.2: Support the implementation of the 2007 Essex Junction Recreation and Park Master Plan.	RC, ALL	Ongoing	N/A		②	③		⑤	⑥		②					⑤		



Objective 1.3: Encourage increasing the annual funding of the Recreation Capital Replacement Reserve Fund to one cent (.01) of the municipal grand list.	AD, RC	Ongoing	Capital Budget		②	③		⑤	⑥		②			⑤		⑦	
Objective 1.4: Encourage implementation of a recreation impact fee to create a fund to support future community park and facility needs.	AD, RC	Ongoing	Capital Budget		②	③		⑤	⑥		②			⑤		⑦	
Goal 2: Create urban open spaces.				①	②	③		⑤			②						
Objective 2.1: Encourage the provision of plazas and other urban outdoor areas in major redevelopment projects in the Village Center and Transit Oriented Development Districts.	P&Z	Ongoing	N/A	①	②	③		⑤			②						
Objective 2.2: Require pedestrian and bicycle amenities in the creation of new public streets in the Village Center and Transit Oriented Development Districts.	P&Z	Ongoing	N/A	①	②	③		⑤			②			⑤			
Objective 2.3: Consider implementing the Design Five Corners Project including the creation of a village green.	ALL	Ongoing	Grants, Capital Budget	①	②	③		⑤			②						
Objective 2.4: Encourage or require the preservation of open space in new residential developments. Allow for innovative design in the preservation of open space through clustering and design techniques.	P&Z	Ongoing	N/A		②	③		⑤			②			④			
Goal 3: Work in collaboration with Essex CHIPS and the school district to integrate healthy choices and substance use prevention into the culture of the Village.	P&Z, Essex CHIPS	Ongoing	N/A		②			⑤			②			⑤			
Natural Resources																	
Goal 1: Preserve the natural beauty indigenous to Vermont within the Village of Essex Junction.	P&Z	Ongoing	N/A		②			⑤			②	③	④				
Objective 1.1: Maintain regulations which encourage the preservation of trees in new development.	P&Z	Ongoing	N/A		②			⑤			②		④				
Objective 1.2: Implement a program of selective planting of trees on private property adjacent to existing road right-of-ways.	AD, PW	Midterm	N/A		②			⑤			②		④				
Objective 1.3: Promote and actively participate in an annual tree planting program.	AD, PW	Ongoing	N/A		②			⑤			②		④				



Objective 1.4: Consider protection of the outstanding view sheds identified in this Plan through amendments to the Land Development Code.	P&Z	Ongoing	N/A		②			⑤		②		④				
Goal 2: Continue protection of existing natural resources identified in this chapter.					②			⑤		②	③	④				
Objective 2.1: Continue to enforce stormwater treatment standards in the Land Development Code to improve water quality in impaired waters and to minimize non-point source water pollution from new development.	P&Z, WQ	Ongoing	N/A		②			⑤	⑥	②	③		⑤			
Objective 2.2: Continue to require retention of vegetation or effective re-vegetation of areas vulnerable to erosion.	P&Z	Ongoing	N/A		②			⑤	⑥	②	③		⑤			
Objective 2.3: Continue to work with the Center for Technology Essex to develop a nursery to raise street trees for the Village and Town.	AD, PW	Ongoing	N/A		②			⑤	⑥	②			⑤			
Objective 2.4: Continue incentivizing growth in the areas planned for growth, so that development pressures on natural resources and open spaces are lessened.	P&Z	Ongoing	N/A		②			⑤	⑥	②	③		⑤			
Ensure protection of the Village's significant wildlife habitat as identified by the Vermont Conservation Design's highest priority and priority landscape and species/community components identified on Map 1 by inventorying the resources, determining their current level of protection, and if necessary, define them and establish standards for protection of them in the Land Development Code.	P&Z	Ongoing	N/A		②			⑤	⑥	②		④	⑤			
Objective 2.6: Analyze the thrust faults to determine how properties in these areas should be managed for protection of aquifer recharge and minimizing undue property damage.	P&Z	Long Term	Grants		②			⑤	⑥	②	③	④	⑤			
Goal 3: Reduce greenhouse gas emissions contributing to climate change and adapt to become more resilient to a changing climate.					②			⑤	⑥	②			⑤			
Objective 3.1: Engage in climate mitigation strategies to reduce the region’s contribution of greenhouse gases. For example, continue to implement policies that promote investment in transportation options that reduce emissions – such as sidewalks and bike lanes; and implement programs to increase urban forest canopy.	ALL	Ongoing	PW, Capital Budget		②			⑤	⑥	②	③	④	⑤			



Objective 3.2: Engage in climate adaptation strategies to help individuals, businesses and communities be able to withstand and bounce back from – or even take advantage of – the impacts of climate change. For example, prepare and maintain plans for emergency operations, emergency response, business continuity and business recovery.	ALL	Ongoing	PW, Capital Budget		②				⑤	⑥		②				⑤			
Natural Hazards Resiliency																			
Goal 1: Avoid new development in floodplains, fluvial erosion hazard areas, and land adjacent to streams, wetlands, and upland forests; eliminate the exacerbation of flooding and fluvial erosion; encourage protection and restoration of these areas; and plan for flood emergency preparedness and response.					②				⑤	⑥		②	③	④	⑤				
Objective 1.1: Continue to enforce the flood plain regulations to protect flood prone areas and minimize fluvial erosion.	P&Z	Ongoing	N/A		②				⑤	⑥		②	③	④	⑤				
Objective 1.2: Monitor the area south of Cascade Street that is not currently regulated by the flood plain regulations to determine if additional flood or erosion protections are needed.	PW, WQ	Ongoing	N/A		②				⑤	⑥		②	③	④	⑤				
Objective 1.3: Plan culvert replacements for any undersized culverts in conjunction with roadway improvements.	PW, WQ	Ongoing	N/A		②					⑥			③		⑤				
Objective 1.4: Review the Hazard Mitigation Plan on a regular basis and follow-up on action steps.	ALL	Ongoing	N/A		②					⑥			③		⑤				
Objective 1.5: Continue annual certification of the Local Emergency Management Plan.	AD	Ongoing	N/A		②					⑥			③		⑤				
Objective 1.6: Adopt a river corridor overlay in the Land Development Code which includes the mapped river corridor and small streams with a drainage area of 0.5 sq.mi. to maintain the natural function of waterways including fluvial equilibrium and natural erosion processes, and to protect public/private property.	PW, WQ, PZ	Ongoing	N/A		②					⑤	⑥		②	③	④	⑤			
Education and Childcare																			
Goal 1: Provide opportunities for access to quality education for all segments of the population and promote full use of all facilities.																		⑥	
Objective 1.1: Coordinate new development with schools to minimize impacts	P&Z	Ongoing	N/A					④	⑤									⑥	



Objective 1.2: Encourage the use of village facilities for adult education, workshops and career development	RD, AD, PW, LB, SC	Ongoing	N/A	①				④										⑥		
Goal 2: Coordinate school population projections	P&Z, SC	Ongoing	N/A					④	⑤									⑥		
Goal 3: Encourage alternative access to education facilities	P&Z, PW, SC	Long Term	Capital Budget, School Budget, Safe Routes to School, TIP, Enhancement Grants					④										⑥		
Goal 4: Maximize use of all public facilities								④										⑥		
Goal 5: Improve bicycle and pedestrian safety for school children including continued participation in Safe Routes to School.	P&Z, PW, SC	Ongoing	Capital Budget, School Budget, Safe Routes to School, TIP, Enhancement Grants		②			④	⑥		②							⑥		
Goal 6: Continue to allow childcare services in most areas of the village	P&Z	Ongoing	N/A	①				④										⑥		⑧
Utilities/Facilities																				
Goal 1: Provide a Village infrastructure system that adequately ensures the availability of potable water, disburses storm and ground water runoff and disposes of sanitary wastes in a manner which ensures community health and is environmentally sound.									⑤		②	③								
Objective 1.1: Maintain public works standards that utilize reasonable technology to ensure adequate infrastructure	PW, WQ	Ongoing	N/A						⑤		②	③								
Objective 1.2: Implement Asset Management to insure long term rate stability	PW, WQ	Midterm	Public works budget, CCRPC/CCMPO Assistance						⑤		②								⑦	
Objective 1.3: Manage sewer capacity for village benefit	AD, PW, WQ, P&Z	Ongoing	N/A	①					⑤		②									
Objective 1.4: Continue to provide improvements or extensions to existing infrastructure systems without undue financial burden to the Village.	PW, WQ	Ongoing	Capital Funds/Water-Wastewater Funds						⑤		②								⑦	



Objective 1.5: Maintain infrastructure for maximum life/use	PW, WQ	Ongoin g	Wastewater and Water revenue funds, Capital Budget						⑤			②						
Objective 1.6: Ensure new development has adequate services	P&Z, PW, WQ	Ongoin g	N/A	①					⑤			②						
Objective 1.7: Continue to identify infrastructure deficiencies and upgrade as appropriate	PW, WQ	Ongoin g	Wastewater and Water revenue funds, Capital Budget						⑤			②						
Objective 1.8: Consider leasing WW capacity on permanent basis	AD	Ongoin g	N/A						⑤			②					⑦	
Objective 1.9: Continue to implement stormwater discharge standards in the Land Development Code to encourage responsible management of stormwater runoff.	PW, WQ	Ongoin g	N/A						⑤			②						
Objective 1.10: Review the Winooski River (Basin 8) and the Northern Lake Champlain Direct (Basin 5) Tactical Basin Plans to identify any additional implementation actions necessary to reduce stormwater pollutants and volume.	PW, WQ	Midterm	N/A						⑤			②						
Objective 1.11: Review the Indian Brook and Sunderland Brook Flow Restoration Plans to identify forth potential projects and measures to be implemented to meet flow restoration targets by December 5, 2032	P&Z, WQ, PW	Short Term	N/A						⑤			②	③					
Objective 1.12 Support and implement green street design along streets, in parking lots, and in other types of development to maintain and enhance water quality.	P&Z, WQ, PW	Ongoin g	N/A						⑤			②	③					
Goal 2: To participate in Public Utility Commission hearings and to encourage the continued provision of a high quality of public utility services to the Village.	P&Z								⑤			②						
Objective 2.1: Encourage utility companies to provide high quality services to new developments	PW, WQ, P&Z	Ongoin g	N/A						⑤			②						
Objective 2.2: Require public utilities companies to maintain corridors	PW, WQ	Ongoin g	N/A						⑤			②						
Goal 3: To provide the community with the best possible sidewalks for the purpose of pedestrian travel at the most reasonable cost.					②				⑤			②						



Objective 3.1: Prioritize sidewalk upgrades	PW	Ongoing	Capital Budget, Public Works Operating Budget		②			⑤		②								
Objective 3.2: Continue to maintain assessments and inventory on all sidewalks	PW	Midterm	Public Works Operating Budget, Municipal Planning Grant		②			⑤		②								
Goal 4: To continue to provide all Village segments with the best fire protection.									⑥						⑤			
Objective 4.1: Actively recruit firefighters, and consider the need for a new fire station to assist in recruitment and retention efforts.	FD	Ongoing	Fire Department Budget						⑥						⑤			
Objective 4.2: Consider a limited full time fire department	AD, PD	Ongoing	General Fund						⑥						⑤			
Objective 4.3: Consider life safety/building codes	AD, FD, PW, P&Z	Midterm	Building Code permit fees		②				⑥		②				⑤			⑧
Goal 5: To provide a high level of Library Services to Village residents for their enjoyment and information, with particular emphasis on education, community connections, health and recreation, and the local economy.					①	②	③	④			①				⑤	⑥		⑧
Objective 5.1: Create opportunities for lifelong learning and exploration	LB	Ongoing	Library Budget				④									⑥		
Objective 5.2: Nurture community spirit in a safe, collaborative and comfortable space.	LB	Ongoing	N/A			③												⑧
Objective 5.3: Support healthy minds and bodies and stimulate imagination.	LB	Ongoing	N/A		②										⑤			
Objective 5.4: Support efforts to improve economic vitality	LB	Ongoing	Library Budget	①						①								
Goal 6: Maintain public buildings and municipal functions in/near village center, encourage new public buildings in village center	AD, P&Z, LB, SD	Ongoing	N/A		①		③		⑤		②						⑦	
Goal 7: To continue to provide the Village with the best police protection.									⑥						⑤			
Objective 7.1. Decrease the amount of time vacancies remain open.	AD	Ongoing	N/A						⑥						⑤			
Objective 7.2. Increased staffing to address the crime rate and the increase in traffic.	AD	Ongoing	General Fund						⑥						⑤			
Objective 7.3. Greater community participation in crime prevention efforts.	AD	Ongoing	N/A			③			⑥						⑤			⑧





Goal 8: Continue to explore options to bury power lines in core commercial districts and require new developments to site utilities underground.	P&Z, PW	Ongo in g	Capital Budget						⑤		②							
Housing																		
Goal 1: Provide a variety of housing opportunities while creating and preserving quality residential environments and existing neighborhood characteristics.									⑤		②							
Objective 1.1: Permit innovative development strategies	P&Z	Ongo in g	N/A						⑤		②							
Objective 1.2: Promote adherence to and enforce the State’s energy building and fire codes for housing.	P&Z, FD, PW, AD	Midterm	Planning Budget, Municipal Planning Grant						⑤	⑥	②							
Objective 1.3: Promote adherence to state energy standards and consider energy conservation and alternative energy requirements for new development	P&Z, AD	Ongo in g	Planning Budget, Municipal Planning Grant						⑤		②							
Objective 1.4: Provide a mechanism within the LDC to encourage the creation of new affordable housing.	P&Z, AD	Ongo in g	N/A	①					⑤		②							
Objective 1.5: Maintain allowance for density bonuses in the residential zoning districts.	P&Z, AD	Midterm	Planning Budget, Municipal Planning Grant						⑤		②							
Objective 1.6: Allow high density housing in major commercial areas and maintain the residential-2 small lot single family zoning designation to allow for affordable housing	P&Z, AD	Midterm	Planning Budget, Municipal Planning Grant						⑤		②							
Objective 1.7: Identify funding to compile a rental registry and inspection program	AD,P& Z	Long Term	N/A						⑤	⑥	②			⑤				
Objective 1.8: Consider zoning changes to encourage pocket parks and other public urban open space amenities.	P&Z	Short Term	N/A		②				⑤		②							
Objective 1.9: Work with the Town of Essex to implement the Housing Needs Assessment and Action Plan to increase the stock of homes affordable to residents earning up to and including 80% of area median income.	P&Z	Ongo in g	N/A						⑤		②							
Goal 2: Work with housing organizations to jointly create affordable housing and senior housing.	P&Z, AD	Ongo in g	Planning Budget						⑤		②							
Goal 3: Continue to provide areas for special needs housing	P&Z	Ongo in g	N/A						⑤		②			⑤			⑧	
Goal 4: Encourage property owners to retain the historic integrity of buildings	P&Z	Ongo in g	N/A			③			⑤		②							
Transportation																		

Goal 1: Implement projects that will move traffic more efficiently while making the Village a more welcoming place for all modes of travel.									⑤			②							
Objective 1.1: Provide alternate routes for non-destination traffic	AD, PW, P&Z	Ongoing	State Funding, Capital Budget						⑤			②							
Objective 1.2: Do not support capacity increases on state highways in the Village that involve additional vehicle lanes	AD, PW, P&Z	Ongoing	N/A						⑤			②							
Objective 1.3: Emphasize local access, public transit, bicycle facilities, pedestrian safety and access, and aesthetics in future streetscape projects	AD, PW, P&Z	Ongoing	N/A					②	⑤	⑥		②							
Objective 1.4: Reduce idling at the Five Corners by closing off a short section of Main Street to create a crossroads intersection	AD, PW, P&Z	Long Term	State Funding, Capital Budget						⑤			②							
Objective 1.5: Redirect Route 15 to Susie Wilson Road and Route 289 to reduce non-destination traffic in the Village.	AD, PW, P&Z	Long Term	State Funding, Capital Budget						⑤	⑥		②							
Goal 2: Monitor, evaluate and implement traffic management practices	P&Z, PW	Ongoing	N/A						⑤			②							
Objective 2.1: Monitor annual traffic counts and accident data	P&Z, PW	Ongoing	N/A						⑤			②							
Objective 2.2: Review all development proposals to minimize traffic and pedestrian safety concerns	P&Z, PW	Ongoing	N/A						⑤	⑥		②							
Objective 2.3: Reduce the size and number of non-conforming curb cuts during development review	P&Z, PW	Ongoing	N/A						⑤	⑥		②							
Objective 2.4: Encourage the use of shared parking lots and joint access	P&Z, PW	Ongoing	N/A						⑤			②							
Objective 2.5: Monitor the timing and sequencing of all traffic lights to optimize traffic and pedestrian safety	PW	Ongoing	Public Works budget, CCMPO						⑤	⑥		②							
Objective 2.6: Cooperate with adjoining communities to minimize traffic increase within the Village resulting from development beyond the Village limits.	AD, P&Z, PW	Ongoing	N/A						⑤			②							
Objective 2.7: Avoid dead-end streets; connect new streets into the existing street network from at least two points	P&Z, PW	Ongoing	N/A				③		⑤			②							
Objective 2.8: Request that neighboring communities require major development proposals to include traffic impact analysis at the Five Corners and that traffic analysis be submitted to the Village for review.	P&Z, PW	Ongoing	N/A						⑤			②							



Objective 2.9: Study and improve safety at high crash locations	P&Z, PW	Midterm	Planning Budget, Municipal Planning Grant, CCMPO						⑤	⑥	②							
Objective 2.10: Implement the Town of Essex/Village of Essex Junction Bicycle and Pedestrian Plan and the Chittenden County Active Transportation Plan	P&Z, PW	Ongoing	Capital Budget, TIP, Enhancement grants		②				⑤		②							
Goal 3: To facilitate the use of sidewalks as a viable transportation alternative.					②				⑤		②							
Objective 3.1: Review development proposals for sidewalk efficiency	P&Z, PW	Ongoing	N/A		②				⑤		②							
Objective 3.2: Consider alternative sidewalk standards based on location/usage	PW, P&Z	Ongoing	N/A		②				⑤		②							
Objective 3.3: Encourage children to walk to school/enrollment in SR2S program	SC, PW	Ongoing	N/A		②				⑤		②							
Objective 3.4: Utilize all traffic calming techniques and strategies available.	P&Z, PW	Ongoing	N/A		②				⑤	⑥	②							
Goal 4: Review and implement parking strategies consistent with other planning purposes.									⑤		②							
Objective 4.1: Encourage quality site design and landscaping for parking lots	P&Z, PW	Ongoing	N/A						⑤		②							
Objective 4.2: Encourage bus and pedestrian access to all parking lots	P&Z, PW	Ongoing	N/A						⑤		②							
Objective 4.3: Develop long term parking strategies for the Village Center	PW, P&Z	Long Term	Planning Budget, Municipal Planning Grant, CCMPO, Capital Budget	①					⑤		②							
Objective 4.4: Review parking requirements to allow for alternatives to on-site parking	P&Z, PW	Ongoing	N/A						⑤		②							
Objective 4.5: Cooperate with surrounding communities to create commuter facilities	AD, PW	Ongoing	N/A						⑤		②							
Objective 4.6: Encourage or require bicycle facilities at major activity centers	P&Z	Ongoing	N/A		②				⑤		②							
Goal 5: Promote and implement strategies to encourage the use of bicycles as alternate transportation modes.					②				⑤		②							
Objective 5.1: Consider bicycle access in new developments	P&Z, PW	Ongoing	N/A		②				⑤		②							
Objective 5.2: Consider the construction or signage of bicycle lanes in street projects	AD, P&Z, PW	Ongoing	N/A		②				⑤	⑥	②							



