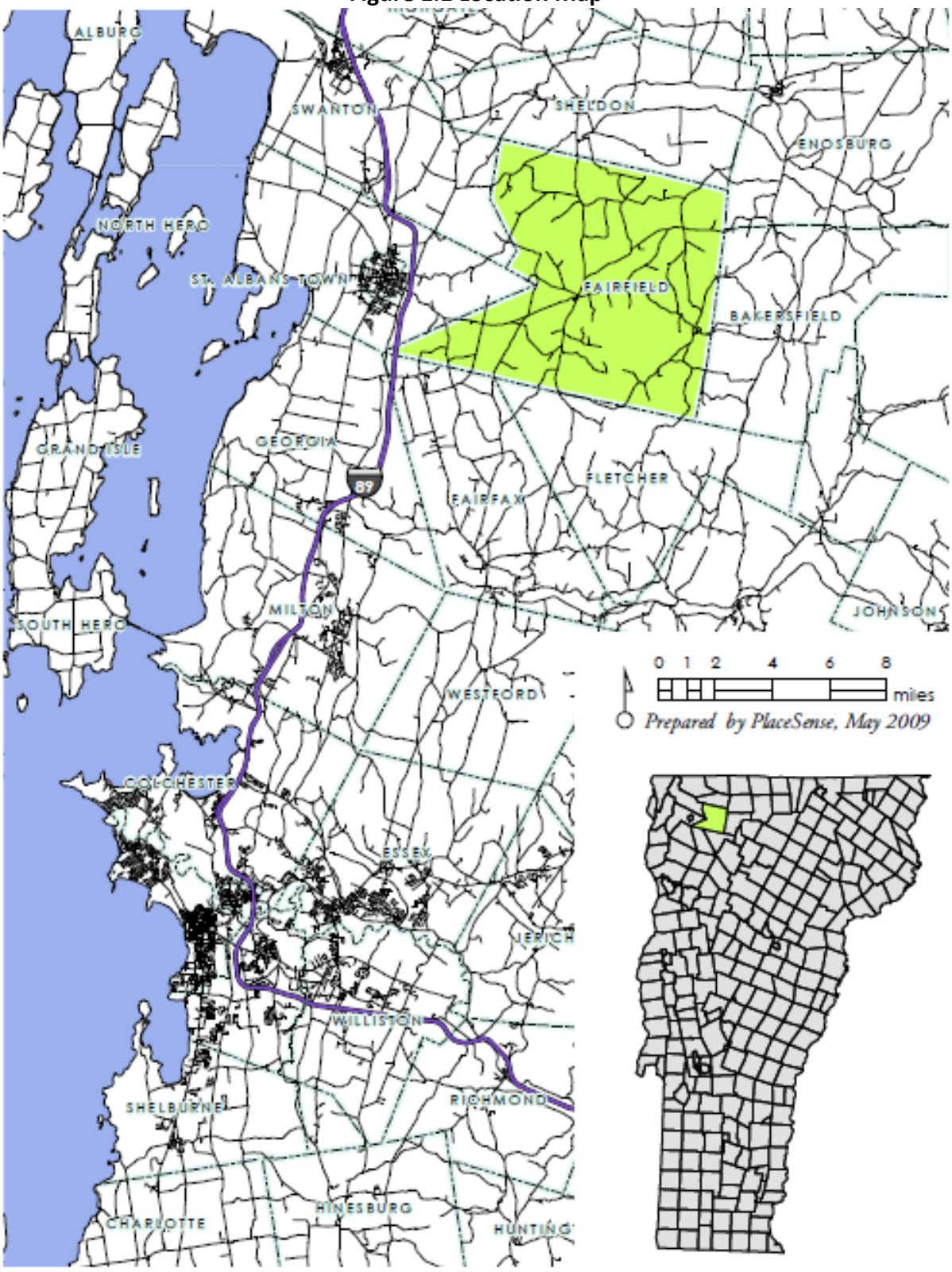
FAIRFIELD, VERMONT MUNICIPAL PLAN 2020-2028

DRAFT

Table of Contents

Figure 1.1 Location Map



1. INTRODUCTION

Community Profile

Fairfield, having about 47,000 acres, is the largest town in Franklin County. It is situated about 30 miles northeast of Burlington and is bounded north by Sheldon, east by Bakersfield, south by Fletcher and Fairfax, and west by St. Albans and Swanton.

The Town of Fairfield lies in the rolling hills of northwestern Vermont. Black Creek, a tributary of the Missisquoi River, flows through the town in a major valley formation.

Fairfield Pond, reserve water supply for the Village of Swanton, and the location of several water-based recreational activities, occupies the northwest part of the Town. Running southerly from Fairfield Pond, an extensive swamp cuts across the town. A large portion of this swamp is encompassed in the state-owned Fairfield Swamp Wildlife Management Area.

Most of Fairfield, nearly seven-eighths of its total area, is very evenly divided between agricultural land and woodland. Residents are quite evenly dispersed throughout the entire town with many homes associated with active farms. Except for a concentration of seasonal housing around Fairfield Pond, the only population centers are the villages of Fairfield and East Fairfield.

Fairfield possesses a long and proud tradition of productiveness. The town has avoided many of the blights of over development and the accompanying loss of agricultural and open land to date, reflecting the stability its generations of residents have given the town. The beauty of Fairfield and the productiveness of its lands stand as a monument to the achievements of earlier generations who have lived here.

Planning

Purpose

Under Vermont's Planning and Development Act, the Fairfield Selectboard has established a Planning Commission to prepare a town plan and land use regulations. Fairfield's first town plan was adopted in 1972. State law now requires that the town plan be updated every eight years, to reflect any changing conditions that may be affecting the community. Fairfield's plan was updated in 1977, 1986, 1996, 2002, 2010, 2015 and now in 2020. Fairfield adopted zoning regulations in 1968 and revised them in 1973, 1986, 1996, 2004, 2012 and 2020. This amended town plan is consistent with the goals established in 24 V.S.A. § 4302.

A comprehensive town plan and land use regulations allow Fairfield to control both the location of development and the types of land uses permitted. Not only is a current town plan necessary should any amendments to the zoning regulations be desired, but major projects that come under Vermont's Land Use and Development Act (Act 250) must conform to a current town plan.

Changes are coming at an increasing rate. The problems posed by these pressures must be addressed by comprehensive

forethought to ensure that future decisions will provide long-term solutions rather than stopgap measures. The intent of this plan is not to eliminate any existing land uses or to stop all future development, but rather to channel growth to appropriate locations within the town.

Citizen Participation
Over the years, citizen participation has been encouraged throughout the process of developing of the plan and bylaws. Previous citizen participation has included a survey in 2001, and a public workshop in 2010.

For the most recent 2020 plan revision, citizen participation focused on developing a new community vision and identifying priorities for the next eight years. This process included two presentations, one at Town Meeting Day and one in August of 2020. Additionally, the Town conducted a survey which received 122 responses from Fairfield residents. Students at the Fairfield Center School were sent a worksheet asking them what places they want to see in Town.

Vision Statement

1. It is the primary and fundamental intention of Fairfield to remain a rural, agricultural town.
Every effort should be given to the maintenance and furtherance of agricultural enterprises in Fairfield. No activities in Fairfield should be allowed that are detrimental to this primary objective.

2.Fairfield supports its agricultural economy and looks forward to a future where working lands continue to be in production for diverse forms of agriculture.
Dairies, maple sugar farms, beef production, vegetable farms and other diverse forms of agriculture are integral to the landscape and economy of Fairfield.

A wise land ethic implies that the placement of new houses on prime croplands ought to be prohibited, as there is enough agriculturally marginal land in Fairfield that can provide suitable locations for new dwellings.

3. Fairfield encourages the development of small-scale enterprises in the village centers of Fairfield and East Fairfield that will offer basic goods and services for town residents, that will provide employment locally and that will enhance the town's rural way of life.
Our two villages continue to be important focal points of the social and commercial life of the town, and serve as rural service centers. Light industry and manufacturing and other businesses appropriate in scale and character, can be further ways to enhance the rural character of Fairfield. Economic growth should be encouraged in and adjacent to these existing villages as growth centers.

4. Fairfield values preserving our natural landscape and historic features.
Our historic settlement and land use create a scenic rural landscape enjoyed by both residents and visitors. Every effort should be made to preserve our natural lands and historic structures.

5. Fairfield is a vibrant and welcoming community.
Fairfield values all residents, from families to senior citizens. We envision a future where both new and long-term residents feel part of the Fairfield community and there are

diverse opportunities for neighbors to connect with each other.

2. IMPLEMENTATION

Plan Action	Involved Parties	Timeline
Remaining a Rural & Agricultural Town: Future Land Use		
Maintain a current Local Emergency Management Plan (LEMP) and Hazard Mitigation Plan.	Selectboard	Ongoing
Supporting the Future of Agriculture in Fairfield		
Develop and annually maintain an inventory of farms, maple sugaring operations, farm parcels, total acreage in farm production, value-added farm business, community-supported agriculture programs, and other agricultural enterprises.	Planning Commission	Develop inventory: 2020-2023, Maintain inventory: Ongoing
Promoting Small-Scale Business in Fairfield's Village Centers		
Develop and maintain a current inventory of home occupations and businesses to determine trends as they develop in the town and encourage the support of such businesses.	Planning Commission	Develop inventory: 2020-2023, Maintain inventory: Ongoing
Maintain membership in and support the efforts of the Northwest Vermont Communications Union District (NWCUD) to expand broadband access in Fairfield.	Selectboard, Planning Commission	Ongoing
Preserving Fairfield's Natural Landscape and Historic Features		
Support any applications for grants to compile a town history.	Historical Society	Ongoing
Support community efforts to restore and utilize the Fairfield Common School.	Selectboard, Planning Commission, Historical Society	2020-2025
Support efforts of the Recreation Committee to pursue public recreational opportunities on Fairfield Pond and the efforts of the Fairfield Pond Recreation Association to maintain the pond's water quality.	Planning Commission, Recreation Committee, Fairfield Pond Recreation Association	Ongoing
Sustaining a Vibrant Community		
Encourage the development of a capital program which includes an inventory of capital facilities, establishes minimum levels of service (as appropriate), and serves as the basis for a five-year capital budget to be revised and adopted on an annual basis.	Selectboard, Planning Commission	2020-2022

Plan Action	Involved Parties	Timeline
Sustaining a Vibrant Community		
Maintain dedicated equipment reserve funds and avoid using those funds for purposes other than the acquisition of capital equipment. A separate short-term cash flow, or contingency, reserve fund can be established should the town deem it necessary.	Selectboard	Ongoing
Continue to participate in the regional Transportation Advisory Committee (TAC) to facilitate transportation plans and policies that are in the best interest of the region and Town of Fairfield.	Selectboard, Road Commissioner	Ongoing
Maintain a Road Erosion Inventory and update it every 5 years in compliance with the Municipal Roads General Permit (MRGP) requirements.	Selectboard, Road Commissioner	Ongoing
Develop a town newsletter and identify volunteers to update the newsletter on a monthly basis.	Planning Commission	2020-2028

2. YESTERDAY

Formation & Settlement

Fairfield was chartered August 18, 1763 and granted to Samuel Hungerford and his associates. The town was not settled until the spring of 1787, when Joseph Wheeler erected a cabin in a clearing in the forested wilderness near the Fairfax line. Others quickly followed, many of who made their way northward from Fairfield, Connecticut.

The town was organized in March 1790 and the first town meeting was held on March 30, 1791, at the home of Joseph Wheeler who was chosen moderator and town treasurer. Edmund Town was elected town clerk, Levi Wakeman, constable; Edmund Town, Thomas Northrup and Ralph Gregory, selectmen; Salmon Wheeler, Abram Northrup and David Hoit, listers; and Nathan Lobdell, collector of taxes. The Federal Census of 1791 recorded 176 residents in Fairfield and neighboring Smithfield. These two towns were merged together in 1792 to create present-day Fairfield – one of the state's largest towns at 60 square miles.

First Settlers

Fairfield's first settler, Joseph Wheeler, brought his family to live in the cabin he had built the previous year in March 1788. In 1789, Hubbard Barlow and Andrew Bradley, with several others, settled here. Polly Hoit was the first child born in Fairfield on July 14, 1788. Smithfield Beaden was the first male child born here, in the part called Smithfield. The proprietors made him a present of 100 acres of land.

In about 1789, Jabez Burr came to Fairfield, bringing his family to the house of one of the Hoits where they remained one night. The next morning the two men started to find the lot upon which Burr was to locate. This was three or four miles from Hoit's. The lot was found with but little difficulty, and the two sturdy fellows immediately went to work to build a house; when night came the building was ready for occupancy; the men returned to Hoit's, and Burr and his family took possession the next morning.

This wooden dwelling contained parlors, dining room, kitchen, dormitory, pantry and scullery all in one. The house was twelve feet square, built of split basswood logs, notched at the ends to ensure stability and tightness of the walls, and about seven feet to the roof, which was constructed by using poles for the support of the outer roofing made of bark peeled from the logs which constituted the sides. The doorway was closed, when necessary, by hanging a blanket over it. The "windows" were small holes covered with greased paper as soon as it could be afforded. This was not fancy; there were many similar houses.

Early Family Histories

The Vermont Gazetteer of 1882 records the following family histories:

John B. Mitchell served seven years in the revolutionary war, returned home to Hartford, Conn., and was married to a young lady sixteen years of age, and when the settlers first commenced to come into this town started on foot with his wife to make for himself a new home here. This they accomplished by locating upon the farm now owned by Samuel H. Soule. Their first house was built on the low bottomland along the creek, but the first overflow of the stream caused them to seek higher land as a site for their residence. Here they remained until their death, at an advanced age, Mrs. Mitchell attaining the great age of 106 years. They reared a family of eight children, none of whom are living, though several grandchildren represent the family here.

Thomas Northrup, from Sherman, Conn., came to the forests of Fairfield in 1790, and settled upon a farm of 140 acres which he had purchased from one of his brothers, an original proprietor of the town, paying therefore $100.00. Upon this he made a small clearing, planted some corn, and cut some hay from a beaver meadow, and also erected a small log cabin, then returned to Connecticut. In the following spring he started for his new home with a yoke of oxen and one horse hitched to a heavy sled, upon which was placed his household effects and provisions for his family, consisting of his wife and three children. After a long and tedious journey, he arrived here and commenced his useful life, remaining in this town until his death. He had a family of four sons and seven daughters, only one of whom, Harmon Northrop, is now living, at the age of eighty-seven years. Harmon has been a deacon of the Congregational church, to which he has been a pillar for the past fifty years. He has held nearly all the offices in the gift of the town, and has also held the office of county commissioner four years, and was president of the Franklin County Agricultural Society three years. The great regard felt for his opinion and advice is attested by the fact that he has assisted in the settlement of, or settled independently, sixty-one estates.

Thomas Ryan came to Vermont from Ireland, about the year of 1812, and worked at his trade of tailoring at Burlington for a time, then removed to this town and located upon the farm now owned by his son, John H. Soon after locating here he married Catharine Belfort, the union being blessed with six children, two of whom are now living. Mr. Ryan was a man of intelligence, and much respected for his integrity and gentlemanly character. He died in 1872, aged seventy-two years.

Joseph Soule, who served in the revolution, had a family of six sons and two daughters, all of whom settled in this town and in Fairfax. The Soule family is of French Huguenot extraction, and came to America in the “Mayflower.” Timothy, the oldest son, came to Fairfield from Dover, Connecticut, about the year 1792. He was twenty-two years of age when he settled in his wilderness home, and remained until his death, December 27, 1861, aged ninety-three years. His youngest child, James M., now resides on the old homestead. Salmon Soule, brother of Timothy, came to Fairfield a year or two after his father, and located upon the farm now occupied by his son, C. Rollin, where he carried on the business of blacksmithing, in addition to conducting his farm. As a blacksmith he made himself particularly useful to the early settlers, and was noted for the fine axes he forged. He died on the old farm, aged eighty-six years and six months.

Joseph Field, Jr. came here with his father, and settled at what is now the village of Fairfield Center. He was a carpenter and joiner, and subsequently engaged in mercantile pursuits, and carried on a distillery and starch manufactory. In business he was quite successful, and succeeded in gaining the regard and esteem of his townsmen, whom he honorably represented in many offices of trust. He died in 1863, aged eighty-four years. Of his family of eleven children, only three, A. G., Samuel H., and Mrs. A. A. Farrand, are now living.

John Leach, Sr., was born as New Fairfield, Connecticut, in 1735, and came to Fairfield, Vermont, in 1789, locating in the southern part of the town. He reared a family of fourteen children, all but two of whom settled in the town, and died in 1811. John Leach, Jr., born at New Fairfield, in 1761, came here in 1788, made some improvements on a farm, and returned to Fairfield, Connecticut. In the spring of 1789, he returned, bringing his wife and two children, and located permanently upon the farm now owned by Mr. Oliver, on road 21. His honorable life was brought to a close in 1844, in his eighty-fourth year.

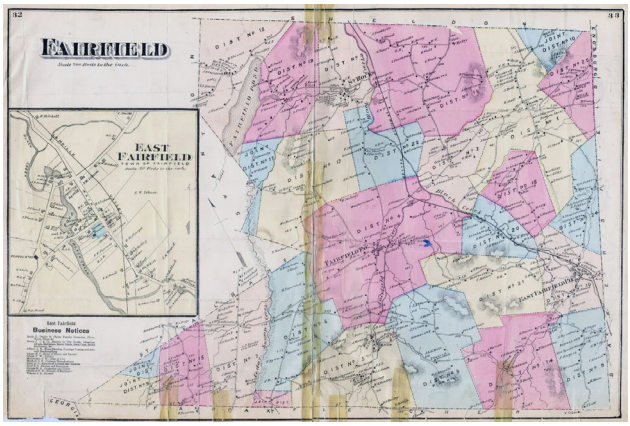
Amos Northrop came to Fairfield, from Fairfield, Connecticut, in 1792, and located where Thomas Hale now resides. Here he resided until his death, in 1849, aged eighty-three years. During the war of 1812, he started to market, at Plattsburg, with a load of oats, and upon his arrival there was pressed into the service of the United States, and sent with his team to Sackett’s Harbor, to transport soldiers and supplies, and was retained from home from January until March. During a portion of this time he was obliged to camp in the forest with no protection from the

weather, and thereby had his feet frozen so badly that a portion of the right foot had to be amputated. He reared a family of four sons and three daughters, only one of whom, Horation, residing at East Fairfield, is living.

Fairfield's Development

The physical design of both the villages of East Fairfield and Fairfield Center with their greens, churches and schools reflect the origins of the town's founders. Land use plans guiding development and protection of rural life are also successful templates provided for us in the original European homelands of so many of Fairfield's earliest settlers.

In the late 18th century, several villages were established near important waterpower sites in Fairfield. Fairfield Center was an important early settlement with the first mill set up in the summer of 1791 on the Fairfield River. The peak of the pioneer period occurred in 1810 when 1,618 town residents were counted in the Census. Many of these original Yankees began to migrate westward, especially after the War of 1812, and the population began to decline. A new influx of settlers, especially from Ireland began arriving in the 1820s, and in 1850 Fairfield reached a peak population of 2,591 residents.



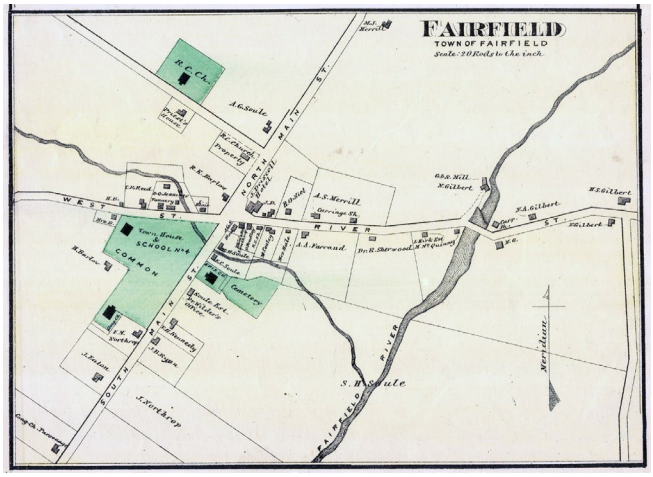


Figure 2.1, 2.2 & 2.3: 1871 F.W. Beers Atlas

The 1842 Gazetteer included the following description of Fairfield:

> There are a Congregational, a Baptist, an Episcopal and a Methodist church in this town. The Rev. Benjamin Wooster was settled over the Congregational Church in 1805. He was the first settled minister, and died in this town February 13, 1840 aged seventy-seven years. The present minister is the Rev. T. Reynolds. The Episcopal Church, called Trinity Church, was the only one in Franklin County when the Rev. Stephen Beach, took charge of it in 1815. Several clergymen labored here more or less previous to 1840, when the Rev. Ezekial H. Sayles, the present minister, was settled. This church consists of about 60 members. An Academy was incorporated here in 1808, and a convenient building erected for its accommodation. Black Creek is a considerable stream, which issues from Metcalf pond in Fletcher, and runs through this township, affording an excellent stand for mills. Fairfield River is a small stream, which, also, takes its rise in Fletcher, and passes through the town near its center, affording several good mill privileges. These streams unite and fall into Missisquoi River in Sheldon. Smithfield pond lying in the westerly part of the town, is about three miles long and one and a half broad. At the outlet is an excellent stand for mills, and another on the same stream about two miles below. The township was originally covered principally with hard wood. The surface is uneven, but very little of it so broken as to be unfit for cultivation. The soil is generally good. The town is divided into fifteen school districts, with a comfortable schoolhouse in each. The public buildings are an Academy, townhouse, an Episcopal and a Congregational church. There are in town, three stores, four gristmills, eight sawmills, two fulling mills, one carding machine, and two tanneries.

The self-sufficient economy of the pioneering settlers shifted to grain and wool production in the early 19th century. Along with timber, these products could be transported and shipped across Lake Champlain and canals to points south and north.

Starting in the middle of the 19th century, rail lines in the Champlain Valley and eventually in East Fairfield allowed for rapid export of products to the rest of the country.

In the decades after the Civil War, a decrease in the importance of wool and an increase in butter and cheese in regional economies resulted in a shift away from sheep and into dairying.

In the early 1900s, logging was an important industry supporting a large part of the economy. Mostly virgin hemlocks, often as large as 4 feet in diameter, were cut and drawn to the railroad for shipment to the Swanton Lumber Mill. Other area industries which profited were the Carrol Page Tannery in Hyde Park which used the bark and the Swanton Lime Kiln which used the unsuitable logs for cordwood.

Today, Fairfield still shows the vestiges of these earlier days. The current villages of Fairfield Center and East Fairfield exist on

Figure 2.4: Chester Allen Arthur
Ole Balling, Oil on Canvas, 1881

the historic settlements from 200 years ago. The economy of the region remains the same as it has been for a hundred years, an agricultural town based around the dairy industry. Many historic structures remain including homes, barns, public buildings, and covered bridges. The population is once again growing, but remains well short of the population peak of 1850.

Birthplace of Chester Alan Arthur

Fairfield is the birthplace of President Chester A. Arthur who took office in 1881. The Vermont Gazetteer of 1882 includes the following story:

> Elder William Arthur, the father of our President, was born in Ireland, finished his education at Edinburgh, Scotland, and soon after its completion came to America, and located at Dunham. He first took up the study of law; but after his marriage with Miss Stone, daughter of Rev. Washington Stone, he entered the ministry of the Free Will Baptist church, and shortly after united with the Baptist Church. He taught school and preached in several localities throughout Chittenden and Franklin counties, and Canada. In 1829, he received a call from the Baptist church of North Fairfield, which he accepted, and removed to that village. He first occupied a portion of Jonathan Bailey's dwelling, where he remained until the church built a parsonage. The parsonage was located on a lonely by-road, some three-quarters of a mile from the church, a story and a half structure, about 18 by 24, and is still in existence, though it has been moved about one hundred rod down the hill and across the highway, where it is used as a hay-barn. In this unpretentious structure Elder passed a few years of an uneventful life, and here was born his son, Chester A., the present chief magistrate of our nation. Young Arthur was named in honor of Dr. Chester Abell, long a friend and physician of the family, and who now peacefully rests in the little cemetery near the church where Elder Arthur officiated.

The Vermont Historical Proceedings adds this to President Arthur's story:

> The one hundredth anniversary of the birth of Chester A. Arthur, which occurred on October 5, 1930, was completely ignored in his native state. Not the slightest observance was made of the day anywhere in Vermont, and if the fact of the occurrence of the anniversary was mentioned by a single Vermont newspaper we were unaware of it. Such is fame. Will the hundredth anniversary of the birth of Calvin Coolidge be similarly ignored and forgotten, we wonder?
>
> The twenty-first president of the United States can hardly be called a typical Vermonter, to be sure, but he was a native son of Vermont and as such deserves something better than oblivion to his memory. He was not a great statesman, but he was fully up to the average of our presidents and his character was irreproachable. It was his misfortune to come into the presidency at a time of great scandal, and he was weighted with the further disadvantage of being known as a machine politician and spoilsman. Perhaps no man of the time could have done better than he did in the circumstances.
>
> Curiously, the centennial of his birth seems not to have brought forward the old story that he was not born in Vermont, but in Canada. Just before the Republican national convention was held in 1884, a writer named Hinman published How a British Subject Became President of the United States. Hinman alleged that the Rev. William Arthur and his Vermont-born wife, who was Malivina Stone, lived in Canada when their oldest son was born. That son was Chester Alan Arthur. They moved to Fairfield, Franklin County, Vermont, where a second son was born. This son died in infancy. According to Hinman's story, it was the second child who was born at Fairfield, October 5, 1830. Up to the time that he became the nominee of his party for the vice-presidency or shortly before then Chester A.

Figure 2.5 Chester A. Arthur Historic

Arthur did not claim either the birthplace or the birthday now accepted, according to Hinman. When he saw the vice-presidency looming before him, with the presidency as a possibility Chester Alan Arthur quietly appropriated the birthday and birthplace of his deceased younger brother, and went to Canada, immediately after his nomination as vice president, to make sure that no records which might prove embarrassing were permitted to remain. The story was widely published, but apparently it had little to do with the outcome of the convention which denied him the Republican nomination for the presidency.

There ought to be a good portrait of President Arthur in the capitol at Montpelier or in the rooms of the Vermont Historical Society. Incidentally he looked the part as very few presidents have done. Possible he is entitled to be called "the handsomest of the presidents."

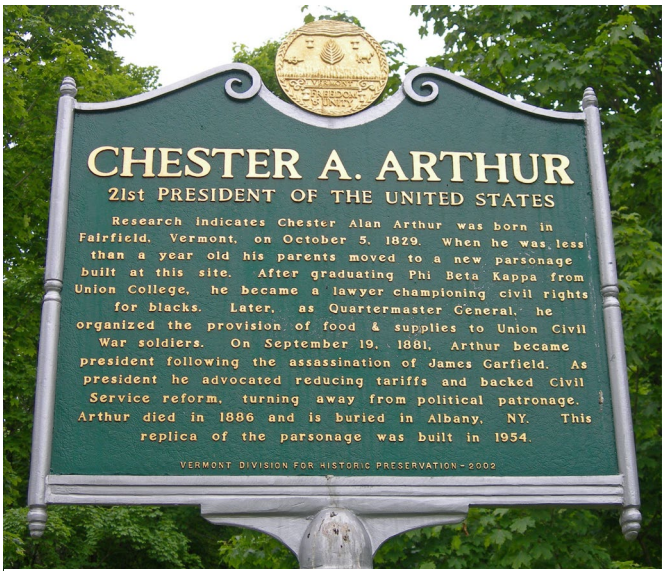


Figure 2.6: Chester A. Arthur Historic Marker

Archeological Resources

Fairfield's archeological sites contain a fragile, complex and irreplaceable record of past human activities. Archeological resources include both prehistoric hunting camps and historic ruins of early homes, mills, and settlements. Archeological resources differ from historic structures in that the information that exists is buried. Fairfield's prehistoric archeological sites are not readily recognizable and have no apparent structural or architectural shape. Rather, evidence of prehistoric activities and occupations are contained within the soil deposits of a cornfield or a woodlot or are buried in a floodplain.

For 10,000 years Native Americans focused their activities within river valleys and lake basins. Although no Native American sites have been documented in Fairfield, the state has identified areas associated with Black Creek as archeologically sensitive. Unlike the large settlements found in Highgate and Swanton along Monument Road, any sites in Fairfield are likely to be much smaller in scale.

The ruins of 18th, 19th and early 20th century buildings, structures, and activity areas comprise historic archeological sites. Thus, the ruins of homes and farmsteads, mills and settlements constitute Fairfield's historic archeological heritage. Visible remnants of these sites frequently consist of stone foundations or collapsed ruins although much of the archeological information is buried.

Our prehistoric and historic archeological sites constitute an essential link to our recent and distant past. These sites are often the only source of information for the longest part of human history in Vermont. Archeological sites are an important non-renewable resource.

Historic Resources

The Fairfield Historical Society was organized in 1996 in order to record and preserve the history of Fairfield. The Historical Society has a safe place to store and display some of its collection since the President Chester A.

Arthur Conference Room was constructed. Additionally, the Historical Society has as one of their goals, to secure funding in order to compile a history of Fairfield. The town supports the efforts of this organization.

The state's Division of Historic Preservation is responsible for preserving the state's historic, architectural, and archeological resources. In 1981, the state conducted a survey of sites and structures in Fairfield. In all, 61 structures were reviewed, of which 60 were later placed onto the Vermont State Register of Historic Places. The entire report can be found in the Town Office. The Chester A. Arthur monument was the lone structure from the survey not to be included in the State Registry.

In similar fashion, the United States Department of the Interior National Park Service is the agency responsible for the National Register of Historic Places. Only the East Fairfield Covered Bridge, which underwent a $1.2 million renovation in 2009, is found on the National Registry. Many other buildings in town qualify but are not registered. Being listed results in the following for historic properties:

- Consideration in planning for federal projects.
- Consideration for federal tax provisions.
- Qualification for federal grants for historic preservation.

Listing on the National Registry does not restrict the use of the property or place any legal restrictions on the property. It only regulates the use of federal funds that may affect the property. The town encourages owners of qualifying properties to register with the National and/or State Registry. Any questions concerning state or federal listing as a historic site or structure should be forwarded to Vermont Division of Historic Preservation in Montpelier.

Historic Districts and Scenic Roads

The state recognizes the Fairfield Center Historic District as an outstanding example of an early 19th century town center. The features identified as important were the intact green, commercial buildings, tavern (since destroyed), residences, school, the Town house and fine Gothic Revival church. Only a few buildings do not contribute to the historic district. The Patton-Soule House, one of the finest Federal style houses in Vermont, sits at the north end of the district overlooking what was a very busy and thriving 19th and 20th century community center. Although not recognized on the state registry, the town has identified East Fairfield Village as being historically significant.

Chester A. Arthur Historic District and Scenic Road is an important part of the legacy of Fairfield. The state maintains a replica of the small house in which he was born in North Fairfield. Other features of this district include an old brick church and adjacent cemetery, now owned by the State Historic Society. Several homes in the area are architecturally appropriate to the era.

Cemeteries

Cemeteries offer a personal link to past residents of Fairfield. For some families in town today, these are the final resting places for parents, grandparents and great-grandparents back to the earliest settlers. There is perhaps no stronger connection to our common past than in the cemeteries that dot our countryside.

Figure 2.7 shows the location of Fairfield's cemeteries. A survey by D. B. Morry in 1973 (and updated in 1990 by Arthur Hyde) cataloged some basic information about each site.

References

Anyone interested in more information regarding Fairfield's colorful history has many places to turn. Unfortunately, a comprehensive work has yet to be compiled. The Fairfield Historic Society is hoping to get grants to have such a work assembled, but until then a trip to a library will have to suffice.

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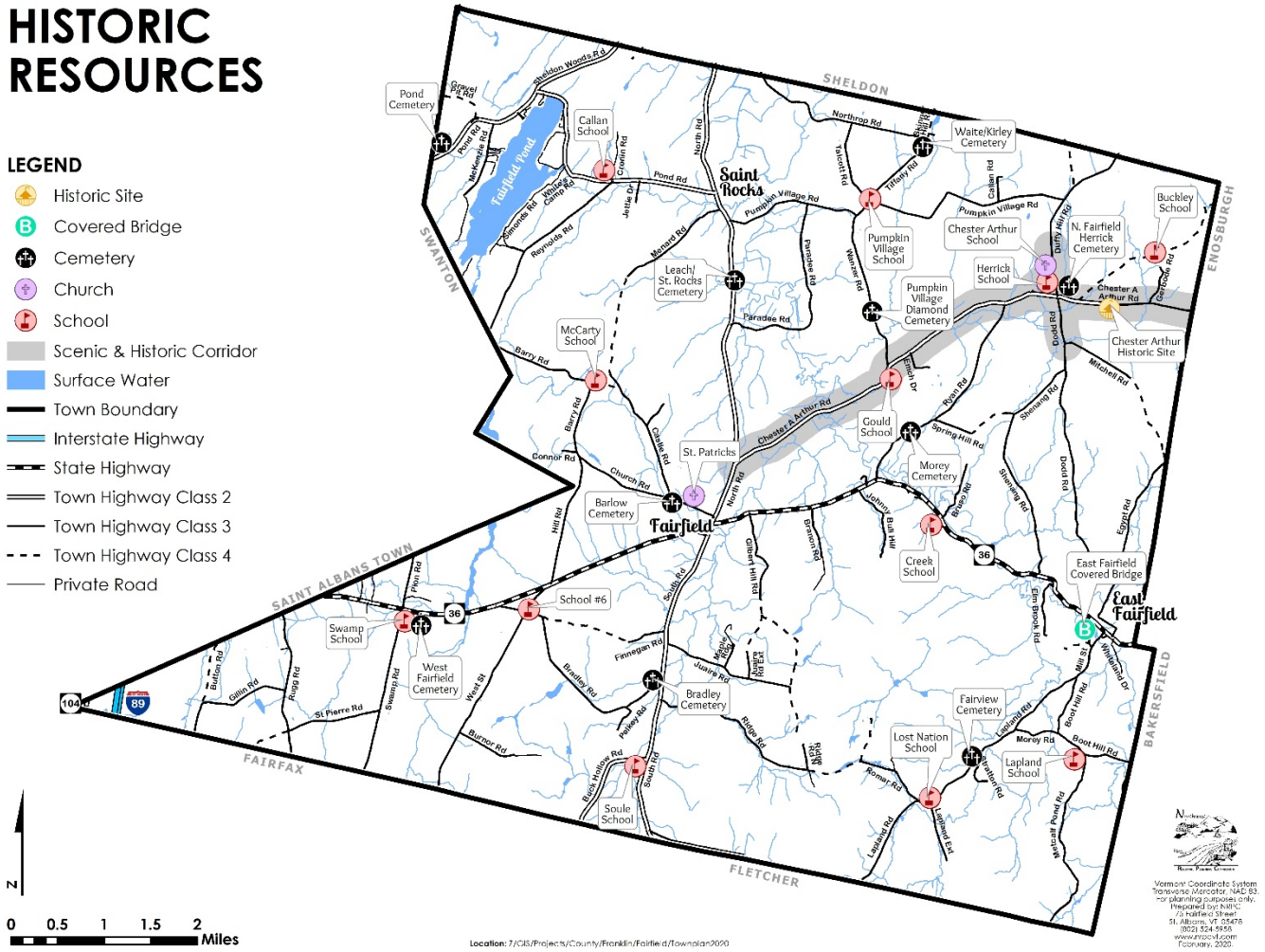
Figure 2.7


HISTORIC RESOURCES
LEGEND
Historic Site
Covered Bridge
Cemetery
Church
School
Scenic & Historic Corridor
Surface Water
Town Boundary
Interstate Highway
State Highway
Town Highway Class 2
Town Highway Class 3
Town Highway Class 4
Private Road
SHELDON
ENOSBURGH
SWANTON
SAINT ALBANS TOWN
FAIRFAX
FLETCHER
BAKERSFIELD
Saint Rocks
Fairfield
East Fairfield
Fairfield Pond
Pond Cemetery
Callan School
Waite/Kirley Cemetery
Pumpkin Village School
Chester Arthur School
N. Fairfield Herrick Cemetery
Buckley School
Herrick School
Chester A Arthur Rd
Chester Arthur Historic Site
Pumpkin Village Diamond Cemetery
Leach/ St. Rocks Cemetery
McCarty School
Gould School
Morey Cemetery
St. Patricks
Barlow Cemetery
Creek School
East Fairfield Covered Bridge
School #6
Swamp School
West Fairfield Cemetery
Bradley Cemetery
Fairview Cemetery
Lost Nation School
Lapland School
Soule School
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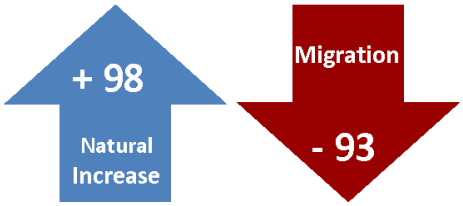
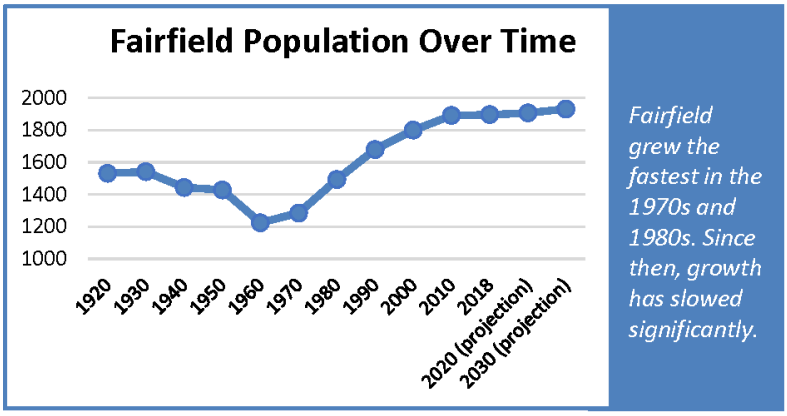
Population & Age Profile

Population growth in Fairfield has slowed significantly over the last 20 years.

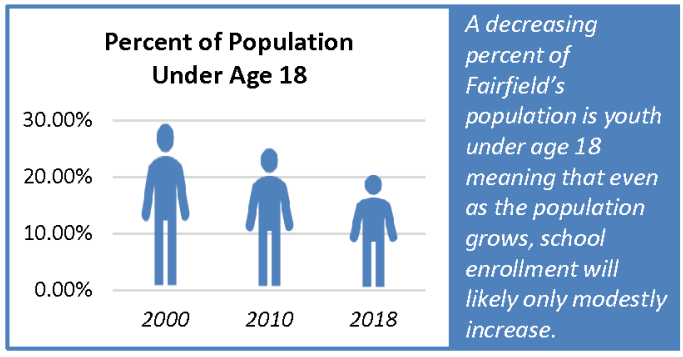


Population growth in Fairfield has been the result of natural increase.

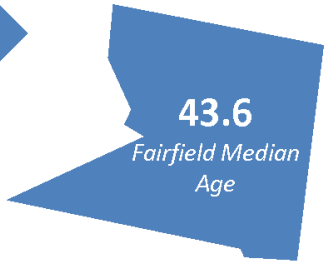


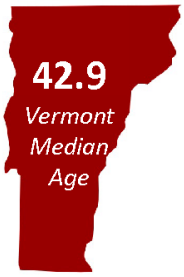
Fairfield grew the fastest in the 1970s and 1980s. Since then, growth has slowed significantly.

Fairfield's population is aging.



A decreasing percent of Fairfield's population is youth under age 18 meaning that even as the population grows, school enrollment will likely only modestly increase.

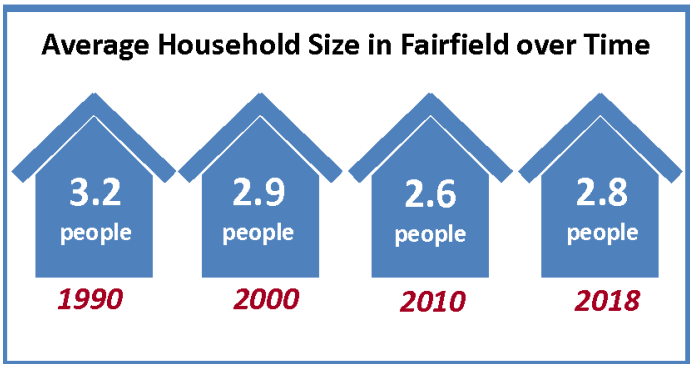




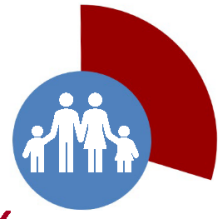
32% *of Fairfield's population is age 55 or older.*

An aging population will need new types of housing and social services.

Fairfield's average household size has declined over the last 30 years. This will lead to increased housing demand, even as population growth slows.



While there has been a slight increase in average household size since 2010, this may be the result of error in the Census estimates.



32% *of Fairfield's households include children under the age of 18, a percentage greater than the state averages. However, this percentage has declined over the last 20 years, leading to a decrease in average household size.*

Sources: U.S. Census; U.S. Census American Community Survey 2014-2018

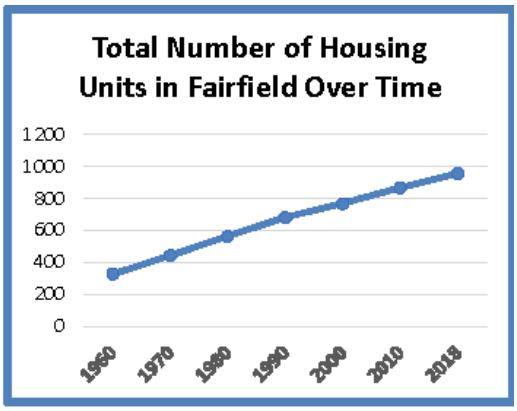
Housing

The number of housing units in Fairfield has continued to grow.

5.3 permits

Average number of permits for single family homes in Fairfield 2010-2019

676 *Occupied housing units*



Most housing units in Fairfield are owner-occupied detached single-family homes.

86.9% *of all housing units are detached single family homes.*

83.9 % *of all year-round occupied housing units are owner-occupied.*

Homeownership in Fairfield is somewhat unaffordable to households making the county median income.

In 2018, the median sale price of a primary residence in Fairfield was ***$215,000***

Affordability of Home Ownership

	Household Income (2018)	Maximum Affordable Mortgage	Median Sale Price of Primary Residence in Fairfield (2018)	Affordability Gap
Median Income	$64,258	$214,398	$215,000	-$602
Low Income (80% Median)	$51,406	$152,916	$215,000	-$62,084
Very Low Income (50% Median)	$32,129	$60,693	$215,000	-154,307

Sources: U.S. Census American Community Survey 2014-2018; Housingdata.org; Calculation of maximum affordable mortgage based on taxes & insurance calculated by NRPC and a 4% interest rate.

The State defines housing as affordable when housing costs are 30% or less of a household's total income. Under this standard home ownership is not affordable to households making the county median income ($64,258) or less.

Mobile homes are an important source of affordable housing. Owning a mobile home with land is affordable for households with county median and low incomes, but not for households with very low incomes ($32,129).

Renting is affordable for those making the median county income and those making 80% of the median county income.

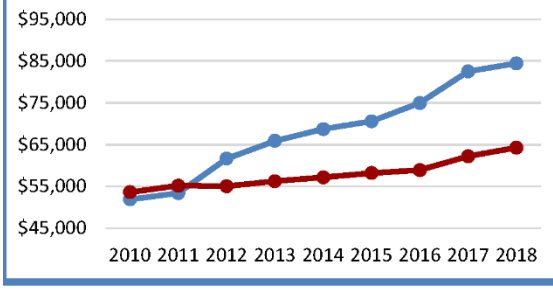
Sources: Fairfield Grand List, Housingdata.org; U.S. Census; U.S. Census American Community Survey 2014-2018; Fairfield Town Report

Income & Economy

*Fairfield's median adjusted income rose **18.0%** from 2010 to 2017*

Incomes in Fairfield are well above County and State averages.

Median Household Income in Fairfield and Franklin County Over Time



Since 2010, median household incomes in Fairfield have risen faster than median household incomes in Franklin County as a whole.

Per Capita Income

Fairfield	Franklin Co.
$39,332	$30,692

Fairfield has a higher per capita income than the county and state averages.

Most Fairfield residents work outside the Town, primarily in St. Albans and Chittenden County.

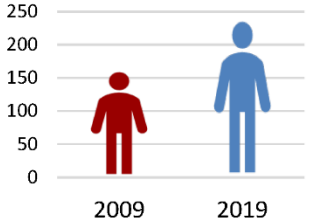
*The average Fairfield resident commutes **28.1** minutes to travel to work.*

*In 2018, Fairfield's unemployment rate was **1.7%***

Top Commuting Destinations for Fairfield Residents

Fairfield has seen modest increases in the number of local businesses and jobs in the last 10 years.

Jobs in Fairfield

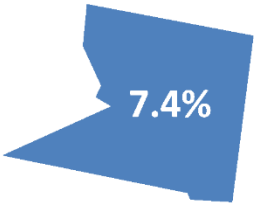


2009

37 businesses

2019

51 businesses



of employed residents work in Town.

Over the last 20 years, the number of farms has decreased significantly.

2013

2018

Sources: U.S. Census; U.S. Census American Community Survey 2014-2018

3. TODAY

Population

Population Trends

Population growth in Fairfield has slowed significantly over the last 20 years.

While the population of Fairfield has continued to grow, this rate of this growth has slowed significantly. From 2010-2018 the population of Fairfield increased by just 5 people, an annual growth rate of .03%. Annual growth rates were significantly higher in the 1970s and 1980s.

The Vermont Agency for Commerce and Community Development created two population projections for each municipality in Vermont based on Census data from 1990-2010: a high growth projection based on growth from 1990 to 2000 and a low growth projection based on growth from 2000 to 2010. Based on the 2018 estimated population, it is likely that the population of Fairfield will more closely reflect the low projection which predicts that Fairfield will have a population of 1,932 by 2030.

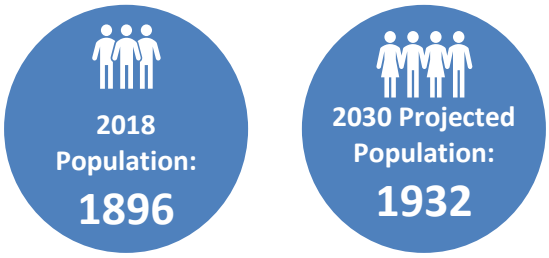


Figure 3.1 Population Estimates

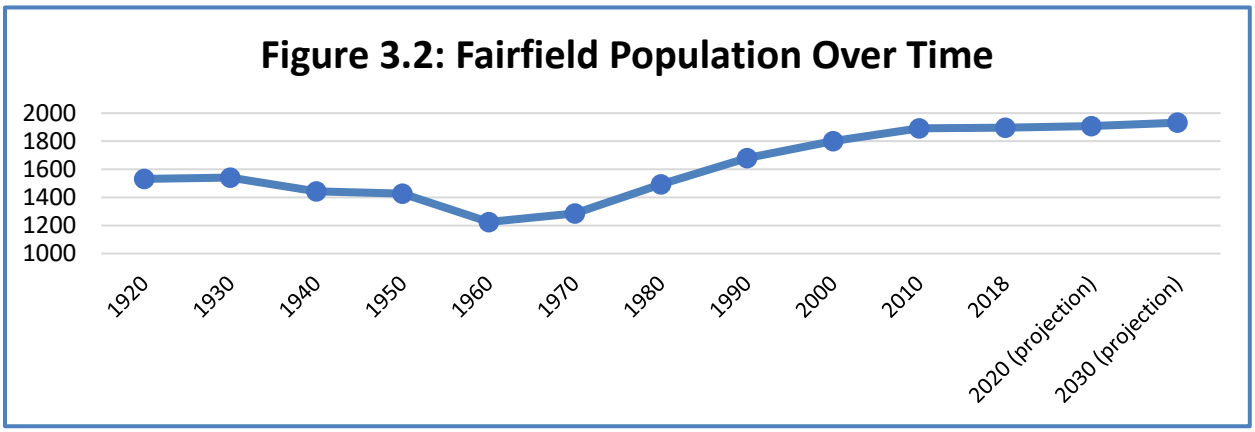
Sources: U.S. Census American Community Survey 2014-2018; Agency of Commerce and Community Development Vermont Population Projections

For the past 40 years, Fairfield's population has been around 4% of the total population of Franklin County. However, if the 2030 low population projection is correct, Fairfield's population will shrink to just 3.5% of the total population of Franklin County by 2030.

Table 3.1: Average Annual Growth Rate

	Fairfield	Franklin Co.
1960s	0.49%	0.61%
1970s	1.62%	1.12%
1980s	1.25%	1.49%
1990s	0.71%	1.36%
2000s	0.51%	0.51%
2010-2018	0.03%	0.33%

Sources: U.S. Census; U.S. Census American Community Survey 2014-2018



Population Projections 2010-2030.

Population growth has not been shared equally among all Franklin County towns. The rate of growth has been markedly higher in towns adjacent to historic population centers (e.g. St. Albans Town) and in towns located on the border with Chittenden County and within the Interstate 89 corridor (e.g. Fairfax).

Unlike those faster growing municipalities, Fairfield's growth is being driven by natural increase, rather than by people moving into town. Natural increase is a measure of the number of births minus the number of deaths in any given year. In the past 8 years, Fairfield lost a net 93 residents due to people moving out of town but gained a net of 98 new residents due to natural increase.

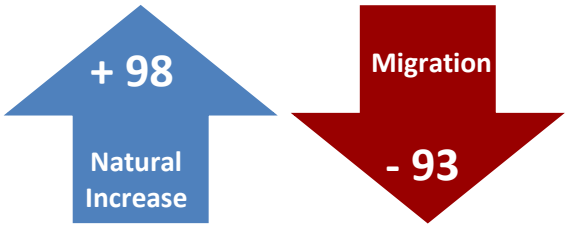


Figure 3.3: Population Change

Sources: U.S. Census American Community Survey 2014-2018; Vermont Department of Health Annual Vital Statistics

Age Profile

Fairfield's population is aging.

Thirty-two percent of Fairfield's population is age 55 or older. The population of those 55 and older has increased by almost 20% in the last 30 years. This increase is reflective of a national trend as the baby-boom generation ages.

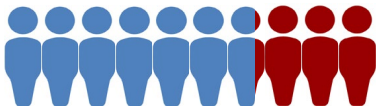
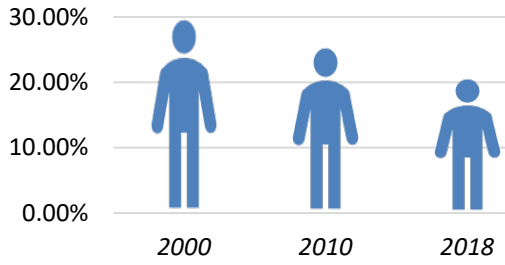


Figure 3.4: Population Over 55

Source: U.S. Census American Community Survey 2014-2018

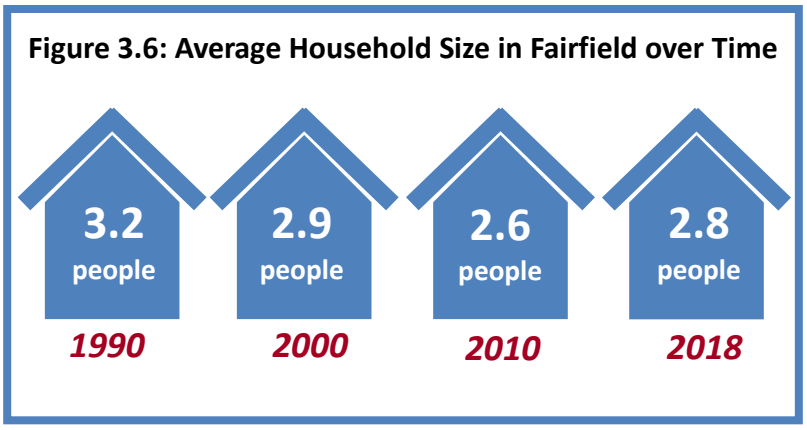
These demographic changes will affect the housing needs of Fairfield residents, the local school system, and the provision of human services. Demand for smaller, accessible homes with reduced maintenance requirements located closer to basic services will likely grow. There is currently a limited amount of housing in Fairfield designed to meet the needs of older residents. The number of frail elderly, many living alone, is expected to increase, which points to a need for housing, healthcare, transportation and other support services that will allow residents to remain living in the community as they age.

Figure 3.5: Percent of Population Under Age 18



Sources: U.S. Census; U.S. Census American Community Survey 2014-2018

As the population ages, the percent of youth under age 18 has decreased. Therefore, even with some population growth it is anticipated that only modest increases in the school's enrollment will occur over the next several decades. The record high school enrollments of the 1990s will likely not be surpassed for the foreseeable future unless there are significant changes in the regional economy that would attract large number of younger families from outside the area to move into town.



32% of households have children under age 18.

Figure 3.7: Households with Children

Sources: U.S. Census; U.S. Census American Community Survey 2014-2018

Households

Fairfield's average household size has declined over the last 30 years. This will lead to increased housing demand, even as population growth slows.

For planning purposes, the number of households and their characteristics are perhaps more important than the total population. Households drive demand for housing, facilities and services. As households become smaller, the number of households – and therefore needed housing units – can increase without any growth in population.

As of 2018, there were approximately 676 households living in Fairfield (2014-2018 American Community Survey). Over the past two decades, the number of households has grown almost twice as fast as the total population due to a declining household size. In 2018, the average household size was 2.8 people, a slight increase from the 2010 household size. However, this increase may be the result of error in the Census estimates, and the overall trend is still towards declining household sizes.

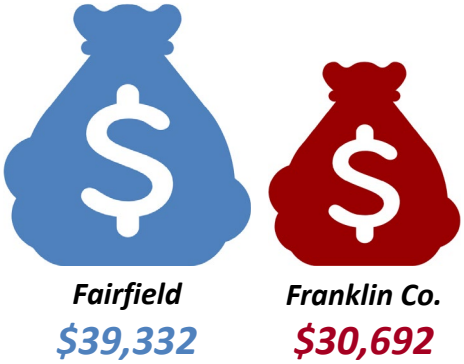
The average household size in Fairfield remains higher than county and state averages, likely because Fairfield has a greater percentage of households with children under age 18 than the State or County.

While the percentage of households with children remains above State averages, it has decreased by 20% over the last 20 years. Given the age distribution of Fairfield, this trend will likely continue and lead to decreased household size in the future.

Income Profile

Incomes in Fairfield are well above State and County averages.

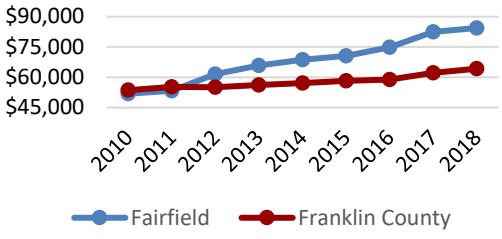
Figure 3.8: Per Capita Income



Source: U.S. Census American Community Survey 2014-2018

According the 2014-2018 American Community Survey, in 2018, the median household income in Fairfield was $84,423 while the per capita income was $39,332. Both these figures are well above the State and County averages. According to the Vermont Department of Labor, the average wage paid by a Franklin County employer in 2018 was approximately $48,000– indicating that many households are likely supported by more than one wage earner.

Figure 3.9: Median Income in Fairfield and Franklin County Over Time



Source: U.S. Census American Community Survey 2014-2018

Housing

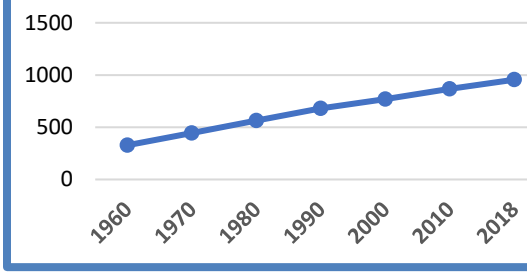
Housing Trends

The number of housing units in Fairfield has continued to grow.

The 2014-2018 American Community Survey counted 955 housing units in Fairfield, of which 676 were classified as year-round, occupied dwellings. During the 1960s, '70s and '80s, Fairfield added around 10 homes per year to its housing stock. The amount of housing in Fairfield was increasing at rates above county and state averages during those decades.

From 1988 to 2020, Fairfield had a permit allocation system that capped the number of residential building permits that can be issued each year. From 2010-2019 the Town issued an average of 5.3 building permits a year. Even with the allocation in place, the rate of housing development in Fairfield was still higher than county or state averages for the period between 2010 and 2018.

Figure 3.10: Total Number of Housing Units in Fairfield Over Time



Source: U.S. Census American Community Survey 2014-2018

The 2018 grand list included 695 residential properties including 104 listed as vacation homes (these figures do not include residences on farm properties) totaling 11,066 acres of land or 28% of listed property in town.

Characteristics

Most housing units in Fairfield are owner-occupied detached single-family homes.

Figure 3.8: Housing Stock

Source: U.S. Census American Community Survey 2014-2018

87% of Fairfield's housing stock is made up of single-family detached homes. Of all housing units occupied year-round, 83.9% are owner-occupied.

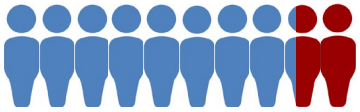


Figure 3.9: Home Ownership

Source: U.S. Census American Community Survey 2014-2018

Farm Housing

An analysis of the town's 2018 Grand List suggests that there were 55 primary dwellings on farm property.

Seasonal Housing

The town also has 104 seasonal properties (2018 Grand List), most located around Fairfield Pond. This is down from 140 in 2013. There have been many conversions of camps to year-round homes in recent years. The town anticipates that more seasonal residences may be converted to year-round use as property owners retire to their "camps."

Mobile Homes

There are between 35 (2018 Grand List) and 89 (2014-2018 ACS) mobile homes in Fairfield, depending on how structures are classified. There are no mobile home parks in town and virtually all mobile homes are on their own lots. Mobile homes have traditionally been an affordable housing option in rural communities like Fairfield. Given the cost of land in Fairfield, a mobile home on its own lot may not be affordable for some households as the average assessment for such a dwelling was around $126,315 in 2018 according to the Fairfield Grand List.