Objective 5.3: Pursue state and local funding for shared use paths and bicycle lanes	AD, PW, P&Z	Ongoing	Enhancement grants, TIP, federal earmarks		②				⑤		②							
Objective 5.4: Include shared use paths in capital budget	AD, PW	Ongoing	Capital Budget		②				⑤		②							
Objective 5.5: Implement the recommendations of the Essex Bicycle Pedestrian Plan.	AD	Long Term	N/A		②				⑤		②							
Objective 5.6: Encourage donations for implementation of shared use paths	AD, P&Z	Ongoing	N/A		②				⑤		②							
Goal 6: To encourage increased usage of the public transportation system.								④	⑤		②							
Objective 6.1: Cooperate with GMT to increase access to bus routes including higher frequencies during peak hours	AD	Ongoing	N/A						⑤		②							
Objective 6.2: Encourage the use of bus turn offs and shelters on major streets	P&Z, AD, PW	Ongoing	N/A						⑤		②							
Objective 6.3: Encourage alternatives to the property tax for funding public transportation	AD	Ongoing	N/A						⑤		②						⑦	
Objective 6.4: Cooperate with GMT to provide education on the benefits of public transportation	P&Z	Ongoing	Planning Budget, CCTA					④	⑤		②							
Objective 6.5: Continue to support seniors and disabled transportation programs	AD	Ongoing	N/A						⑤		②							⑧
Goal 7: Cooperate with the State of Vermont to locate air quality monitors at the Five Corners.					②				⑤		②							
Objective 7.1: Require state/federal air quality permits as prerequisite to local permits	AD, P&Z	Ongoing	N/A						⑤		②							
Objective 7.2: Ensure uniform enforcement air quality standards	AD, P&Z, PW	Ongoing	N/A						⑤		②							
Goal 8: Cooperate with state and regional entities to develop commuter and international passenger rail				①					⑤		②							
Objective 8.1: Support appropriate upgrades to the existing station and the surrounding areas to meet future needs.	AD, P&Z, PW	Ongoing	N/A															
Land Use																		
Goal 1: Provide sufficient locations within the Village to accommodate a variety of land uses									⑤		②							
Objective 1.1: Redefine zoning district boundaries in Village Center to address differences in land use patterns	P&Z	Ongoing	N/A						⑤		②							



Objective 1.2: Encourage the development of a variety of residential units in the Village Center and Pearl Street Districts.	P&Z	Ongoing	N/A	①					⑤		②						
Objective 1.3: Study the purchase of key properties in the Village Center for public use	AD, P&Z	Long Term	Planning Budget, Land Acquisition Fund, Economic Development Fund						⑤		②						
Goal 2: Promote responsible residential growth and encourage the growth and maintenance of quality residential areas.				①					⑤		②						
Objective 2.1: Preserve open space/agricultural land	AD, P&Z	Long Term	Land Acquisition Fund		②								④				
Goal 3: Mitigate negative impacts of contiguous but different land uses	P&Z	Ongoing	N/A						⑤		②						
Goal 4: Ensure quality land planning and site design in new commercial/industrial development in a manner compatible with surrounding architecture.	P&Z	Ongoing	N/A						⑤		②						
Goal 5: Coordinate land use decisions with public infrastructure needs	P&Z	Ongoing	N/A						⑤		②						
Goal 6: Encourage innovative development while maintaining the existing urban character of the Village.									⑤		②						
Objective 6.1: Consider overlay districts, design review and development agreements as a means to achieve innovative development	P&Z	Ongoing	Planning Budget, Municipal Planning Grant, TIF District						⑤		②					⑦	
Objective 6.2: Include visuals within the LDC to make standards clear for developers and residents. Engage the public in development of these visuals to gain consensus on design standards.	P&Z, AD	Midterm	Municipal Planning Grant/Planning Budget			③	④	⑤			②						
Objective 6.3: Promote use of the Village Center Designation benefits	P&Z	Ongoing	N/A						⑤		②						
Goal 7: Coordinate development review with adjoining communities	P&Z	Ongoing	N/A						⑤		②						
Objective 7.1: Initiate communication with surrounding communities to discuss development impacts on land use and planned compatibility.	P&Z	Ongoing	N/A						⑤		②						
Goal 8: Coordinate needed public improvements with development review	P&Z, PW	Ongoing	N/A						⑤		②						



Goal 9: Prevent development on lands that are environmentally unsuitable	P&Z, WQ	Ongoing	N/A						⑤			②	③	④				
Goal 10: Design new streets to limit the length and site grading; when possible connect new streets through to existing streets to develop a grid pattern.	P&Z, PW	Ongoing	N/A						⑤			②						
Goal 11: Place a high priority in development review on pedestrian and vehicular access and safety	P&Z, PW	Ongoing	N/A						⑤	⑥		②						
Goal 12: Protect and enhance sensitive and important areas.	P&Z, PW	Ongoing	N/A						⑤			②	③	④				
Objective 12.1: Consider design review on main corridors upon approach to the Village Center	P&Z	Midterm	Planning Budget, Municipal Planning Grant						⑤			②						
Objective 12.2: Analyze and prioritize historic resources to determine which sites and structures should be preserved	P&Z	Midterm	Planning Budget, Municipal Planning Grant						⑤			②						
Objective 12.3: Consider zoning changes to preserve historic structures in conjunction with the purpose of the Village Center.	P&Z	Midterm	Planning Budget, Municipal Planning Grant						⑤			②						

Departments: AD - Administration; PZ Planning & Zoning; CL - Clerk; PW - Public Works; WQ - Water Quality; LB - Library; FN - Finance; RC - Recreation; SC - Schools; ALL - All Departments

Table 14: Implementation Schedule

Heart & Soul Values:

1. *Local Economy:* Our residents contribute to a vibrant economy by working for and patronizing a diverse mix of businesses, from small, locally-owned enterprises to international corporations. We are committed to fostering an environment that produces a world class workforce and a strong economy for years to come.
2. *Health & Recreation:* We value public places for outdoor and indoor recreation for all ages and abilities. We treasure Indian Brook reservoir, neighborhood parks and the chance to connect by bicycle or on foot. Community institutions provide education and programs to support healthy lifestyles.  
*Community Connections:* Our deep connections with each other make Essex special. Neighbors help each other during good times and bad. We value diversity and welcome everyone. We build our sense of community at local events such as the Memorial Day Parade, Five Corners Farmers Market, and Winter Carnival. Our local newspapers and online forums give us plenty of ways to stay in touch. Residents participate in local government and volunteer.
3. *Education:* Essex invests time, energy, and resources to ensure that our highly respected schools meet the needs of everyone in the community. We are proud to support learning that extends beyond the traditional classroom and includes the arts, athletics, and vocational instruction. Community programs, and libraries offer diverse and affordable opportunities that prepare residents of all ages for lifelong learning and for work in an evolving economy.
4. *Thoughtful Growth:* We value wide-open spaces and tight-knit neighborhoods, rural roads and vibrant downtown streets. Essex is a place where we can enjoy a beautiful view, walk in the woods and go out to eat without ever leaving town. We support a diverse housing mix, opportunities for business development and a transportation system with a variety of options including a connected network of walking and biking routes.
5. *Safety:* Essex is a safe place where neighbors watch out for one another. We value an active, visible police force and strong fire and rescue services. Upgrades to our physical infrastructure will allow us to move about our community with comfort and security.

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**ECOS Strategies:**

***Strategy 1:*** Improve and strengthen the economic systems of our region to increase opportunities for Vermont employers and employees.

***Strategy 2:*** Strive for 80% of new development in areas planned for growth, which amounts to 15% of our land area.

***Strategy 3:*** Improve the safety, water quality, and habitat of our rivers, streams, wetlands and lakes in each watershed.

***Strategy 4:*** Increase investment in and decrease subdivision of working lands and significant habitats and support local food systems.

***Strategy 5:*** Increase opportunity for every person in our community to achieve optimal health and personal safety.

***Strategy 6:*** Equip our residents with the education and skills that they need to thrive.

***Strategy 7:*** Develop financing and governance systems to make the most efficient use of taxpayer dollars and reduce costs.

***Strategy 8:*** Ensure that the projects and actions in all ECOS strategies assess equity impacts, and that the design and development of programs are inclusive of all and engage underrepresented populations.



Appendix A Historic Sites

Historic Inventories				
Vermont Historic Sites and Structures Survey	Criteria for Inclusion	Protections	Benefits	Sites in Essex Junction*
State Register of Historic Places	Identifies and documents historic properties and sites yielding or likely to yield archeological and anthropological information	None	If in a State Village Center designation owner renovating historic buildings are eligible for tax benefits.	The 1984 inventory includes 12 districts, and 2 complexes (Whitcomb Farm and the Champlain Valley Fair) - and 205 buildings within them. The inventory then lists 71 buildings (some within the group of 205), for a total of 244 (or 243) historic sites.
National Register of Historic Places	The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and: a. That are associated with events that have made a significant contribution to the broad patterns of our history; or b. That are associated with the lives of persons significant in our past; or c. That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or d. That have yielded, or may be likely to yield, information important in prehistory or history.	Being listed does not, in itself, impose any obligation on the property owner, or restrict the owner's basic right to use and dispose of the property as he or she sees fit. Though, under Act 250 review, listed sites are presumed to meet the definition of “historic site” under Criterion 8 for review of development applications and are thus considered in the decision of whether to issue a permit.	If in a State Village Center designation owner renovating historic buildings are eligible for tax benefits.	Downtown Essex Junction Commercial Historic District, more research is needed to determine if there are more districts listed.
Vermont Archeological Inventory		Being listed does not impose any obligation on the property owner, or restrict the owner's basic right to use and dispose of the property as he or she sees fit. Though the designation offers some protection from	Properties eligible for federal and state tax credits	Downtown Essex Junction Commercial Historic District, more research is needed to determine if there are more districts listed.



		federally funded, licensed, or permitted projects that would harm them. However, it does not restrict what an owner may do to his property, including tearing it down.		
* While the State and National Registries are being digitized and brought online there is some discrepancy in the data regarding what sites/structures are listed.	Preliminary information about the potential locations of prehistoric Native American archeological sites.	Development projects that are subject to Act 250 or recipients of federal funding are required to address the development project's impact on archeological resources.		More research is needed to determine where these sites are located.
Local Historic Preservation Programs that provide for benefits and authorize local protection of historic buildings:				
1. Local Historic Preservation Commissions: Can encourage preservation activities through education, advice and/or regulation. One type is a Local Certified Government which is set up as a partnership with the state's Division for Historic Preservation and may apply for matching grants to carry out local preservation activities (approx. \$50,000 is allocated to the State each year).				
2. Design Control District: A zoning overlay district that creates planning and design criteria to protect historic or other valued resources in a designated area.				
3. Local Historic District (or Design Review District): an ordinance that specifies certain design review criteria and a commission to review projects.				
Source of Information: <i>Vermont Land Use Planning and Implementation Manual</i> , April 2007. Topic Paper 11: Historic Preservation. Vermont Land Use Education & Training Collaborative				
<a href="http://accd.vermont.gov/strong_communities/preservation/resources/national_register">http://accd.vermont.gov/strong_communities/preservation/resources/national_register</a>				
<a href="http://accd.vermont.gov/strong_communities/preservation/resources/state_register/criteria">http://accd.vermont.gov/strong_communities/preservation/resources/state_register/criteria</a>				



Map 2 Vermont Historic Sites and Structures Survey - Cross Reference Information:				
Districts	Vermont Historic Sites and Structures Survey Site#	Building Numbers within Each District (Map#)		
School Street-Park Terrace Historic District	0405-39	68, 81, 86, 94, 97, 95, 88, 84, 72, 78, 83, 74		
Pearl Street Historic District	0405-40	171, 163,155, 151, 142, 132, 128, 122, 98, 101, 102, 109, 116, 120, 129		
School Street Historic District	0405-41	140, 152, 164, 167, 176		
Lincoln Street Historic District	0405-42	106, 144, 150, 154, 161, 169, 177, 200, 206, 212, 216, 222, 228, 219, 201, 187, 182		
Commercial Center Historic District	0405-43	162, 159, 156, 148, 139, 126, 114,108, 119		
Central Street Historic District	0405-44	191, 185, 188, 192, 195, 199, 203, 184, 194, 186, 196, 202		
Main Street Neighborhood Historic District	0405-45	178, 190, 193, 197, 205, 208, 204, 198, 189, 183, 179, 172, 165, 158, 146, 138		
Pleasant Street Historic District	0405-46	181, 175,166, 157,170,149, 143,137, 125,107, 100,90, 89,124, 133,113,118, 130, 134,141, 147, 153,168, 174		
Church Street Historic District	0405-47	145, 135, 131, 123, 117, 115, 112, 103,93, 87, 82, 73, 79, 85, 91, 104, 111, 121, 136		
Oak Street Historic District	0405-48	59,65, 71, 75,63,58, 52		
Maple Street Historic District	0405-49	77, 76, 70, 69, 67, 64, 62, 57, 53, 49, 45, 41, 37, 33, 32, 31, 28, 26, 22, 27, 34, 38, 43, 44, 47, 50,54,60		
Park Street Historic District	0405-50	1, 3, 4,5,6,2		
Whitcomb Farm Complex	0405-51	29, 48, 56, 61, 51		
Champlain Valley Fair Grounds Complex	0405-52	242		
Other Buildings	Vermont Historic Sites and Structures Survey Site #	Map Reference #	Notes made on the survey over the years	
Magee House, 86 Pearl St	0405-53	224		
88 Pearl St	0405-54	227		
5 Roscoe Ct	0405-55	210		
7 Roscoe Ct	0405-56	207		
Wilson House, 12 Hillcrest Road	0405-57	226		
Morris House, 3 Prospect St	0405-58	217		
Johnson House, 5 Prospect St	0405-59	218		
6-8 Prospect St	0405-60	211		
10-12 Prospect St	0405-61	214		
O'Grady House, 16 Prospect St	0405-62	221		
Jenkins House, 22 Prospect St	0405-63	230		
Essex Junction Graded School, Prospect St	0405-64	234		
17 Grove St	0405-65	213		
19 Grove St	0405-66	215		
29 Grove St	0405-67	220		
McGinnis House, 30 Grove St	0405-68	225		
Farley House, 37 Grove St	0405-69	236		
10 North St	0405-70	223		
Wayne-Blanchard House, 11 North St	0405-71	229		
Remington House, 15 North St	0405-72	233		
Culver-Newell House, 16 North St	0405-73	231		

Villamil House, 18 North St	0405-74	232		
Blanchette House, 28 North St	0405-75	237		
38-40 North St	0405-76	239		
43 Central St	0405-77	209		
lincoln Hall, 1 Pearl St	0405-78	110		
Kolvord, Olson, Wilson Law Offices, 3 Main St	0405-79	96	demolished	
H.K. Drury House, 88 Main St	0405-80	238		
Williamson House, 116 Main St	0405-81	241		
Gregory House. 121 Main St	0405-82	240		
140 Main St	0405-83	243		
The Brickyard Offices, 15 Brickyard Rd	0405-84	235		
Accent Travel Agency, 2-4 Railroad St	0405-85	127		
12 Railroad St	0405-86	105		
14 Railroad St	0405-87	99		
Guilfoy Medical Office, 16 Railroad St	0405-88	92		
Park Street School, 21 Park St	0405-89	55		
Bartlett House, 40 Park St	0405-90	21		
50 Park St	0405-91	15		
Discovery Museum, 51 Park St	0405-92	18		
Prabhu House, 52 Park St	0405-93	14		
57 Park St	0405-94	13		
56-58 Park St	0405-95	11		
59 Park St	0405-96	12		
67 Park St	0405-97	8		
Johnson House, 2 South St	0405-98	7		
Driscoll House, 9 South St	0405-99	9		
Menior House, 11 South St	0405-100	10		
Trombley House, 60 South St	0405-101	16		
Whitcomb Property, 77 Cascade St	0405-102	244		
Stevens House, 3 Elm St	0405-103	46		
Blanchette House, 6-8 Elm St	0405-104	39		
Warehouse, 11 Maple St	0405-105	40	Set way back from Maple	
Vermont Maple Orchards, Inc. 1 Jackson St	0405-106	24	Flexible Seal	
Railroad Warehouse	0405-107		Bldg is gone, not mapped	
Emery House, 22 Jackson St	0405-108	23		
Bechtel House, 27 Jackson St	0405-109	19		
Sourdiff House, 33 Jackson St	0405-110	17		
LeClair House, 3 Grant St	0405-111	30		
Basic House, 4 Grant St	0405-112	25		
Lawrence House, 10 Grant St	0405-113	20		
Corbin House, 2 Arlington St	0405-114	180		
4 Arlington St	0405-115	173		
5 Arlington St	0405-116	160		
6 Mansfield Ave	0405-117	36		
Mason House, 8 Mansfield Ave	0405-118	42		



McGuire House, 29 Mansfield Ave	0405-120	66		
15 Waverly St	0405-121	80		

## Appendix B Underground Storage Tanks in Essex Junction

<u>Facility ID#</u>	<u>Hazardous Sites</u>	<u>Facility Name</u>	<u>Facility Address</u>
102		Abrams' Sunoco	142 Pearl Street
222	900593	Fairgrounds Beverage	99 Pearl Street
384		Robinson's Inc.	Park Street
385		Sunoco Gasoline Station	16 Maple Street
411	931476	Agway/McEwing Fuels	134 Main Street
565		Champlain Farms Gulf	56 Pearl Street
856		Stannard Residence	5 Warner Avenue
922	900573	Essex Junction Public Works Garage	11 Jackson Street
1166	770012	IBM Corporation	1000 River Street
1122		Keenan Residence	1 Maplewood Lane
1223		Dietzel Office	6 Hillcrest Road
1226		Reed Residence	11 Maplewood Lane
1228		Triangle Auto Body	7 River Street
1233		Hamel Residence	4 Warner Avenue
1249		Dietrich Residence	2 Upland Road
1258		Seiple Residence	15 Upland Road
1301		Mcintyre Residence	6 Woods End Drive
1760		VT State Tree Nursery	111 West Street
1905	961961	Simon's Five Corner Store	2 Park Street
1996		Essex Community Education Center	2 Educational Drive
2687		Winston Prouty Federal Building	11 Lincoln Street
8783536		Sunoco Gasoline Station	30 Main Street
8784309		Dave Whitcomb's Service Center	45 Lincoln Street
8785745		First Congregational Church	39 Main Street
8799559		Corner Gas Store	141 Pearl Street

Source: Underground Storage Tank Program  
Waste Management Division  
Vermont Department of Environmental Conservation

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## Appendix C Maps

Map 1: Natural Resources

Map 2: Historic Sites

Map 3: Recreation

Map 4: Transportation

Map 5: Community Facilities

Map 6: Non-Motorized Transportation

Map 7: Wastewater

Map 8: Water Distribution

Map 9: Existing Land Use

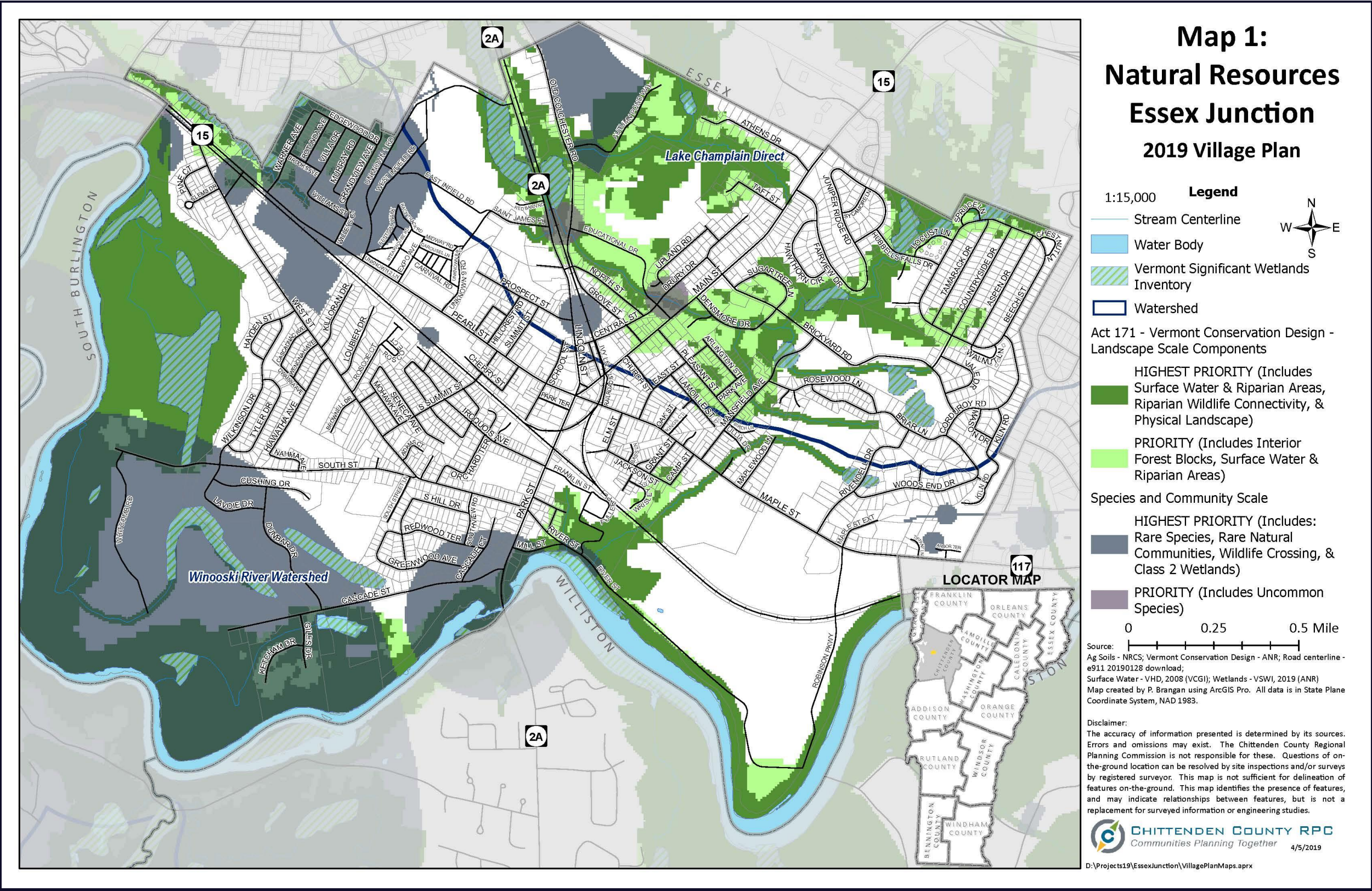
Map 10: Future Land Use

Map 11: Flood Hazard Areas

Map 12: Parking

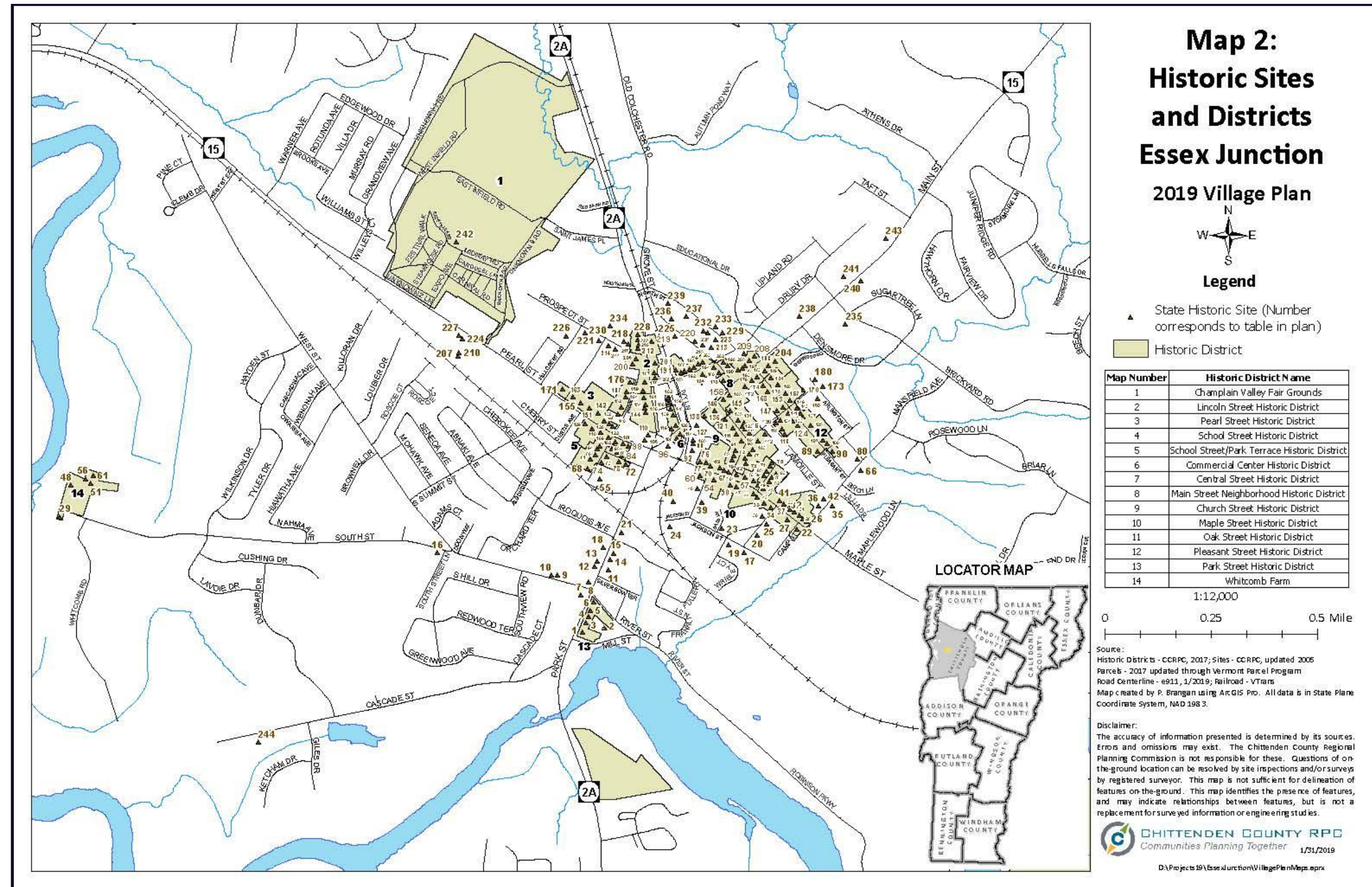


Map 1 Natural Resources



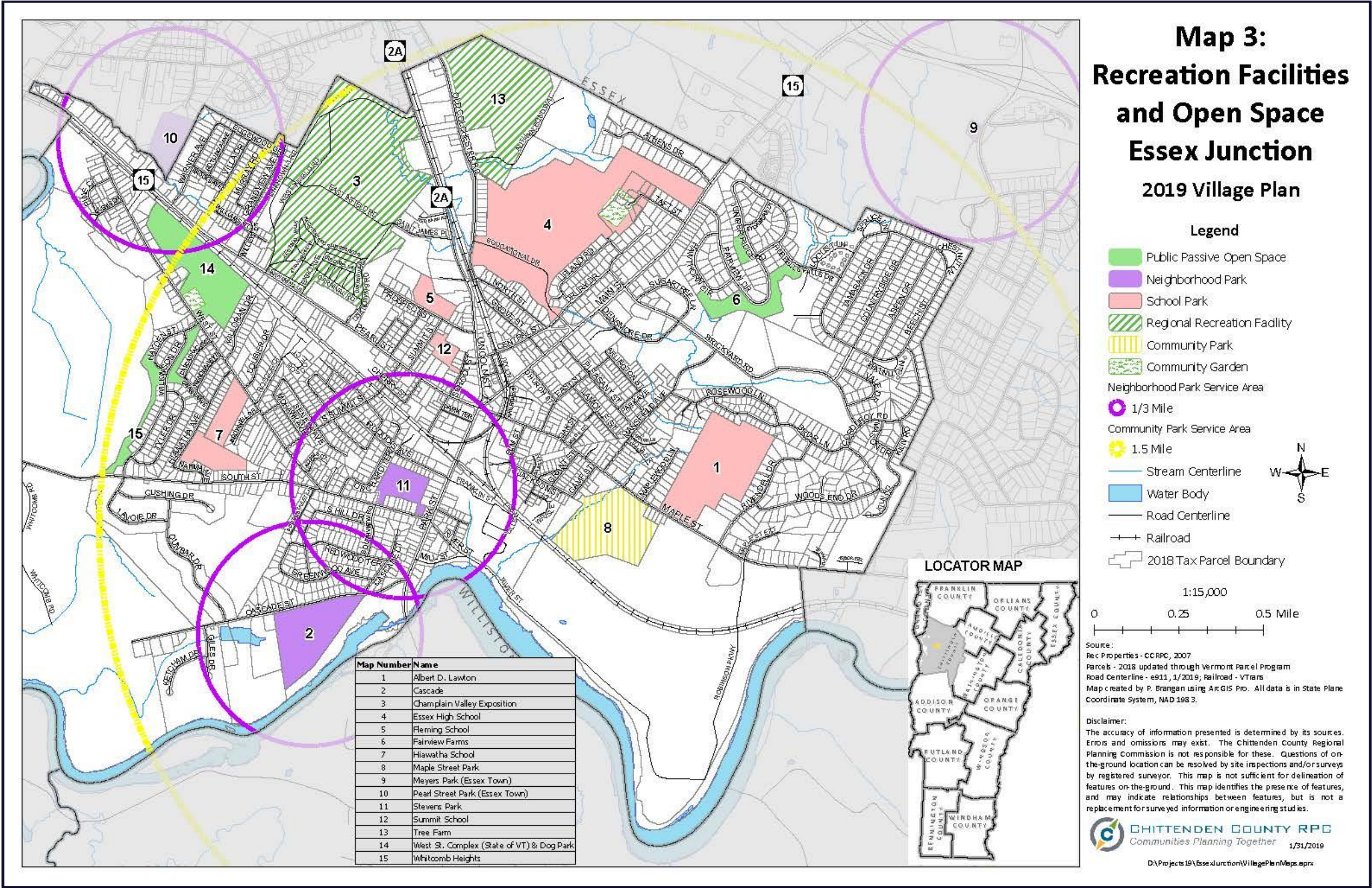


## Map 2 Historic Sites



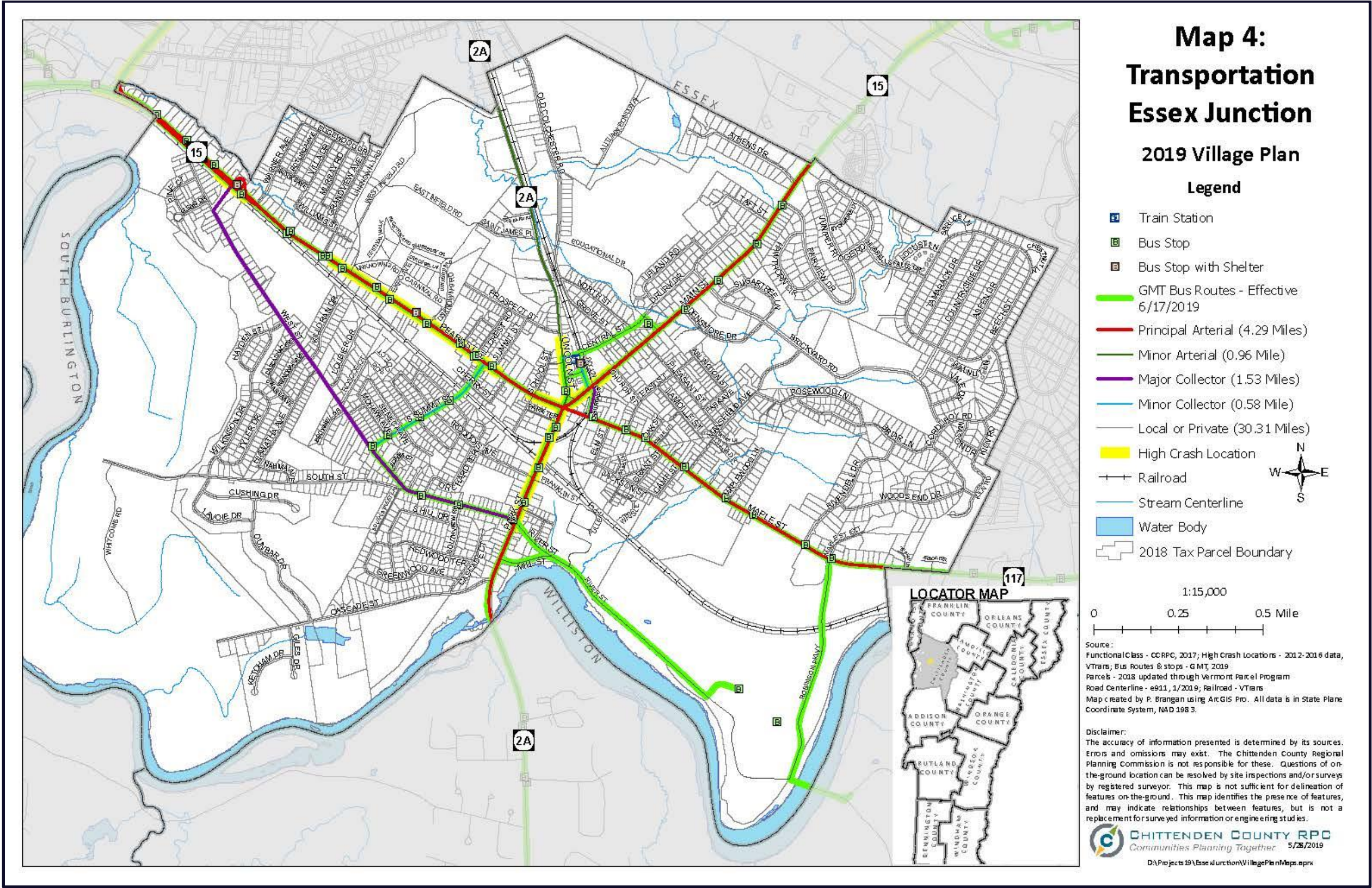


Map 3 Recreation



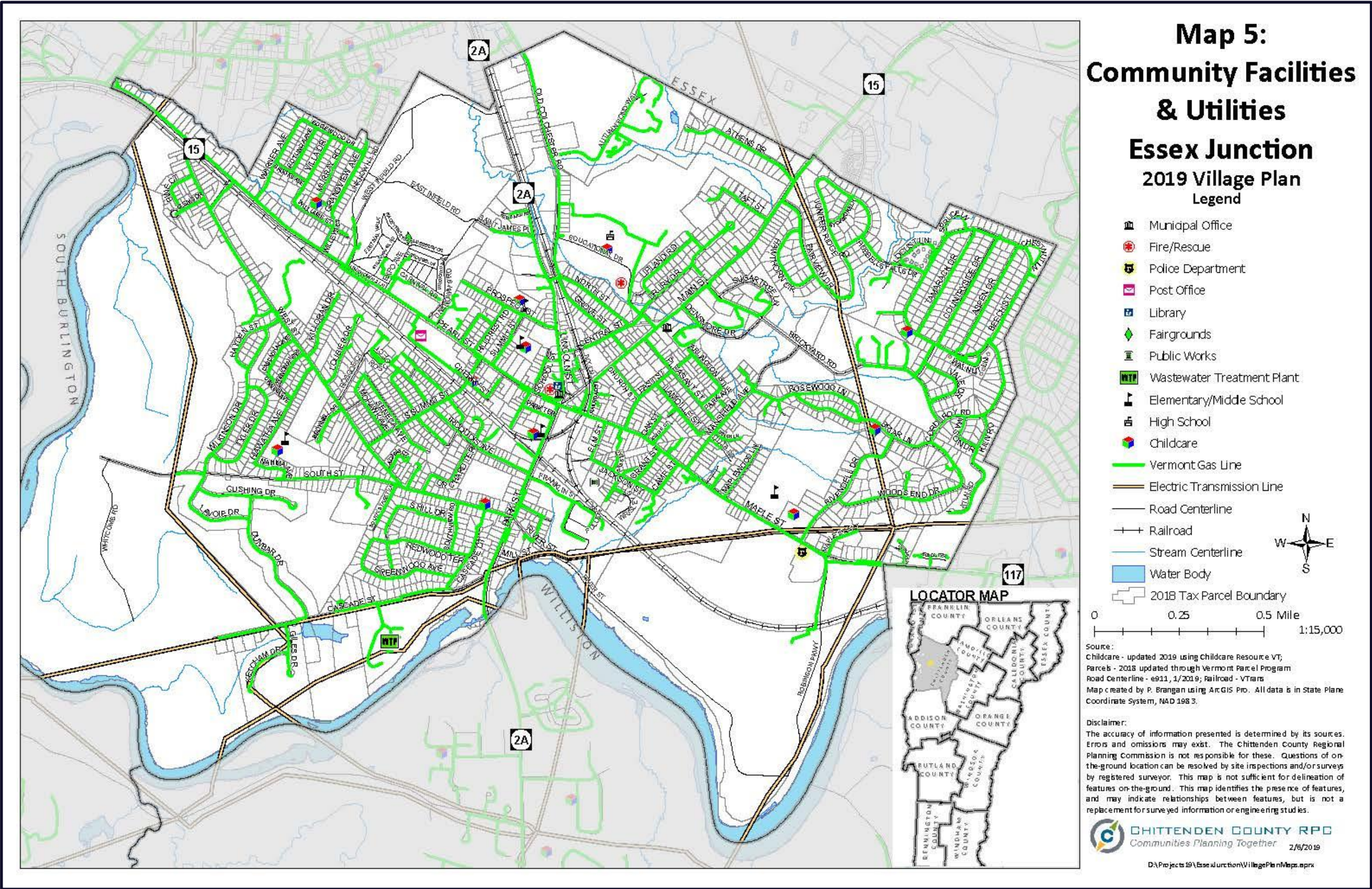


Map 4 Transportation



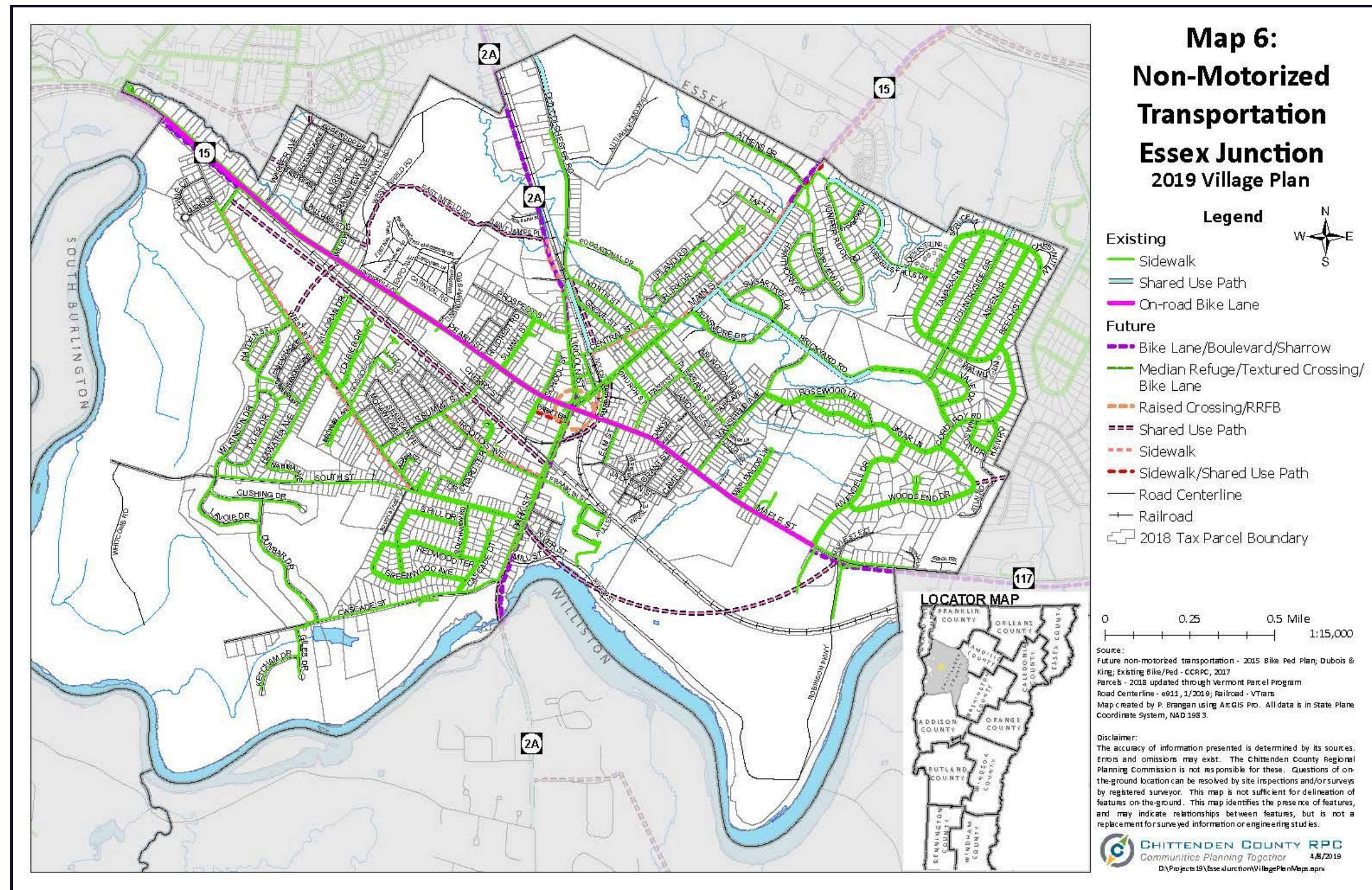


Map 5 Facilities



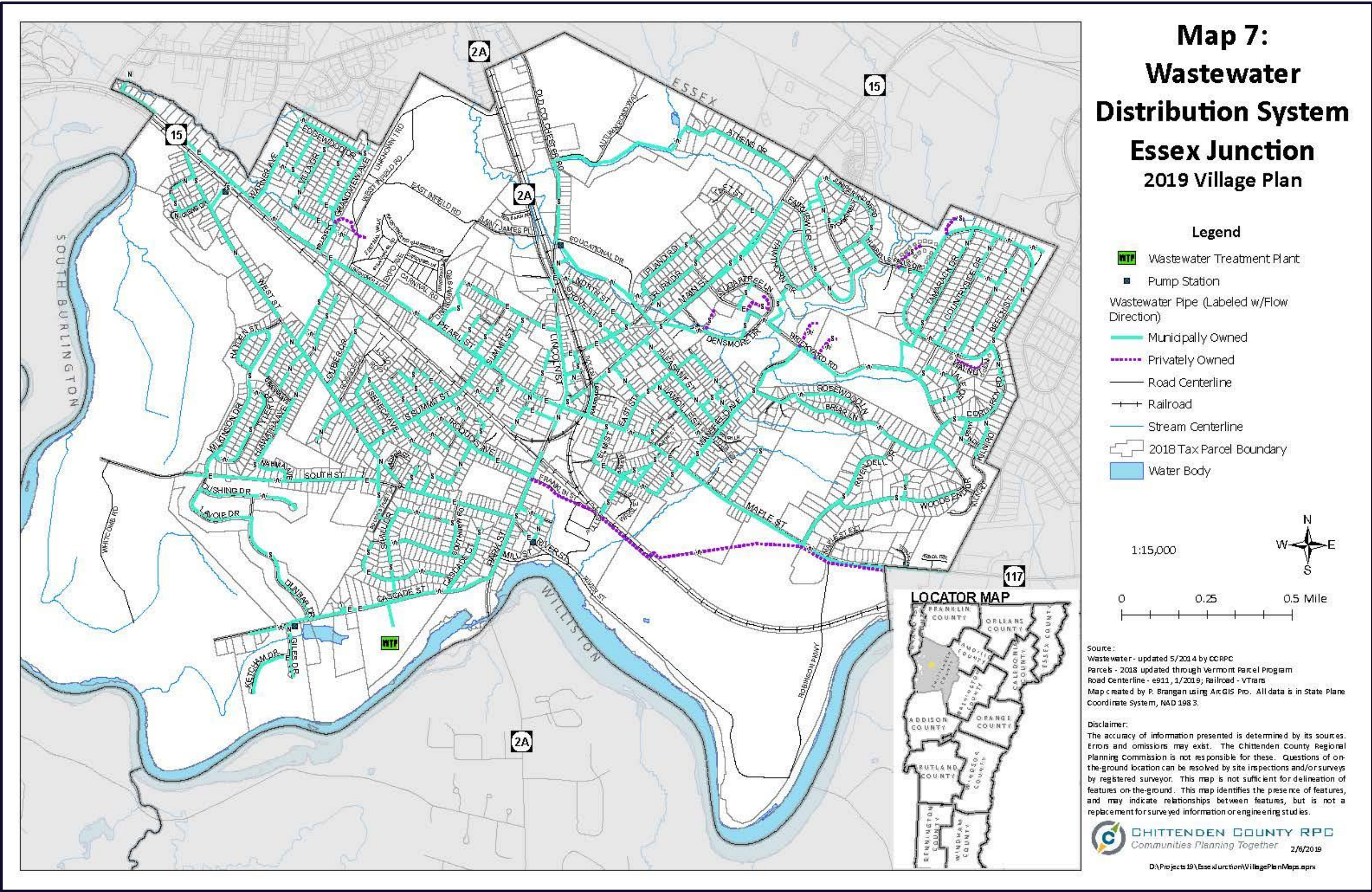


## Map 6 Non-Motorized Transportation



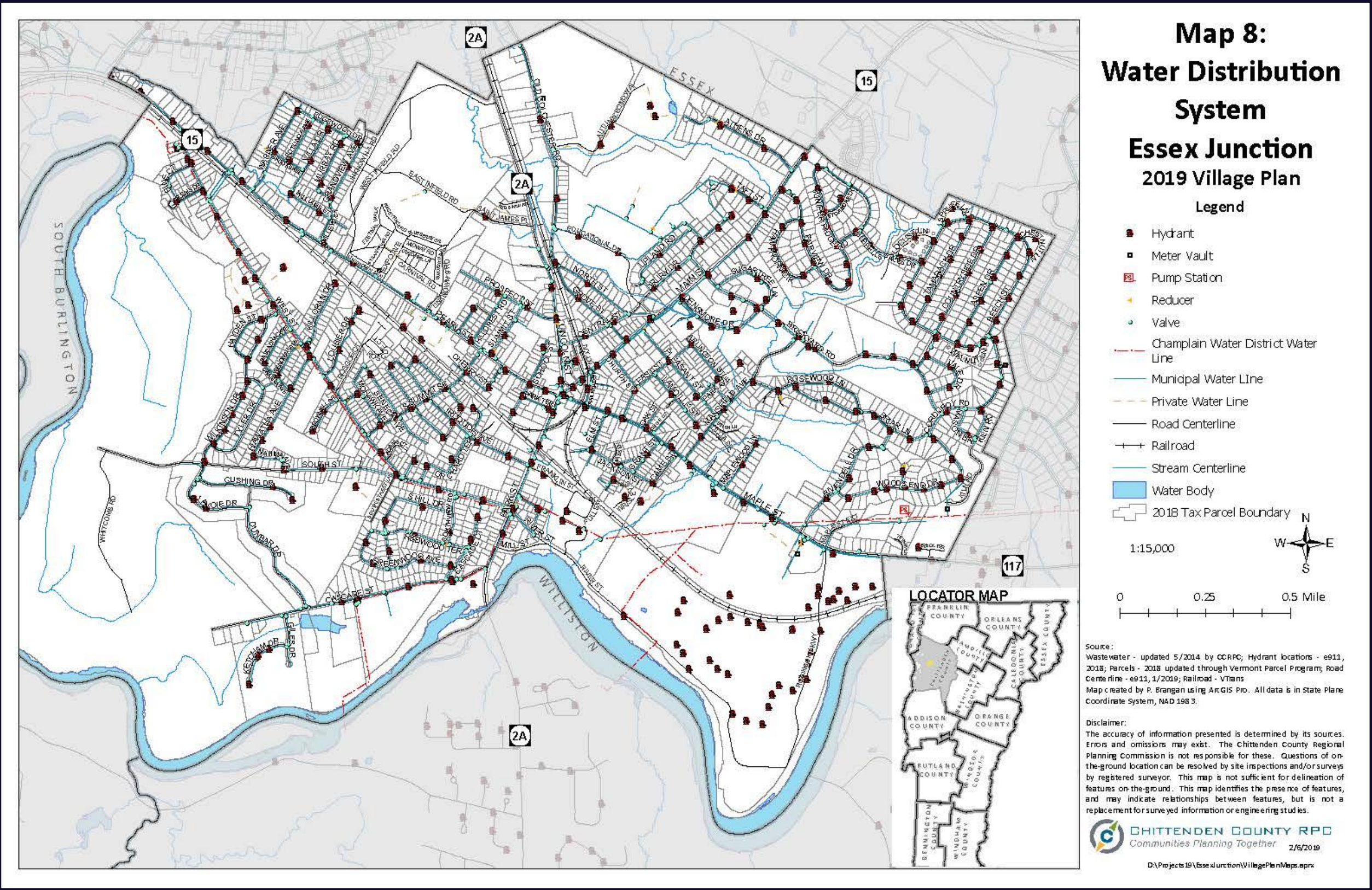


Map 7 Wastewater Distribution System



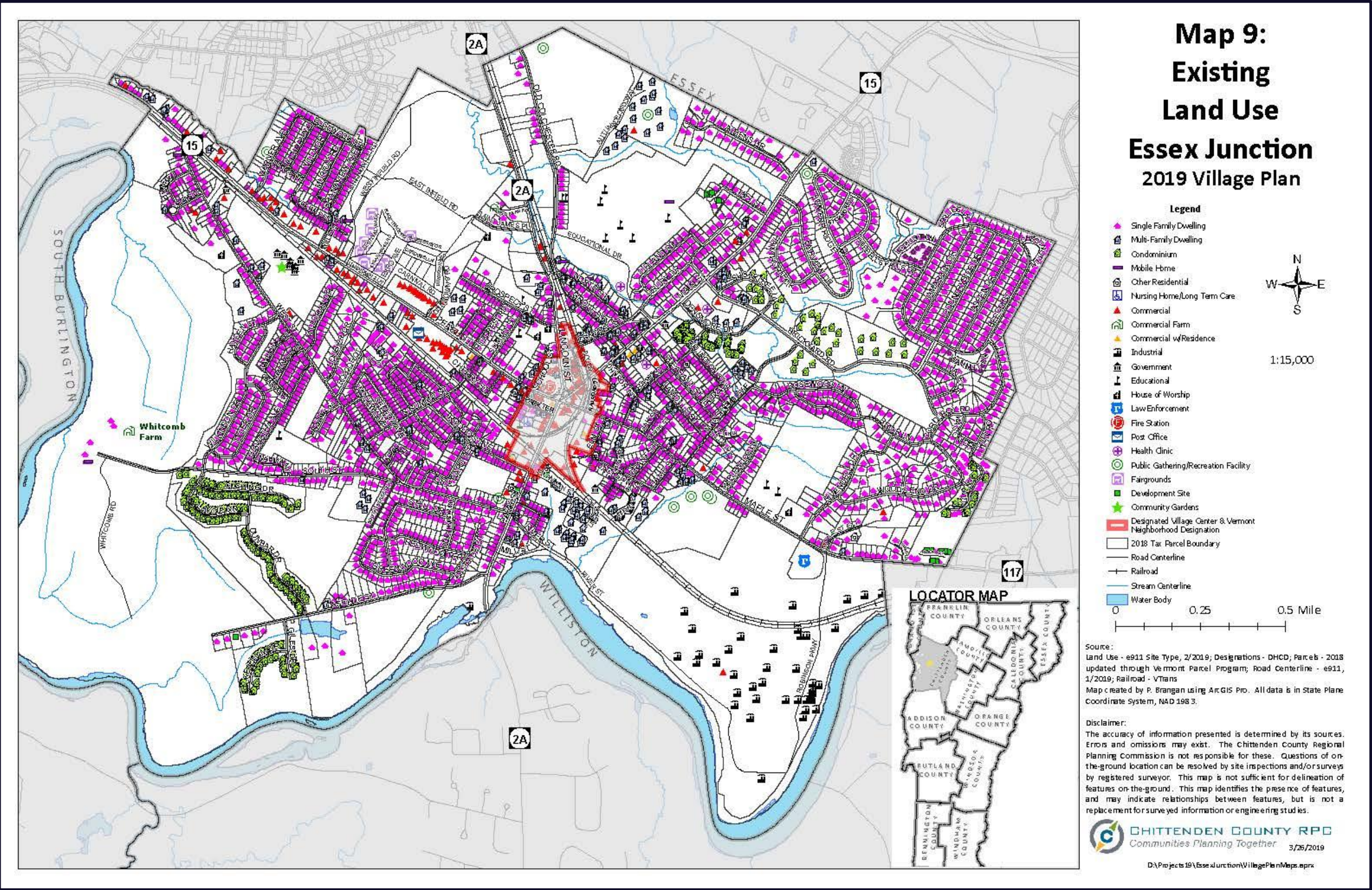