Table 3.2: 2018 Fairfield Grand List Characteristics

	# of Parcels	Acres	Average Value
Residential	556	10,656	$222,364
Mobile Home	35	254	$138,237
Vacation	104	1041	$130,392
Commercial	16	15	$317,401
Utility	1	-	$659,400
Farm	108	21,959	$454,099
Woodland	57	4,249	$80,197
Vacant Land	119	3,456	$93,277

Source: 2018 Fairfield Grand List

Table 3.3: Affordability of Home Ownership				
	Household Income (2018)	Maximum Affordable Mortgage	Median Sale Price of Primary Residence in Fairfield (2018)	Affordability Gap
Median Income	$64,258	$214,398	$215,000	**-$602**
Low Income (80% Median)	$51,406	$152,916	$215,000	**-$62,084**
Very Low Income (50% Median)	$32,129	$60,693	$215,000	**-154,307**

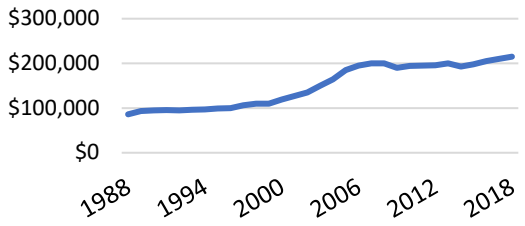
Sources: U.S. Census American Community Survey 2014-2018; Housingdata.org; Calculation of maximum affordable mortgage based on taxes & insurance calculated by NRPC and a 4% interest rate.

Values and Affordability

Homeownership in Fairfield is somewhat unaffordable to households making the county median income.

An analysis of housing affordability based on the state's definition found that owning a home was somewhat unaffordable for households making the county median income of $64,258, however the affordability gap is very small ($602). In contrast, homeownership is very unaffordable for those with low incomes (80% or less of the county median income).

Figure 3.10: Fairfield Median Primary Home Sales Price



Source: Housingdata.org

Housing sale prices shot up in Fairfield between 2002 and 2006 but leveled off from the beginning of the recession in 2008 to 2014. From 2014-2018 housing prices have begun to increase. Sale prices, household income and assessed values should continue to be monitored to determine the affordability of homes in Fairfield.

While home ownership is not affordable to those with lower incomes, renting and mobile home ownership are affordable to both median and low-income households.

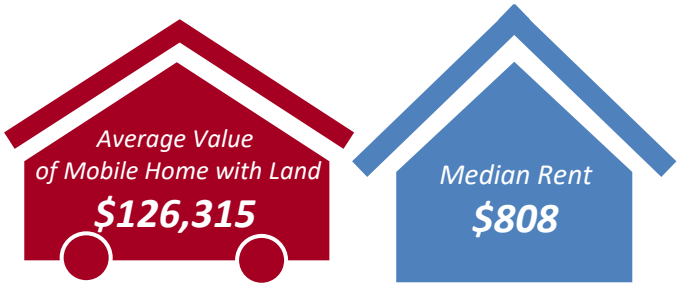


Figure 3.11: Housing Costs

Sources: 2018 Fairfield Grand List, U.S. Census American Community Survey 2014-2018

Economy

Agriculture

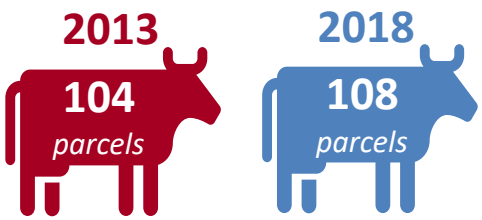
Over the last 20 years, the number of farms has decreased significantly.

Fairfield, despite continued decline in the total number of farms, remains one of the most agricultural communities in the state. The town's farming community is ever

changing and increasingly diverse. Fairfield acknowledges the importance of farmworkers to the farming community in Town.

Unfortunately, there are few agricultural statistics available at the town level. The Agricultural Censuses used to tabulate data by zip code but data is only available by county for the most recent 2017 census.

Over the past two decades, Fairfield's agricultural economy has experienced both consolidation and diversification. In order to remain profitable, the average Vermont dairy farm has become larger, which



Sources: 2018 Fairfield Grand List, 2013 Fairfield Grand List

explains why the number of farms in Fairfield has declined while the amount of land being farmed has increased. From 1990 to 2014 the number of dairy farms decreased from 74 to 25. However, the number of agricultural parcels has stayed relatively consistent.

The available statistics also point to the increasing number of small farms that are diversifying the town's agricultural economy, which for more than a century has been largely focused on milk production. Within Fairfield, farmers are raising beef cattle, horses, pigs and poultry in addition to milk cows. A range of crops is grown including corn, hay, soybeans and berries. Across the region, small direct-to-consumer farm operations have grown, with value added vegetable and maple sugar operations being successful in Fairfield. The Healthy Roots Collaborative maintains a directory of direct-to-consumer farm operations in the region.

It is estimated that more than half of the town's farms produce maple syrup; so, stands of sugar maples are important agricultural resources in Fairfield. In addition to the challenges posed by acid rain, air pollution and climate change on the sugar maples, woodlots also face pressure from development.

Figure 3.12: Agricultural Parcels

Figure 3.13: Farmland in Fairfield

Current Use Program

The Current Use Program allows landowners to be taxed based on the current productive

Figure 3.14: Fairfield Farm

value of land rather than based on the traditional "highest and best" use of the land. The program includes a tax penalty for removing enrolled lands as a disincentive to develop productive lands. Over the past 25 years, the amount of land enrolled in Fairfield has increased from 62% of the town to 73% of the town, a total of over 29,000 acres. However, it should not be assumed that all that acreage is actually in productive use.

Purchase of Development Rights

Farmers may want to consider selling their development rights – that is, selling the right to develop the land while maintaining all other existing rights – to land trusts or other parties buying such rights for agricultural lands preservation purposes. This provides extra income, and can ensure that the land is not developed even after the current farmer has passed on the land to the next generation, rented it out, or sold it.

The purchase of development rights has been perhaps the most effective form of protection of farmland to date. The Vermont Land Trust, has targeted Fairfield farms as part of an agricultural "critical mass" area resulting in the purchase of development rights on roughly 8,177 acres of land.

Local Businesses

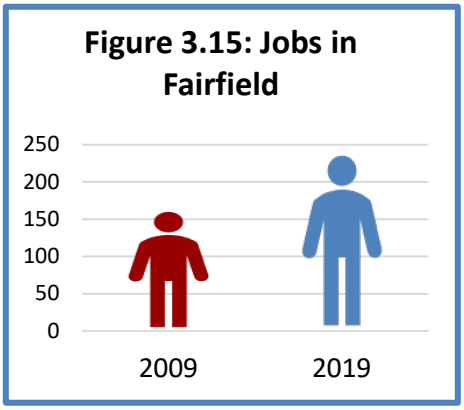
Fairfield has seen modest increases in the number of local businesses and jobs in the last 10 years.

In 2019, the Vermont Department of Labor counted 51 business establishments in Fairfield, employing 242 people. While the most rapid growth in number of businesses occurred in the 1980s, the number has continued to grow. From 2009 to 2019, the number of businesses increased 47.6%. The average annual wage of someone employed in Fairfield in 2019 was $42,000.

51

businesses

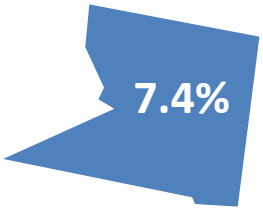
The types of non-agricultural businesses in town are diverse and typical of rural communities including a number of construction contractors, automotive service and repair, specialty shops, professional services, and artists. The town's largest employer is the public school system, which employs around 60 people.



Source: Vermont Department of Labor

Home Businesses

While there is little concrete data available on home businesses currently operating in town, there is evidence that they are an important component of the town's economy. According to the 2014-2018 American Community Survey, 150 (22.2%) of the employed civilian population over 16 reported self-employment income and 99 (9.2%) people reported working at home.



of employed residents work in Town.

Source: Longitudinal Employer-Household Dynamics Data

Employment

Most Fairfield residents work outside the Town, primarily in St. Albans and Chittenden County.

According the 2014-2018 American Community Survey, Fairfield has a labor force of 1,162 people. In 2018, the unemployment rate was 1.7%, a figure lower than State and County averages. While the rate of unemployment has risen to 6.6% as a result of the Coronavirus pandemic, this rate is still lower than the state average.

The average Fairfield resident commutes 28.1 minutes to work. Top commuting destinations include St. Albans City, St. Albans Town, and Burlington.

Figure 3.16: Commuting Locations

Source: Longitudinal Employer-Household Dynamics Data

Education

Facilities

The Maple Run Unified School District operates full educational services for children in grades K-8 in Fairfield. Grades 9-12 attend regional high schools, primarily Bellows Free Academy in St. Albans. The Fairfield School was last expanded in 1988, when six classrooms and a new library were added. The library has since been moved to a new, separate building from the school. Current school capacity is approximately 300 students.

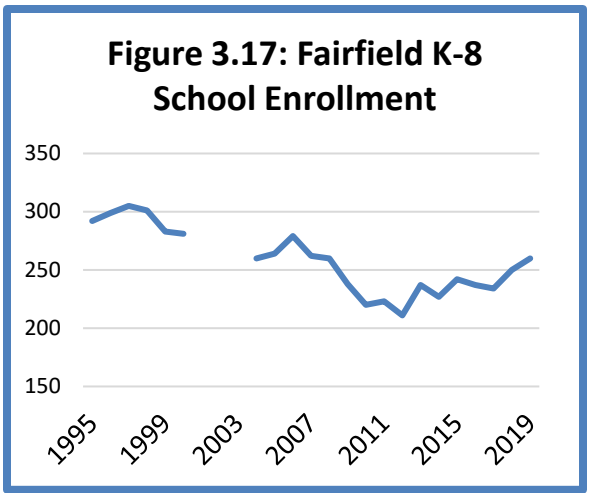
The School District is currently constructing a new addition to the Fairfield Center school. This addition will add two classrooms for music and art classes which are currently be conducted in the historic Common School building. It will also add an office & storage space.

Fairfield continues to provide transportation services (busing) for students. Because of the extensive road network and large area of town, the replacement of school buses is a reoccurring capital expense for the school.

Enrollment

Enrollment has increased somewhat since 2010, but remains below the peak enrollments of the 1990s.

Current enrollment (2018-2019 school year) at the Fairfield School is approximately 260 students. Enrollment peaked at around 300 students during the 1996-97 school year, reflecting the passing of the "echo baby boom" through the school system. Over the past 5 years, enrollment has increased somewhat. However, given the demographic trends of smaller households and an aging population it is unlikely that school enrollment will surpass the peak of the 1990s unless there are significant changes to the regional economy that would attract young families with children to town.



Source: Vermont Agency of Education

Costs

The cost of providing public education has risen sharply over the past decade. There have been changes to state funding for education that have complicated the relationship between education costs and property tax bills, but the simple fact remains that each new home has the potential to add students to the school system and the taxes levied on that home alone will not cover the annual cost of educating even one child. As of 2018-2019 school year, the Maple Run Unified School District, which includes Fairfield Central School, spent around $15,442 per equalized pupil. This figure is roughly equal to the state average of $15,521.

Childcare

There has been a decrease in the availability of child care in Fairfield and surrounding communities.

According to the 2014-2018 U.S. Census American Community Survey, 77.2% of all children under age 6 in Fairfield live in households where all parents in the household are working. Many of these families are reliant on childcare providers, located both in Fairfield and nearby communities. This percentage was slightly higher for school-age children (84.9%), indicating a potential need for after-school and summer programs.

In 2019, there were two registered in-home childcare providers located in Fairfield. Additionally, a preschool program located at the Fairfield Center chool is available during the school year. Combined these programs have 32 child care slots for children under the age of 6. There are 105 children under 6 with children for every existing working parents, meaning that there are 3.3 slot in a child care facility.

In 2020, a new child care center opened at the Fairfield Community Center with 30 total slots for both children under 6 and school age children.

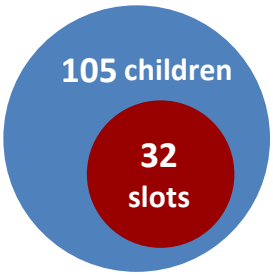


Figure 3.18: Child Care Availability

Source: Bright Futures Child Care System

Many parents likely use childcare providers in the community in which they are employed. However, there has been an 18% decline in the number of child care slots available in the county from 2015 to 2018, suggesting that the availability of child care may be an issue for Fairfield families.

Vocational and Continuing Education

Fairfield school-age and adult residents have access to vocational and continuing education in nearby communities including the Northwest Technical Center in St. Albans,

Cold Hollow Career Center in Enosburg Falls, Vermont Adult Learning in St. Albans, Vermont Community College in St. Albans, and numerous opportunities in the greater Burlington area.

Utilities and Services

Water

Two private water districts, one serving Fairfield Village and one serving East Fairfield, operate in town. Both are funded through user fees and have not traditionally sought assistance from the town. Both systems were last upgraded in the early 1990s. Fairfield Fire District #1 is facing upgrade needs.

Fairfield Fire District #1 owns and operates East Fairfield's water supply system. The source of supply for this system is a gravel-packed well located at the Burton Gravel Pit land donated by Francis Howrigan in Fairfield. With a depth of 381 feet, the well is reported to have a safe yield of 275 gallons per minute. This chlorinated water supply is then distributed throughout the village area by four-inch and smaller plastic water mains. The system's 60,000-gallon reservoir is currently covered by a wooden structure. To maintain compliance with state requirements, the Fire District plans to replace this cover with a concrete cap. The Fire District is currently investigating funding sources to assist with this upgrade.

Fairfield Village is serviced by a water supply completed in the fall of 1992. A 40,000 gallon covered storage reservoir is located adjacent to State Route 36. At an elevation of about 480 feet, this reservoir is connected to the system with a six-inch plastic main and helps to maintain the operating pressure at 40 to 45 pounds per square inch in the village.

Throughout the rest of the town, homes are served by individual water systems.

Wastewater

Wastewater is treated on-site by private systems. Changes to the state septic regulations in 2002 closed the 10-acre exemption requiring all new lots, no matter their size, to obtain a state wastewater permit. The changes also included approval of alternative systems for use in Vermont. As a result, the town no longer relies on state septic regulations to maintain a low density settlement pattern in rural areas or to keep development off marginal lands.

There is a potential problem in the villages for the proper disposal of sewage. In 2011, the Town completed a Wastewater Needs Assessment and Feasibility Study to look at solutions for improvements to wastewater management in East Fairfield, Fairfield Village and Fairfield Pond, including decentralized options. Estimated costs for various wastewater solutions ranged from $500,000 to $3 million. A survey of Fairfield residents found that most residents felt that this cost was too high, therefore there is no plan for implementation.

Solid Waste

Fairfield is a member of the Northwest Regional Solid Waste District. Residents must make their own arrangements with private haulers for trash and recycling pickup.

Electric Infrastructure and Services

Both Green Mountain Power (GMP) and

Vermont Electric Co-Op (VEC) provide electricity in Fairfield. There is a transmission corridor that crosses into the southwestern corner of town, but no other regional infrastructure is located in Fairfield.

Communication Infrastructure and Services

Land line phone service is provided in Fairfield by Consolidated Communications. There is one cell phone antenna array installed on a farm silo along Chester Arthur Road. There is also cell phone service from out-of-town towers. Some places in town still may have limited cell phone coverage.

The primary types of internet services available in Fairfield are DSL and wireless/satellite internet. Some residents may have cable service. Just 10.5% of Fairfield homes & businesses have access to broadband internet as defined by the FCC. Improving broadband & cell phone service was rated by residents as a top priority for the Town to address in the next eight years.

Public Safety and Emergency Response

Fire Protection

Two volunteer fire departments – Fairfield and East Fairfield – provide fire protection service in the town. Both departments are funded through the town and private donations. No significant shortages of equipment or personnel have been identified at the present time. During the past few years, the numbers of fire calls responded to by the department have increased due to an increase in motor vehicle accidents. As a result, training and equipment costs have increased, resulting in higher Town expenditures.

Police Protection

Police protection, when needed, is provided by the Vermont State Police.

Health and Human Services

Doctors, dentists, and hospitals in nearby St. Albans provide medical treatment.

Energy

Fairfield has adopted an enhanced energy plan which can be found in the Appendix.

Transportation

As one of the most rural towns in Vermont, Fairfield deals with a smaller range of transportation issues than many other municipalities in the state. There is no public transportation system. The town's roads are not as heavily traveled by tourists as those in many other parts of Vermont. All transportation related features are identified on Figure 3.20.

Public Roads

The only state highway in Fairfield is Route 36, which travels west from the St. Albans line east to the Bakersfield line and passes through Fairfield Center and East Fairfield. Route 36 is state maintained and carries around 1,600 vehicles per day at the Bakersfield line and 3,000 vehicles per day at the St. Albans line. These traffic figures have been increasing gradually and they suggest that the highway is a primary route for many of the town's commuters and residents. A very short segment of Interstate 89 cuts across the westernmost corner of town, but the nearest interchange is approximately 2.5 miles west of the town line in neighboring St. Albans. Most of the remaining roads in

Fairfield are town-maintained highways. Class 2 and 3 town roads receive state monies for their upkeep according to formulas based on class. Class 4 town roads receive no state funding for maintenance and are not maintained by the town during the winter months.

The majority of the transportation issues in Fairfield have to do with the maintenance of the many public roads, and associated bridges and culverts, which dissect the town. Most town roads are gravel. Respondents to the 2020 survey rated the maintenance of town highways as the second most important priority for the Town. Some residents encouraged better maintenance of existing gravel roads, while others indicated that they would prefer roads to be paved.

Fairfield has a higher number of road miles than most Vermont towns, but a relatively low population. This means that a high proportion of the town's budget must be used for road maintenance. Downgrading some roads from class 3 to class 4 is one option for the town to reduce maintenance costs. However, this must be done with caution since evidence suggests that most roads are well traveled.

Table 3.4: Fairfield Road Mileage

	Paved	***Gravel***	***Total***
Interstate Hwy	0.676	0	0.7
State Hwy	10.1	0	10.1
Town Class 2	19.8	1.5	21.3
Town Class 3	1.7	68.8	70.5
Town Class 4	0	13.1	13.1
Private Roads	0	3.4	3.4
Total	**32.3**	**86.7**	**119.1**

Data Source: VT Agency of Transportation

Fairfield has designated the Chester A. Arthur Road as State Scenic Road protecting the road's scenic character.

Private Roads

Given the fiscal implications of increasing the total mileage of town-maintained roads, it is likely that any new roads constructed in Fairfield will be private. Private roads need to be constructed to basic standards in order to protect public safety and prevent damage to adjoining public infrastructure.

Bicycle and Pedestrian Infrastructure

In recent years there has been an expansion in the amount of bicycle and pedestrian infrastructure in Fairfield.

In 2020, Fairfield installed 2,700 feet of sidewalk and pedestrian improvements along Vermont Route 36, Soule Drive and South Road in Fairfield Center.

In terms of trails, the former Missisquoi Valley Rail Trail cuts across the northwest corner of town (for about 1/3 of a mile) from Swanton to Sheldon.

It is expected that by 2023, the State will finish construction of the Lamoille Valley Rail Trail, which will run parallel to the Black Creek for several miles through the villages of Fairfield and East Fairfield from Sheldon to Bakersfield. Once constructed, the trail can be used for walking hiking, cycling, horseback riding, snow-shoeing, cross-country skiing, and snowmobiling.

Other trails in Town are the Chester A. Arthur Walking path and a walking path around the school. Residents can utilize ancient roads as trails (see Appendix).

Residents have provided mixed feedback on future bicycle and pedestrian infrastructure priorities. Several residents have expressed that there should be sidewalks in East Fairfield, but bicycle & pedestrian infrastructure was rated as the lowest priority in the 2020 Town Plan survey.

Public Transportation

The Town of Fairfield is not serviced by fixed public transit. Green Mountain Transit (GMT) offers public transit for Franklin County. GMT offers a commuter route from St. Albans to Burlington called the St. Albans LINK Express, as well as several other regional commuter routes and a St. Albans City loop.

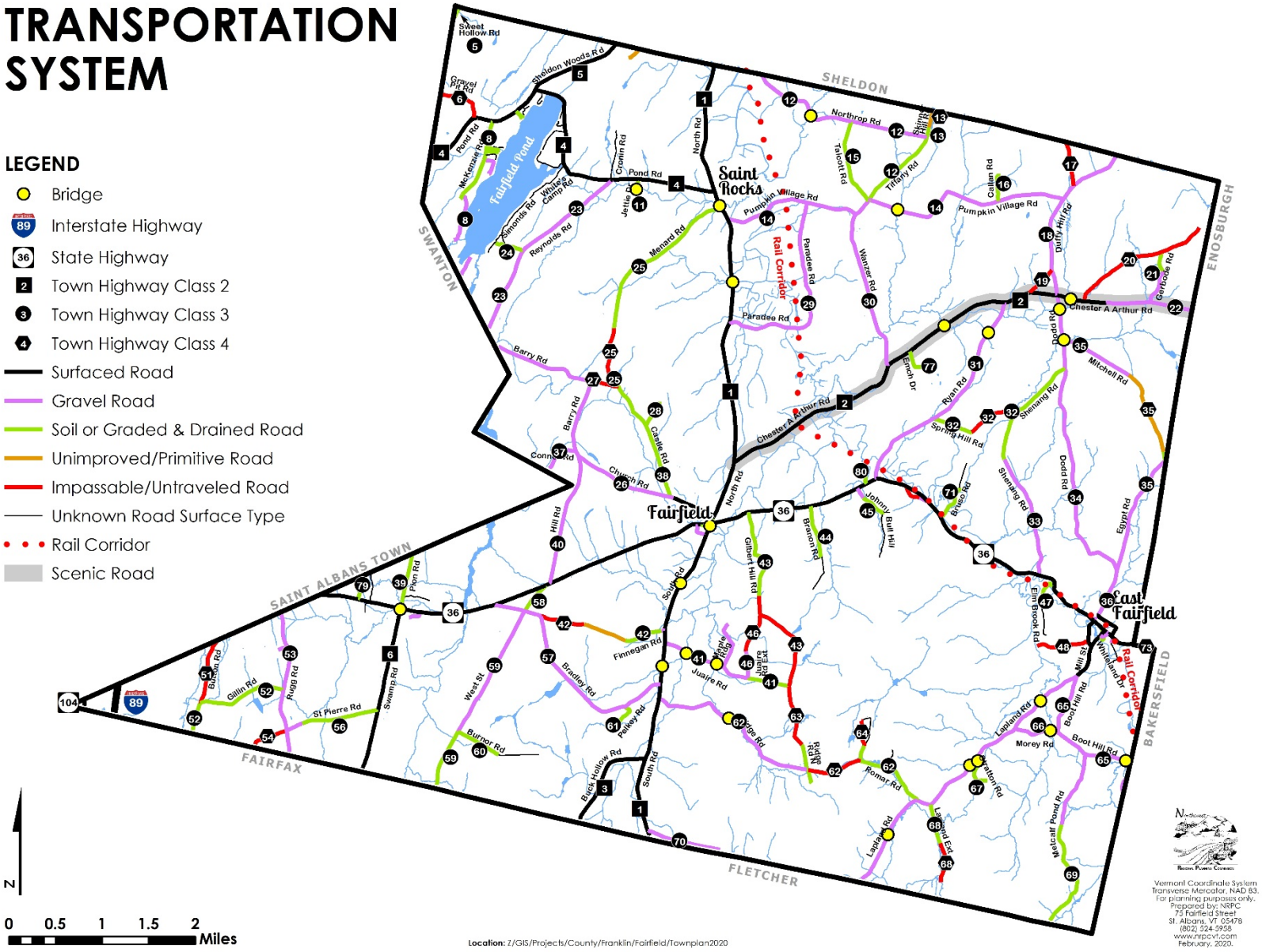
Presently, the nearest rail service for freight is in Richford (Canadian Pacific). The nearest passenger rail service is Amtrak's Vermonter which stops in St. Albans and travels south to New York City and Washington D.C with connections to Boston and other locations on the east coast.

Historically, two railroad lines ran through Fairfield, but neither is currently used. Both of these lines have been officially rail banked meaning they will remain trails until rail becomes feasible again.

Burlington International Airport, approximately 45 miles to the southwest, is the closest airport with national and international connections. Trudeau Airport is located about two hours to the north in Montreal, Quebec.

Figure 3.19

TRANSPORTATION SYSTEM



Recreation

Fairfield has an active Recreation Committee that oversees the mostly volunteer maintenance of the town's recreation fields and that organizes year-round activities. In recent years the Recreation Committee has started an annual run and put in a high school certified softball field and a full-sized junior high school soccer field in Fairfield Center. The committee plans to add a tee-ball field to the facility. The town typically funds capital costs associated with maintenance, such as the replacement of the East Fairfield Community Center septic system in 1998.

Figure 3.20 Fairfield Pond

Facilities

Fairfield's public recreation facilities include the following:

East Fairfield Town Common: Located in East Fairfield, the town common includes a basketball court / ice rink, baseball field and picnic tables. There is a playground nearby next to the Fairfield Community Center.

Fairfield Center Town Common: Includes a baseball field, soccer field and basketball court.

Fairfield Center Recreation Park: Fairfield has a five-acre Recreation Park located on town property across from the Fairfield Center School. The park, which was developed in 1989, contains a gazebo, playground equipment and a recreation path. The Town Recreation Committee remains active in maintaining and improving the park.

Fairfield Pond Beach: Fairfield Pond Beach consists of a stretch of beach along Pond Road on the north end of the pond. Recently, the Town developed a parking area, eliminating the need to park on the beach itself. The Recreation Committee is in the process examining other potential improvements to the beach.

Outdoor Recreation and Rural Character

Maintaining and developing Fairfield's natural beauty and resources for recreational purposes is an important aspect of the overall town plan, because not only is such an endeavor compatible with the preservation of the rural character of the town, but also, recreational development in the form of vacation dwellings helps form a solid tax base for the town.

Keeping the area attractive for outdoor recreation entails more than merely maintenance of the present assets. Some assets are already deteriorating and becoming overcrowded. Fairfield Pond, for example, has nearly reached its limits as far as accommodating housing on its shores. The area requires immediate attention in order to prevent further development where the water quality and surrounding

soils are already suffering.

In addition to cleaning up the deteriorating areas, the town's recreational plan must encourage the development of new recreational areas. Many good sites are located in the town and could be made suitable for recreation, wildlife areas and other uses. The Town forest could be one area further developed for such uses. The most important aspect of planning new recreation areas is to ensure that sound environmental and ecological principles are employed.

The density of housing, whether it is seasonal or full-time, must be carefully controlled in areas surrounding water bodies to control pollution and accompanying health hazards; similarly the proximity of housing to the water's edge must be carefully guarded. In line with maintaining ecologically sound recreation areas with natural beauty as their outstanding quality, measures must be taken to ensure that commercial establishments and concession stands do not dominate 'natural' recreation areas. Such commercial development must be confined to specific areas where environmental beauty and quality will not be impaired.

Environment

Climate and Air Quality

Vermont's climate is best described as variable; temperatures range greatly throughout the year and can change considerably in a given day. There can be great differences in the weather during the same seasons in different years, and considerable diversity from place-to-place. Moderately warm summers, cold winters and ample rainfall are characteristic of the regional climate.

Air quality is generally high throughout Vermont, especially in rural towns like Fairfield. Levels of air pollution throughout most of Vermont meet federal standards. Unlike more industrialized places, motor vehicles are the largest source of air pollution in Vermont; vehicles emit ozone, particulate matter and chemical compounds. Localized areas where traffic is congested or vehicles sit idling often have very low air quality. Weather patterns can also influence whether pollutants will disperse or remain concentrated close to the ground. Lower air quality has been linked to human health problems and can impact the natural environment as well.

Acid rain, which is caused by air pollution, is affecting environmental quality in Vermont. Acid rain causes acidification of lakes and streams and contributes to damage of trees, especially at high elevations. Acid rain is an additional stress, along with climate change, on the town's sugar maple stands. In addition, acid rain accelerates the decay of building materials such as stone and metal. Power plants, industrial manufacturing and motor vehicles are all sources of pollutants that are ingredients of acid rain. These pollutants become part of the air masses circulating in the upper atmosphere. Prevailing winds transport the polluting compounds, sometimes hundreds of miles, across state and national borders.

Geology, Terrain and Soils

Geology

Greywacke schist is a rock commonly found in Fairfield. It is complex metamorphosed sandstone. Gniesses, phyllites, schists, and greenstones are also present in Fairfield. The main difference between these rocks is their degree of metamorphism - some are finer grained than others are. These metamorphic rocks of Fairfield have also been folded, faulted, and jointed.

On the surface, a large part of Fairfield is covered by more recently deposited glacial till, the debris deposited directly by the melting ice of a retreating glacier. Till is unsorted, which means it is composed of particles of all sizes from clay to small boulders. Till covers Fairfield as a thin veneer less than ten feet thick (greater in stream valleys).

Slope

The locations of slope categories in Fairfield are listed and described below, and are shown on the development limitations map. More than half of Fairfield has a slope that is favorable for agriculture.

Steep slopes present challenges to development. Slopes greater than 25 percent are characteristically covered by shallow soils often having fragipans that make development more difficult. Development at such a slope requires cuts and slope stabilization for foundations, parking areas, road access and utilities that are expensive and often, unless well designed, are unattractive.

Development on slopes over 15 percent may also be at the expense of the municipality as the costs of road maintenance, runoff maintenance and sedimentation problems are much higher on steep slope areas. School bus and fire service may also be difficult, expensive or even impossible depending on weather conditions.