Map 8 Water Distribution System



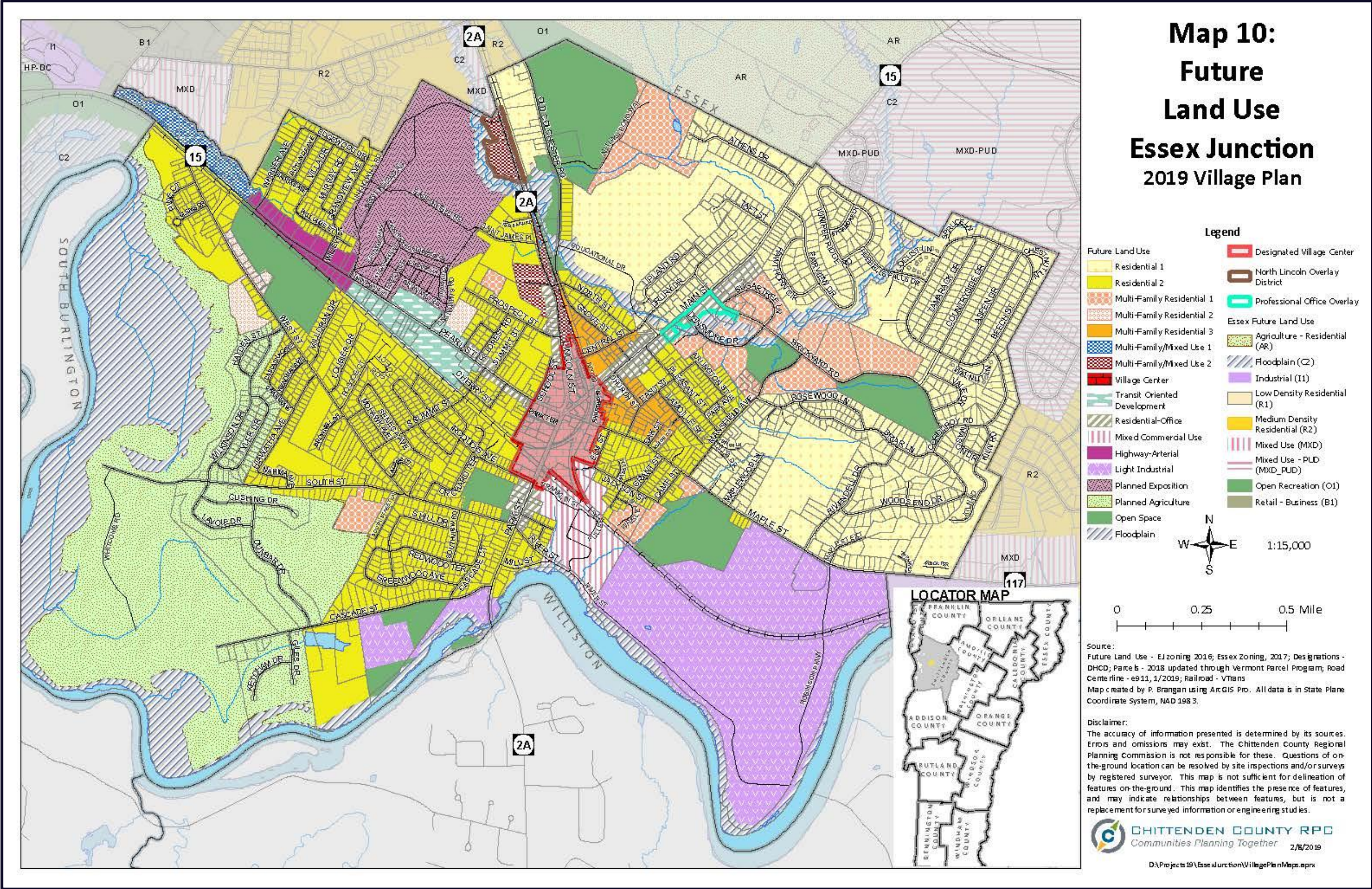


Map 9 Existing Land Use





Map 10 Future Land Use





Map 11 Flood Hazard Areas

**Map 11:  
Flood Hazard Areas  
Essex Junction  
2019 Village Plan  
Legend**

Structures/Infrastructure within Special  
Flood Hazard Area or River Corridor

- Residential
- ✚ Health Clinic
- ▲ Commercial/Industrial
- ◆ Utility/Pump Station
- Bridge
- Culvert
- Road
- River Corridor
- Special Flood Hazard Area  
(100 yr flood)
- .2 % annual chance flood hazard  
(500 yr flood)
- Road Centerline
- Railroad
- Stream Centerline
- Water Body



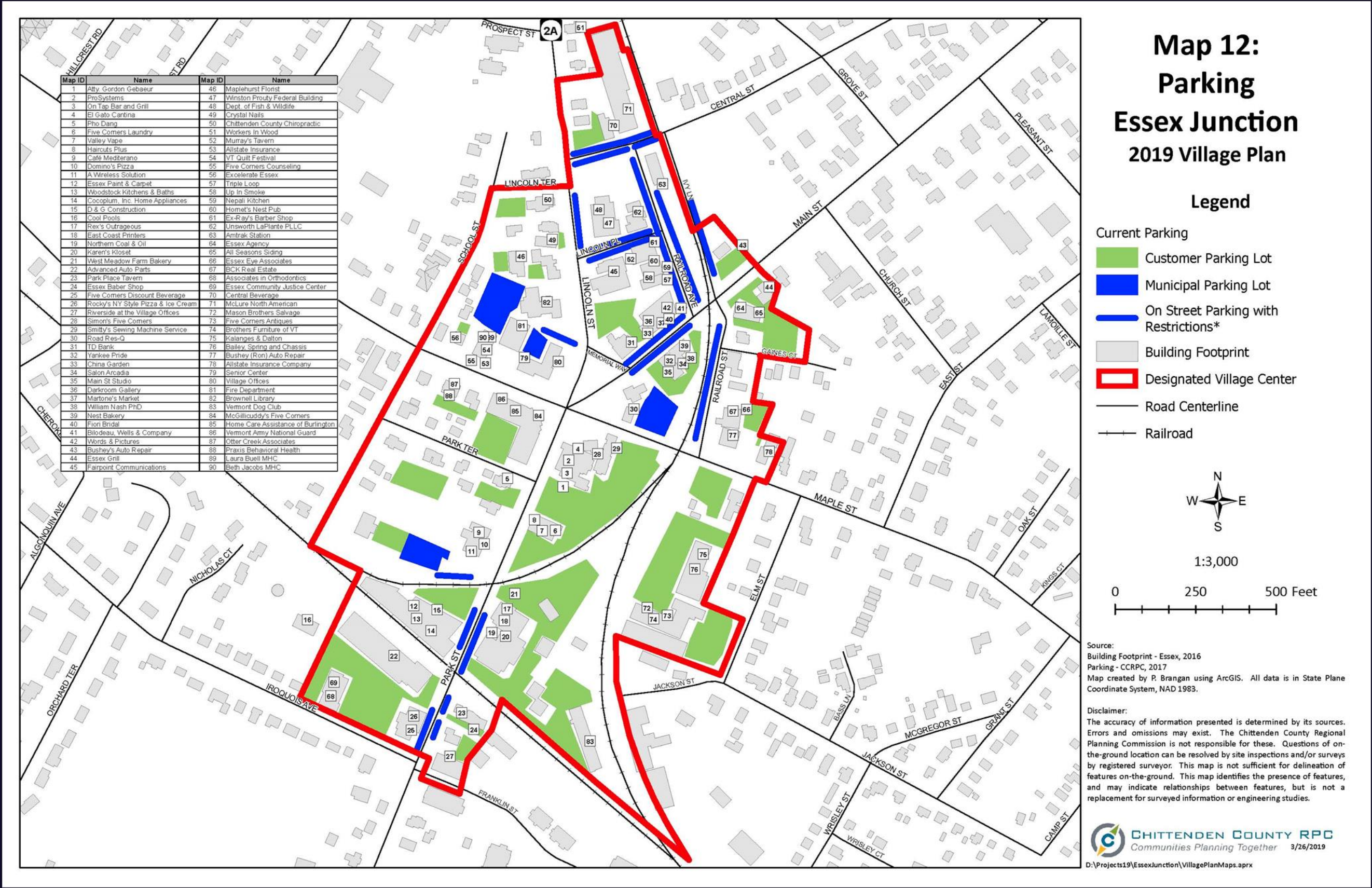
1:15,000  
0 0.25 0.5 Mile

Source:  
River Corridor - ANR, 2018; Floodplain - FEMA, 2011;  
Structures in floodplain or River Corridor - e911, roads, Vtculverts, ANR  
DMS, 2019  
Surface Water - VHD, 2008 (VCGI)  
Map created by P. Brangan using ArcGIS. All data is in State Plane  
Coordinate System, NAD 1983.

Disclaimer:  
The accuracy of information presented is determined by its sources.  
Errors and omissions may exist. The Chittenden County Regional  
Planning Commission is not responsible for these. Questions of on-  
the-ground location can be resolved by site inspections and/or surveys  
by registered surveyor. This map is not sufficient for delineation of  
features on-the-ground. This map identifies the presence of features,  
and may indicate relationships between features, but is not a  
replacement for surveyed information or engineering studies.



Map 12 Parking





## Appendix D

### Essex Community Enhanced Energy Plan



**Prepared by** Chittenden County Regional Planning Commission, in coordination with Town and Village Community Development staff, the Essex Energy Committee, the Village of Essex Planning Commission, and the Town of Essex Planning Commission, with support from the Vermont Department of Public Service.



Approved by the Town of Essex June 17, 2019

Adopted by the Village of Essex Junction August 13, 2019

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## Purpose

This energy plan is a vision for the Essex Community to advance the State of Vermont's Comprehensive Energy Plan and to align energy planning with local land use policies. This plan is incorporated by reference in the 2019 Essex Junction Comprehensive Plan and will be incorporated by reference in the next update of the Essex Town Plan. This plan was developed according to the Department of Public Service's energy planning standards for municipal plans. When this plan is given a determination of energy compliance from the Chittenden County Regional Planning Commission it will have substantial deference in the Public Utility Commission's (PUC) review of whether an energy project meets the orderly development criterion in the Section 248 process. The Section 248 process is not easily summarized. For an in-depth discussion of the Section 248 process see the guide on Municipal Enhanced Energy Planning in Vermont [here](#). See the energy compliance section in this plan for more information, as well.

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*For the purpose of this plan, the Town of Essex and the Village of Essex Junction is referred to as the Essex Community*

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## Introduction

Since releasing a [Comprehensive Energy Plan](#) in 2011, Vermont has been working toward a goal of obtaining 90 percent of its energy from renewable resources by 2050. Renewable energy, as defined by 24 V.S.A. §4303(24), "means energy available for collection or conversion from direct sunlight, wind, running water, organically derived fuels, including wood and agricultural sources, waste heat, and geothermal sources." As of 2017, Vermont only obtains 20% of its overall energy from renewable resources. The electricity sector is the most renewable at 43% source energy or 53% site energy<sup>1</sup>. The thermal sector is 20% renewable and the transportation sector is the least renewable sector at 5% renewable<sup>2</sup>. As of October 2018, the Essex Community generates 27,799 MWh annually of renewable electricity, which is 3.4% of the electricity consumed in 2017.

The state's 2016 *Comprehensive Energy Plan* makes many policy recommendations to move toward the goal of 90 percent renewable. The recommendations aim to foster economic security and independence, safeguard environmental legacy, drive in-state innovation and job creation, and increase community involvement and investment. The plan prioritizes improvements in energy conservation and efficiency and the development of renewable, local sources of energy.

The *Comprehensive Energy Plan* also aims to reduce total energy consumption per capita by 15% by 2025, and by more than 33% by 2050; to weatherize 25% of all homes by 2020; and to reduce greenhouse gas emissions from within the state to 50% of 1990 levels by 2028, and to 75% of those same levels by 2050. The challenges set forth in the Comprehensive Energy Plan are not easily met. Data showing the current trend of total energy consumption is not available. The status of housing weatherization as of 2017 statewide is about 7.6% of the state's housing stock. Greenhouse gas (GHG) emissions estimates in Vermont continued to rise for calendar year 2015, increasing from 9.45 million metric tons CO<sub>2</sub> equivalent (MMTCO<sub>2</sub>e) in 2014 to 9.99 MMTCO<sub>2</sub>e in 2015. This increase puts Vermont approximately 16% above the 1990 baseline value of 8.59 MMTCO<sub>2</sub>e and adds to the difficulty of reaching the statewide

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<sup>1</sup> Source energy includes all energy generated, transmitted, and consumed. Site energy is the energy directly consumed in buildings and vehicles.

<sup>2</sup> 2017 Energy Action Network Annual Report



goal of 50% below 1990 emissions levels by 2028. Without greater participation and mobilization at a local level, these goals are unlikely to be achieved.

This plan describes how the Essex Community intends to act to implement the state energy goals outlined above. Meeting these goals will require ambitious action to transform the way the Essex Community uses, stores, and produces energy.

The following are transformations needed for the Essex Community, as the most likely pathway to meet these goals by 2050, given current technologies:

- Establish enough renewable energy generation sites to generate between 211,386 to 353,629 MWh of electricity<sup>3</sup>.
- Increase electric vehicles to 89% of passenger vehicles registered in the Essex Community
- Fuel 96% of heavy-duty vehicles with biodiesel or other renewable carbon free fuel.
- Weatherize 100% of homes and 38% of commercial and industrial establishments
- Heat 60% of homes with electric heat pumps and 14% of homes with wood
- Heat 38% of businesses with electric heat pumps and 11% with wood

Led by its [Energy Committee](#), the Essex Community is striving to match the state's 90 percent goal. The Essex Energy Committee has taken the position that, "For the Essex Community to achieve the 90 percent renewables level of success for the overall betterment of our community, we must develop and implement plans which aggressively change the way in which we view energy from the standpoint of cost, use and conservation." The Town of Essex Selectboard also adopted the [Vermont Climate Pledge Coalition](#) by virtue of a resolution voted on November 2, 2017, recognizing the goal of reducing greenhouse gas emissions by 26 to 28 percent from 2005 levels by 2025 in addition the 90 percent goal. The Village of Essex Junction Trustees have not adopted the Vermont Climate Pledge Coalition.

To meet these goals, the Essex Community has prioritized multiple actions under the following general categories: (i) Land Use Implementation; (ii) Transportation, (iii) Thermal and Electric Energy Conservation and Efficiency; and (iv) Renewable Energy Generation and Storage. See the implementation section for additional information.

## Energy Compliance

In 2016, Act 174 established a process for "enhanced energy planning" for municipalities. Enhanced energy planning sets up the framework for municipalities to update their **Municipal Plans** according to a set of energy standards developed by the Vermont Department of Public Service. If a **Municipal Plan** meet these standards, the **Municipal Plan** is given a determination of energy compliance from the regional planning commission. The detailed standards for **Municipal Plans** are available [here](#).

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<sup>3</sup> The renewable energy target is expressed in MWh because the target is intended to be technology neutral. The Essex Community's target takes into account both electricity used in the commercial, industrial, and residential sectors. The target is modeled based on population and electricity usage. The Essex Community makes up 43% of electricity used in Chittenden County; therefore, the community's target is among the highest in the County.

A determination of energy compliance means that the PUC will give the **Municipal Plan** substantial deference. This means that a land conservation measure or specific policy shall be applied by the PUC in determining whether a jurisdictional energy siting project meets the orderly development criterion in the Section 248 process, unless there is a clear and convincing demonstration that other factors affecting the general good of the State outweigh the application of the measure or policy. This is a higher standard of review than a **Municipal Plan** would otherwise receive in the Section 248 siting process.

At present, the Essex Community municipalities will seek their own affirmative determination from CCRPC to amend or supplement an existing **Municipal Plan**. This is being done with the understanding that the two plans may eventually be combined for the Essex Community in the future.

### Siting

The Essex Community can have input over the siting of renewable generation facilities in a few ways through the policies contained in this plan. The community can define preferred sites for net-metering facilities and include policies to identify the scale and type of renewable energy generation facilities to occur in specific areas within the community. Also, the Essex Community can restrict renewable generation facilities where appropriate.

[Vermont's Net Metering Rules](#) (Rule 5.100, effective 7/1/2017) defines preferred sites for renewable energy development (any renewable technology besides hydroelectric). Compared to non-preferred sites, net metering on preferred sites can be larger (up to 500 kW instead of 150 kW) and such projects receive financial benefits in the net metering rates. See the latest Vermont Public Utility Commission Rule Pertaining to Construction and Operation of Net-Metering Systems for details on the financial and scale benefits of preferred sites. Systems up to 15kW and rooftop solar systems up to 500kW go through a registration process rather than the full Public Utilities Commission process. However, all other projects do not have an expedited review process and must meet the same requirements as any other system. Preferred sites as defined under the PUC rule include:

- On a pre-existing structure
- Landfills
- Parking lot canopies over permitted paved areas
- Gravel pits
- Previously developed land
- Superfund sites
- Brownfields
- Municipal-designated sites
- On the same parcel or directly adjacent parcel as a customer taking 50% or more of the output

## ACT 174 AND SUBSTANTIAL DEFERENCE

In 2016, Act 174 established a process for “enhanced energy planning,” which encourages municipalities to write plans that are “energy compliant.” This plan meets the standards for energy planning established by Act 174 and outlined in 24 V.S.A. §4352. Therefore, the policies of this plan will receive substantial deference in §248 proceedings. The Public Utility Commission shall apply the land conservation measures or specific policies in accordance with their terms unless there is a clear and convincing demonstration that other factors affecting the general good of the State outweigh the application of the measure or policy. This is a higher standard of review than “due consideration,” which the municipal plan’s policies would otherwise receive.

The Essex Community strongly encourages the siting of net-metered systems on parking lots. Municipally designated preferred sites can be identified in a duly adopted municipal plan or through a joint letter of support by the Town and/or Village planning commissions, Town and Village legislative bodies and regional planning commission. Project developers are encouraged to reach out the Energy Committee, the Planning Commission(s), and the Essex Community staff to discuss projects in advance of submitting a petition.

## Constraints

Some areas are not appropriate for any type of development, including types of renewable energy generation facilities existing as of the date of this plan. The State of Vermont has defined certain resources as known and possible constraints, which are protected by the ECOS Regional Plan and state agency review during the Public Utility Commission review process. The Essex Community have added additional constraints based on local policy. In determining whether known or possible constraints are present, on-site field verification should be conducted.

Known constraints are areas in which development, including renewable energy generation, is not appropriate. See Map 2 for the location of known constraints within the community. Known constraints are:

- | <b><u>State Known Constraints</u></b>   | <b><u>Local Known Constraints</u></b>   |
|---|---|
| <ul style="list-style-type: none"> <li>• FEMA Designated Floodway</li> <li>• DEC River Corridors</li> <li>• National Wilderness Areas State-significant Natural Communities</li> <li>• Vernal Pools (confirmed and unconfirmed)</li> <li>• Class 1 and 2 wetlands (VSWI and advisory layers)</li> </ul> | <ul style="list-style-type: none"> <li>• Slopes of 20% and steeper</li> <li>• Recreation/Conservation areas within the Resource Preservation-Industrial District</li> </ul> |

Possible constraints are areas in which the effects of development, including current types of renewable energy generation facilities, may need to be mitigated. See Map 3 for the location of possible constraints in the community. Possible constraints are:

- | <b><u>State Possible Constraints</u></b>  | <b><u>Local Possible Constraints</u></b>  |
|---|---|
| <ul style="list-style-type: none"> <li>• Agricultural Soils (<i>While the State will review agricultural soils, it is not the intent of the Village of Essex Junction to protect primary agricultural soils from development considering agricultural operations (outside of community gardens) are not feasible on small parcels isolated from more intact open agricultural areas. Further, mitigation of these soils through state development approval processes does not seem</i></li> </ul> | <ul style="list-style-type: none"> <li>• Industrial designated areas of the Resource Preservation-Industrial District (see siting policy 8)</li> <li>• Designated Village Center Historic District in the Village, Town Center and Design Control Districts in the Town</li> <li>• Scenic Resource Protection Overlay District (including portions of Bixby Hill Road, Browns River Road, Chapin Road, Colonel Page Road, Jericho Road/VT Route 15, Naylor Road, North Williston Road, Old Stage Road, Pettingill Road, River Road/VT Route 117, Towers Road, Upper Main</li> </ul> |

*appropriate in such an urban environment).*

- Hydric Soils
- Act 250 Agricultural Soil Mitigation Areas
- FEMA Special Flood Hazard Areas
- Protected Lands
- Deer Wintering Areas
- Vermont Conservation Design Highest Priority Landscape Scale Components. These include highest priority interior forest blocks, surface water and riparian areas, and connectivity blocks, and wildlife crossings.

Street/VT Route 15, Weed Road, and Woodside Drive

- 15 % or steeper and less than 20%
- Vermont Conservation Design Priority Landscape Scale Components. These include priority forest blocks, connectivity blocks, surface water and riparian areas, and physical landscapes).
  - Forest blocks are areas of contiguous forest and other natural communities and habitats, such as wetlands, ponds, and cliffs that are unfragmented by roads, development, or agriculture (Sorenson and Osborne 2014).
  - Connectivity Blocks are the network of forest blocks that together provide terrestrial connectivity at the regional scale.
  - Physical landscapes (often referred to as enduring features) are the parts of the landscape that resist change. They are the hills and valleys, the underlying bedrock, and the deposits left behind by glaciers.
  - Surface Waters and Riparian Areas

### Siting Policies

The policies in this section are the land conservation measures to be applied in the Section 248 decision making process with respect to the PUC's review of a petition for a renewable generation facility. The Essex Community will use the following siting policies to determine support for identifying a municipally designated preferred site and in the review of Section 248 applications.

1. The Essex Community strongly encourages development of renewable energy generation facilities on rooftops, parking lots, on parcels or directly adjacent parcels to a customer that has been allocated more than fifty percent of the net-metered system's electrical output, previously-developed sites, brownfields, landfills, former mineral resource extraction areas, and municipally designated sites. In the state designated Village Center in the Village of Essex Junction, the Essex Town Center, and the Historic Preservation and Business Design Control Districts design control best practices must be applied to integrate development into the built environment to the extent feasible. (See Appendix A for these standards).
2. Locate ground-mounted solar and wind turbines outside of the state designated Village Center in the Village of Essex Junction, the Essex Town Center, and the Business and Historic Preservation Design Control Districts.
3. Development of renewable energy generation facilities shall not take place in areas with known constraints and shall first explore alternatives to and then mitigate adverse impacts in areas with possible constraints, as identified in the constraints section of this plan. In determining whether known or possible constraints are present, on-site field verification should be conducted.

4. With the exception of preferred sites listed in policy 1, development of large-scale renewable energy generation facilities (capacity greater than 500kW) shall be located only within industrial zones, including the industrial zoned portion of the Resource Preservation District, in the Town of Essex.
5. Locate energy generation proximate to existing distribution and transmission infrastructure with adequate capacity and near areas with high electric load (See [Green Mountain Power's Solar Map](#)) to reduce the need for new distribution and transmission extensions.
6. Avoid or minimize the adverse impacts of development (including renewable energy development and associated transmission and distribution infrastructure) on identified scenic resources, viewsheds and roadscape corridors in the Town of Essex Scenic Resource protection overlay district (See Map 3) through appropriate site planning and design practices. See Appendix A for appropriate planning guidance on siting or site development design standards
7. Apply the Design Control Best Practices (see Appendix A) when locating roof-mounted photovoltaic net metering systems in the Village Center, Town Center, and the Town's Historic Preservation and Business Design Control Districts
8. Within the Resource Preservation Industrial District the following policies apply:
  - a. 200-foot vegetative buffer shall be maintained along adjacent residential areas and streets, including VT Route 15, Sand Hill Road and Saxon Hill Road and where development abuts a residential property not located in a residential district.
  - b. A 100-foot vegetative buffer shall be maintained along Allen Martin Drive. Parking areas, components of stormwater management systems may not be located within the 100- or 200-foot buffer in this district.
  - c. Underground utility easement crossings are permitted only within the 200 ft. and 100 ft. buffer. Utility easements are permitted if ledge, underground water or other conditions make underground installation infeasible. Areas cleared for utility crossings shall be re-vegetated.
9. Development (including renewable energy generation facilities and associated transmission and distribution infrastructure) is discouraged on slopes of 15 % or steeper and less than 20% due to the likelihood of erosion and stormwater runoff problems. Development shall be prohibited on slopes of 20 percent and steeper due to the likelihood of environmental damage.
10. Development (including renewable energy generation and associated transmission and distribution infrastructure) will not destroy or significantly imperil wildlife habitat identified on Map 3 as highest priority and priority landscape scale components) or all reasonable means of minimizing the destruction or imperilment of such habitat or species will be utilized.
11. Where feasible, pair renewable energy generation with electrical energy storage to ensure energy is utilized to the fullest potential, to increase resiliency/reliability of electricity during outages and decrease fossil fuel usage during peak periods. Renewable energy generation projects that can accommodate energy storage are strongly encouraged.

## Implementation

### Land Use and Development Policies

The relationship between transportation, land use and energy consumption is extremely important and is an area in which the community can have a large impact through development regulations and infrastructure. According to the Vermont Total Energy Study, "more than one third of the state's energy consumption, and nearly half of its greenhouse gas emissions, are tied to the transportation sector." Therefore, a reduction in vehicle miles traveled by passenger vehicles can have a big impact on energy consumption.

In recent years communities are realizing the important connection between transportation and land use, which impacts energy use. Certain land use patterns can reduce dependency on the automobile by providing greater transportation options through compact mixed-use developments where people can choose to walk, bike, use public transportation or drive an automobile.

For new construction and building renovations, the State of Vermont has an energy building code, the Vermont Residential and Commercial Building Energy Standard. Compliance with the energy code is necessary to ensure that new development and alterations to existing buildings are using all types of energy efficiently. To meet the code, the zoning administrator is responsible for providing the energy code to land use permit applicants and must see a completed energy certificate that certifies that the applicant has complied with the code before issuing a certificate of occupancy. Even though a certificate of occupancy may not be needed for all types of buildings, all buildings must comply with the State energy code. Additionally, the Community should consider incorporating language into zoning ordinances requiring new homes and commercial buildings to be built to higher levels of efficiency.

To improve the thermal efficiency of existing commercial and residential buildings, a municipality could implement a time of sale energy retrofit ordinance for rental housing. Time of sale retrofits target older buildings, particularly multi-family housing, that aren't being reached by voluntary incentive programs. Building energy retrofits offer multiple benefits that include saving money on utility bills, improved safety and maintenance, and comfort. Additionally, the money saved from doing energy improvements gets recirculated into the community instead of being exported out of the region. As an example, the City of Burlington has a time of sale energy retrofit ordinance.

**Goal:** The Essex community is committed to development patterns and building energy use that result in the efficient use of energy.

**General Policy:** The Town Center in the Town is a focus of concentrated growth and community life intended to encourage energy efficient development and travel. (See the Land Use and Development section of the Essex Town Plan for more detail). Higher density infill and redevelopment is supported in the core areas of the Village to reduce demand on energy. (See the Land Use section of the Essex Junction Comprehensive Plan for more detail).

### Actions

1. Consider including the Vermont Building Energy Stretch Code to cover all development in the Zoning Regulations for the Town (including the ETC Next Plan) and in the Village of Essex Junction Land Development Code.
2. Consider implementing a time of sale policy to ensure existing buildings, especially older rental housing, are in compliance with the State of Vermont Building Energy Code.