Considerable environmental problems may arise from development on steep slopes presenting hazards to those residing within the areas as well as those outside.

Development on steep slopes may upset the natural slope repose angle and by removal of vegetation and the injection of effluent by on-site sewage disposal will increase runoff, erosion and the possibility of mass movement or slumping. Slippage of foundations is not uncommon in steep slope areas.

Slope Categories in Fairfield and Best Possible Uses

0–15% Slope (Flat). Good for agriculture, housing construction and engineering. This is the best land and makes up 31,328 acres or 66% of the land in Fairfield.

15–25% Slope (Gently Sloping). Good for agriculture with the use of machinery and more labor. 10,580 acres of Fairfield, or 22% of the land area, is in this category.

25%+ Slope (Steep). Thin soils, susceptible to erosion. This land is not agriculturally productive, is not safe for construction, and is best kept under natural vegetation and grass cover. Approximately 5,382 acres, or 12% of Fairfield, is in this category.

Septic tank disposal fields located on slopes greater than 15 percent may result in partially treated effluent surfacing and seeping onto the downslope surface causing health hazards and possible nutrient enrichment of surface water, not to mention aesthetic problems. Of the effluent that does remain under the shallow soil characteristics of steep slopes, much of it may flow laterally and result in groundwater contamination or the surfacing of effluent at outcrop or fragipan areas.

Development on slopes greater than 15 percent should be avoided or at minimum carefully performed in order to avoid high environmental and social costs. Runoff and erosion should be carefully controlled during all phases of construction and wastes should be treated outside the steep slope area.

Soils

In addition to slope, soil characteristics greatly influence the suitability of land for a given use. Since all development in Fairfield relies on on-site, soil-based systems to treat wastewater, the suitability of soils for septic systems is a key element in determining future land use patterns. As shown in Figure 3.22, there are few areas in town with soils well suited for on-site septic systems. Most of the town's soils are either moderately or marginally suited, and a significant amount are unsuited for wastewater treatment. While the soil survey provides information at the town level, a field assessment is necessary to accurately determine soil capacity on a particular piece of property. Figure 3.22 also identifies soils which are frequently flooded and therefore present a significant barrier to development.

In addition to influencing development potential, soils are the foundation of the agricultural landscape. Both state and federal agencies have classified soils by their properties and have identified the most productive soils, as shown in Figure 3.23. Prime agricultural soils have natural fertility retention qualities, high organic matter content, favorable drainage, level to gently rolling slopes, sufficient depth and textural qualities as well as high available moisture content. These factors in combination make such soils intrinsically suitable for crop production.

Figure 3.21

SLOPES

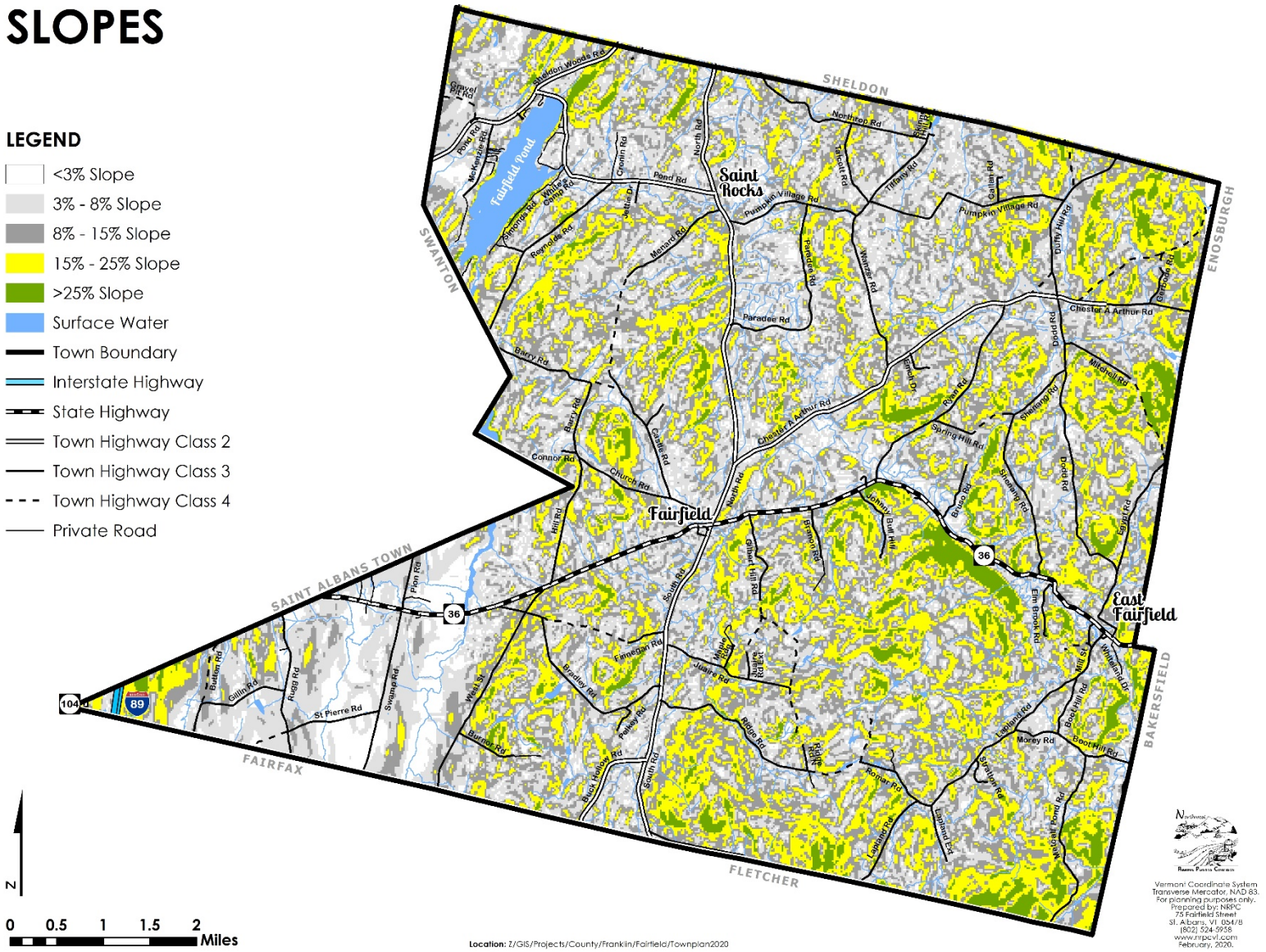


Figure 3.22

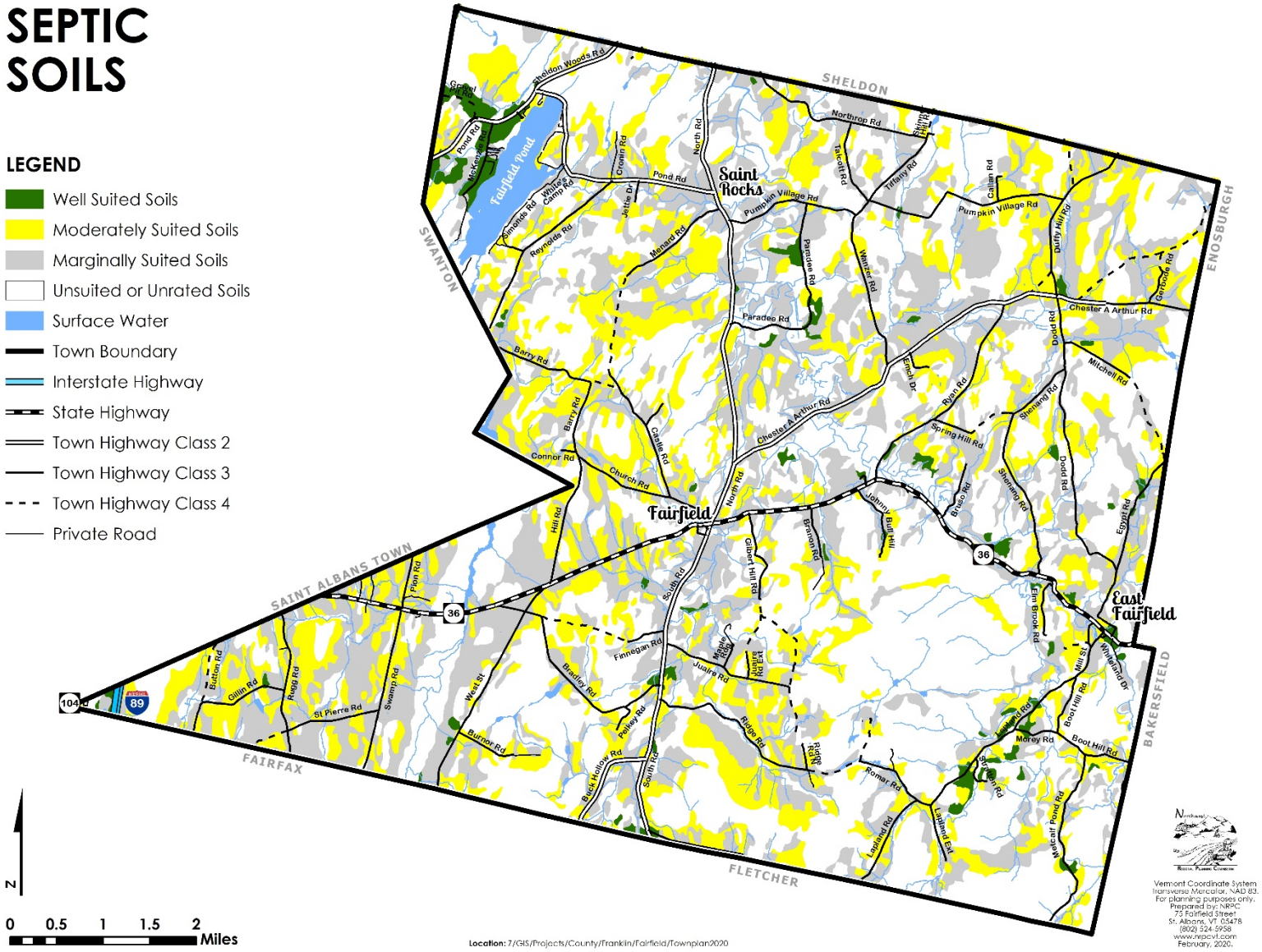
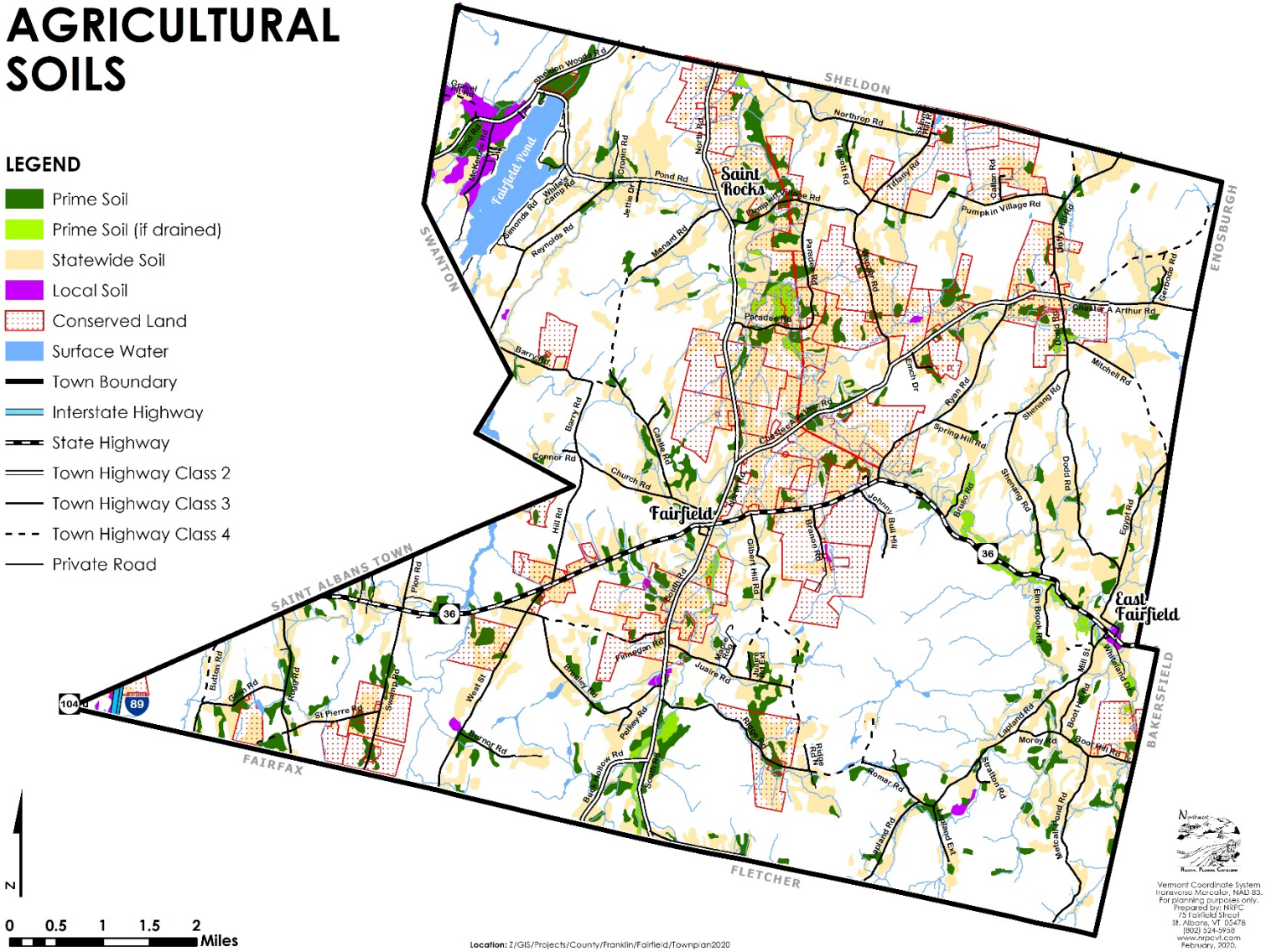

SEPTIC SOILS
LEGEND
Well Suited Soils
Moderately Suited Soils
Marginally Suited Soils
Unsuited or Unrated Soils
Surface Water
Town Boundary
Interstate Highway
State Highway
Town Highway Class 2
Town Highway Class 3
Town Highway Class 4
Private Road
SHELDON
SWANTON
ENOSBURGH
SAINT ALBANS TOWN
FAIRFAX
FLETCHER
BAKERSFIELD
Saint Rocks
Fairfield
East Fairfield
Fairfield Pond
N
0 0.5 1 1.5 2 Miles
Location: T:/GIS/Projects/County/Franklin/Fairfield/Townplan2020
Vermont Coordinate System Transverse Mercator, NAD 83. For planning purposes only. Prepared by: NRPC 75 Fairfield Street St. Albans, VT 05478 (802) 524-5958 www.nrpcvt.com February, 2020.

Figure 3.23


AGRICULTURAL SOILS
LEGEND
Prime Soil
Prime Soil (if drained)
Statewide Soil
Local Soil
Conserved Land
Surface Water
Town Boundary
Interstate Highway
State Highway
Town Highway Class 2
Town Highway Class 3
Town Highway Class 4
Private Road
SHELDON
SWANTON
ENOSBURGH
SAINT ALBANS TOWN
FAIRFAX
FLETCHER
BAKERSFIELD
Saint Rocks
Fairfield
East Fairfield
Fairfield Pond
36
104
89
N
0 0.5 1 1.5 2 Miles
Location: Z/GIS/Projects/County/Franklin/Fairfield/Townplan2020
Vermont Coordinate System
Transverse Mercator, NAD 83.
For planning purposes only.
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75 Fairfield Street
St. Albans, VT 05478
(802) 524-5958
www.nrpcvt.com
February, 2020.

Earth Resources

There are a few earth resources of importance in Fairfield – sand and gravel deposits and mineral deposits. Sand and gravel are important local resources for Fairfield and are needed for road repair and construction. Gravel deposits also are important areas for recharging groundwater supplies.

The state recognizes two mineral sites in Fairfield. Located just west of North Road between Sheldon and St. Rocks behind the Callan Farm is the Saint Rock Iron Mine. This small mine consists of six pits where good quality hematite has been extracted.

The second site is the Burnor #1 oil and gas exploration well (also known as the Columbia gas well). In the mid-1980s, Columbia Gas and Delta Drilling commenced work on an exploratory well on the north side of the Chester A. Arthur Road. In 1984, at a depth of nearly 7,000 feet, the consortium ceased drilling operations. The site is now registered as a dry hole. The possibility still exists for future exploratory wells in Fairfield. Wells drilled in St. Albans and near Mallets Bay in Colchester produced small amounts of natural gas mixed with a high percentage of methane. If gas prices remain high there may be incentives again to search for resources like natural gas.

Earth resource extraction and/or processing activities have a high potential for becoming a substantial public nuisance in the area where such activities are located. There is a potential for problems in any of the following areas:

- Noise, dust and air pollution, or radiation.
- Surface and groundwater pollution, siltation or radiation.
- Storage and disposal of waste materials, both solid and liquid.
- Increased storm water runoff, erosion and sedimentation.
- Despoilation of the landscape and limited utility for subsequent uses of the site.
- Decreased highway safety and increased municipal costs due to increased traffic and accelerated deterioration of highways and bridges attributable to transportation activities generated by the earth resources operations.
- Reduced property values because of primary or secondary impacts of the proposed earth resource operations.

All of these factors, single and together, may act to substantially depreciate land values in the immediate vicinity of such activities and the town in general.

While earth resource extraction comes with risks, many of these resources are needed by residents for road and building material, or for sale as a marketable resource. Each of these resources is finite and once depleted cannot be replaced. Development near or over the resource may, in effect, make extraction impossible in the future. Therefore, any construction over an earth resource should account for the potential loss of that resource. The state has estimated that more than 30 percent of all sand and gravel deposits in Vermont are now inaccessible due to state regulations including water supply protection, critical wildlife habitat, conserved lands, and other factors. Current developments over deposits have further limited the availability of the resource.

The town, therefore, has two responsibilities. First, it needs to be vigilant in its regulation of earth resource extraction operations to prevent the creation of a nuisance. And second, the town needs to protect the resource to ensure its availability for future residents.

Water Resources

The Town of Fairfield is located in the Missisquoi River Basin, with the Black Creek Watershed covering most of the area in town. Major streams in town include the Black Creek, Dead Creek, Elm Brook, Fairfield River, and Wanzer Brook.

Black Creek

As the Black Creek meanders through the center of Fairfield, it is degraded by human and agricultural waste to the extent that large portions of it no longer support the most fundamental needs. The Vermont Agency of Natural Resources partnered with the Missisquoi River Basin Association and the Northwest Regional Planning Commission to conduct Phase 1 and Phase 2 Geomorphic Assessments of several stream reaches within the Black Creek watershed, which then resulted in the Corridor Management Plan, April 2009. The plan identifies areas where restoration projects can have the greatest impact on improving stream stability and water quality.

Fairfield Pond

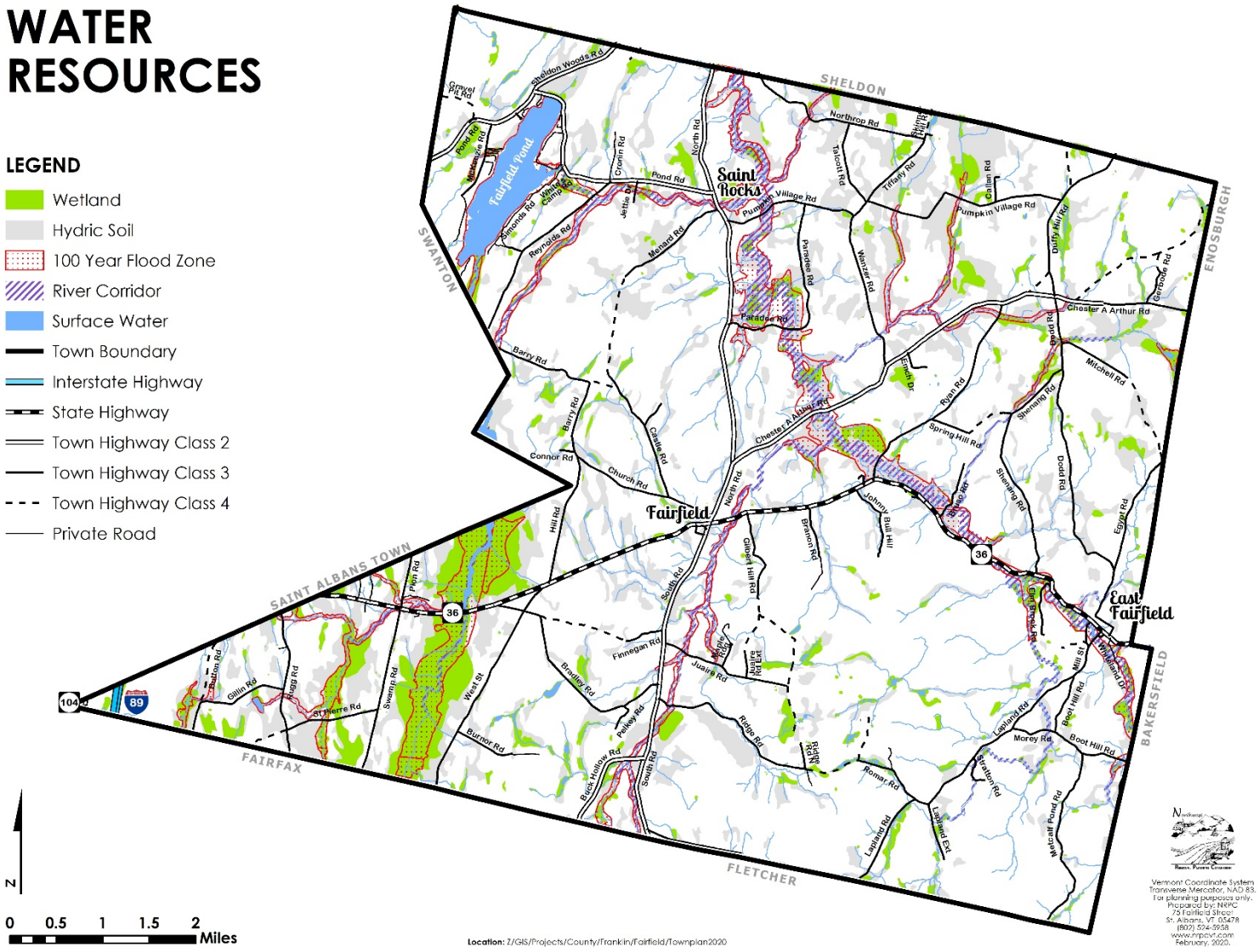
Located in the northwest corner of the town, Fairfield Pond is a spot of incredible beauty and considerable activity. It is used by town residents for recreational activities such as fishing, boating, and sailing. Its shores are dotted with a number of seasonal camps that are for the most part unobtrusive and bolster the particular New England feel of the area. The pond also serves as water supply for the Town of Swanton, so it is essential that this water be protected for diverse uses.

Beginning in 1988, the water quality of the lake experienced a significant downturn with large-scale algal blooms occurring during both the winter and summer months. A detailed study was compiled that outlined the current status of the pond and recommended a series of actions that were meant to reduce the negative effects of land-use in the surrounding area. The study was called the Fairfield Pond Diagnostic Study. The study recommended the creation of a survey that would catalog current land use practices and attempt to predict future patterns. This in turn could dictate a land management strategy to guide future decision-making, but no such survey has been developed.

In 2018, the Fairfield Pond Recreation Association received a grant to study aquatic plants with an emphasis on controlling milfoil in Fairfield Pons. The study, available on the Fairfield Town website, identifies rare native species and high-priority areas for milfoil removal. The Association has been active in hosting milfoil removal events and placing no-wake buoys around milfoil infested areas.

An important objective for Fairfield would be to work creatively toward preserving the

Figure 3.24


WATER RESOURCES
LEGEND
Wetland
Hydric Soil
100 Year Flood Zone
River Corridor
Surface Water
Town Boundary
Interstate Highway
State Highway
Town Highway Class 2
Town Highway Class 3
Town Highway Class 4
Private Road
SHELDON
SWANTON
ENOSBURGH
SAINT ALBANS TOWN
FAIRFAX
FLETCHER
BAKERSFIELD
Fairfield
Saint Rocks
East Fairfield
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0 0.5 1 1.5 2 Miles
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Location: Z:/GIS/Projects/County/Franklin/Fairfield/Townplan2020
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character of the lake while simultaneously improving its quality. The Fairfield Pond Recreation Association is an excellent vehicle through which to promote actions necessary to improve the health of the lake.

Groundwater

Groundwater is defined as all water that exists beneath the surface of the earth. The geology of the region is the most important factor in determining the flow of subsurface water.

As a result of Fairfield's geologic conditions there is limited availability of groundwater. Areas of moderate groundwater potential are available within sand and gravel deposits in the sand valleys of Black Creek. Good ground water potential is present in the area directly west of Fairfield Pond. Recharge areas should be protected from unrestricted dumping and other practices which might harm the potability of this important water supply.

The limited availability of ground water in Fairfield led to difficulties in locating a well site that would produce sufficient municipal water supply for Fairfield Center, however a good source was found and is expected to contain adequate supply for many years. Similar to the need for protecting recharge areas, it is important to protect the area surrounding a municipal supply well to ensure continued water quality. State regulations require that every municipal wellhead be managed under a Source Protection Plan. A Source Protection Area has been delineated around the new water supply wellhead to protect the Town's water supply.

Groundwater can become polluted when it comes in contact with surface water pollutants. There are many points at which groundwater and surface water meet, creating the opportunity for contamination. For this reason, good surface water quality should be maintained.

Human activity is a significant contributor to groundwater contamination. Therefore, it is essential that residents be informed of the types of practices that can cause contamination. This is particularly true in an area such as Fairfield, which does not have an abundance of ground water sources. Potential sources of ground water contamination include septage, sewage, agriculture, landfills, junkyards, salt from runoff, and inadequate-depth or poorly percolating soils. These sources should be identified and ameliorated to the greatest extent possible.

Wetlands

Wetlands are those areas inundated by surface or ground water with a frequency sufficient to support vegetation or aquatic life that depend on saturated or seasonally saturated soil conditions for growth and reproduction. Such areas include but are not limited to marshes, swamps, sloughs, potholes, ferns, river and lake overflows, mud flats, bogs and ponds, but exclude areas that grow food or crops in connection with farming activities.

Over 2,000 acres of wetlands are scattered across Fairfield, although Fairfield Swamp dominates in most people's minds. A large portion of Fairfield Swamp is under state management, and as such, no development is permitted. It is estimated that only 50 percent of Vermont's original wetlands still

Figure 3.25: Fairfield Swamp

exist, and roughly 200 acres per year are disappearing in the state. No exact figures are available for Fairfield.

Fairfield Swamp in the Dead Creek valley is one of the largest and most diverse natural areas in the county. Its 1,700 acres consist of 75 percent vegetative cover and 15 percent open water. There are a number of significant and rare plant species which have been identified in Fairfield Swamp including the only autumn-willow (*Salix serissima*) in Vermont. Other rare species that have been discovered in the swamp include the fringed white orchid (*Platanthera blephariglottis*) and one showy lady's slipper (*Cypripedium reginae*).