3. Review the zoning regulations and associated parking standards and sign regulations to encourage installation of electric vehicle charging stations.
4. Adopt a municipal screening requirement for solar generation facilities in accordance with 30 V.S.A. §248(b)(1)(B).
5. Consider reviewing the process for LEED density bonuses to increase utilization, in the Town.
6. Evaluate a process for incentivizing the creation of energy efficient buildings in the Essex Community.
7. Explore the idea of an energy fee or revolving loan fund that would fund public improvements to renewable energy infrastructure, such as rooftop solar and electric vehicle charging stations, with waivers for development that meets energy goals, such as installing electric vehicle charging infrastructure and providing ride-sharing options.
8. Continue to require energy efficient street lighting for new developments and when replacing existing lamps
9. Refer to the land use sections of both the 2019 Village of Essex Junction Comprehensive Plan and the 2016 Essex Town Plan for more information related to land use in the Community.

“Stretch code” means a building energy code that achieves greater energy savings than the base code. All development subject to Act 250 must follow the energy stretch code. Efficiency Vermont offers an incentive-based program to improve insulation/air-sealing and heating systems to support energy projects.

## Transportation

The Community has a relatively unique opportunity within the county to support greater transportation choice and reduce automobile dependency since it is a relatively compact community with an extensive sidewalk network, especially in the Village, where local services are within walking distance to residences. The Community is also served by public transportation and rail. Residents have more transportation choices than many neighboring communities that have a more suburban/rural land use pattern. Further support of higher density infill and redevelopment in core areas of the Village may reduce demand on energy.

**Goal:** The community should be served by varied modes of transportation with automobile use balanced by increased availability of public transit, sidewalks, and multi-use trails to reduce transportation energy demand.

**General Policy:** Transportation systems shall be integrated with land use policy in such a way that improvements are compatible with the overarching settlement pattern of compact settlement surrounded by a productive rural countryside.

## Actions

1. Design and construct pedestrian/bike paths on VT Route 2A, Pinecrest Drive, and Towers Road.
2. Construct a new multi-use path from Susie Wilson Road to the City of Winooski.
3. Reduce single-occupancy vehicle trips by establishing strategic park-and-ride locations, and by partnering with ridesharing, car-sharing, and public transit organizations.
4. Partner with [Drive Electric Vermont](#), nonprofit organizations, vehicle dealers, and/or state agencies to organize high-visibility events where people can see and test drive EVs, such as energy fairs and summer festivals. Particular attention should be made to electric pickup trucks and motorcycles, since these represent nearly ½ the existing non- electric vehicle stock in the community. Events should also leverage local newspaper and public access coverage to showcase residents and organizations that are helping to propel the transition to EVs.



5. Promote the [Drive Electric Vermont](#) webpage, which connects users to financial incentives, dealers, and recharging stations for EVs. Promote the [Go Vermont](#) webpage, which provides ride share, vanpool, public transit, and park and-ride options.
6. Support employer programs to encourage transit use, telecommuting, carpooling, vanpooling, walking, and biking for employees' commute trips. Encourage employers to offer such programs and provide information on tax benefits that may be available for doing so.
7. Assess current access to public and workplace charging (to the extent known) and identify strategic locations in busy areas (large employers or areas of high visitation in the Village and Town Centers) where charging stations should be added or expanded.
8. Provide charging stations at prominent publicly owned locations such as municipal or school parking lots, as well as parking areas near public transportation and park and rides. Municipalities may develop their own charging stations, or work with private companies.
9. Lead by example by replacing the Town's vehicle fleet with electric or biodiesel fuel vehicles as fossil fuel-burning vehicles reach the end of their useful life.
10. Assess the number of park-and-ride spaces and explore opportunities to expand the number of spaces and provide greater connectivity between public transit and park and ride locations.
11. Work with the school district to maximize ridership for public school busses and minimize use of private vehicles for student transport. Explore working with a bus company who is converting its bus fleet to electric.
12. Present annually to the public, staff, and municipal officials an overview of public transit available in the Town and the Village including information about Green Mountain Transit and the major routes they offer.
13. Continue to work with Local Motion to make the Essex Community safe and welcoming for bicycling.
14. Continue to identify issues and opportunities for walk-bike improvements and connections.
15. Refer to the transportation sections of both the 2019 Village of Essex Junction Comprehensive Plan and the 2016 Essex Town Plan for more information related to transportation in the community.

## Thermal and Electric Energy Conservation and Efficiency

Building weatherization is the most cost-effective way of modifying a building to reduce electricity and heating fuel consumption, as well as greenhouse gas (ghg) emissions. Weatherization includes air sealing, insulation, and upgrading heating system and can dramatically reduce a home's heating bills. However, the initial upfront capital to make weatherization improvements on a home can be difficult for some households and businesses. Various organizations like Efficiency Vermont and financial institutions provide incentives and low financing to make thermal and electric efficiency retrofits possible. A critical step to ensuring thermal and electric efficiency in all buildings is implemented is educating residents and businesses about the programs and technologies available. The actions in this section provide a plan for how the community can work with energy vendors and the public to raise awareness about these issues.

**Goal:** The Essex Community's energy goals and targets shall be met primarily through energy conservation, efficiency, and fuel switching while transitioning away from fossil fuels.

**General Policy:** The Essex Community shall support regulatory and non-regulatory initiatives that result in decreased greenhouse gas emissions, reduced energy consumption, and increased renewable energy generation.



## **Actions**

1. Fund an Energy Coordinator position to develop energy implementation plans, coordinate efforts for both the Town and the Village and encourage residential and commercial energy conservation. As an initial step, make this goal a priority for the new Building Manager.
2. Continue to explore energy efficiency and renewable energy options for all Town and Village-owned and Town/Village-sponsored facilities, from buildings to street lighting. Findings and recommendations should be based on an audit of all municipally owned and municipally sponsored facilities and a subsequent cost-benefit analysis for upgrading or replacing those facilities
3. Host education programs and collaborate with Efficiency Vermont, utilities, and energy vendors to encourage energy efficiency in existing residential and commercial buildings and to educate residents and businesses about heating pumps, advanced wood heating, geothermal heating, renewable natural gas, and other renewable technologies. Provide residents with information on heating assistance programs on an annual basis to make those in need aware of the programs.
4. Promote wood stove change-out programs that take older non-EPA certified stoves out of service and replace them with more efficient and lower emitting cord and pellet stoves.
5. Facilitate a workshop and/or conduct building walk-throughs for owners of rental housing to encourage implementation of energy efficiency measures.
6. Through the Building Manager, monitor energy used by the Town and Village buildings annually to describe progress towards energy goals, working closely with the Energy Committee
7. Work towards a plan to replace existing municipally owned-streetlamps with solar-generating lamps, provided that these can be harmonized to the extent feasible with design constraints.

## **Renewable Energy**

**Goal:** Generate 183,587 -325,830 MWh of new renewable energy by 2050.

**General Policy:** The Essex Community shall support regulatory and non-regulatory initiatives that result in decreased greenhouse gas emissions, reduced energy consumption, and increased renewable energy generation.

## **Actions**

1. Identify and map specific preferred sites for renewable energy generation to send a message to potential developers that these are the locations where the Town and Village would like to see renewable energy generation development.
2. Promote community solar net metering.
3. Encourage and support renewable energy projects consistent with the siting policies of this plan through letters of support to the Public Utilities Commission.
4. Explore possible municipally owned sites for renewable energy generation, such as the Town landfill, rooftop solar on municipal buildings, and parking lot canopies on public lots.
5. Study the capabilities of existing buildings to support roof-mounted solar PV systems in zoning districts where it is deemed appropriate for a better estimate of this potential.

## Existing + Future Estimates of Energy Consumption

The data included in this section show one path the Essex Community could take to meet State of Vermont's energy goals. The targets are intended to be a demonstration of one possible scenario to reach 90% renewable by 2050 and are not intended to prescribe a single future path. To meet the goals, the Essex Community must plan for a major shift away from fossil fuels in the transportation and heating sectors to renewable sources of energy, as well as efficiency in transportation, heating and electricity, and an increase in renewable energy generators sited in the Essex Community. However, the actions or technology changes that the Essex Community will take will very likely change between now and 2050, as new and improved technologies become available.

The analysis in this section estimates current energy use and provides targets for future energy use across all sectors (transportation, heating, and electricity). These targets represent the amount of renewable energy that the community should aspire to produce to meet the 90% by 2050 goal. The Essex Community's targets represent the amount of renewable energy generation that the community should aspire to achieving to advance the amount of local renewable energy generation. Please note that these data are a starting point for considering a renewable energy future. This information should provide the framework for a discussion about changes that will need to occur within the Essex Community to ensure that State energy goals are met.

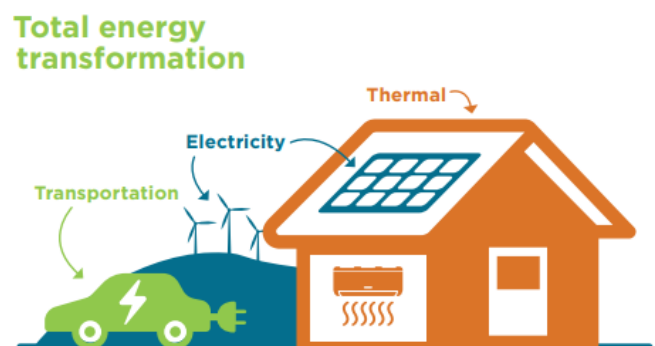
The data in this section are intended to provide an overview of current energy use and a sense of the trajectories and pace of change needed to meet the State's energy goals. Targets for each sector are also provided to demonstrate milestones along the way toward meeting 90% of total energy needs with renewable energy.

Targets for future energy use are drawn from the Long-Range Energy Alternatives Planning (LEAP) analysis for Chittenden County, completed by the Vermont Energy Investment Corporation (VEIC). The LEAP model is an accounting framework that shows one possible path for Chittenden County and its municipalities to meet the state energy goals. See the [2018 Chittenden County ECOS Plan Supplement 6](#) for information about the methodology.

To achieve these targets a concerted effort in the Essex Community is needed, including residents, businesses, community groups, and government, to conserve energy and transition to renewable sources. The Energy Committee has recommended multiple projects in each area. Completing the projects will lead to energy savings and an improved quality of life for all residents of the Essex Community through financial savings, improved air quality, and reduced greenhouse gas emissions.

## Total Energy Use Per Capita

The LEAP model indicates that total energy use will continue to grow over the next 30 years, even as energy savings increase. This is partly due to overall population increase, but also due to fuel switching from fossil fuels to renewably-sourced electricity, including uses within the transportation and heating sectors. As shown in Table 1, total energy use increases but total energy use per capita will decrease because of transformations in the heating and transportation sectors needed to reach the state's energy goals. Although the state goal is to reduce per capita energy by 1/3, modeling was unable to demonstrate this reduction. The uncertainty lies in the model at the local level. The reduction is achievable at the County and state level.



**Table 1 Estimated Future Total Energy Use per Capita (excluding industrial electricity use), 2015-2050**

	2015	2025	2035	2050
<b>Total energy use (MMBtu)</b>	4,136,978	4,240,447	4,240,447	4,669,525
<b>Population</b>	20,946	22,137	22,895	24,020
<b>Total energy use per capita (MMBtu)</b>	198	192	192	194
<b>Reduction in total energy use per capita since 2015</b>	N/A	-3%	-3%	-2%
<i>Source: CCRPC LEAP model *, CCRPC Demographic Forecast (2017)</i>				

## Heating

The building inventory in the Essex Community includes government/commercial buildings and homes. Municipally owned structures range from the new, energy efficient Town Municipal Building, to historic inefficient buildings such as Memorial Hall. With a goal of saving tax dollars by improving energy efficiency of Municipal-owned structures, the Essex Energy Committee has conducted an overall energy assessment and is developing a retrofit plan for all municipally-owned properties. Examples of these include the Village Wastewater Treatment Facility's combined heat and electric power system, which uses methane captured from anaerobic digestion to feed the water treatment process and provide service to the facility's buildings. The Town offices at 81 Main Street were renovated in 2016 with a modern HVAC system as well as motion-sensitive lighting, which have reduced heating and electricity use. Improvements to other municipal buildings, such as Lincoln and Memorial Halls, face financial, design, and permitting challenges that will require more resources than other improvements due to their age. However, these investments will save energy and money in the long run and showcase energy efficiency renovations for historic buildings.

According to the American Community Survey, in 2016 about 86% percent of homes in the Essex Community use fossil fuels for heating (see Table 2); this does not account for the fossil fuels in the electricity supply mix for homes heating with electricity. The remaining portion of homes heat with renewable sources of either electricity or wood. It is difficult to know the type of electrical equipment used in homes heated with electricity. Homes heated with electricity could be using electric resistance heat or cold climate heat pumps. Historically, electric heating (through electric resistance) has been expensive and inefficient, but new technology such as heat pumps (which heat and cool air using a refrigerant process) and weatherization of homes will make heating with electricity viable from both a financial and energy planning perspective. The efficiency of wood heating has also improved with the advent of wood pellets and high-efficiency stoves. Further improvements in home heating, such as combined air and water heating with heat storage systems, will also benefit new construction.

Residential energy costs are often overlooked due to the current low cost of natural gas and the stable cost of electricity. Residential incentives, improvements in zoning regulations, and energy education should be at the forefront of

residential energy planning in the Essex Community. Through regulations and incentives, the Essex Community should also encourage rental housing property owners to invest in energy conservation measures, rather than letting heating, cooling, and lighting costs fall to tenants. The state has [Residential Building Energy Standards](#) and [Commercial Building Energy Standards](#) that establish a minimum level of energy efficiency in new and renovated buildings. The community should investigate incentives. For example, a time sale ordinance would encourage builders and property owners to meet or exceed the basic energy standards by leveraging additional funding for energy efficiency so that housing affordability is not reduced by passing those additional costs to renters or homeowners.

The costs and long-term savings of heating efficiency improvements and switching from equipment dependent on fossil fuels to those using renewable energy will largely be borne by building owners. Efficiency Vermont provides technical assistance, rebates, and referrals to ENERGY STAR®-certified contractors and low-interest energy efficiency loans for homeowners, landlords, and business owners. The Essex Energy Committee also conducts outreach and collects information for the community on such improvements.

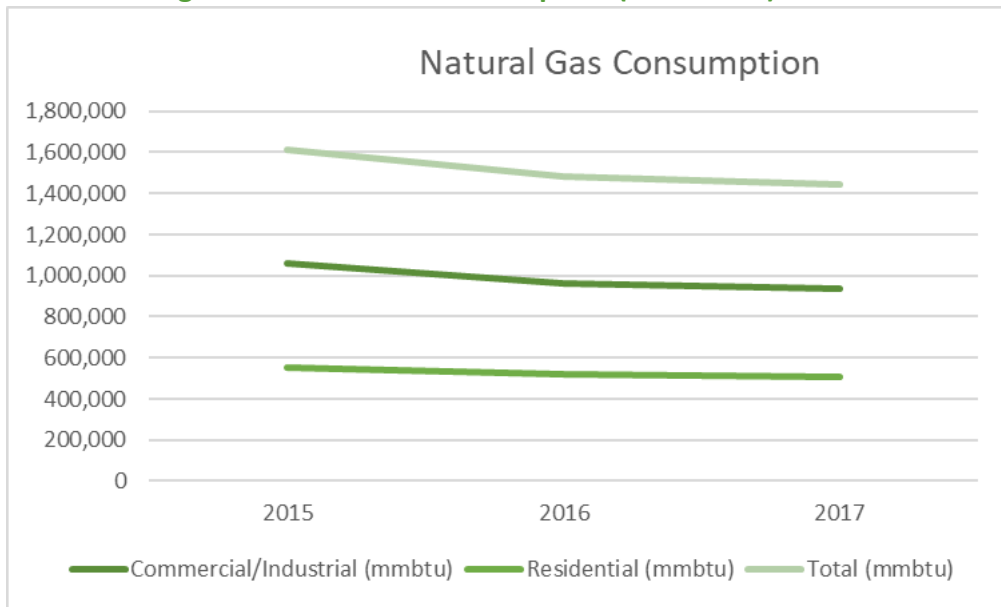
**Table 2 Home Heating Fuel Type**

Type	Estimate (# of homes)	Percentage	Margin of Error
<b>Total</b>	<b>8,453</b>	<b>100%</b>	<b>+/-252</b>
Utility gas	5,435	64%	+/-375
Propane	437	5%	+/-171
Electricity	845	10%	+/-246
Fuel oil, kerosene	1,408	17%	+/-253
Coal or coke	0	0%	+/-16
Wood	247	3%	+/-87
Solar energy	0	0%	+/-16
Other fuel	66	1%	+/-47
No fuel used	15	0%	+/-24

Source: 2012-2016 American Community Survey 5-Year Estimates

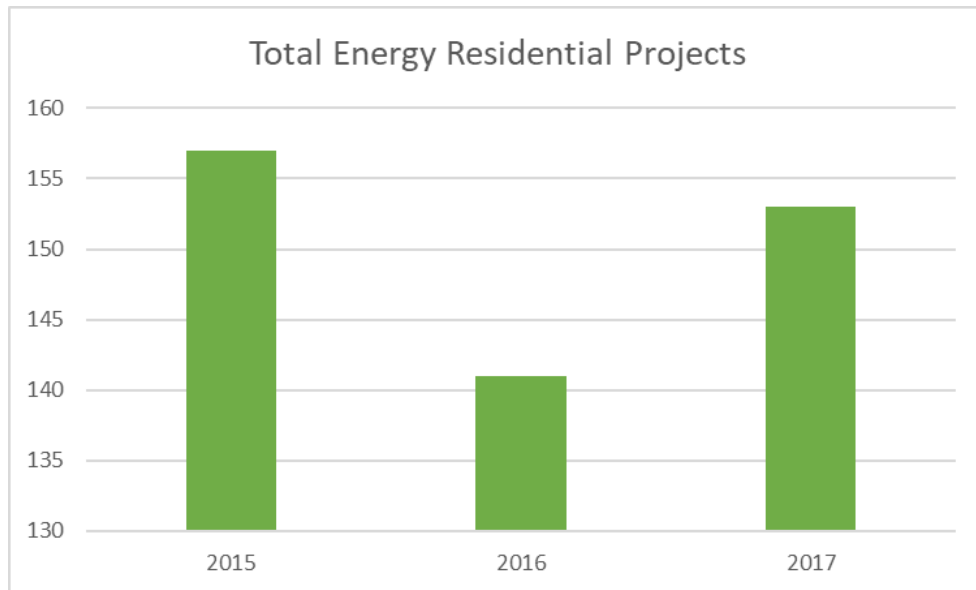
Weatherizing buildings (sealing air leaks and improving insulation), using more efficient heating and cooling systems such as heat pumps, and installing smart thermostat systems to avoid peaks and troughs in heat output are all important steps building owners should take to help reduce heating energy use between now and 2050 (see Table 3 and Table 4). As seen in Figure 1, natural consumption has declined for both residential and commercial/industrial users. Additionally, there has been a steady trend of residential projects undertaking energy efficiency measures which include improvements to the thermal shell, installed efficient appliances and heating equipment (see Figure 2). Keep in mind that data on building weatherization is difficult to track and the data below is not a complete measure of the homes weatherized to date.

**Figure 1 Natural Gas Consumption (2015-2017)**



Source: Vermont Gas

**Figure 2 Residential Energy Retrofits (2015-2017)**



Source: Efficiency Vermont



**Table 3 Essex Community Future Estimated Residential Thermal Energy Use (2025-2050)**

	2025	2035	2050
<b>Total residential thermal energy use (MMBtu)</b>	743,710	630,580	436,586
<b>Percent of residences weatherized</b>	14%	36%	100%
<b>Residential energy saved by weatherization (MMBtu)</b>	1,262	3,448	10,793
<b>Residences using heat pumps (%)</b>	18%	37%	60%
<b>Residential thermal energy use from heat pumps (MMBtu)</b>	48,202	99,170	145,397
<b>Percent of residences using wood heating</b>	14%	14%	14%
<b>Residential thermal energy use from wood heating (MMBtu)</b>	136,573	136,705	120,110
<i>Source: CCRPC LEAP Model, Vermont Department of Public Service</i>			

**Table 4 Essex Community Future Estimated Commercial Thermal Energy Use (2025-2050)**

	2025	2035	2050
<b>Total commercial / thermal energy use (MMBtu)</b>	393,515	374,823	331,537
<b>Percent of commercial establishments weatherized</b>	19%	22%	38%
<b>Commercial energy saved by weatherization (MMBtu)</b>	21,154	29,330	70,685
<b>Commercial establishments using heat pumps (%)</b>	21%	34%	38%
<b>Commercial thermal energy use from heat pumps (MMBtu)</b>	31,909	63,078	94,247
<b>Commercial establishments using wood heating (%)</b>	9%	10%	11%
<b>Commercial thermal energy use from wood heating (MMBtu)</b>	47,615	65,583	96,017
<i>Source: CCRPC LEAP Model, Vermont Department of Public Service, Vermont Department of Labor</i>			

## Electricity

Total electrical energy use within the Essex Community has decreased since 2015, though the number of residential premises has increased. This is primarily due to energy efficiency appliances and smart technologies. Additionally, utilities are measuring savings from estimated reductions in electricity realized by installed efficiency measures in the commercial sector. The Essex Community has saved 7,644 MWh of electricity from 2015-2017 from commercial and industrial users. The Community should consider working with businesses to accelerate the pace of energy efficiency savings, given that the commercial/industrial sector makes up 90% of electricity consumption. Residential users make up 10% of electricity use in the community. Like the commercial/industrial sector, residential users saved nearly 50% of the electricity saved between 2015-2017. The LEAP model (see Table 7) has estimated future electricity demands and intermediate targets for electricity savings and renewable generation in line with the Vermont CEP to demonstrate the importance of maintaining and accelerating this momentum.

**Table 4 Electricity Consumption (2015-2017)**

Sector	2015	2016	2017
<b>Commercial &amp; Industrial (MWh)</b>	491,868	485,004	480,218
<b>Residential (MWh)</b>	55,341	54,407	52,836
<b>Total (MWh)</b>	<b>574,209</b>	<b>539,411</b>	<b>533,054</b>
<b>Count of Residential Premises</b>	8,353	8,516	8,593
<b>Average Residential Usage (KWh)</b>	6,625	6,389	6,149

Source: Green Mountain Power, Efficiency Vermont

**Table 5 Electricity Consumption (2015-2017)**

	2015	2016	2017	Total
<b>Total Electric Savings (MWh)</b>	<b>4,395</b>	<b>4,456</b>	<b>5,766</b>	<b>14,617</b>
<b>Residential</b>	2,250	2,213	2,511	6,973
<b>Commercial &amp; Industrial</b>	2,145	2,243	3,255	7,644

Source: Green Mountain Power, Efficiency Vermont

**Table 6 Estimate Future Electricity Usage (2025-2050)**

	2025	2035	2050
<b>Total electrical energy use (MWh)</b>	859,118	1,098,896	1,436,730
<b>Total electrical energy savings (MWh)</b>	14,092	28,447	53,207
<b>Percent of Residences that should increase their electric efficiency</b>	30%	58%	98%
<b>Percent of Commercial and Industrial Establishments that should increase their electric efficiency</b>	30%	58%	98%
<i>Source: CCRPC LEAP Model, Vermont Department of Public Service</i>			

Within the Essex Community there are currently 432 sites that generate 27,799MWh of electricity from renewable sources, with a total capacity of 12 megawatts (MW). Green Mountain Power's Essex #19 hydroelectric dam on the Winooski River at VT-2A accounts for 18,300 MWh, or 66% of this total. The energy generated from the hydro dam is split between the Essex Community and the Town of Williston because the jurisdictional boundaries split the centerline line of the Winooski River. The next largest producer is the wastewater treatment facility's combined heat and power system, which provides 760 MWh of electricity to the facility (in addition to heat). The remaining 8 MW/8,739 MWh come from 430 roof-mounted or ground-mounted photovoltaic ((PV) solar systems scattered throughout the community. By securing a power purchase agreement with Green Lantern Solar, LLC, which supplies 80% of municipal buildings' electricity needs from a 500 kW PV facility on River Road, the Essex Community has demonstrated leadership in deployment of renewable energy resources. These sources supply approximately 3.4% of the current (2017) electric energy used within the community.

**Table 7 Existing Renewable Energy Generation**

	Sites	Power (MW)	Energy (MWh)
<b>Solar</b>	430	8	8,739
<b>Hydro</b>	1	4	18,300
<b>WWTP</b>	1		760
<b>Total</b>	432	12	27,799

Source: Community Energy Dashboard, 10/23/2018

## Renewable Energy Generation Targets

Regardless of ultimate use, the transformation to renewable sources of electricity will require increased generation from a variety of sources including biomass, hydro, solar, and wind. Additionally, electricity storage technologies such as batteries, fuel cells, pumped hydroelectric, and compressed air systems store excess power generated by intermittent renewable sources. These will become more important as the technology develops and the proportion of generation from renewable sources increases. The community should work with electric utility companies to support these infrastructure needs.

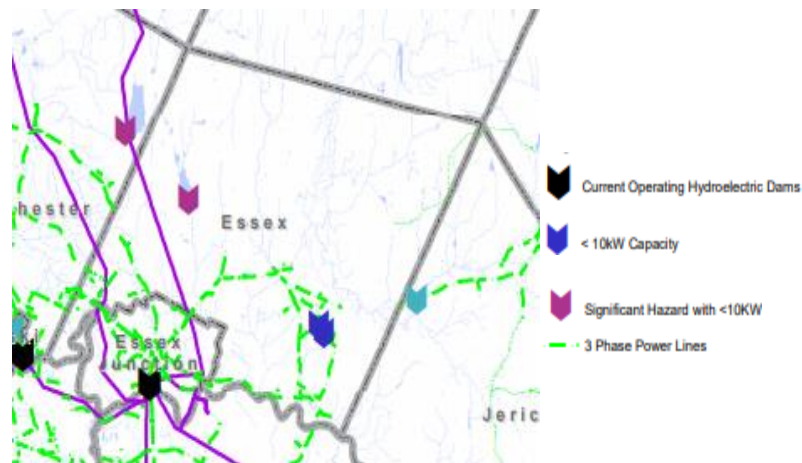
Electricity generation potential from woody biomass is difficult to model, but woody biomass resource areas are shown in Figure 3. These areas are generally privately-owned forest lands and demand for saw timber and other forest products will compete with firewood, wood chips, and wood pellets. Furthermore, electric generation efficiency from woody biomass is low—around 25% at most—compared to other sources (2016 CEP, p. 339). Woody biomass would be better used for heating or combined heat and power.

Figure 3 Woody Biomass



Hydroelectric generation is unlikely to increase significantly in the community for several reasons. There are few additional sites for large facilities, and smaller facilities have limited generation potential. Furthermore, site design and permitting are extremely challenging due to the significant impacts on stream geomorphology and aquatic habitats. That said, there are several potential sites for micro-hydro in Essex and Essex Junction, shown in Figure 4. The Energy Committee wholeheartedly supports development of micro-hydro and will seek to work with stakeholders to investigate the feasibility.

Figure 4 Potential Hydro Power



Supplying the community's electricity needs primarily through local PV solar systems and wind turbines will require a significant portion of land area. According to CCRPC's mapping analysis, there is enough suitable land for development of renewable energy generation to meet the community's targets. Figure 5 indicates that there is about 13% of the community's land area capable of accommodating solar energy generation facilities to meet the low target (see Table 10 for targets). However, the community only needs about 1,198 acres or 4.75% of the Community's land area to meet the low target for renewable electricity generation. Given that the Essex Community cannot meet its low target solely with 883 acres of prime solar the remaining 325 acres must be developed in areas of base solar. Because the actual development potential of base solar is uncertain, CCRPC's methodology assumes a generation density of 1 MW per 60 acres when calculating land area required to meet the community's overall generation targets. Therefore, once all constraints are accounted for, the actual area occupied by solar development would still be only 1,198 acres in total. Developing this amount of acreage is just one pathway for meeting the target. There are many other technologies (i.e. hydro, district heating, and biomass) that could be used to offset the need to utilize some of the 1,198 acres. Additionally, the policies on siting renewable energy generation facilities should be reviewed and adjusted as steps are taken towards the goal of 90% renewable energy use by 2050. The community should revisit the concept of a community net metering solar array by conducting an engineering study for the former town dump located near the intersection of VT Route 2A and VT Route 289.

Map 4 and Map 5 show the areas in the community where conditions are appropriate for solar and wind energy generation, such as slope, aspect, elevation, and modeled wind speed. These are classified into prime areas (appropriate conditions and no known or possible development constraints) and base areas (appropriate conditions, but with possible constraints to avoid or mitigate). Table 8 describes the land available for renewable energy generation based on the acreage of prime and base areas. Table 9 shows the generation potential (capacity or power in MW, total annual energy output in MWh) based on these prime and base resource areas.

**Table 8 Land available for Renewable Energy Generation**

	Prime Potential	Base Potential
<b>Solar (acres)</b>	883	7,716
<b>Solar (% of land area)</b>	9%	64%
<b>Solar generation density (MWh/acre)</b>	153	20
<b>Wind (acres)</b>	125	3,307
<b>Wind (% of land area)</b>	0.6%	15%
<b>Wind generation density (MWh/acre)</b>	122	123
<i>Source: CCRPC, Vermont Department of Public Service, Vermont Center for Geographic Information</i>		

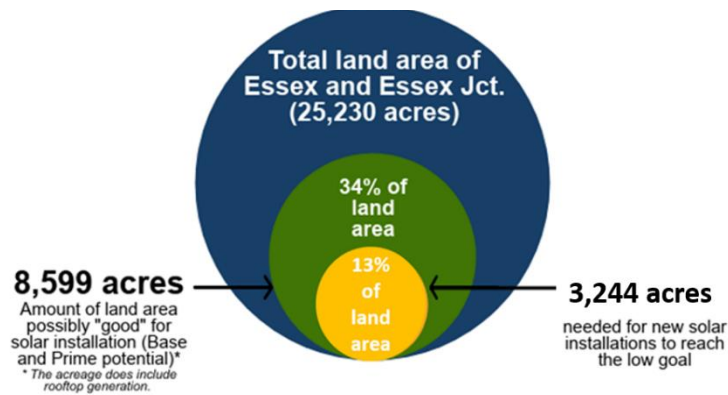


**Table 9 Potential Renewable Energy by Technology**

	Power (MW)	Energy (MWh)
<b>Rooftop Solar</b>	15	18,262
<b>Ground-Mounted Solar – Prime</b>	110	135,323
<b>Ground-Mounted Solar – Base</b>	129	157,707
<b>Wind – Prime</b>	5	15,278
<b>Wind – Base</b>	132	405,570

*Source: CCRPC, Vermont Department of Public Service*

**Figure 5 Land Area Available to Reach Low Target**



**Table 10 Renewable Energy Generation Target**

	Low	High
<b>Additional Target (Mwh)</b>	183,587	325,830
<b>Existing (Mwh)</b>	27,799	
<b>Total (Mwh)</b>	211,386	353,629
<b>Additional Acres Needed to Meet Target</b>	1,198 (5% of Community)	2,125 (8% of Community)

Of the total solar generation potential, 15 MW (18,262 MWh) could be located on existing impervious surfaces, such as rooftops and paved areas. Because these sites are already developed, solar generation may be compatible with other land uses if developed in a way that is in harmony with existing development patterns and existing aesthetic norms especially in the Village Center District and the Town's Historic Preservation and Business Design Control Districts. Preferred sites should be the focus of renewable energy development over undeveloped land, or historic districts. The Essex Energy Committee has partnered with solar developers to promote adoption of rooftop solar in the community by hosting informational events for both residential and commercial building owners.

Other preferred sites for net metering systems include brownfields, landfills, and former mineral resource extraction areas. For instance, the Town strongly supported Green Mountain Power's 4.5-MW photovoltaic array and battery storage facility at River Road on the site of a reclaimed sand and gravel extraction area. Wind turbines may also be located on previously-developed sites, but wind generation efficiency drops exponentially with turbine size, and only small-scale turbines should be sited near developed areas, so the generation potential for these sites would be limited. There are nevertheless good reasons to consider small-scale wind on municipal lands as a means of reducing electrical costs and setting an example of the small-but-important steps residents and businesses can take to work towards Essex's goals.

Renewable energy generation facilities shall not take place in areas with known constraints; if impacts to possible constraints cannot be avoided, they shall be mitigated. Renewable energy installers should be encouraged to develop in tandem with other uses that could occur on a given site to add value in a way that speaks to holistic development patterns rather than a standalone facility. This type of development could also locate renewable energy installations on the same site as high energy users and reduce the need for distribution and transmission line upgrades.

Facilities with a generation capacity greater than 500kW are considered utility-scale and shall be located in designated industrial or commercial zones, where constraints are less numerous, impacts are more easily mitigated, and there is less competition for other land uses than in other areas. Other areas would have to be considered on a case by case basis, with developers encouraged to interact directly with Essex's municipal planners and committees in advance of issuing an advance notice under Section 248.

Within the Town of Essex's Scenic Resource Protection Overlay District, the designated Village Center District, the Town of Essex's Historic Preservation Design Control District, and the Business Design Control District, all renewable energy generation facilities shall follow the siting, design, and screening standards/best practices as other forms of development to avert or minimize undue adverse impact on scenic resources.

## Transportation

As noted in the Transportation section of the Essex Village Comprehensive Plan and Essex Town, the Essex Community has been and continues to be, a transportation hub. The only Amtrak station in Chittenden County exists in the Village, an active bus terminal, and five state highways are also present. Promoting compact development, providing more options for walking, biking, and public transit, and reducing single-occupancy vehicle trips can reduce energy use in the transportation sector. The park and ride on Landfill Lane provides one option to carpool and reduce single-occupancy vehicle use; the community should explore other strategic locations for park and ride lots.

The Essex Community relies almost exclusively on fossil fuels for its transportation energy. In 2015, there were 15,114 fossil-fuel burning light-duty vehicles registered in the community, in addition to heavy-duty vehicles and locomotives. Heavy-duty vehicles will still rely on internal combustion engines due to power demands, but these can transition to renewable biofuels with changes to vehicle design and fueling systems.

The LEAP model indicates that, to reach 2050 targets, total transportation energy use in the community (including light-duty and heavy-duty vehicles) must decrease significantly and steadily. In addition, light-duty vehicles will create a significant demand for electricity by transitioning from fossil fuels, while heavy-duty vehicles will likely transition to using biodiesel almost exclusively.

**Table 11 Estimated Future Transportation Energy Use, 2025-2050**

	2025	2035	2050
<b>Total light duty transportation energy use (MMBtu)</b>	890,049	563,787	245,721
<b>Electricity used for light duty transportation (MMBtu)</b>	11,869	81,813	172,669
<b>Light duty electric vehicles (% of vehicle fleet)</b>	94%	59%	11%
<b>Biofuel blended* energy used for light duty transportation (MMBtu)</b>	878,180	481,974	73,052
<b>Biofuel blend* light duty vehicles (% of vehicle fleet)</b>	94%	59%	11%
<b>Heavy-duty transportation energy use from biodiesel (% of total)</b>	33%	58%	96%
<b>Heavy-duty transportation energy use from fossil fuels (% of total)</b>	67%	42%	4%
<b>*This measures biofuels blended with fossil fuels. A common example is gasoline with ethanol mixed in.</b>			
<b>Sources: VTRANS, CCRPC/VEIC LEAP model</b>			

The technological improvements and decreasing price of hybrid and all-electric vehicles (“EVs”) will allow for a steady transition from fossil fuel to renewable sources for light-duty vehicles; in 2017, there were already 49 light-duty EVs registered in the community. The community can become “electric vehicle ready” by requiring that buildings (including residences and places of work) are built and retrofitted with EV charging infrastructure, while also encouraging development of public charging stations. [Drive Electric Vermont](#) has information on the use of EVs.

Because of the urgent need to make progress towards these goals, the Essex Community should actively pursue both incentive-based and regulatory strategies to encourage conservation and efficiency, such as a revolving loan fund for energy efficiency upgrades, or an energy fee that funds public energy improvements (such as EV charging stations and rooftop solar grants or loans), with waivers or reduced rates for those who make their own improvements.

## Government

As the primary source of regulation and enforcement in the community, as well as a source of guidance, the Town and Village governments can champion energy reform and efficiency.

The community needs to prepare for energy-related issues beyond its control. As the community and state take steps to improve efficiency, reduce consumption, and incorporate more renewable energy into the mix, large-scale renewable energy sites such as solar farms may wish to locate in the Essex Community. Though the community could take pride in locally-produced, renewable energy, other Vermont towns can attest to the controversy that can arise when wind turbines are placed atop ridgelines or solar arrays fill previously-undeveloped fields.

The [Vermont Public Utilities Commission\(PUC\)](#), rather than the community, issue permits for electric transmission and electric generation facilities. As a result, energy projects are not subject to direct municipal land use regulation, though the changes made by Act 174 of 2016, provide new means of local control through solar setbacks, site designation, and this plan. Moreover, the community can rely on this plan to engage in the Section 248 process to ensure that local land use policies are considered and enforced in the orderly development criterion of the permitting process conducted by the PUC.

## Appendix A

The standards in this section shall apply to all development (including renewable energy generation) located in the specified areas identified.

### Design Control Best Practices

This section outlines the best practices for locating net-metered roof-mounted solar facilities up to 500 kW in the Village of Essex Junction's Designated Village Center/historic district and the Town of Essex's Business and Historic Preservation Design Control Districts. The best practices in this section are intended to preserve character-defining features of these areas while accommodating the need for renewable energy generation to the extent practical.

1. The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.
2. New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.
3. Utilization of low-profile solar panels is recommended. Panels shall be within ten percent (10%) of the average height of existing adjacent buildings and not be visible from the public right of way. Solar shingles laminates, glazing, or similar materials should not replace original or historic materials. Use of solar systems in windows or on walls, siding, and shutters should be avoided.
4. Panels should be installed flat and not alter the slope of the roof. Installation of panels must be reversible and not damage to the historic integrity of the resource and district.
5. Solar panels should be positioned behind existing architectural features such as parapets, dormers, and chimneys so they are not visible from the public right of way.
6. Use solar panels and mounting systems that are compatible in color to established roof materials. Mechanical equipment associated with the photovoltaic system should be unobtrusive.
7. Solar panels should be installed on rear slopes or other locations that are not visible from the public right-of-way. Panels should be installed flat and not alter the slope of the roof. Installation of panels must be reversible and not damage the historic integrity of the resource and district.
8. Flat roof structures should have solar panels set back from the roof edge to minimize visibility. Pitch and elevation should be adjusted so they are not visible from public right-of-way.
9. Use of solar systems in non-historic windows or on walls, siding, or shutters should not be visible from the public right of way.



## Scenic Resource Protection Standards

The scenic resource protection standards should be applied to the Town of Essex's Scenic Resource Protection District. The purpose of these standards is to avert or minimize the adverse impacts of development (including renewable energy generation) on identified scenic resources, viewsheds and roadscape corridors through appropriate siting and design practices. A proposed development along any of the scenic road segments identified in this section shall address any impacts on scenic resources as seen from public roads using these standards.

1. To minimize the loss of scenic character renewable energy generation facilities shall be designed and located to minimize the intrusion of incompatible and unharmonious development into existing scenic vantage points as viewed from public vantage points identified in the list of scenic streets.
2. Renewable energy generation facilities shall be positioned so that views to distant mountains remain as natural as possible.
3. Renewable energy generation facilities should be arranged in a manner that protects a significant portion of open space.
4. The use of vegetation to screen renewable energy generation facilities and associated fencing in all seasons is strongly encouraged. Plantings shall be of sufficient height, density and maturity to serve as a visual barrier from buildings and the roadscape identified in this section
5. Shorter structures may be more appropriate in certain spaces than taller structures to keep the project from obstructing public vantage points identified in this section. Avoid locating a renewable energy generation facility in a location which diminishes the visual impact of the array from the owner's property but places the array immediately within their neighbor's or the public's viewshed. Locate facilities in a manner designed to reduce impacts on neighbors or public viewsheds.

### SCENIC STREETS

Portions of the following streets are included in the Scenic Resource Protection Overlay District. To see which portions of the streets are in the district, refer to the SRPO map.