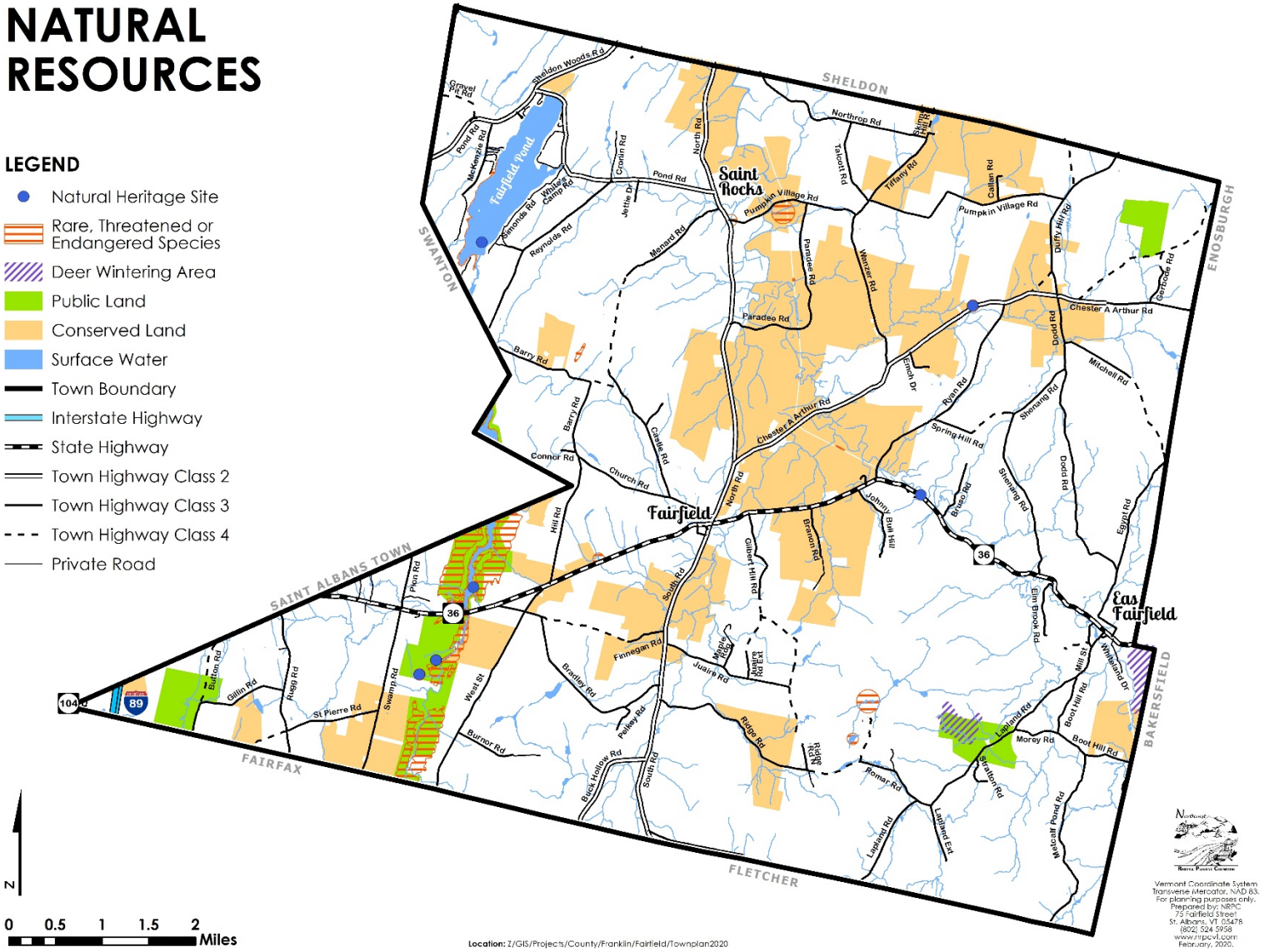
Fairfield Swamp has important potential as a good example of a hardwood-northern white cedar swamp which comprises a large part of the swamp's acreage. This type of ecosystem has often been degraded due to cedar harvest. Good management of this area as future "old growth" is likely as most of it is under state ownership. This area exhibits good examples of cattail marsh, shrub swamp and lowland bog, as well as a leatherleaf shrub bog and a black spruce bog.

All the typical components of hardwood-northern white cedar swamp forest are present in Fairfield Swamp except for a healthy population of white cedar. Red maple, yellow birch, black ash (*Fraxinus nigra*), winterberry (*Ilex verticilla*), red-osier dogwood (*Cornus stolonifera*), and withe-rod (*Viburnum nudum*) are the forest's main components. White cedar, also common in these areas, has suffered due to extensive logging and has never grown very large in size.

Species that are common to the habitat include the common cat-tail (*Typha latifolia*), bulrushes (*Scirpus spp.*), white water-lily (*Nymphaea odorata*), spatterdock (*Nuphar variegatum*), water-shield (*Brasenia schreberi*), speckled alder (*Alnus rugosa*), red maple, leatherleaf (*Chamaedaphne calyculata*), black spruce and bog laurel (*Kalmia polifolia*), and small cranberry (*Vaccinium oxycoccos*). Common herbs include pitcher plant (*Sarracenia purpurea*), cottongrass (*Eriophorum*), and uncommon rose-pink (*Calopogon tuberosus*).

Figure 3.26

NATURAL RESOURCES



Flood Resiliency

Flooding is a natural occurrence and the most common natural disaster in Vermont. Two types of flooding are associated with most flooding damage: inundation flooding and fluvial erosion.

Inundation flooding occurs when the water level in rivers, lakes and streams rises and inundates the adjacent low-lying land. The Federal Emergency Management Agency (FEMA) defines a floodplain as an area of land adjacent to lakes and streams that is subject to recurring inundation or high water (see Figure 3.24).

Fluvial erosion occurs when lateral and vertical movement of streams and rivers cause erosion of the river or stream bank. Both inundation flooding and fluvial erosion are becoming more common within the Northwestern region of Vermont.

Special Flood Hazard Area

Development within floodplains can have many potentially damaging consequences, as construction may obstruct the natural flow of water or displace soil and raise base flood elevations.

Lake and stream buffers can be used as a planning tool to reduce future development in these areas. In 2014, the state adopted the Shoreland Protection Act. The Act applies to all Lakes greater than 10 acres, which includes Fairfield Pond. It essentially prohibits new clearing and development within 100 feet of the mean water level of the Lake and place limits on clearing and development from 100 to 250 feet from the mean water level.

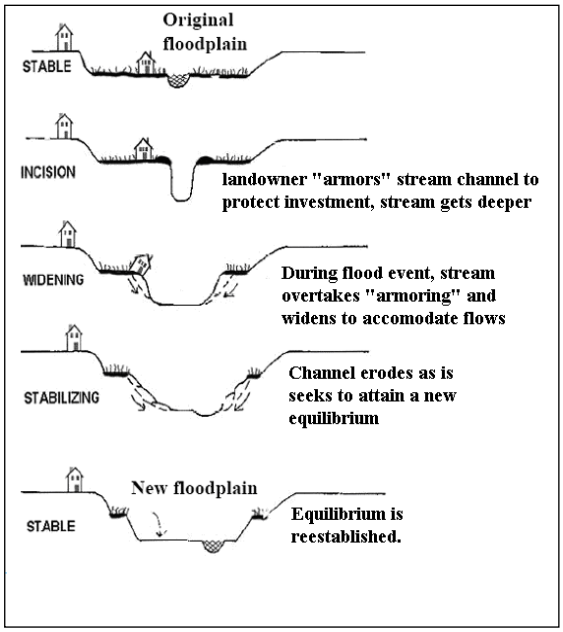


Figure 3.27: Fluvial Erosion

Another strategy to mitigate potential encroachment and flood loss due to inundation flooding is to prohibit development below base flood elevation, or set the elevation from which development is prohibited at a level higher than the base flood elevation.

The Town of Fairfield has adopted development regulations for special flood hazard areas as defined by FEMA on Flood Insurance Rate Maps (FIRMS). These regulations protect the health, safety, and welfare of its residents and to allow the community to participate in the National Flood Hazard Insurance Program.

The existing FIRMs were developed in 1985 and the Flood Insurance Study was developed in 1975, so while this information is the best available, it may not reflect changes to streams and effects of development since 1976. FEMA is currently in the process of updating the FIRMs for the Missisquoi Basin.

The Town should participate in this process as needed to ensure new FIRM maps accurately reflect conditions in Town. The current FIRMs were digitized by the Northwest Regional Planning commission in 1999 to assist in planning efforts and are used to determine approximate locations. The digital version is not used for regulatory rulings.

River Corridors

Seventy-five percent of all flooding damages in the state of Vermont are the result of fluvial erosion. Historic land uses along the river and its streams including floodplain encroachments and vegetative debris removal have increased the risk of erosion and landslides. Such practices included armoring, dredging, gravel mining and channelization, for the purpose of containing high flows and to protect infrastructure built in the historic floodplains. These practices increase the power of the stream, disconnect the stream from its historic floodplain, and ultimately lead to channel instability and increased damages from flooding.

To limit the potential damages of fluvial erosion, the Vermont Agency of Natural Resources (ANR) recommends regulating development in the river and stream corridors. For rivers with a watershed of greater than 2 square miles, ANR has mapped the river corridor area where risk of fluvial erosion is greatest. For all other smaller streams, the stream corridor is defined as the area within 50 feet of the top bank of the stream.

In 2020, the Town of Fairfield adopted development regulations that limit development in these river/stream corridor areas. These regulations are designed to ensure the safety of town residents and limit damages from flooding events.

For more information on the Town's disaster preparedness and resilience initiatives, please reference the Fairfield Local Hazard Mitigation Plan.

Land Cover and Habitat

Natural Communities

Fairfield is situated in the hemlock-white pine-northern hardwood sub-region. The dominant species of this forest type are eastern hemlock (*Tsuga canadensis*), sugar maple (*Acer saccharum*), American beech (*Fagus grandifolia*), white ash (*Fraxinus americana*), and yellow birch (*Betula leutia*). Of the softwoods, Fairfield is comprised predominately of eastern hemlock, eastern white pine (*Pinus strobus*), black spruce (*Picea mariana*), northern white cedar (*Thuja occidentalis*), and tamarack (*Larix laricina*). The most common hardwoods include sugar maple, American beech, white ash, yellow birch and paper birch (*Betula paprifera*).

Our Changing Landscape

Prior to European settlement, Vermont forests consisted primarily of sugar maples, beech, yellow birch, paper birch, red spruce (*Picea rubens*) and balsam fir (*Abies balsamea*).

Due to high demand for agricultural land, nearly 75 percent of Vermont's forests had been cut by the late 1800s. Over the last century Vermont forests have regenerated, resulting in the current forest cover.

The maple sugar business has been a catalyst for the protection of hardwood forests. Use of sugar maples for making maple syrup, an important agricultural product in

Fairfield, has often motivated landowners to manage forest areas in a monoculture fashion.

Invasive species, including emerald ash borer, buckthorn, Japanese knotweed, multiflora rose and poison parsnip, can pose a threat to the native vegetation and natural landscape of Fairfield. Good management practices can limit the spread of these species.

Wildlife and Fisheries

Wildlife is an important resource for any community. The presence of wildlife is an indication of a healthy, sustainable environment. A diverse and large wildlife population is also necessary for hunting and trapping. Fairfield has an extraordinary range of habitats, characterized by many elevation differences, and thus hosting a diverse collection of wildlife and bird populations.

Wildlife is mobile and uses different areas for living, eating and sleeping; because of their mobility wildlife is difficult to inventory. Fairfield is gifted with abundant wildlife and fish resources. The following are some of the wildlife species or groups of species found in Fairfield.

Deer: There is a considerable variation in deer habitat across Vermont. Because of the generally mild winter climate of this area, deer do not concentrate in wintering yards to the extent they do in other zones. Conflicting land use practices also affect the range of the deer, especially intensive agriculture. The area has good potential for increased deer range as it becomes more wooded and through the creation of more buffers. The prime deer wintering area is hemlock.

Bear: The greatest threats to the black bear in Vermont are buildings and roads; seclusion and forest areas are the requirements for successful bear habitat. A large population of bear is said to live in the southeastern corner of Fairfield, probably resulting from a spill over of individuals from Bakersfield. The beech stand in the northeast quadrant of Fairfield is a good bear habitat. Beech “mast” is one of the preferred foods for bear.

Upland Game: Fairfield is an extraordinary habitat for birds like the upland plover, hawks, kestrel, pheasant, Hungarian partridge, ruffled grouse and woodcock.

Furbearers: There are a variety of furbearers found in Fairfield: beaver, otter, martin, mink, raccoon, fisher, fox, skunk, and muskrat. In economic terms, the greatest income is from mink, fox, and muskrat.

Waterfowl: There is a diversity of waterfowl found in Fairfield such as duck, mallard, wood duck, blue winged teal, golden eyes, and ring necked ducks. These species prefer shallow marshes with a good interspersion of aquatic vegetation species for cover and food. The major problem facing waterfowl is loss of habitat hence there is a need to retain the wetlands as prime habitat and prevent pollution and filling of these areas.

Warmwater Fish: Among the native species are pickerel, northern pike, small mouth and large mouth bass, and yellow perch. There is need to preserve predator species of fish to control other populations, e.g. northern pike on perch. Water levels should be kept at a level which allows for adequate spawning.

Pollution of the streams from agriculture has affected the perch and brown trout populations.

Coldwater Fish: Local species are dominated by brook, brown and rainbow trout.

Problems related to wildlife:

- Lack of access for hunters from excessive posting,
- Lack of all stream side buffers, resulting in a fragmented habitat,
- Little money in the trapping business,
- Misfiring by hunters; firing of horses, dogs and the destruction of fences.

Hunting & Habitat Blocks

Fairfield has only a fall hunting season; during this season gun, bow and arrow, and trap (beaver) hunting are permitted.

Maintaining large unfragmented forest areas is critical to preserving large animal species and providing hunting opportunities to Fairfield residents. Over time, even low-density rural development and roads can fragment these areas, threatening their health, function and value of these forest areas.

The largest habitat block is located in the southeastern corner of Fairfield known as the Romar District (see Figure 3.29). This area should be preserved as a wildlife habitat especially seasonally for bear. Additionally, buffers should be left out along streams and other habitat connectors to provide for the free movement of wildlife.

Wildlife Management Areas

These are the areas owned and administered by the Vermont Department of Fish and Wildlife; they include:

*The Elm Brook Management Area***:** This is situated on a knoll on the northeastern corner of Fairfield. This area provides a 53-acre deer wintering area (80% basal is hemlock). This is the home of woodcock, white tailed deer, ruffed grouse, sunshine hare, brook trout lark, flying squirrels, brown bat and the short tailed shrew. The game population in this area is small because of area size.

Fairfield Swamp: This comprises 1,292 acres, spanning Swanton, St. Albans and Fairfield; the largest portion being in Swanton. Waterfowl are seen in the area, because of the 60 woodduck boxes. Studies have shown that 90 percent are used annually by woodducks and hooded mergansers. There is an element of pressure from hunting.

Figure 3.28

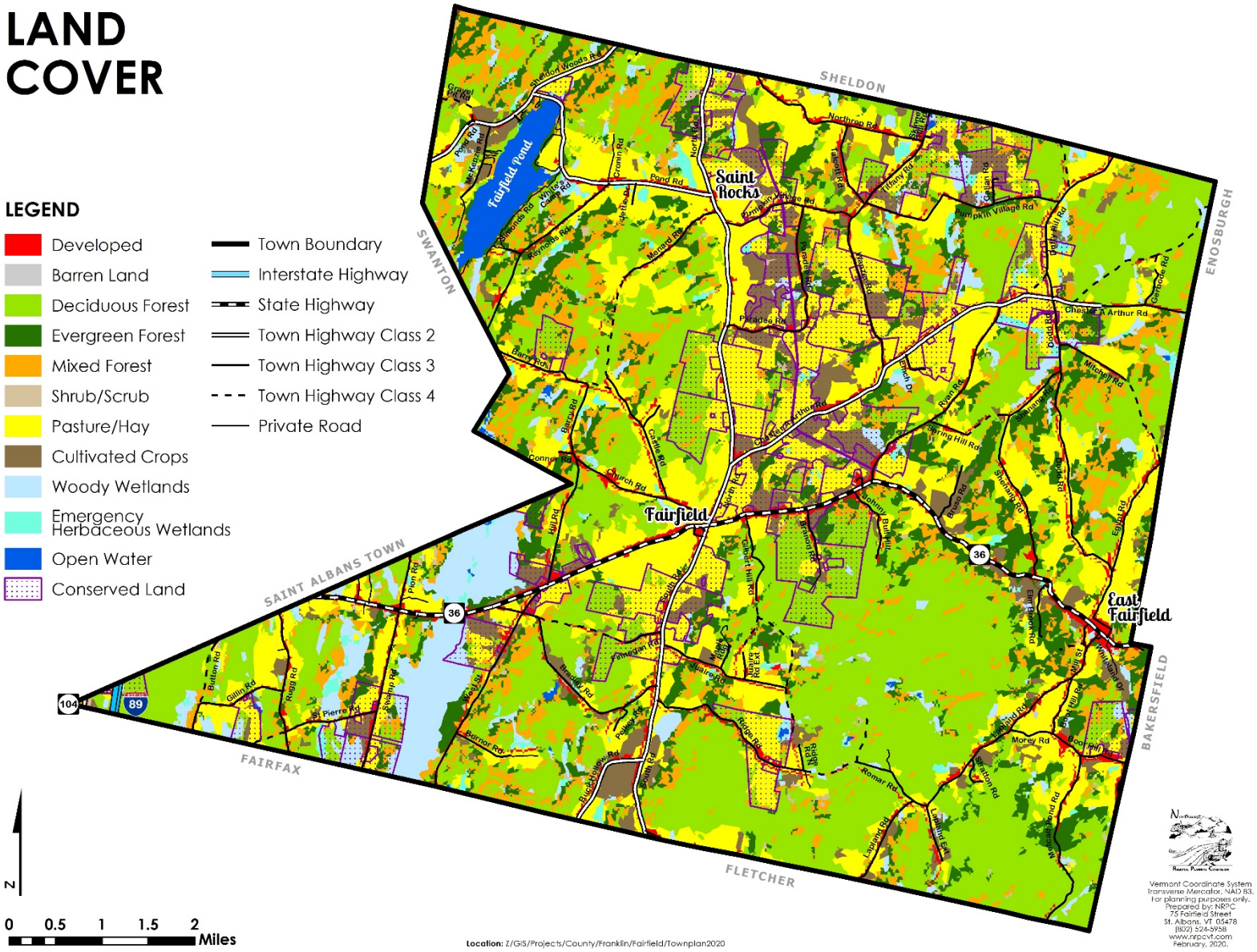
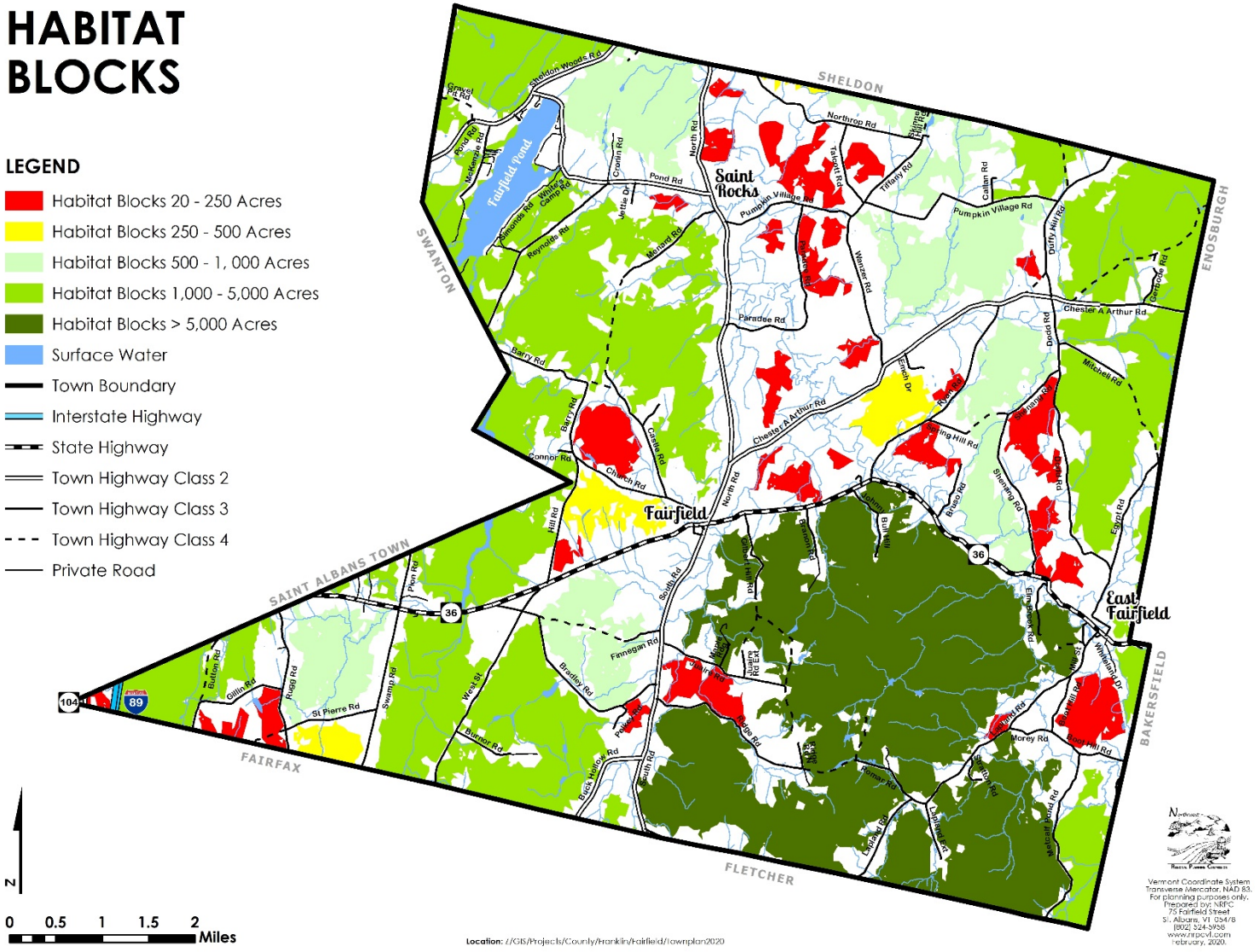

LAND COVER
LEGEND
Developed
Barren Land
Deciduous Forest
Evergreen Forest
Mixed Forest
Shrub/Scrub
Pasture/Hay
Cultivated Crops
Woody Wetlands
Emergency Herbaceous Wetlands
Open Water
Conserved Land
Town Boundary
Interstate Highway
State Highway
Town Highway Class 2
Town Highway Class 3
Town Highway Class 4
Private Road
SHELDON
SWANTON
ENOSBURGH
SAINT ALBANS TOWN
FAIRFAX
FLETCHER
BAKERSFIELD
Fairfield Pond
Saint Rocks
Fairfield
East Fairfield
36
104
89
N
0 0.5 1 1.5 2 Miles
Location: Z:/GIS/Projects/County/Franklin/Fairfield/Townplan2020
Vermont Coordinate System
Transverse Mercator, NAD 83.
For planning purposes only.
Prepared by: NRPC
75 Fairfield Street
St. Albans, VT 05478
(802) 524-5958
www.nrpcvt.com
February, 2020.

Figure 3.29


HABITAT BLOCKS
LEGEND
Habitat Blocks 20 - 250 Acres
Habitat Blocks 250 - 500 Acres
Habitat Blocks 500 - 1, 000 Acres
Habitat Blocks 1,000 - 5,000 Acres
Habitat Blocks > 5,000 Acres
Surface Water
Town Boundary
Interstate Highway
State Highway
Town Highway Class 2
Town Highway Class 3
Town Highway Class 4
Private Road
SHELDON
SWANTON
ENOSBURGH
SAINT ALBANS TOWN
FAIRFAX
FLETCHER
BAKERSFIELD
Fairfield
Saint Rocks
East Fairfield
Fairfield Pond
N
0 0.5 1 1.5 2 Miles
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February, 2020.

Significant Natural Areas

Creekside Rails, a stretch of unused Lamoille Valley Railroad track between Black Creek and Route 36, has become home to one of Vermont's rare and endangered species, the great St. John's wort (*Hypericum ascyron* or *Hypericum pyramidatum*). Great St. John's wort typically grows along rivers on gravel shores and bedrock ledges. The population that is found in Fairfield is one of Vermont's largest consisting of over 100 stems. The man-made gravel railroad bed forms an excellent habitat for this endangered plant. A serious threat to the population would be a possible conversion of the tracks to recreational uses.

The Elmbook Wildlife Management Area is significant because it is state-owned and therefore protected from inappropriate development. Three forest stands have been identified in this area including a 53-acre high-quality hemlock stand, a 22-acre pole timber northern hardwood stand (composed of red (*Acer rubrum*) and sugar maple and yellow birch) and a 76-acre black ash-elm-red maple pole timber stand.

Scenic Resources

Fairfield is an incredibly beautiful rural town. Set against the backdrop of the Green Mountains, the town's hamlets, open fields, wooded hillsides and historic farmsteads all delight the eye. The town's geography and historic settlement patterns create a wonderful town resource, and the visual beauty is a valued asset of the town.

Current Land Use

Current Development Patterns

A review of Fairfield's 2018 Grand List indicated that roughly one quarter of the town's land area is used primarily for residential and commercial uses. Just over sixty percent of the land in town is farm land, open land, or woodlands.

The greatest density of homes occurs in East Fairfield and Fairfield Village, around Fairfield Pond (primarily seasonal camps) and in the vicinity of Route 36 near the St. Albans line. However, most of the town's year-round homes are dispersed at low densities along the town's many miles of rural roads.

There is limited new land available for development in the Village Centers. As a result, much of new development is occurring at the outer edges of town, most notably near Fairfield's border with St. Albans and Swanton.

Fairfield has a large proportion of residential properties on large lots. Of properties classified as year-round residential in the 2018 Grand List, 48% were 6 acres or more in size accounting for 23% of the total land in Town. The other 52% of properties were on lots less than 6 acres in town acres. In total this 52% of properties account for just 1.5% of the total land in town. While it is likely that many large-lot residential properties include working lands or open space, the trend towards greater fragmentation of the town's land base is a concern. Encouraging residential development to occur on smaller lots would help maintain larger tracts of agricultural and forest land suitable for productive use.

Land Ownership

Fairfield enjoys a high rate of resident ownership with around 65 percent of the

town's land area owned by town residents. The owners of most of the remaining land live in neighboring communities. Less than five percent of land is owned by out-of-state entities. Even the town's seasonal camps are largely owned by Vermont residents, many of whom are residents of nearby towns.

Conservation

Approximately one-third of Fairfield's land area has been conserved through the Vermont Land Trust, limiting its future development potential, or is owned by the State of Vermont for conservation purposes. Most of the nearly 12,000 acres of conserved lands are located in the central part of town, creating a large swath of land that will remain in productive use. The state-owned lands are part of the Fairfield Swamp Wildlife Management Area. (See Figure 3.28).

Town Government

Facilities

Town Office

In 1998, the town acquired property in Fairfield village which has allowed for the construction of a new town office with a larger vault, meeting space and office space for the clerk and other town officers.

Fairfield Community Center

East Fairfield Community Center on School Street houses a food shelf, a community center, and a youth program.

Town Library

The town library was moved from the school to a new building on Park Street in 2011. It still serves both the school and the community. In addition to great books, the library offers WiFi, on-line databases, word processing, magazine subscriptions (both in print and electronically), and downloadable audio books! Library Policies are established by the Library Board of Trustees. In addition to holding regular story hours, the library hosts a variety of community programs and classes.

Fairfield Common School

The Fairfield Common School is a historic building located next to the Fairfield Center School. Until 2020, it was leased to the School from the Town. Currently, the Town is examining other options for its use.

Officials and Staff

The administration of the town is the responsibility of a town clerk, treasurer and town administrator working closely with the Selectboard. The clerk's office oversees the financial management of the town, maintains land records and associated documents. The town administrator provides management and administration for a variety of town projects.

A three member Board of Listers maintain the town's grand list with the assistance of the town clerk. With the passage of Act 60, the board was provided with computer equipment intended to help standardize property assessments in the state. The Town is currently undergoing a town-wide reappraisal which may lead to changes in the Town's systems for assessing property values. Property parcel maps are available through the State Parcel Mapping Program.

Fairfield Grant Writers Committee

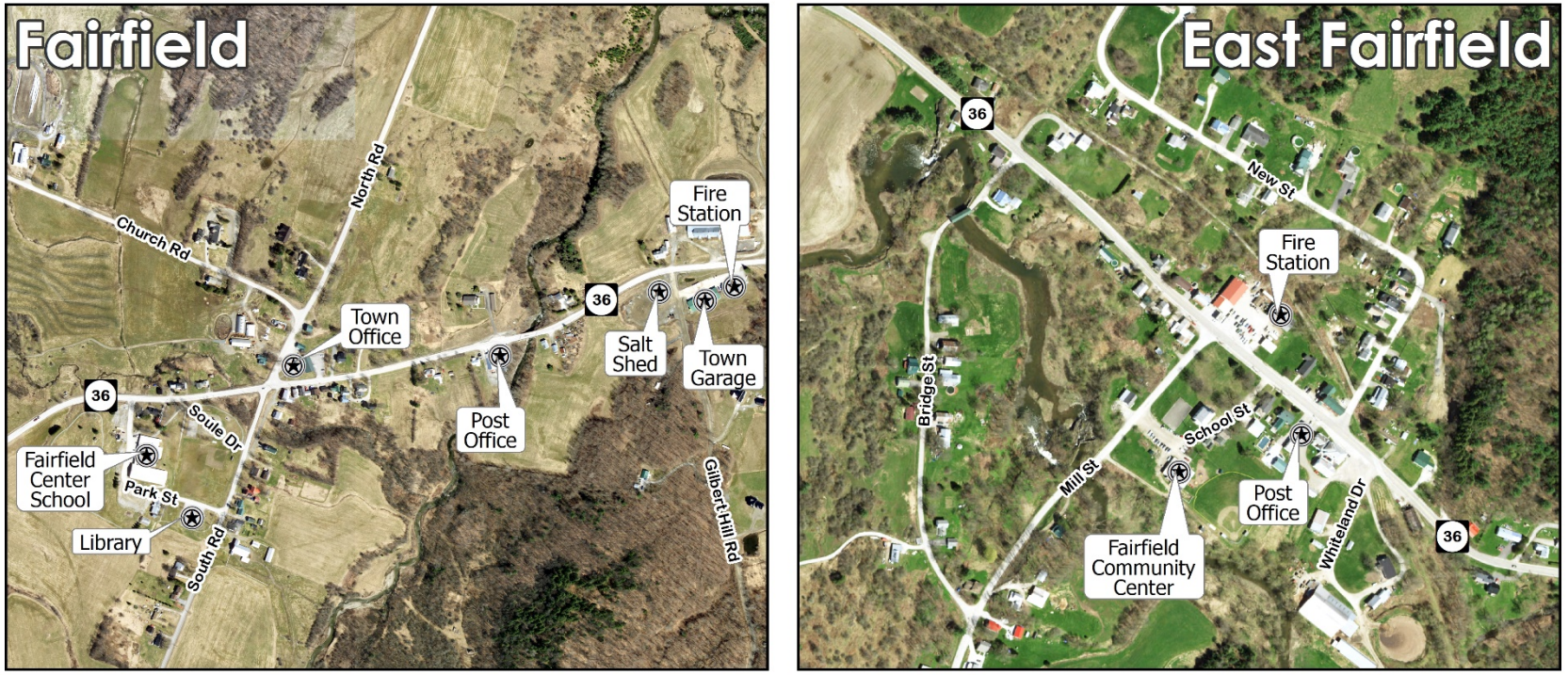
The Fairfield Grant Writing Committee consists of various members of town

organizations who work with a part-time grant writer to find grant opportunities for the Fairfield community. The grant-writer is funded by both the Town and participating organizations. In 2019, $20,000 of funding was awarded through Committee-written grants.

Fairfield Town Office

Figure 3.30

PUBLIC FACILITIES



4. TOMORROW

Remaining a Rural & Agricultural Town: Future Land Use

Housing Demand

According to a study commissioned by the Vermont Agency of Commerce and Community Development Fairfield's population is projected to grow to 1,932 by 2030. The ACCD projections do not provide any insight into the composition of Fairfield's future population. At the county level, however, the ACCD projection does provide an age profile of the future population. That profile suggests that current trends will continue – reflecting the aging of the baby boom generation and declining birth rates. While the composition of Fairfield's population is slightly younger than the county as a whole, it is likely that Fairfield's population will continue to age over the next decade.

Using the projected demographic profile for Franklin County, by 2030, Fairfield should anticipate that approximately 23 percent of its population will be 65 years of age or older. The percentage of the population composed of school-age children is expected to decline to around 18 percent

Consistent with national trends, the number of people per household in Fairfield has been declining for more than 25 years. Given the current demographic profile of Fairfield residents, it is reasonable to assume that average household size will continue to decline.

Even with a low rate of population growth, decreasing household sizes will lead to new housing development. Over the last 10 years, there has been an average of 5 new single-family homes constructed in Fairfield per year. It is critical that such development is carefully regulated to preserve the rural & agricultural character of Fairfield.

Telecommunications Facilities

Improving broadband and cellular service in Fairfield is an important priority for the Town. Improving these services may require additional telecommunications facilities. Each town must identify areas in which telecommunications towers and facilities will be allowed. Towns may also regulate the appearance and other considerations with regards to towers and facilities.

The Town encourages telecommunications facilities to be located on other structures existing in the area such as silos and steeples, wherever possible. Towers and facilities should be sited away from populated areas and sensitive habitats to minimize safety and health risks. Due to the risk of contaminating public water supplies in the event of a fire, facilities should not be located in wellhead protection areas.

The Rural Character of Fairfield

Fairfield's rural character is created by complex development patterns, which have evolved over two centuries of agricultural- and forestry-based land uses. The Town's landscapes include areas of relatively

clustered development separated by large areas of productive farmland, forests, wetlands, rivers and hills. Buildings of different sizes are located on lots of variable areas at various distances from the roads based on the character of the land and its intended use. Key to the rural character of the Town is large unfragmented sections of land suitable for agriculture and forestry uses.

To preserve Fairfield's rural character while accommodating reasonable amounts of growth, Fairfield should promote development in the Village Districts and the use of planned unit development (PUDs) on the lands outside the Village Districts. PUDs require development to be clustered together on smaller lots with a significant amount of the original parcel set aside as open space or productive land. In those areas identified as environmentally sensitive, PUDs should be clustered so as to protect important natural resources such as prime agricultural soils, wetlands, steep slopes, wildlife habitat, scenic views or forestlands.

Within the two villages of Fairfield, new development should maintain the character of small, traditional New England village centers. Traditional New England village centers can be described as places with:

- A mix of commercial, residential, civic and recreational uses in close proximity to each other bringing people of all ages and income levels together for a variety of activities.
- A physical layout with higher densities in comparison to outlying areas and a distinct, defined geographical edge that establishes an identity or a sense of place.
- A pedestrian-friendly environment in which most uses are within a five- or ten-minute walk (1,500 to 3,000 feet) of each other and a transportation system that is designed first for pedestrians and secondarily for vehicles.
- A strong public presence, such as greens or parks, municipal buildings, post office, school or other public spaces or buildings.
- An atmosphere that is friendly and inviting.
- A presence of special features, such as historic buildings, landmarks, and views.

New development within the Village Districts should be compatible with the physical design of the traditional village centers. Lot sizes, building heights and massing, setbacks, frontages, etc. should match and continue historic patterns. The physical design of traditional New England villages is characterized by:

- Multi-story buildings that maximize the use of vertical space while maintaining a human scale at street level.
- New buildings are located at similar setbacks to existing buildings.
- Principal buildings closer to the street than associated accessory buildings (such as garages).
- Narrow, interconnected, tree-lined streets.
- Short and/or irregularly shaped blocks.
- Buildings whose main entrance is oriented to the street.
- Limited amounts of land devoted to parking, especially as visible from the street.

- On-street parking.
- Diversity in the size of buildings and lots.

Land Use Policy

The overall policy concerning future land use shall be to maintain the rural character, aesthetic and scenic resources of the town and provide sufficient space in appropriate locations for forest and agriculture, residential, recreational, commercial, and industrial development and for public and semi-public facilities in light of their respective environmental needs and of their mutual interrelationships. Land use in the Town of Fairfield, for present and future purposes, has been defined in the following districts as shown in Figure 4.2.

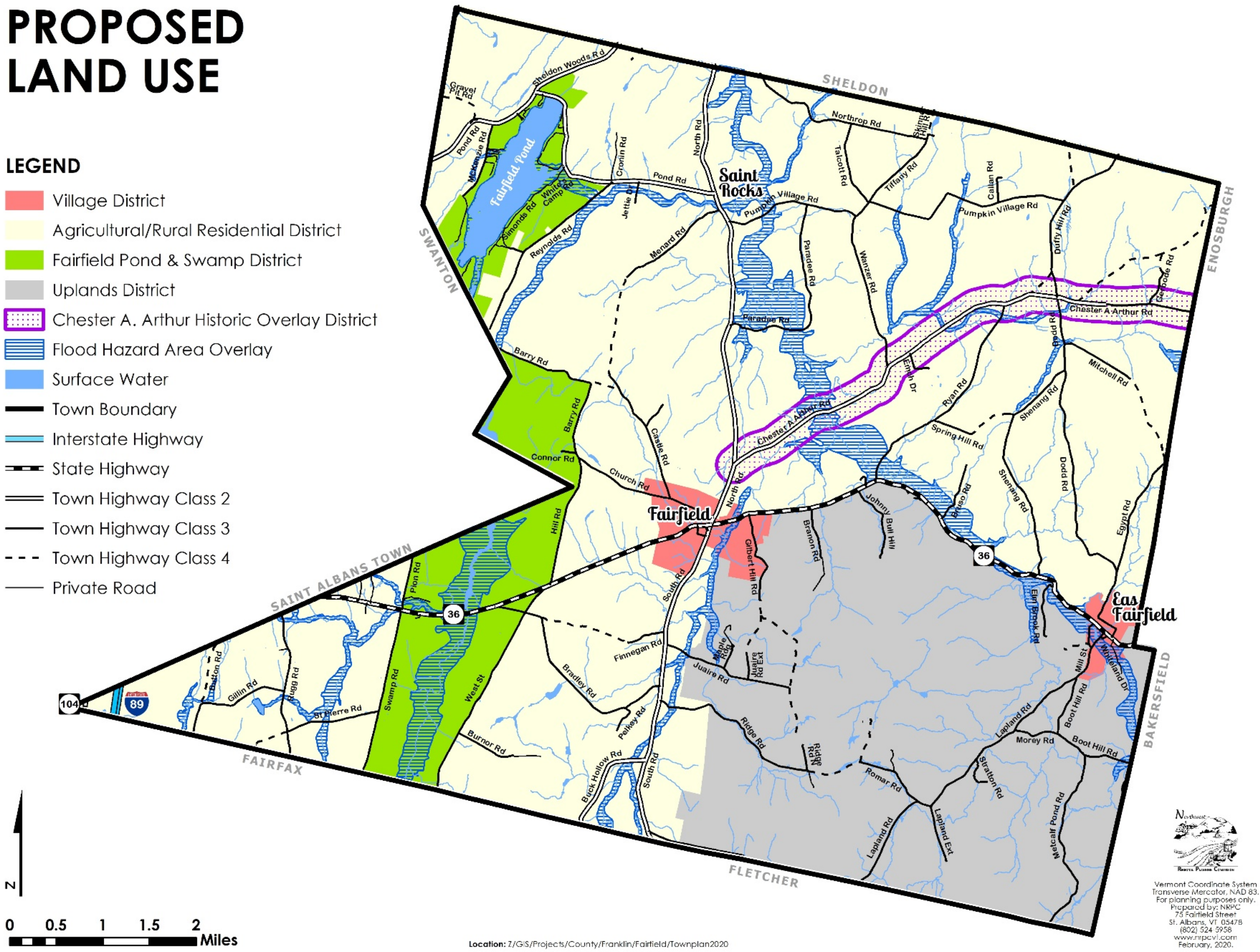
Village District

The Village District includes the historic limits of the town's two villages, East Fairfield and Fairfield, as shown as Figure 4.2. These areas are largely developed and are characterized by high-density residential, civic, and business uses. For that reason, the geographic boundaries of this area incorporate a limited amount of adjacent undeveloped and underdeveloped lands, which have the possibility of being served by public infrastructure, to accommodate future growth and development.

The purpose of the Village District is to support the role of the villages of Fairfield and East Fairfield in social and economic activities in the community and to provide for residential, commercial and other compatible development that serves the needs of the Town. Such development should occur with densities and uses which will maintain the traditional, social and physical character of the villages, including their historic and scenic resources, and which will not exceed the capability of the lands, waters, services, and the facilities to support such densities.

Figure 4.1: East Fairfield

Figure 4.2


PROPOSED LAND USE
LEGEND
Village District
Agricultural/Rural Residential District
Fairfield Pond & Swamp District
Uplands District
Chester A. Arthur Historic Overlay District
Flood Hazard Area Overlay
Surface Water
Town Boundary
Interstate Highway
State Highway
Town Highway Class 2
Town Highway Class 3
Town Highway Class 4
Private Road
SHELDON
SWANTON
ENOSBURGH
SAINT ALBANS TOWN
FAIRFAX
FLETCHER
BAKERSFIELD
Saint Rocks
Fairfield
East Fairfield
Fairfield Pond
Sheldon Woods Rd
Gravel Pit Rd
Pond Rd
North Rd
Northrop Rd
Pumpkin Village Rd
Paradee Rd
Chester A Arthur Rd
Barry Rd
Connor Rd
Church Rd
Castle Rd
Spring Hill Rd
Mitchell Rd
Johnny Bull Hill
Gilbert Hill Rd
Branon Rd
South Rd
Finnegan Rd
Juaire Rd
Bradley Rd
Pelkey Rd
Buck Hollow Rd
Burnor Rd
West St
Swamp Rd
Hill Rd
Pion Rd
Gillin Rd
Rugg Rd
St Pierre Rd
Ridge Rd
Romar Rd
Lapland Rd
Lapland Ext
Stratton Rd
Morey Rd
Boot Hill Rd
Metcalf Pond Rd
Mill St
Egypt Rd
Dodd Rd
Shenang Rd
Duffy Hill Rd
Wanzer Rd
Talcott Rd
Tiffany Rd
Reynolds Rd
Menard Rd
Cronin Rd
Jettie Dr
Simonds Rd
36
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89
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0 0.5 1 1.5 2 Miles
Location: Z/GIS/Projects/County/Franklin/Fairfield/Townplan2020
Vermont Coordinate System
Transverse Mercator, NAD 83.
For planning purposes only.
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February, 2020.

Agricultural District

In agriculture lies the economic, social, historic, aesthetic and scenic character of the town and the fundamental strength and stability of the local and regional economy. Agricultural land represents a vulnerable and irreplaceable resource which must not be wasted; once it is developed it will likely be lost forever.

The purpose of the Agricultural District is to provide for and protect agricultural, forestry and compatible residential, commercial, and recreational uses. Lower development densities and clustered development are encouraged so as to preserve the rural character and protect the agricultural resources of these areas.

Though residential development is an appropriate use for these areas, and very likely will take place, measures should be taken to ensure that minimum lot sizes are large enough to accommodate a septic system.

While lots for residential development need to be large enough to accommodate water and septic systems, the parcels should be kept as small as necessary so as to minimize the loss of agricultural lands. The town supports the use of Planned Unit Developments (PUDs) and other clustering mechanisms to conserve agricultural lands.

Fairfield Swamp, Pond and Uplands Districts

This planning area includes the lands around Fairfield Pond, Fairfield Swamp, the town's wildlife management areas and steep uplands. Generally, the lands in this area are poorly suited for future community growth and development.

Such areas may present severe limitations because of environmental characteristics, location or potential social costs if misused. Once developed these areas may entail high maintenance costs, the burden of which may fall directly upon the municipality.

Fairfield Swamp: Development in the area around Fairfield Swamp must be carefully controlled to protect water quality, scenic beauty, and related natural resources. Due to the presence of natural resources and the cost of providing public services to this district, only limited, low-density land development will be permitted.

Fairfield Pond: Land development in proximity to Fairfield Pond must be carefully controlled to protect water quality and scenic beauty. Fairfield Pond is a resource used by people for fishing, swimming, and boating. Land adjacent to Fairfield Pond is used for agricultural and low-density residential land uses. No land development shall be allowed in this district which degrades the pond's quality. Only limited commercial development shall be permitted to protect the natural environment.

Seasonal homes will be permitted in the area around the pond, as they contribute to the town's tax base; however, the enlargement of these seasonal homes or the conversion of a part-time dwelling to a full-time dwelling must conform to stringent controls in order to preserve the fragile environment of these areas.

Uplands District: The southeast corner of Fairfield is characterized by a series of upland ridges and is presently the least settled part of town. The soils here tend to be most severely restrictive for all types of human developments, but do contain areas appropriate wildlife habitat, with its accompanying use by people for hiking, nature study, snow-shoeing, snowmobiling, cross country skiing, and hunting.

Historic and Scenic Corridor

The Chester A. Arthur Historic and Scenic Corridor is an important part of the legacy of Fairfield. The state maintains a replica of the small house in which President Arthur was born in North Fairfield. Other features of this district include an old brick church and adjacent cemetery, now owned by the State Historic Society. Several homes in the area are architecturally appropriate to the era.

Chester A. Arthur Road is recognized along its entire length, from the intersection of North Road and Route 36 as a scenic road extending 1000 feet on either side. Appropriate means, such as landscaping and screening with trees and shrubs must be taken to maintain the pleasant appearance of this route which is traveled by many tourist visitors to our town. Efforts should be made to encourage appropriate building styles within or visible from the corridor. Fairfield has established an overlay zoning district to protect this important resource from incompatible development.

Flood Hazard Overlay District

The flood hazard overlay district includes all land defined as a river/stream corridor by the Vermont Agency of Natural Resources and all land defined as a special flood hazard area by FEMA.

The purpose of this district is to prevent flooding in flood hazard areas and River Corridors, to minimize future public and private losses due to floods, and to promote the public health, safety and general welfare. Designation of this district is also required for continued town eligibility in the National Flood Insurance Program.

Goals

1. Protect prime agricultural lands and support the continuation of agriculture.
2. Encourage residential & appropriate small-scale commercial development in the village growth centers.
3. Maintain Fairfield's historical settlement pattern of compact villages surrounded by agricultural countryside.
4. Provide adequate infrastructure to support appropriately-scaled development in the village planning areas.
5. Protect and improve water quality and recreational values of the area for residents and visitors of Fairfield.
6. Protect the scenic and important natural resource value of open meadowland, lands for forestry, ground and surface water recharge, wildlife habitat, and outdoor recreation.
7. Preserve Fairfield's heritage, scenic vistas and scenic landscapes within the Chester A. Arthur Historic and Scenic Corridor and other recognized scenic areas.
8. Mitigate loss of life and damages to public infrastructure resulting from flood events

through hazard mitigation planning.

9. Ensure that all development within the town is pursued with strict regard to the capability of the land to support it and to limit development in areas which are hazardous or otherwise unsuited for this purpose.

Policies

1. Protect the vitality and importance of the villages of Fairfield as community and regional assets.
2. Provide safe drinking water in the village areas.
3. Promote a diversified and stable economy by encouraging compatible industrial development and home occupations that utilize the skills of the local labor force.
4. Encourage appropriately scaled commercial development that serves the needs of Fairfield residents and provides additional employment opportunities.
5. Promote the clustering of related and compatible commercial uses and to discourage strip commercial development along highways.
6. New development in the Village Centers should respect traditional densities, setbacks, building scale and massing, and architectural integrity with attention paid to the need for new pedestrian and bicycle infrastructure in proportion to new development.
7. Encourage the development of agricultural business and cooperatives as a means to stimulate the agricultural economy.
8. Control the siting of non-agricultural development and structures to limit impacts on important resources and loss of agricultural lands.
9. Encourage innovative densities, clustering of houses, protection of development rights, purchase of development rights, tax incentives and other means to keep prime agricultural lands in productive use.
10. Require tree/shrub planting and location of berms or equivalents to preserve scenic roads and vistas.
11. Support designation and protection of historic buildings including barns.
12. Discourage new development in the Special Flood Hazard Area and river corridors as identified by the Agency of Natural Resources. If new development is to be built in such areas, it should not exacerbate flooding and fluvial erosion.
13. Encourage the protection and restoration of floodplains and upland forested areas that attenuate and moderate flooding and fluvial erosion. Support efforts of the watershed organization, the state or others to protect and restore such areas.
14. Encourage flood emergency preparedness and response planning.
15. Limit land development on steep slopes and where there are shallow soils.
16. In accordance with state policy, discourage development that will risk contamination of an existing or potential source of public water supply.

Supporting the Future of Agriculture in Fairfield

Agricultural soils, open meadowlands, and forests are truly unique, irreplaceable resources due to their unique physical qualities. Preserving such areas is vital to Fairfield's economy and its rural landscape. Poorly planned development and poor management practices that threaten these areas should be discouraged.

While it is important to preserve such resources, the desire to maintain the present status quo conflicts with the financial pressures of our modern world. Therefore, the implementation of strict zoning may not be possible and other solutions must be developed to accomplish our planning goals. The purchase of development rights is one such alternate strategy to preserve farmland.

Beyond the protection of farmland, the continued economic health for the Town of Fairfield lies in the maintenance of a viable agricultural industry, including dairying, sugaring, and other forms of agricultural enterprises. Fairfield should support enterprises that ensure the continued economic viability of agriculture such as on-farm businesses, agritourism, and the production of value-added products.

Goal

1. Continue efforts to preserve productive farmland & forest resources in the Town of Fairfield.

Policies

1. Encourage local landowners to participate in the Vermont Current Use program.
2. Promote the sale or transfer of development rights to control growth, development and foster the continuation of agricultural activity.
3. Support the efforts of the Vermont Land Trust to conserve farmland in the town.
4. Prohibit development within agricultural areas on the prime or very good agricultural soils where alternative locations exist.
5. Encourage siting buildings outside of meadows wherever possible.
6. Protect and enhance forest productivity by encouragement of sound management practices.
7. Encourage that agricultural and forest land be maintained for viable economic use.
8. Encourage the implementation of agricultural/forestry best management practices.
9. Encourage value added business and promote locally accessible markets for locally grown products.

Promoting Small-Scale Business in Fairfield's Village Centers

Village Designation

Fairfield has two village areas: Fairfield Center and East Fairfield. Each has received status as a Vermont Designated Village Center (See Figure 4.4 and 4.5), which affords these villages with benefits, including priority consideration for state grants, priority site consideration by the State Building and General Services (BGS) when leasing or constructing buildings, and a variety of tax credits available to commercial property owners in the district. The tax credits provide incentives to improve commercial structures in the district, which will in turn encourage revitalization and reinvestment. Priority consideration for grants allows the Town to take on planning and other implementation activities that support the Village, such as the Decentralized Wastewater Feasibility Analysis and the Sidewalk Feasibility Analysis completed for the villages.

Businesses in the Village Centers

The agricultural industry remains central to the economy of Fairfield. However, businesses which provide goods & services necessary that support an agrarian economy, home based businesses throughout the town and small businesses in or near the existing Village centers are also of importance. Tax credits available through the state's Village Designation program and the maintenance of appropriate infrastructure in the villages can support such small business. Expansion of broadband internet will also be necessary to support many types of businesses.

Goal

1. Promote a balanced, diverse economic base, with a focus on locally owned enterprises.

Policies

1. Encourage the diversification of the economic base, including the development of compatible businesses and light industry, and the promotion of home occupations.
2. Economic development should be pursued to provide maximum economic benefit with minimal environmental impact.
3. Maintain village center designation status for the villages and encourage businesses to take advantage of the various tax credits made available through this designation program.
4. Support regional and statewide efforts to expand broadband internet access.

Figure 4.4

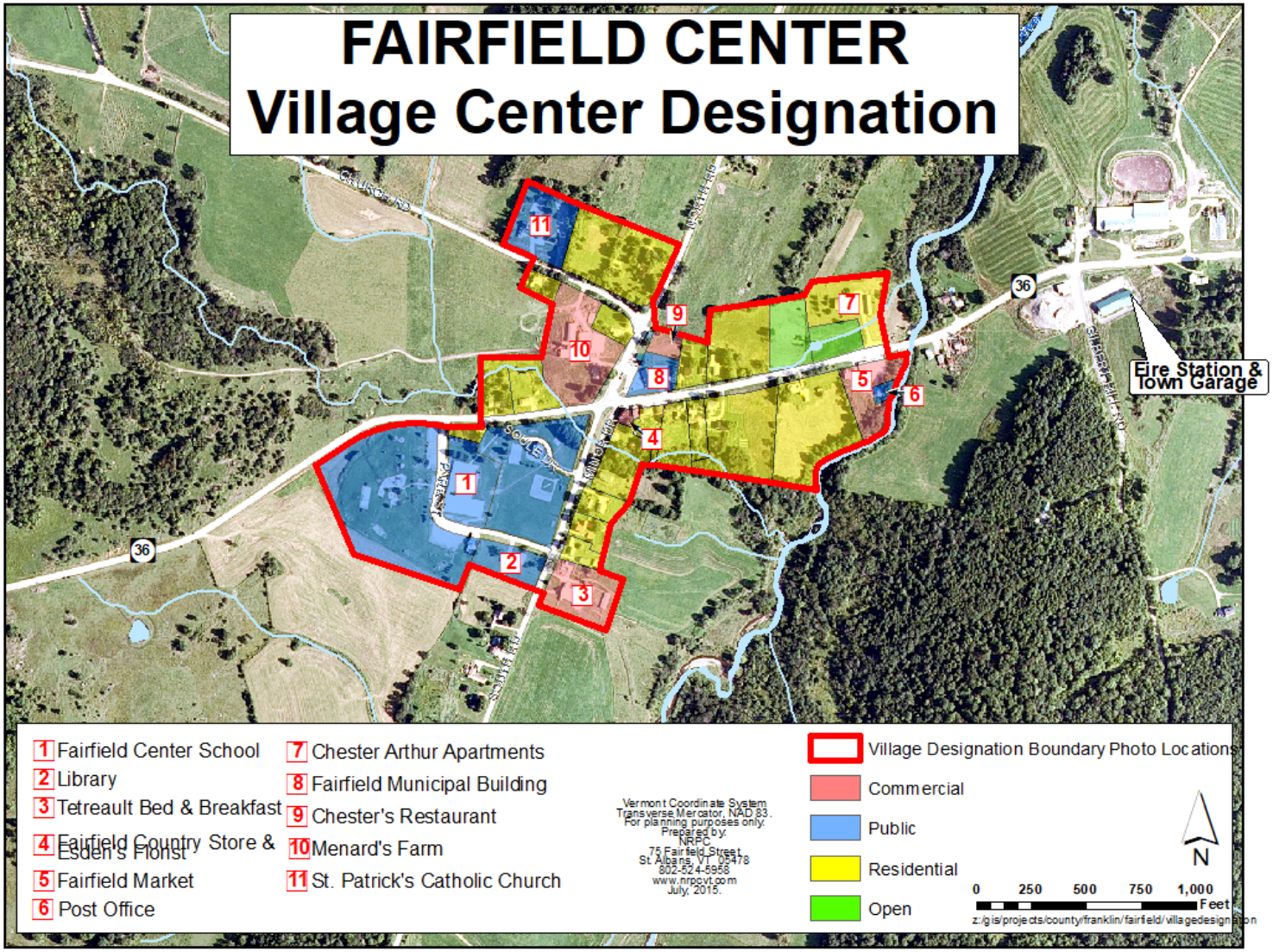
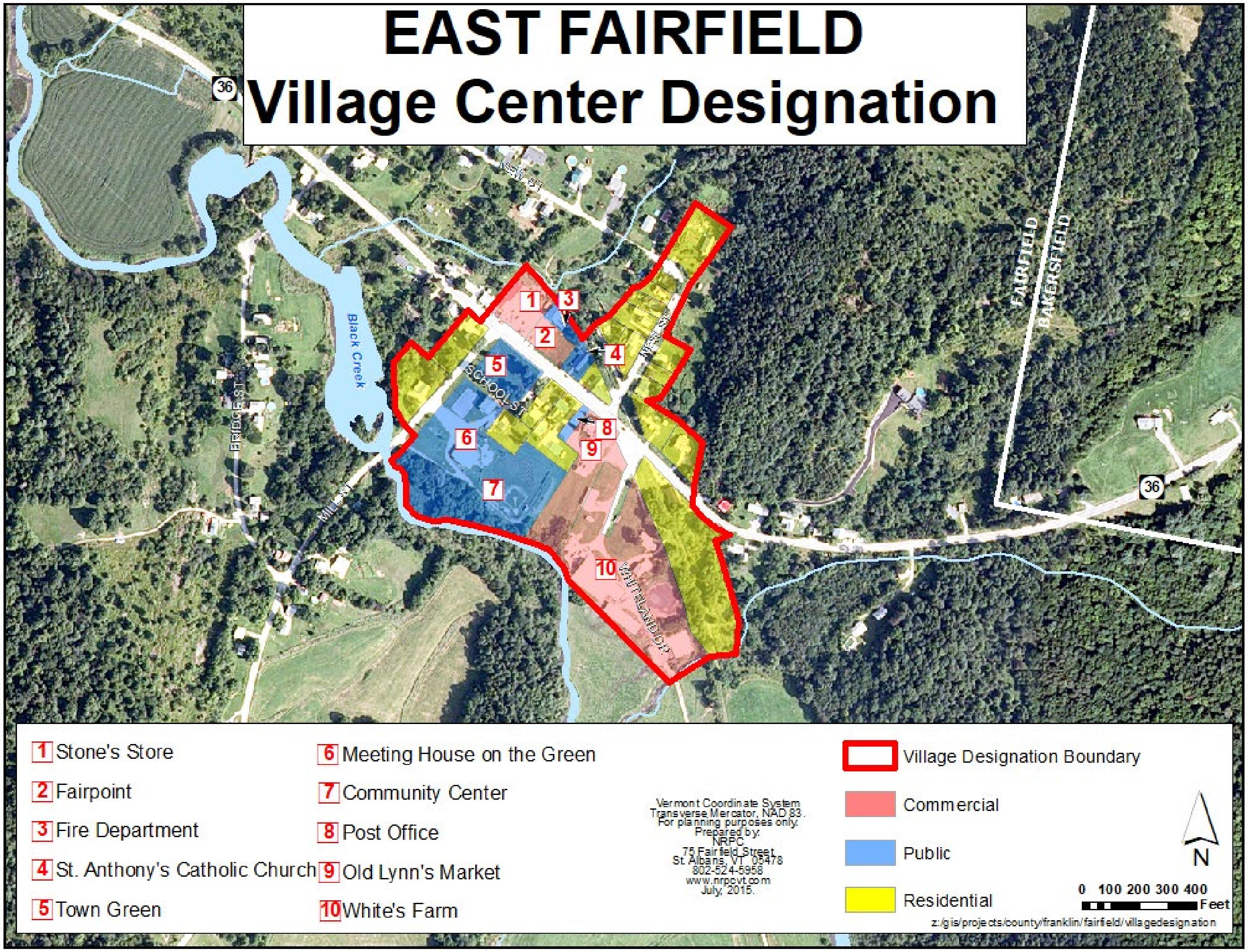

FAIRFIELD CENTER
Village Center Designation
Fire Station & Town Garage
1 Fairfield Center School
2 Library
3 Tetreault Bed & Breakfast
4 Fairfield Country Store & Esden's Florist
5 Fairfield Market
6 Post Office
7 Chester Arthur Apartments
8 Fairfield Municipal Building
9 Chester's Restaurant
10 Menard's Farm
11 St. Patrick's Catholic Church
Vermont Coordinate System Transverse Mercator, NAD 83. For planning purposes only. Prepared by: NRPC 75 Fairfield Street St. Albans, VT 05478 802-524-5958 www.nrpcvt.com July, 2015.
Village Designation Boundary Photo Locations
Commercial
Public
Residential
Open
N
0 250 500 750 1,000 Feet
z:/gis/projects/county/franklin/fairfield/villagedesignation

Figure 4.5



EAST FAIRFIELD
Village Center Designation
36
Black Creek
SCHOOL ST
BRIDGE ST
MILL ST
FAIRFIELD
BAKERSFIELD
1 Stone's Store
2 Fairpoint
3 Fire Department
4 St. Anthony's Catholic Church
5 Town Green
6 Meeting House on the Green
7 Community Center
8 Post Office
9 Old Lynn's Market
10 White's Farm
Vermont Coordinate System
Transverse Mercator, NAD 83.
For planning purposes only.
Prepared by:
NRPC
75 Fairfield Street
St Albans, VT 05478
802-524-5958
www.nrpcvt.com
July, 2015.
Village Designation Boundary
Commercial
Public
Residential
N
0 100 200 300 400
Feet
z:/gis/projects/county/franklin/fairfield/villagedesignation

Preserving Fairfield's Natural Landscape and Historic Features

Archeological and Historic Resources

In light of the fragile and irreplaceable nature of archeological resources, development in archeologically sensitive areas should proceed with caution. Our prehistoric and historic archeological sites constitute an essential link to our recent and distant past. These sites are often the only source of information for the longest part of human history in Vermont.