- Bixby Hill Road
- Browns River Road
- Chapin Road
- Colonel Page Road
- Jericho Road/VT Route 15
- Naylor Road
- North Williston Road
- Old Stage Road
- Pettingill Road
- River Road/VT Route 117
- Towers Road
- Upper Main Street/VT Route 15
- Weed Road
- Woodside Drive

# Map 1.

## Existing Renewable Energy Sites & Preferred Sites

### Essex Community, Vermont

#### Existing Site Type

- Roof-Mounted Solar
- Ground-Mounted Solar
- Solar Canopy
- Hydropower
- ⚡ Combined Heat and Power System

#### State Designated Preferred Sites\*

- ▲ Closed Landfill
- ⛏ Sand or Gravel Pit
- Brownfield
- Parking Lot
- 3 Phase Power Lines
- Transmission Lines

\*Additional state designated preferred sites not shown on this map include roof-tops, parking lot canopy, a previously developed site, or a parcel or adjacent parcel to a customer that has been allocated more than 50 percent of the net-metered output.

This map and the corresponding data is intended to be used to inform energy planning efforts by municipalities and regions. They may also be used for conceptual planning or initial site identification by those interested in developing renewable energy infrastructure. They should NOT take the place of site-specific investigation for a proposed facility and should not be used as "siting maps".

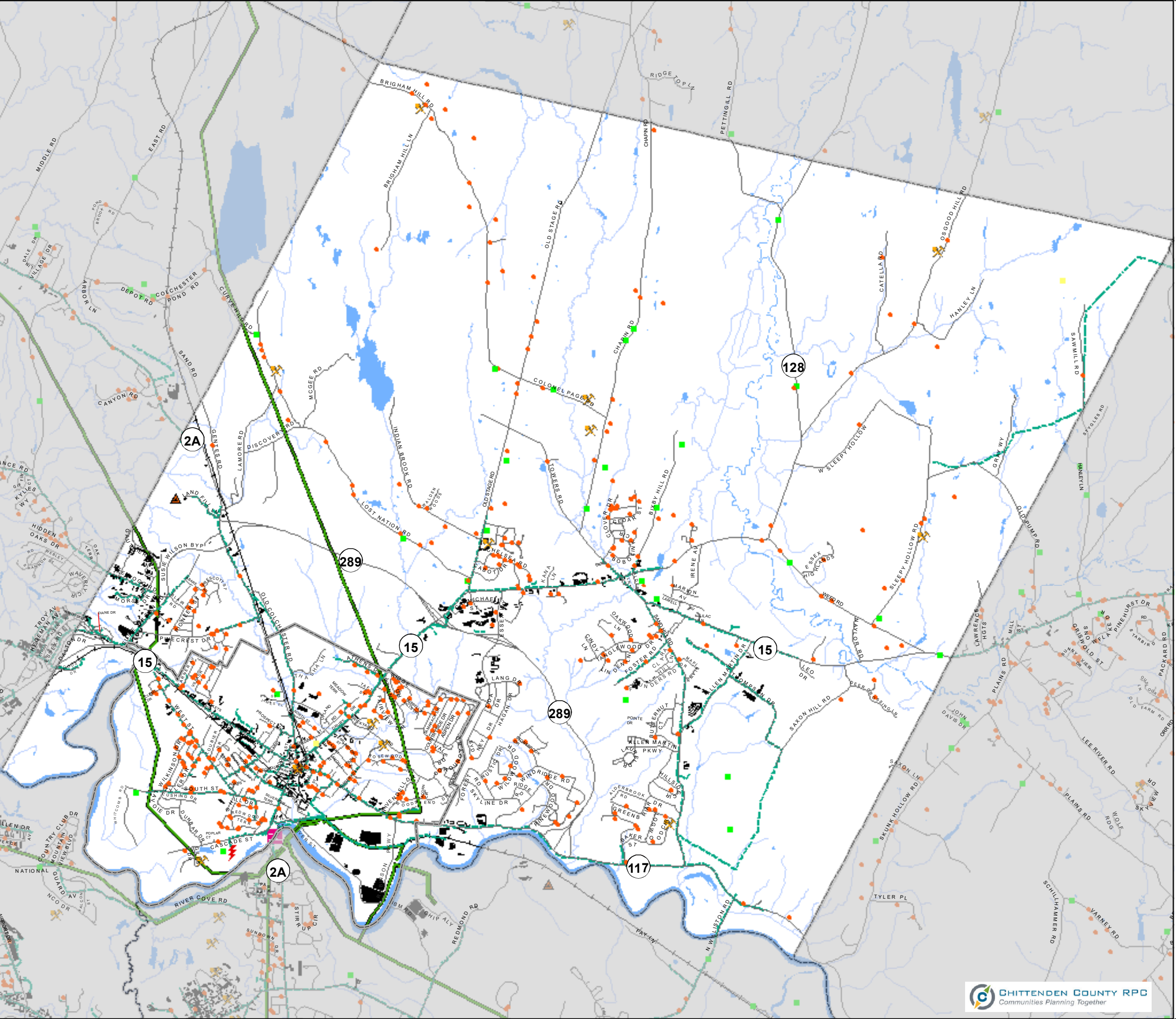
0 0.5 1 2 Miles

Sources:  
Closed Landfill-ANR  
Sand or Gravel Pit-ANR  
Parking Lots-CCRPC, 2008  
3-Phase Power-VCGI, BED  
Existing Sites-EAN, 11.2018  
Major Roads and Railroad - VTrans  
Town Boundary and Water Body - VCGI  
Map produced with ArcGIS,  
State Plane Coordinate System NAD83.

Date: 5/31/2019

Disclaimer:  
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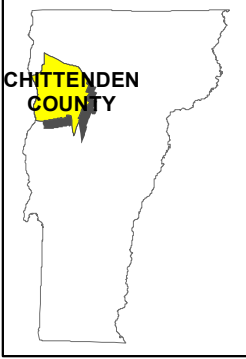
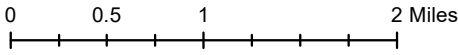




# Map 2. Known Constraints Essex Community, Vermont

## State and Local Constraints

- Vernal Pools (Confirmed and Unconfirmed)
- FEMA Designated Floodway
- Vermont Department of Environmental Conservation River Corridors\*
- State-significant Natural Communities & RTE Species
- Wetland (Vermont Significant Wetlands Inventory and Advisory Layer)
- Recreation/Conservation Area within Resource Preservation-Industrial Zoning District
- Slopes of 20% and steeper
- Stream Centerline
- Water Body

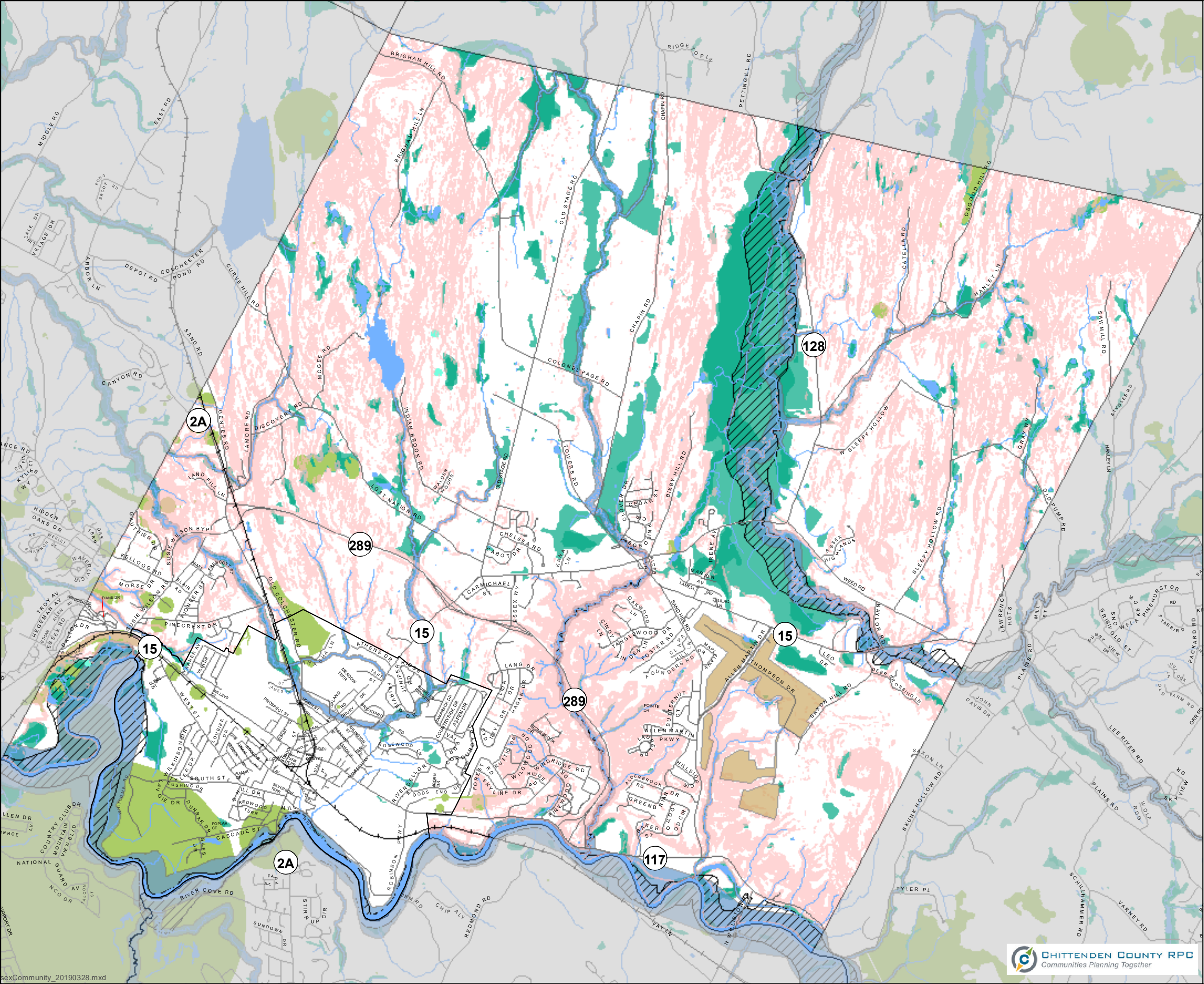


\*Note: River corridors are comprised of meander belt and riparian buffer components for the purpose of achieving and maintaining stream equilibrium conditions. Small streams draining 0.5 to 2 square miles and a 50 ft. buffer are also included.

Sources:  
Vernal Pools; VCGI, 2017  
DEC River Corridors; VCGI, 2019  
FEMA DFIRM Floodways; VCGI, 2017  
RTE + Sig. Natural Comm; VCGI, 2017  
Wetlands; VSWI Wetlands Class Layer, VSWI Advisory Layer, 2017  
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# Map 3. Possible Constraints Essex Community, Vermont

## State and Local Constraints

- Stream Centerline
- Water Body
- FEMA Special Flood Hazard Areas
- Agricultural Soils
- ACT 250 Ag Mitigation Parcel
- Hydric Soils
- Deer Wintering Areas
- Protected Lands
- Slope 15% to 20%
- Resource Preservation Industrial District

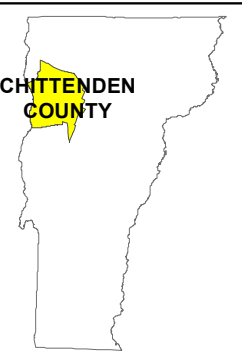
- Areas where design control best practices apply
- Scenic Resource Overlay

## Vermont Conservation Design - Landscape Scale Components

### PRIORITY

- HIGHEST PRIORITY
- PRIORITY

0 0.5 1 2 Miles

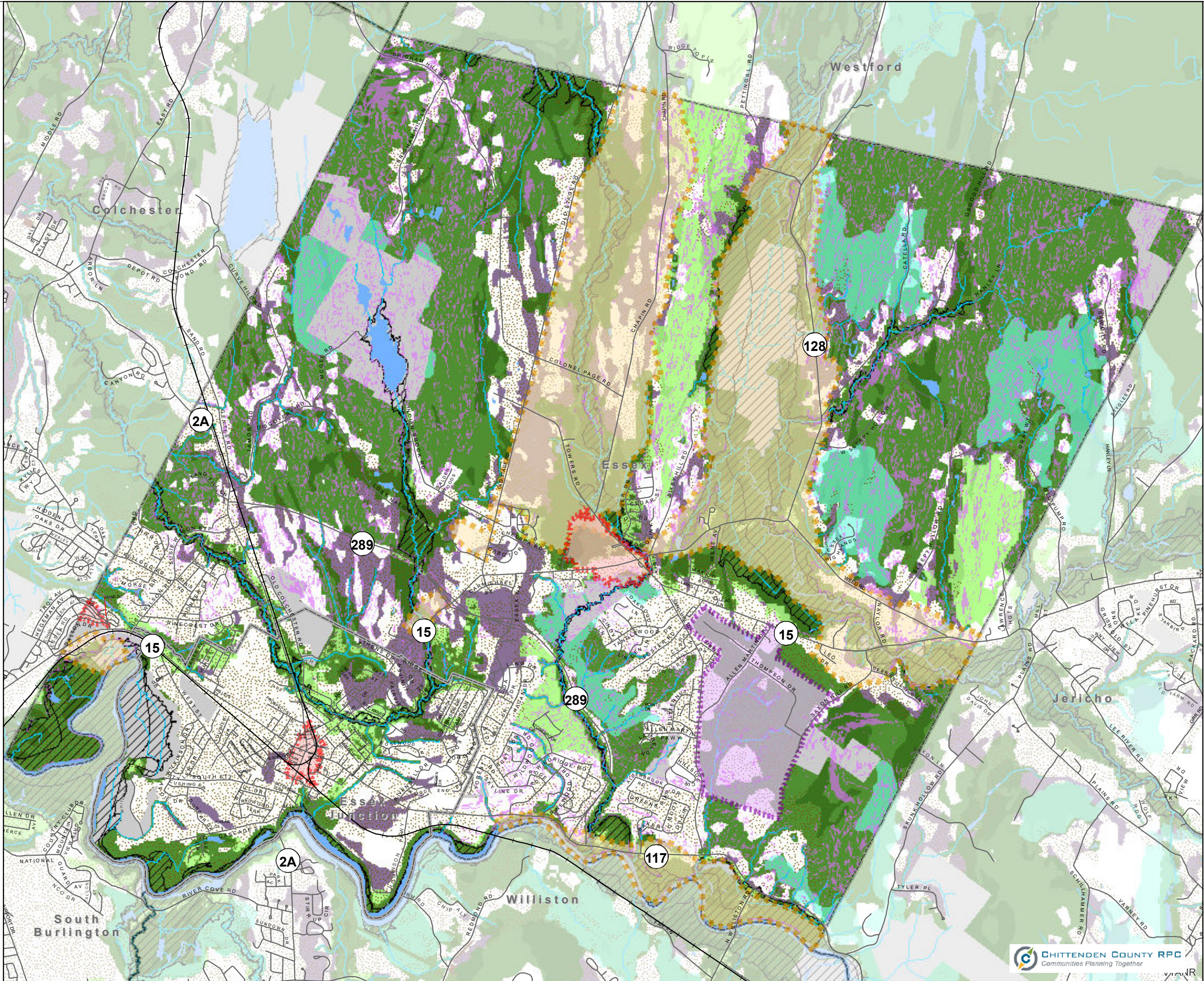


Sources:  
Agricultural Soils; VCGI, 2017  
FEMA Special Flood Hazard Areas; VCGI, 2017  
Protected Land; VCGI  
Act 250 Mitigation Areas; VCGI, 2017  
Deer Wintering Areas; VCGI, 2017  
Priority Forest Blocks; Vermont Conservation Design  
Hydric Soils; VCGI, 2017

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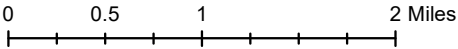




# Map 4. Potential Solar Energy Resource Areas Essex Community, Vermont

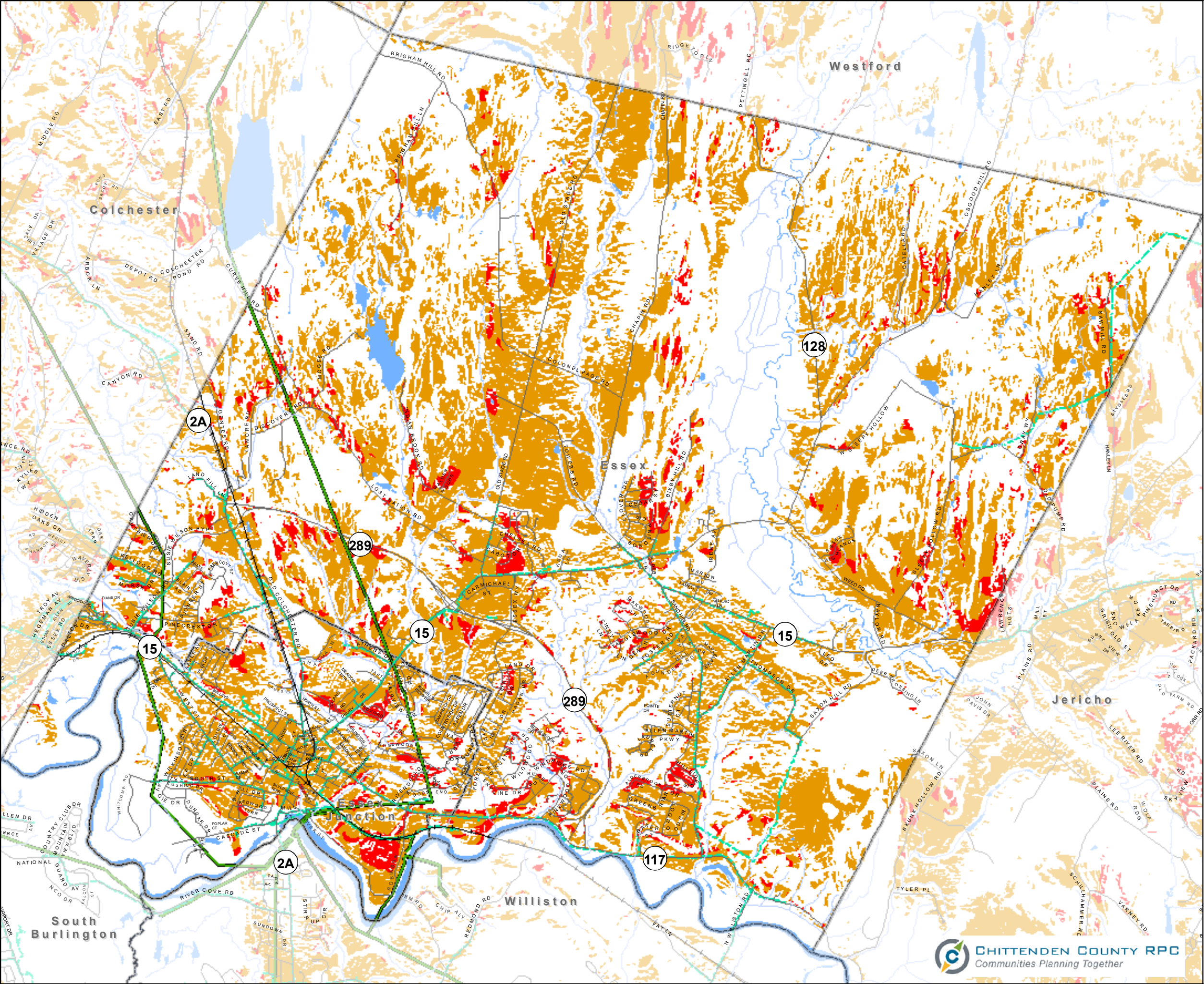
-  Prime Solar: Areas with high solar potential and no state/local known & possible constraints
-  Base Solar: Areas with high solar potential and a presence of state/local possible constraints
-  3 Phase Power Lines
-  Transmission lines

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Sources:  
Solar Energy Resource Areas;VCGI,2017  
Disclaimer:  
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Date: 5/31/2019





Map 5.  
Potential Wind Energy  
Resource Areas  
Essex Community, Vermont

- Prime Wind: Areas with high wind potential and no state/local known & possible constraints
- Base Wind: Areas with high wind potential and a presence of state/local possible constraints
- 3 Phase Power Lines
- Transmission Lines

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0 0.5 1 2 Miles

Sources:  
Wind Energy Resource Areas;VCGI,2017  
Disclaimer:  
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