The Town of Fairfield has a long and varied past which has been responsible for the values and traditions held today. The town should ensure that the history behind the town is available for residents new and old to enjoy. Over the years, pieces of that past have been captured in Fairfield Vermont Reminiscences and in the history portions of this town plan. But gaps in the historic record exist – most notably the late nineteenth and twentieth century. Therefore, we support the Fairfield Historical Society and their efforts to compile and preserve the history of Fairfield. Fairfield has many structures which have historical significance. To preserve the architectural and cultural character of the community as well as the contribution these buildings make to the overall attractiveness of the town, consideration should be given to the protection of those structures of historical and architectural interest. Similarly, the historic pattern of village centers surrounded by agricultural countryside is supported and encouraged.

Goals

1. Preserve and record Fairfield's heritage, history, and archeological record for current and future generations.
2. Encourage the preservation of buildings and districts of historical value.

Policies

1. Support the efforts of the Fairfield Historical Society and others to protect, preserve and display items and artifacts of historic significance to Fairfield.
2. Support designation and protection of historic buildings including barns.
3. Promote the use of historic buildings for public purposes where feasible.

Natural Resources

Streams, Headwaters and Shorelines

Stream headwaters (located in the upper reaches of a watershed) are usually cool, and have a high oxygen and low nutrient content. For this reason, upland streams tend to be highly productive per unit area and are extremely sensitive to sedimentation and pollution discharge.

Many of these streams are ephemeral, only flowing after heavy precipitation when surface runoff and rising water tables intersect the stream channel. All of these factors make pristine stream headwaters extremely sensitive to disturbances resulting from forestry and urbanization.

Shoreland conservation practices contribute to the prevention and control of water pollution, protection of spawning grounds for fish and aquatic life, preservation of shore cover and natural beauty, and the multiple use of waters.

Source Water Protection Areas

The Town of Fairfield contains two delineated Source Protection Areas. The first area is located within both Fairfield and Fletcher and exists because of the wells which provide water for East Fairfield Fire Department #1 and the Village of East Fairfield. Sources of potential contamination include leach fields and agricultural activities but there is little to no potential for contamination of the well or reservoir due to topography. The second area covers a small area north of Castle Road west of Fairfield Center.

The state recommends, where economically feasible, the purchase of all lands within a source water protection area. Where not economically feasible, the town should adopt regulations prohibiting activities which pose a significant risk of contaminating a well such as storage of hazardous materials, salt sheds, landfills, junkyards, cemeteries, telecommunications facilities, and electrical substations. Agricultural activities are permitted uses although BMPs are recommended.

Wetlands

Wetlands are of crucial importance to the surface water regime. These areas store large quantities of water during periods of high runoff and gradually release water during low flow periods. Therefore, the wetland regulates stream discharge both during low flow and peak flow. Loss of this storage capacity will not only adversely affect stream behavior but will also increase floods and reduce stream flow during crucial low flow periods.

Wetlands are also important for the maintenance of water quality. The biological activity of a wetland area enables the absorption and assimilation of nutrients and thus purifies to some extent the water which is discharged.

Earth Resources

A number of resources located underground in the Town of Fairfield have commercial value, either at the present time or for the future. While there may be an obligation on the part of the town to allow these resources to be reasonably developed for the good of the general public, such extraction or processing activities must not be allowed to impose an adverse impact upon town residents. It is intended that the public interest be protected by regulations assuring that both the present and future effects of such extraction or processing operations are not adverse to the public health, safety, comfort or convenience or damaging to the value of surrounding properties.

Natural Areas

Natural areas have educational, scenic, recreational or scientific value to the present and future populations. They include areas that constitute unique ecological or natural science value and are suitable areas for education and research, or areas which are unique within a community and possesses scenic or recreational values.

Goal

1. Protect the water quality of streams, Fairfield Pond, wetland areas and groundwater.
2. Development in proximity to natural areas should take place in such a way as to preserve their value for education, science, research, aesthetics, and recreation

Policies

1. Regulate densities and uses within Source Water Protection Areas in order to prevent the potential contamination of public water supplies.
2. Ensure that development within the shoreline areas of lakes, streams and rivers is compatible with the natural beauty of the area, protects existing vegetation, is set back sufficiently to prevent erosion along stream banks or pollution from subsurface sewage disposal systems, and where possible retains visual and physical access to the water bodies.
3. Prohibit land development resulting in the loss of wetland storage capacity or additions to the marsh areas of any substances which are likely to increase the concentration of materials beyond the assimilative capacities.
4. Require that that all earth extraction or processing operations are appropriately permitted to limit potential detrimental impacts.
5. Require that development being proposed near or over important earth resources accounts for the potential loss of that resource.

Sustaining a Vibrant Community

In the 2020 Town Plan public outreach process, many residents identified the community connections and support as key to the future of Fairfield. Supporting a vibrant Fairfield community means addressing issues such as town services, housing affordability, recreation, and education.

Housing

All of Fairfield's residents should have the opportunity to pursue safe and affordable housing. How future housing developments occur (the location, type and size of the development) is critical to perpetuating the rural and agricultural character of Fairfield. Further, housing development necessarily increases demand on services and may potentially adversely affect environmentally sensitive areas or have negative impacts on agricultural lands.

Goal

1. Encourage the availability of safe and healthful housing for all segments of the population.

Policies

1. Support the provision of adequate housing of a variety of types for all income, age, minority, and transient groups in an environment which is safe, and satisfies the day-to-day living and recreational requirements of the residents.
2. Encourage low densities where low levels of services are to be provided and higher densities only where they can be properly served.
3. Continue to not differentiate between mobile homes and other single family homes.

Education

Quality educational services are crucial to supporting families in Fairfield. The Town especially recognizes the importance of the Fairfield Outdoor Classroom, a program which provides Fairfield students the opportunity to engage in hands-on learning about the town's agricultural and cultural heritage.

Goal

1. Provide educational and vocational services to meet the needs of Fairfield's residents.

Policy

1. Support efforts to broaden access to educational and vocational training.
2. Continue to support the efforts of the Fairfield Outdoor Classroom program.

Town Services & Fiscal Condition

The primary service provided by Fairfield is the maintenance of an extensive road network. Other services are provided in order to maintain a suitable rural life style to its citizens and visitors including fire protection and public water (within village areas). The Town supports the Fairfield Community Center, which provides community meals, child care, activities for families, and a food shelf. The Town's conservative fiscal policies should ensure a relatively stable tax rate well into the future.

Goals

1. Ensure adequate public facilities and services to maintain a suitable rural lifestyle for residents and visitors.
2. Maintain a stable tax rate and avoid significant fluctuations in annual capital expenditures.

Policies

1. Give preference to capital projects involving the maintenance and upgrade of existing facilities necessary to provide current levels of service over capital projects designed to provide new or expanded services, unless such projects are clearly tied to the goals and policies set for in this town plan.
2. Continue to support the Fairfield Community Center.

Energy
See Appendix.

Transportation
The majority of the transportation issues in Fairfield have to do with the maintenance of the many roads that dissect the town. Agricultural, natural, lake and recreation areas all require care in location of roads and access. Additionally, the Town has recently developed sidewalks in Fairfield Center and should continue to maintain these sidewalks.

Goals
1. Provide a safe and economical transportation network.
2. Maintain existing pedestrian infrastructure.

Policies
1. Provide no services to Class IV town roads levels which currently exist.
2. Prohibit the conversion of seasonal dwellings and camps not accessible via a public or private road that conforms to the standards of the Fairfield Development Regulations.
3. Allow reasonable requests for simple access to property. Access for the purposes of land development shall be allowed only in accordance with all relevant town regulations.
4. Allow Class IV roads to be maintained by landowners, with Selectboard approval, only to the degree necessary to provide simple access to property.
5. Require permission for all new road cuts from the Selectboard according to the town's Road Policy, as well as approval from the Planning Commission as required by the town's land use regulations.
6. Require all private rights-of-way to be constructed to standards set forth in the Fairfield Development Regulations.
7. Support efforts to connect the Lamoille Valley Rail Trail with the Fairfield Village.

Recreation
Maintaining and developing Fairfield's natural beauty and resources for recreational purposes is an important aspect of the overall town plan for several reasons. First, recreational resources are compatible with the preservation of the rural character of the town. Second, recreation is a necessary, beneficial and essential activity in the lifestyles of the residents. Third, recreational resources encourage the development of vacation dwellings which helps to form a solid tax base for the town.

Goal
1. Maintain and enhance recreational and scenic resources.
2. Continue to support the efforts of the Fairfield Recreation Committee.

Policies

1. Provide in convenient and suitable locations, recreational areas and facilities for the use and enjoyment of the residents and assure the provisions by the developer of adequate and suitable recreational areas within existing and proposed subdivisions.
2. Maintain, improve and expand town-owned recreation areas in order to provide recreational opportunities for future generations and promote fitness, health and wellbeing. The encroachment of incompatible uses should be carefully monitored and avoided in order to preserve the integrity of these areas, as well as areas that are not yet owned by the town but have been identified as prime recreational resources.
3. Provide open space system for the preservation, protection and enhancement of major physical and environmental features such as mountains, waterways and bodies of water, wildlife and other natural resources.
4. Conserve prime recreational resources from incompatible land uses and to protect the scenic qualities including agricultural, forest and riparian lands from unnecessary despoliation.

Priority Actions

A mere statement of the town's past, its present situation and desired direction will not ensure that this direction is followed; action must be taken to implement the plan and work toward the objectives developed therein.

The local boards and commissions charged with the implementation of this plan must adhere to its basic tenets of the plan. Similarly, the District Environmental Commission and other state agencies will use the plan as part of Act 250 and elsewhere as provided in state law.

The chief component of implementation will be the administration and enforcement of the town's land use regulations. Additionally, implementation of the Plan should include undertaking priority actions identified in implementation table located at the front of the plan.

Throughout the implementation of the plan, periodic reviews and future consideration of other implementation devices, increased public involvement in the town planning process will be essential.

Regional Connections

Compatibility with Neighboring Communities

As a rural town, Fairfield is much more likely to be affected by outside development pressure than to generate growth or impacts that will affect its neighbors. As part of developing this plan, Fairfield has examined the plans of adjoining towns and has found its goals and policies to be compatible with those of its neighbors. In particular, Fairfield compared its plans for future land use and development along its town line with those of its neighbors and found no conflicts.

Bakersfield

Bakersfield has designated the entire length of its boundary with Fairfield as part of its Rural District. This borders Fairfield's Agricultural/Rural Residential and Uplands Districts. These land uses are compatible. Both Fairfield and Bakersfield have designated the area along Route 36 between their villages (East Fairfield and Bakersfield village) as rural in order to limit the potential for strip development along the highway and to maintain the two centers as distinct.

Enosburgh

Enosburgh has designated the lands along its shared border with Fairfield as part of its Rural Residential District. Enosburgh calls for low-density, cluster development so that large contiguous open space is protected for farming and pockets of housing will occur in less productive areas. The Fairfield side of the border is part of the Agricultural/Rural Residential District. These uses are compatible.

Fairfax

Fairfax's Rural and Conservation Districts abuts the town line with Fairfield. Their plans calls for agriculture and forestry to remain the dominant land use and for the maintenance of rural open countryside and forestland. This is generally consistent with the Fairfield's Agricultural/Rural Residential and Fairfield Pond & Swamp District that

border Fairfax.

Fletcher
Fletcher has placed the land along its town line with Fairfield into its Agricultural/Rural Residential District, Conservation District or Forest District, which is consistent with Agricultural/Rural Residential and Uplands District land uses envisioned on Fairfield's side of the border.

St. Albans
The Town of St. Albans has placed much of its land along the Fairfield town line in its Rural District while the remaining land, largely around Fairfield Swamp, is in the Conservation District. This is consistent with Fairfield's proposed land use of the Agricultural/Rural Residential District and Fairfield Pond & Swamp District to conserve the area around Fairfield Swamp.

Sheldon
Sheldon has designated all the lands along the Fairfield border as Rural Lands 1 or Rural Lands 2. There is an area of rural land between Sheldon village and the town line. This is consistent with Fairfield's designation of lands along the Sheldon border as Agricultural/Rural Residential.

Swanton
Around Fairfield Swamp, Swanton has land in a Recreation/Conservation District. The remaining land along the town's shared border with Fairfield is part of the Agricultural/Residential District. This is consistent with Fairfield's planned land use of Agricultural/Rural Residential and a Fairfield Pond & Swamp District around the Fairfield Pond and Swamp.

Compatibility with the Regional Plan
Fairfield recognizes that it is part of a larger region and has considered the compatibility of its planning goals with that of the region. Fairfield's land use planning areas are similar to the proposed land use plan adopted by the Regional Planning Commission. The Regional Plan identifies Fairfield's village centers and supports the continuation of historic village and hamlet centers through village center planning and designation efforts that preserve their traditional character. The Regional Plan also designates Fairfield's agricultural lands as an important resource, and further states that the best farmland in the region should be given the highest level of support for continued agricultural use.

4. APPENDIX: ENHANCED ENERGY PLAN

The intent of this section is to meet the municipal determination standards for enhanced energy planning enabled in 24 V.S.A. 4352. The purpose of enhanced energy planning is to further local, regional, and state energy goals, including the goal of having 90% of energy used in Vermont come from renewable sources by 2050 (90 x 50 goal), and the following:

A. *Vermont's greenhouse gas reduction goals under 10 V.S.A. § 578(a);*
B. *Vermont's 25 by 25 goal for renewable energy under 10 V.S.A. § 580;*
C. *Vermont's building efficiency goals under 10 V.S.A. § 581;*
D. *State energy policy under 30 V.S.A. § 202a and the recommendations for regional and municipal energy planning pertaining to the efficient use of energy and the siting and development of renewable energy resources contained in the State energy plans adopted pursuant to 30 V.S.A. §§ 202 and 202b (State energy plans); and*
E. *The distributed renewable generation and energy transformation categories of resources to meet the requirements of the Renewable Energy Standard under 30 V.S.A. §§ 8004 and 8005.*

A positive determination of compliance with the requirements of enhanced energy planning, as provided by the Regional Planning Commission, will enable Fairfield to achieve "substantial deference" instead of "due consideration" in Certificate of Public Good (CPG) proceedings for energy generation facilities (ex. wind facilities, solar facilities, hydro facilities, etc.) under Criteria (b)(1)-Orderly Development. In short, this means that Fairfield will have a greater "say" in CPG proceedings before the Vermont Public Utility Commission about where these facilities should or should not be located in the community.

To receive a positive determination of energy compliance, an enhanced energy plan must be duly adopted, regionally approved, and contain the following information:

A. An analysis of current energy resources, needs, scarcities, costs, and problems.
B. Targets for future energy use and generation.
C. "Pathways," or implementation actions, to help the municipality achieve the established targets.
D. Mapping to help guide the conversation about the siting of renewables.

More on Certificate of Public Good (CPG) Proceedings

Rather than being regulated by local zoning, the development of new energy generation facilities is regulated at the state level by the Public Utility Commission through a quasi-judicial process. These CPG proceedings are often referred to as "Section 248" proceedings, in reference to the enabling legislation (30 V.S.A. § 248).

The intent of this process is to guarantee proposed projects meet eleven specific criteria in the statute that assess need for a facility, its reliability, economic benefit, environmental impacts, and the "land conservation measures" in the municipal plan. Land conservation measures and other policies included in an enhanced energy plan receive a greater standard of consideration than those in a standard municipal plan.

The Town has the ability to provide recommendations related to a CPG application to the Public Utility Commission. Where such recommendations are clearly linked to the goals and policies of an enhanced energy plan, they are likely to be treated with greater weight than recommendations linked to the goals and policies of a standard municipal plan

Energy Resources, Needs, Scarcities, Costs and Problems

The following subsection reviews each sector of energy use (thermal, transportation, electricity), electricity generation in Fairfield and other factors important to achieving the state energy goals. Several different units of measurement are used in this section. Please refer to Table 7.13 for more information about unit conversions.

Land Use & Energy

Maintaining Fairfield's rural development pattern of clustered development surrounded by large areas of productive agricultural and forestry land is crucial to achieving the state energy goals. Clustered residential and commercial development is more energy-efficient as it reduces the need for vehicle travel.

Another important benefit of compact land development is that it preserves existing forest and agricultural lands. These lands are important for several reasons. First, with appropriate management techniques, forest lands can provide a local renewable energy source in the form of wood biofuel. A map of forest lands with good potential for biofuel is included below. Second, these lands sequester and store carbon. According to data from the U.S. Forest Service, the average acre of forest in Vermont stores 107 metric tons of carbon. There is 15,625 acres of land enrolled as forest land in the current use program in Fairfield. Based on this statewide estimate, these forest lands may be capable of storing as much as 1.7 million metric tons of carbon. Exact amounts of can depend on the types of tree species and forest management practices. With appropriate management, certain soils found in agricultural areas can also act as stores for carbon. Exact figures for the amount of carbon stored in agricultural soils are difficult to estimate because the type of soil and the types of land management practices employed both significantly impact carbon storage potential.

Thermal Energy Use

Table A.1 shows an estimate of current residential thermal energy demand in Fairfield, based on data from the American Community Survey (ACS 2011-2015). The data shows that 34.7% of households in Fairfield depend on wood and 45.8% of household rely on fuel oil as their primary source for home heating. Wood includes both cord wood and wood pellets. The remainder of homes heat primarily with propane. The nearest natural gas pipeline is located in St. Albans and is not likely to be extended to Fairfield in the future.

Table A.1 - Current Fairfield Residential Thermal Energy Use

Fuel Source	Fairfield Households (ACS 2011-2015)	Fairfield % of Households	Fairfield - Households Square Footage Heated	Municipal Thermal Energy Use in British Thermal Units (BTUs) BTU (in Billions)
Natural Gas	3	0.5%	5,712	0
Propane	73	11.6%	119,984	7
Electricity	19	3.0%	22,800	1
Fuel Oil	289	45.8%	528,432	32
Coal	0	0.0%	0	0
Wood	219	34.7%	390,224	23
Solar	0	0.0%	0	0
Other	28	4.4%	53,312	3
No Fuel	0	0.0%	0	0
Total	631	100.0%	1,120,464	67

Estimates for commercial and industrial thermal energy use are more difficult to calculate due to the lack of accurate information available. Table A.2 provides an estimate of total commercial energy use (thermal and electricity). The estimate is based on data from the Vermont Department of Labor (VT DOL) and the Vermont Department of Public Service (VT DPS). According to NRPC, it is assumed that the majority of this energy use, 15 billion BTUs per year, is used as thermal energy for commercial uses.

Table A.2 - Current Fairfield Commercial Energy Use

	Commercial Establishments in Fairfield (VT DOL)	Estimated Thermal Energy BTUs per Commercial Establishment/year (in Billions) (VT DPS)	Estimated Thermal Energy BTUs by Commercial Establishments in Fairfield/year (in Billions)
Municipal Commercial Energy Use	21	0.725	15

Electricity Use

Table A.3 shows 2017 electricity use in Fairfield per date available from Efficiency Vermont. Fairfield's total electricity use has increased since 2015 from 10.5 million kWh in 2015 to about 11.1 million kWh per year in 2017. According to Efficiency Vermont, the average residential usage per household has decreased from 8,063 kWh per year to 8,023 kWh per year between 2015 and 2017. During the same period, overall commercial and industrial electricity usage increased from 3.3 million kWh to 3.8 million kWh. Fairfield's average residential usage in 2017 was about 1000 kWh higher than the average residential kWh use in the region.

Fairfield is served by two electric utilities. Vermont Electric Cooperative serves the majority of Town and Green Mountain Power serves properties along Route 36 in Fairfield.

Table A.3 - Current Fairfield Electricity Use		
Use Sector	**Current Electricity Use in Fairfield - 2017 (Efficiency Vermont) (kWh)**	**Current Electricity Use (in Billion BTUs)**
Residential	7,316,561	24.9
Commercial and Industrial	3,838,198	13.1
Total	11,154,760	38

Table A.4 – Current Fairfield Transportation Energy Use	
Transportation Data	**Municipal Data**
Total # of Passenger Vehicles (ACS 2011-2015)	1,397
Average Miles per Vehicle (VTrans)	11,356
Total Miles Traveled	15,864,332
Realized MPG (2013 - VTrans 2015 Energy Profile)	18.6
Total Gallons Use per Year	852,921
Transportation BTUs (Billion)	103
Average Cost per Gallon of Gasoline in 2016 (NRPC)	2.31
Gasoline Cost per Year	1,970,248

Transportation Energy Use

Table A.4 contains an estimate of transportation energy use in Fairfield. NRPC estimates that Fairfield residents drive personal vehicles approximately 15.8 million miles per year and spend about $1.9 million on transportation fuel expenses per year. This calculation does not include expenses for commercially owned and operated vehicles.

As of January 2017, there were 3 electric or hybrid vehicles registered in Fairfield according to the Vermont Department of Motor Vehicles.

Fairfield has one park & ride facility, located behind the Town office with 16 spaces. This represents an important asset to reducing transportation energy use in Fairfield.

Electricity Generation

Table A.5 – Existing Renewable Electricity Generation		
Generation Type	**MW**	**MWh**
Solar	0.74	907.54
Wind	0.03	77.57
Hydro	0.00	0.00
Biomass	0.00	0.00
Other	0.00	0.00
Total Existing Generation	0.77	985.11

There is currently .77 MW of electricity generation capacity from renewable generation facilities located in Fairfield. This capacity results in approximately 985.11 MWh of electricity generation per year. All of this generation is from net-metering solar facilities located in Fairfield. The amount of electricity generation in Fairfield is roughly equal to the annual electricity use of about 147 households in Vermont based on information available from the U.S. Energy Information Administration (6696 kWh per VT household per year).

Table A.5 organizes information about existing generation in Fairfield by type of facility. Map 7.4 shows the location of all electricity generators in Fairfield with a capacity greater than 15 kW. A full list of electricity generators in Fairfield can be found at the end of this section (Table A.12).

Fairfield has relatively good access to electric three-phase distribution lines. These types of lines are used to distribute large quantities of electricity and are needed to serve large industrial users and commercial centers. The relatively good access to three-phase distribution lines in Fairfield may make development of renewable energy facilities more likely and cost-effective than in other surrounding communities with less existing grid infrastructure. While there is relatively good access to three-phase distribution lines, there are no transmission lines in Fairfield. These lines transmit large quantities of electricity from one place to another.

Map 7.2 shows the three-phase distribution line infrastructure in Fairfield. The map shows a three-phase distribution line in the town along Swamp Road, most of VT Route 36, North Road, Pumpkin Village Road, Duffy Hill Road, and parts of Pond and Lapland Roads. Access to renewable generation resources, such as solar and wind, will be addressed below in the mapping section.

One barrier to the development of new energy generation facilities in Fairfield is constraints on the electrical transmission grid. After the addition of the Kingdom Community Wind plant in the Town of Lowell, the Sheffield-Highgate Export Interface (SHEI) was created to monitor the system and flows in relation to system capacity in Northern Vermont. Generation resources in this area are often required to curtail their output due to the lack of capacity to export power. Distribution utilities have made some improvements to address these issues, but there are no plans to develop new transmission lines at this time.

Economic Impacts of Current Energy Usage

Currently, Fairfield's residents and businesses are highly dependent on imported sources of energy. On average, Vermonters consume 74 percent of their non-transportation energy in the

form of fossil fuels and another 17 percent in the form of electricity. Energy used for transportation is almost entirely fossil fuel based. Because these nonrenewable forms of energy are produced outside the region, most of the money spent on that energy is exported from the local economy.

Dependence upon energy resources is generally taken for granted. The costs and vulnerability of outside sources, especially fossil fuels, has increased drastically during the past decade. Yet, use of these outside sources of energy has continued to increase. Several studies have shown that for every dollar spent on outside energy resources 85 percent of that dollar leaves the community. Energy costs have become a major expense in government, business and personal budgets. Successfully reducing the impact of the costs and vulnerability of energy will benefit the town and its people.

Targets for Use and Generation

The second required element of an enhanced energy plan is creation of targets for future energy use. Northwest Regional Planning Commission worked with the Vermont Energy Investment Corporation (VEIC) and the Vermont Department of Public Service in 2016 to develop regional targets for future energy use and renewable electricity generation to meet the State of Vermont's 90 x 50 goal. The targets represent only one scenario that would meet this goal. There may be many different ways that would also enable Vermont to achieve the 90 x 50 goal and these standards do not necessarily set a mandatory target to achieve nor set a penalty. For more information about the regional targets, please see the Northwest Regional Energy Plan (www.nrpcvt.com).

Regional targets for energy use and renewable electricity generation were disaggregated to create municipal targets. These municipal targets were also designed to ensure compliance with the Department of Public Service's Municipal Determination Standards. Tables A.6, A.7 and A.8 show the targets for future energy use for Fairfield by sector (totals are cumulative). There are many strategies that will help Fairfield attain the state energy goals, but these strategies cannot be achieved by Fairfield alone and require the action of the state agencies, regional organizations, public utilities, and private individuals.

Statewide Energy Organizations

Vermont Energy Investment Corporation (VEIC): VEIC administers Efficiency Vermont, the state's electric efficiency utility funded by electric ratepayers.

Vermont Department of Public Service (PSD): The PSD is housed within the executive branch of Vermont state government, and is charged with representing the public interest in energy, telecommunications, water and wastewater utility matters. The Public Utility Commission is part of the Department.

Future Thermal Energy Use

One thermal target for Fairfield in 2050 is to have 87.4% of structures be heated by renewable energy sources. Much of this transition is likely to come from conversion to electric heat pumps as the primary heating source for single family homes as the technology becomes more readily available and affordable. Electric heat pumps work best in well-weatherized homes. To promote the efficient use of such technologies, Fairfield encourages resident's participation in home weatherization programs. Additionally, new homes in Fairfield should be built to the Residential Energy Building Standards.

Regionally, the target also relies on wood heating being a continued source of residential heating. However, Fairfield does not have a high target for new efficient wood heat systems. This is due primarily to the high proportion of existing households in Fairfield that already use wood heating systems. Although there is only a small target (1), Fairfield strongly encourages residents' conversion of existing wood heating systems to more advanced wood heating systems. Newer wood heating systems are more efficient and have less greenhouse gas emissions than older wood heating systems. Table A.6 also includes targets for the weatherization of residential households and commercial structures (78% and 73% respectively in 2050).

Table A.6 - Thermal Targets

Thermal Targets	**2025**	**2035**	**2050**
Percent of Total Heating Energy From Renewable Sources - Heating (BTUs)	46.0%	59.5%	87.4%
New Efficient Wood Heat Systems (in units)	0	0	1
New Heat Pumps (in units)	75	172	322
Percentage of municipal households to be weatherized	5%	16%	78%
Percentage of commercial establishments to be weatherized	25%	25%	73%

Increased use of biofuels and additional home weatherization may also support reduced reliance on nonrenewable heating sources.

Future Transportation Energy Use

The transportation energy targets for Fairfield are similarly ambitious. By 2050, almost 90.1% of transportation energy will need to come from renewable sources in order to meet the 90 x 50 goal. This will primarily be done through the conversion light-duty passenger vehicles from fossil fuels energy sources to electric energy. However, it will also mean conversion of heavy-duty vehicles from diesel to biodiesel sources. Biodiesel technology and infrastructure will certainly need to advance tremendously in coming years to meet this ambitious target.

Table A.7 - Transportation Targets			
Transportation Targets	**2025**	**2035**	**2050**
Percent of Total Transportation Energy from Renewable Sources - Transportation (BTUs)	9.3%	30.8%	90.1%
Electric Vehicles	122	915	2177
Biodiesel Vehicles	204	407	784

Future Electricity Energy Use

Targets for electricity use are complex to interpret. Electricity use in Fairfield is targeted to double by 2050 (Table A.8). This increase in use will likely be driven by conversions to electric heat pumps and electric vehicles. These consumer changes will cause electricity use to grow. At the same time, total energy use (energy, not electricity) will become more efficient. This is because electric cars and electric heating sources are more efficient than using other energy sources, such as fossil fuels.[1]

Table A.8 - Electricity Targets			
Electricity Targets	**2025**	**2035**	**2050**
Increased Efficiency and Conservation (BTUs)	25.2%	48.3%	100.7%

[1] Vermont Comprehensive Energy Plan - 2016, page 44.

Future Energy Generation

Table A.9 shows the electricity generation targets for new electricity generation in Fairfield in 2025, 2035, and 2050. All new wind, solar, hydro, and biomass electricity generation sites will further progress towards achieving the generation targets (in MWh). Given the difficulty of developing additional hydro generation, and the constraints upon wind development, it is likely that solar generation will need to be a substantial component of meeting these generation targets. Meeting the generation targets will take considerable effort over the next 30 to 35 years. The 2050 generation target (15,258.9 MWh) is about 15 times more than the current generation capacity (985 MWh) within the Town of Fairfield.

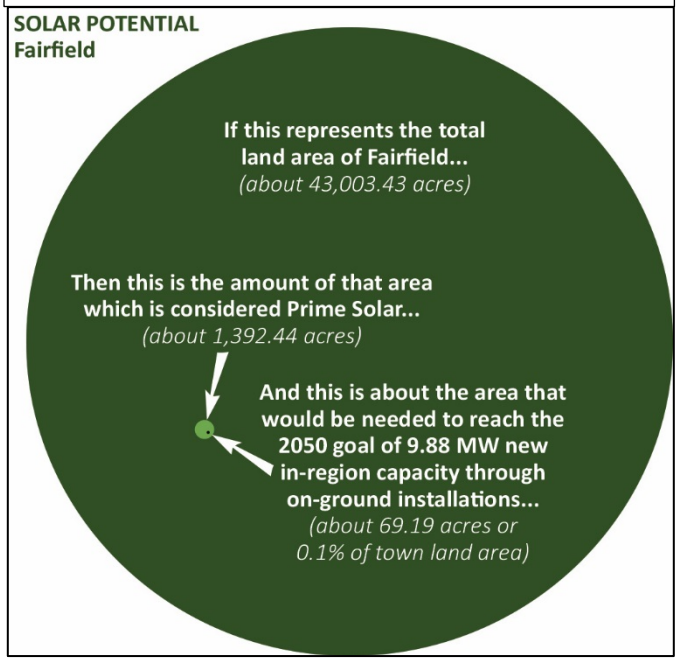
Table A.9 – Renewable Electricity Generation Targets

Renewable Generation Targets	2025	2035	2050
Total Renewable Generation Target (in MWh)	5,035.44	10,070.87	15,258.90

Table A.10 - Renewable Electricity Generation Potential

Resource	MW	MWh
Rooftop Solar	1	903
Ground-mounted Solar	1,437	1,761,767
Wind	997	3,056,794
Hydro	0.064	224
Biomass and Methane	0	0
Other	0	0
Total Renewable Generation Potential	2,434	4,819,689

Figure A.2 – Ground Mounted Solar Potential



Based on mapping and calculations completed by NRPC, Fairfield has sufficient land to meet the above electricity generation targets. Fairfield has access to the renewable electricity generation capacity outlined in Table A.10. This estimate shows that Fairfield has considerably more potential for renewable electricity generation than what is needed to meet the renewable electricity generation targets in Table A.9. This generation capacity was calculated using the "base" layers for solar and wind. For an explanation of what constitutes a "base" layer, please see the mapping subsection below.

Fairfield supports NRPC's position regarding "commercial" and "industrial" wind facilities. The NRPC Regional Plan finds that the construction of new "industrial" or "commercial" wind facilities within the region does not conform to the Regional Plan (NRPC considers any wind facility with a tower height (excluding blades) in excess of 100 feet tall to be considered an "industrial" or "commercial" wind facility).

Energy potential from biomass and methane sources is not estimated. This is due to a variety of factors including insufficient information on which to create estimates. Fairfield encourages the use of these sources for electricity and thermal energy generation, especially on farms.

Mapping Energy Resources and Constraints

The third required element of an enhanced energy plan is the inclusion of maps that will provide guidance to the community and developers regarding the location of new renewable generation facilities. Fairfield has incorporated maps provided by NRPC. These maps show data as required by the Department of Public Service Municipal Determination Standards, including access to energy resources and constraints to renewable development. All maps may be found at the end of this section.

The intent of the maps is to generally show those areas that may be good locations, or may be inappropriate locations, for future renewable electricity generation facilities. However, it is important to note that the maps are a planning tool and do not precisely indicate locations where siting a facility is necessarily acceptable. When an electricity generation facility is proposed, the presence of all natural resources constraints on site shall be verified as a part of the application.

Mapping Methodology

Spatial data showing the location of energy resources formed the basis of the maps developed by NRPC. This is the data that shows where there is solar, wind, hydro, and biomass "potential" in Fairfield based on information provided by the Vermont Sustainable Jobs Fund. "Known" and "possible" constraints were subsequently identified on the maps. Known constraints are conservation resources that shall be protected from all future development of renewable electricity generation facilities. Possible constraints are conservation resources that shall be protected, to some extent, from the development of renewable generation facilities. The presence of possible constraints on land does not necessarily impede the siting of renewable generation facilities on a site. Siting in these locations could occur if impacts to the affected possible constraints are mitigated, preferably on-site.

A full list of known and possible constraints included on the maps is located in Table A.11. The known constraints and possible constraints used to create the maps include constraints that are required per the Municipal Determination Standards from the Department of Public Service and regional constraints selected by NRPC. The Conservation District in Fairfield was included as regional possible constraint.

Solar and Wind

The solar and wind maps show both "base" and "prime" areas. Base areas are areas with electricity generation potential, yet may contain possible constraints. Prime areas are areas that have electricity generation potential that do not contain known or possible constraints. Areas that do not contain electricity generation potential, and areas that contain a known constraint, are shown as white space on the map.

The solar map indicates a general concentration of base and prime solar areas in western and northern Fairfield. The following are preferred locations for solar generation facilities by the Town of Fairfield: rooftops, parking lots, and landfills. Brownfield sites located outside of the village areas of East Fairfield and Fairfield are also considered preferred locations.

Fairfield has a strong preference for solar facilities that have less than 5 MW in generation capacity. This preference is a reflection of the community's dedication to preserving the aesthetic and rural qualities of Fairfield by restricting the geographic size of solar facilities. In addition, Fairfield prefers that solar facilities greater than 149 kW in generation capacity to be sufficiently separated from other similarly sized solar facilities to "break up" the visual impact of two or more solar facilities located next to each other and to preserve Fairfield's rural character.

All solar facilities to be sited in Fairfield shall include proper screening. The Town of Fairfield may to adopt a municipal solar screening ordinance in the future.

There generally isn't much land available in Fairfield that has base and prime wind resources. The small areas that do exist are generally concentrated in the southwest Fairfield along Rugg Road, near the intersection of VT Route 36 and West Street, and in extreme northeastern Fairfield.

Hydro and Biomass

The biomass map is somewhat similar to the solar and wind maps. The biomass map also displays "base" and "prime" areas. However, these categories are not necessarily indicative of electricity generation potential. They instead indicate areas of contiguous forest that may be used for the harvesting of woody biomass for use in either thermal or electric generation.

The hydro map is unique from the other types of generation maps. It shows existing dam sites used for electricity generation. It also shows existing dam sites that are not used for electricity generation, but could be retrofitted to provide electricity generation capacity. Data about these dams comes from a study commissioned by the Vermont Agency of Natural Resources. The hydro map also shows some known and possible constraints that could impact the redevelopment of some dam sites. Fairfield has two existing dam sites in East Fairfield and on Fairfield Pond. The redevelopment of these sites and the development of new dam sites is extremely unlikely due to Fairfield's upland location and the extensive regulatory process involved in developing new dams.

Conclusion

Achieving the 90 x 50 goal, and the other energy goals in state statute, will be difficult. Fairfield is committed to playing its part in working towards accomplishing these goals and in creating a more sustainable, affordable, and secure energy future.

GOALS:

1. Plan for increased electric demand with the support of local electric utilities and Efficiency Vermont.

2. Reduce annual fuel needs and fuel costs for heating structures, to foster the transition from non-renewable fuel sources to renewable fuel sources, and to maximize the weatherization of residential households and commercial establishments.

3. Hold vehicle miles traveled per capita to 2011 levels through reducing the amount of single occupancy vehicle (SOV) commute trips and developing public transit ridership.

4. Focus growth within and adjacent to the villages.

POLICIES

1. Fairfield supports energy conservation efforts and the efficient use of energy across all sectors.

2. Fairfield supports the reduction of transportation energy demand, reduction of single-occupancy vehicle use, and the transition to renewable and lower-emission energy sources for transportation.

3. Fairfield supports patterns and densities of concentrated development that result in the conservation of energy. This includes support of public transit connections from Fairfield to

other parts of the region.

4. Fairfield supports the development and siting of renewable electricity generation resources in the Town that are in conformance with the goals, strategies, and mapping outlined in this plan. Development of electricity generation in identified preferred locations shall be favored over the development of other sites.

5. Fairfield supports the conversion of fossil fuel heating to advanced wood heating systems or electric heat pumps.

6. Support local farms and the local food system.

7. Support high intensity grazing and other agricultural and forestry practices that encourage carbon sequestration.

IMPLEMENTATION ACTIONS:

1. Coordinate annually with Efficiency Vermont and state low-income weatherization programs to encourage residents to participate in weatherization programs available to Fairfield residents.

2. Promote the use of the residential and commercial building energy standards by distributing code information to permit applicants.

3. Determine if there is a need to create a municipal Energy Committee, appoint an Energy Coordinator, or provide greater funding and support to existing municipal boards to coordinate energy-related planning in Fairfield and to educate residents about the goals of this plan.

4. Conduct an energy audit of municipal and other public buildings to identify weatherization retrofits.

5. Promote the use of the park & ride facility by the Town office.

6. Promote wood stove change-out programs that take older non-EPA certified out of service and replace them with more efficient and lower emitting cord and pellet stoves.

7. Encourage the use of advanced wood heating for commercial and municipal uses.

8. Maintain zoning standards that protect forests and agricultural soils.

9. Support any efforts to extend Green Mountain Transit service to Fairfield.

10. Plan for and install electric vehicle charging infrastructure on municipal property.

11. Review municipal road standards to ensure that they reflect the "complete streets" principles as outlined by Vermont Agency of Transportation and Vermont Department of Health (http://www.healthvermont.gov/sites/default/files/documents/2016/11/HPDP_PA&N%20Complete_streets_guide_for_VT_communities.pdf).

12. Encourage the development and expansion of water and sewer infrastructure only where there is existing population centers.

13. Investigate installation of a community-based renewable energy project.

14. Provide firefighters with training in fighting fires on structures that have solar installed.

15. Develop and adopt a municipal solar screening ordinance.

16. Investigate the need for an additional municipal park and ride facility.

Table A.11 – Mapping Constraints		
Solar, Wind and Biomass Maps - Known Constraints		
Constraint	**Description**	**Source**
Confirmed and unconfirmed vernal pools	There is a 600-foot buffer around confirmed or unconfirmed vernal pools.	ANR
State Significant Natural Communities and Rare, Threatened, and Endangered Species	Rankings S1 through S3 were used as constraints. These include all of the rare and uncommon rankings within the file. For more information on the specific rankings, explore the methodology for the shapefile.	VCGI
River corridors	Only mapped River Corridors were mapped. Does not include 50 foot buffer for streams with a drainage area less than 2 square miles.	VCGI
National wilderness areas		VCGI
FEMA Floodways		VCGI/NRPC
Class 1 and Class 2 Wetlands		VCGI
Designated Downtowns, Designated Growth Centers, and Designated Village Centers	These areas are the center of dense, traditional development in the region. This constraint does not apply to roof-mounted solar within such designated areas. The inclusion of this resource as a regional constraint is consistent with goals and policies of the Northwest Regional Plan.	NRPC
FEMA Flood Insurance Rate Map (FIRM) special flood hazard areas	Special flood hazard areas as digitized by the NRPC were used (just the 100-year flood plain -500-year floodplain not mapped). The inclusion of this resource as a regional constraint is consistent with goals and policies of the Northwest Regional Plan.	NRPC
Ground and surface waters drinking protection areas	Buffered Source Protection Areas (SPAs) are designated by the Vermont Department of Environmental Conservation (DEC). SPA boundaries are approximate but are conservative enough to capture the areas most susceptible to contamination. The inclusion of this resource as a regional constraint is consistent with goals and policies of the Northwest Regional Plan.	ANR

Vermont Conservation Design Highest Priority Forest Blocks	The lands and waters identified here are the areas of the state that are of highest priority for maintaining ecological integrity. Together, these lands comprise a connected landscape of large and intact forested habitat, healthy aquatic and riparian systems, and a full range of physical features (bedrock, soils, elevation, slope, and aspect) on which plant and animal natural communities depend. The inclusion of this resource as a regional constraint is consistent with goals and policies of the Northwest Regional Plan. (Source: ANR)	ANR
Public water sources	A 200-foot buffer is used around public drinking water wellheads. The inclusion of this resource as a regional constraint is consistent with goals and policies of the Northwest Regional Plan.	ANR
Municipal Conservation Land Use Areas	Conservation Land Use Districts, as designated in municipal plans, that include strict language that strongly deters or prohibits development have been included as a regional known constraint. The inclusion of this resource as a regional constraint is consistent with the goals and policies of the Northwest Regional Plan. Specific municipal land use districts included are outlined in Section D of the Regional Energy Plan. No areas identified in the Fairfield Town Plan were included in this category.	NRPC
<u>Solar, Wind and Biomass Maps - Possible Constraints</u>		
Constraint	**Description**	**Source**
Protected lands	This constraint includes public lands held by agencies with conservation or natural resource oriented missions, municipal natural resource holdings (ex. Town forests), public boating and fishing access areas, public and private educational institution holdings with natural resource uses and protections, publicly owned rights on private lands, parcels owned in fee by non-profit organizations dedicated to conserving land or resources, and	VCGI

	private parcels with conservation easements held by non-profit organizations.	
Deer wintering areas	Deer wintering habitat as identified by the Vermont Agency of Natural Resources.	ANR
Hydric soils	Hydric soils as identified by the US Department of Agriculture.	VCGI
Agricultural soils	Local, statewide, and prime agricultural soils are considered.	VCGI
Act 250 Agricultural Soil Mitigation Areas	Sites conserved as a condition of an Act 250 permit.	VCGI
Class 3 wetlands	Class 3 wetlands in the region have been included as a Regional Possible Constraint. The inclusion of this resource as a regional constraint is consistent with goals and policies of the Northwest Regional Plan.	ANR
Municipal Conservation Land Use Areas	Conservation Land Use Districts, as designated in municipal plans, that include strict language that deters, but does not prohibit development, have been included as a regional possible constraint. Specific municipal land use districts included are outlined in Section D of the Regional Energy Plan. The Conservation District identified in the Fairfield Town Plan was included in this category.	NRPC
<u>Hydro Map - Known Constraints</u>		
Constraint	**Description**	**Source**
None		
Hydro Map - Possible Constraints		
Constraint	**Description**	**Source**
"303d" list of stressed waters		ANR
Impaired waters		ANR
State Significant Natural Communities and Rare, Threatened, and Endangered	Rankings S1 through S3 were used as constraints. These include all of the rare and uncommon rankings within the file. For more	VCGI

Species	information on the specific rankings, explore the methodology for the shapefile.	

The date in Table A.12 displays facilities that have a Certificate of Public Good from the Vermont Utilities Commission to generate electricity. The Town of Fairfield recognizes that some of the data in the table may be out of date or incorrect. The Town of Fairfield also recognizes that some identified facilities may no longer generate electricity.

Table A.12 - Fairfield Electricity Generators (12.27.18)

Category	Sub Category	Name	Address	CPG Number	Electricity Type	Utility	Capacity kW
Solar	Ground-mounted PV	Benjamin & Sarah Toof	604 Hill Rd	2753	Net Metered	Vermont Electric Coop	8.9
Solar	Ground-mounted PV	Doug Grant	1963 Sheldon Woods Road	2948	Net Metered	Vermont Electric Coop	5
Solar	Ground-mounted PV	Randy Callan	645 Pumpkin Village Rd	5242	Group Net Metered	Vermont Electric Coop	10.8
Solar	Ground-mounted PV	Sun CSA 16	489 Barry Rd	5162	Community Solar Array	Vermont Electric Coop	148.2
Solar	Ground-mounted PV	Tony Beauregard	2528 Dodd Rd	3969	Net Metered	Green Mountain Power	1.5
Solar	Ground-mounted PV	William & Sara Kittell	437 Chester Arthur Road	473	Net Metered	Green Mountain Power	3.1
Solar	Ground-mounted PV	BDE Fairfield Lazar Solar, LLC		16-0050	Group Net Metered	Vermont Electric Coop	500
Solar	Ground-mounted PV	Peter Watson	71 Buck Hollow Road	17-4497	Net Metered	Vermont Electric Coop	5
Solar	Ground-mounted PV	First Terrace Solar, LLC	Egypt Road	18-2630	Group Net Metered	Green Mountain Power	274
Solar	Ground-mounted PV	Samuel Gorton	1492 Pumpkin Village Road	18-2199	Net Metered	Vermont Electric Coop	6
Solar	Ground-mounte	Branon Family Maple Orchards	539 Branon Road	2646	Net Metered	Green Mountain Power	100.1

	d PV: Tracker						
Solar	Ground - mounted PV: Tracker	Charles Verderber	1364 Castle Rd	5131	Net Metered	Vermont Electric Coop	7
Solar	Ground - mounted PV: Tracker	Chester Arthur Apartments	4695 VT Route 36	2840	Net Metered	Green Mountain Power	34.2
Solar	Ground - mounted PV: Tracker	Howard Mitchell	1513 Lapland Rd	4270	Net Metered	Green Mountain Power	6
Solar	Ground - mounted PV: Tracker	Toby Fulwiler	1941 Ridge Rd North	1482	Net Metered	Vermont Electric Coop	9.5
Solar	Ground - mounted PV: Tracker	Mark & Jennifer Carpenter	5432 Duffy Hill Road	18-0928	Net Metered	Vermont Electric Coop	7.6
Solar	Roof-Mounted PV	Alisa & Craig Aylward	91 Fischer Dr	5069	Net Metered	Vermont Electric Coop	8
Solar	Roof-Mounted PV	Barbara Stone	1563 Church Road	3814	Net Metered	Vermont Electric Coop	7
Solar	Roof-Mounted PV	Charles Russell	2261 Pumpkin Village Rd	6284	Net Metered	Vermont Electric Coop	3.8
Solar	Roof-Mounted PV	Brian Pardy	5132 VT Route 36	2146	Net Metered	Green Mountain Power	7.1
Solar	Roof-Mounted PV	David Lacross	223 Hiram Hill	3977	Net Metered	Vermont Electric Coop	7.5
Solar	Roof-Mounted PV	Diana Bailey and Greg Hunter	2757 Pumpkin Village Rd	2235	Net Metered	Vermont Electric Coop	4.3
Solar	Roof-Mounted PV	Jane Paquette	1654 Swamp Road	3824	Net Metered	Vermont Electric Coop	7
Solar	Roof-Mounted PV	Jody Curry	105 South Rd	2879	Net Metered	Green Mountain Power	6.9
Solar	Roof-Mounted PV	John Schreindorfer	4552 Rt 36	2853	Net Metered	Green Mountain Power	4
Solar	Roof-Mounted PV	Larissa Hebert	1685 Rugg Rd	4073	Net Metered	Vermont Electric Coop	10
Solar	Roof-Mounted PV	Magnan Bros Dairy	4883 VT Route 36	2839	Net Metered	Green Mountain Power	65.2
Solar	Roof-Mounted PV	Matthew Howrigan	792 Bruso Rd	5314	Net Metered	Vermont Electric Coop	7

Solar	Roof-Mounted PV	Michelle Patnode	313 Hiram Rd	5313	Net Metered	Vermont Electric Coop	6
Solar	Roof-Mounted PV	Pumpkin Village Foods	1345 Northrop Rd	6325	Net Metered	Vermont Electric Coop	15
Solar	Roof-Mounted PV	Sean Walsh	90 Pion Rd	5192	Net Metered	Vermont Electric Coop	6
Solar	Roof-Mounted PV	Stephen Archambault	2 VT-36	6235	Net Metered	Vermont Electric Coop	6
Solar	Roof-Mounted PV	Steven Osgood	4112 Pond Rd	2867	Net Metered	Vermont Electric Coop	6.9
Solar	Roof-Mounted PV	Timothy Beaman & Sylvia Lazarnick	578 Swamp Rd	2054	Net Metered	Vermont Electric Coop	4.2
Solar	Roof-Mounted PV	Brian Moegelin	250 Maple Ridge	16-0230	Net Metered	Green Mountain Power	7.6
Solar	Roof-Mounted PV	Desiree & Jason Brace	4078 Pond Road	7197	Net Metered	Vermont Electric Coop	6
Solar	Roof-Mounted PV	Eric Schoonbs	444 Pion Road	7290	Net Metered	Vermont Electric Coop	5
Solar	Roof-Mounted PV	John Lapointe	394 Route 36	7267	Net Metered		6
Solar	Roof-Mounted PV	Kathryn O'Donnell and David Burnor	47 Gilbert Hill Rd	6667	Net Metered	Green Mountain Power	10
Solar	Roof-Mounted PV	Steve Doe	6065 Duffy Hill Road	7214	Net Metered	Vermont Electric Coop	5
Solar	Roof-Mounted PV	William Roberts	1130 Barry Road	7028	Net Metered	Vermont Electric Coop	3
Solar	Roof-Mounted PV	Nate & Margreth Patenaude	1799 Pond Road	7256	Net Metered	Vermont Electric Coop	3.1
Solar	Roof-Mounted PV	Richard Berthiaume	125 Dorian Dr	17-3022	Net Metered	Vermont Electric Coop	3.8
Solar	Roof-Mounted PV	Charles and Andrea Mudgett	2671 Pumpkin Village Rd	17-2886	Net Metered	Vermont Electric Coop	6
Solar	Roof-Mounted PV	Lyndsi Cote	121 Dorian Dr	17-2719	Net Metered	Vermont Electric Coop	5.2
Solar	Roof-Mounted PV	Kati Lambert	1758 Reynolds Rd	17-2149	Net Metered	Vermont Electric Coop	5
Solar	Roof-Mounted PV	Shawn Labelle	927 Barry Road	18-1008	Net Metered	Vermont Electric Coop	6.38
Solar	Roof-Mounted PV	Shelley Ismail	1311 Rugg Road	18-0989	Net Metered	Vermont Electric Coop	3.8
Solar	Roof-Mounted PV	Christopher Leduc	625 Gillin Road	17-5239	Net Metered	Vermont Electric Coop	12.76

Solar	Roof-Mounted PV	Shelley Paradee	3671 Chester Arthur Road	17-1691-NMR	Net Metered	Vermont Electric Coop	6
Solar	Roof-Mounted PV	Taja Hall	35 Button Road	18-0962	Net Metered	Vermont Electric Coop	3.8
Solar	Roof-Mounted PV	Harry Dewyea	605 Lapland Ext	18-0549	Net Metered	Green Mountain Power	3.6
Solar	Roof-Mounted PV	Jeff Barney	6 Jupiter Lane	2829	Net Metered	Vermont Electric Coop	6.16
Solar	Roof-Mounted PV	Loren Tracy	Fairfield Pond Road	17-4582	Net Metered	Vermont Electric Coop	3
Solar	Roof-Mounted PV	Matthew Magnan	74 Emch Road	18-0863	Net Metered	Vermont Electric Coop	6
Solar	Roof-Mounted PV	Michael Malone	57 Jupiter Lane	17-5154	Net Metered	Vermont Electric Coop	10.4
Solar	Roof-Mounted PV	Sandra Hovdenn	472 Swamp Rd	17-4637	Net Metered	Vermont Electric Coop	11.4
Solar	Roof-Mounted PV	David Burnor	193 Pion Rd	18-2818	Net Metered	Vermont Electric Coop	5
Solar	Roof-Mounted PV	Flack Family Farm	3971 Pumpkin Village Road	18-2366	Group Net Metered	Vermont Electric Coop	10
Solar	Roof-Mounted PV	Jason Walent	202 Swamp Rd	18-1258	Net Metered	Vermont Electric Coop	10
Solar	Roof-Mounted PV	John Bouchard	79 Fisher Drive	18-1998	Net Metered	Vermont Electric Coop	6
Wind	Small Wind	Doug Grant	1963 Sheldon Woods Road	460	Net Metered	Vermont Electric Coop	9.5
Wind	Small Wind	Flack Family Farm	3971 Pumpkin Village Road	383	Net Metered	Vermont Electric Coop	6.3
Wind	Small Wind	Tyler Webb	336 Emch Drive	445	Net Metered	Vermont Electric Coop	9.5

Table A.13 Standard Conversions - BTU to Unit		
Unit	**Unit Type**	**British Thermal Units**
Kilowatt	Kilowatt	3,412
Gasoline	Gallon	120,404
Ethanol	Gallon	84,714
Diesel Fuel	Gallon	137,571
Heating Oil	Gallon	137,571
Residual Fuel Oil	Gallon	149,690
LPG	Gallon	84,738
Kerosene	Gallon	135,000
Biodiesel	Gallon	127,595
Wood Pellets	Ton	16,500,000
Cord Wood	Cord	20,000,000
Wood	Pounds	8,000
Natural Gas	Cubic Feet	103,200
Compressed Natural Gas	Pounds	20,160
Coal	Short Ton	19,490,000

Utility Service Areas

Fairfield, Vermont
Act 174
The Energy Development Improvement Act of 2016

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Map C.1

Legend

Utility Service Area Features

- Green Mountain Power
- Swanton Village Electric
- Vermont Electric Co-op
- Enosburg Falls Electric
- Substation
- 3 Phase Power Line
- Transmission Line

Sources: VCGI
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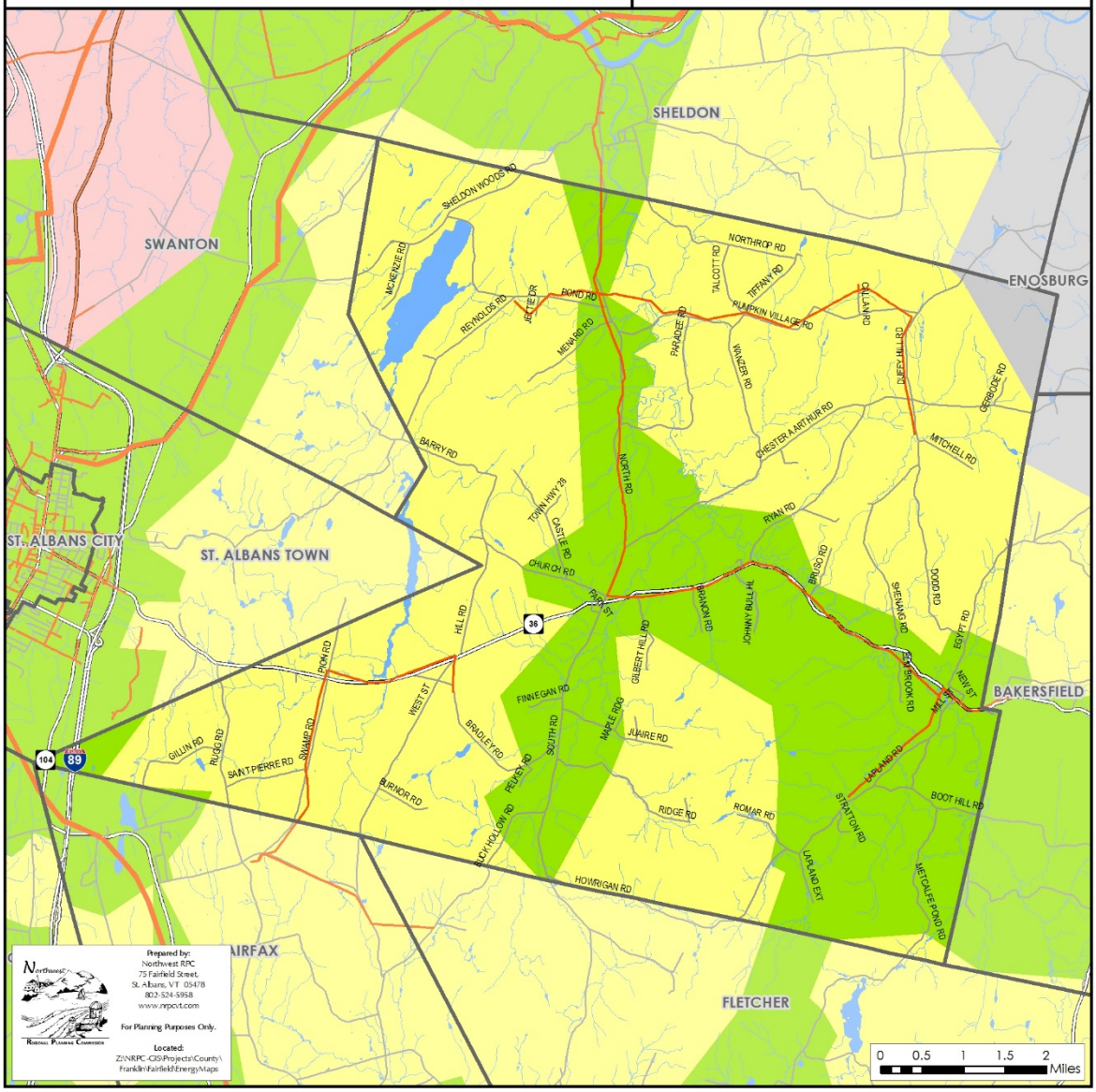

Transmission & 3 Phase Power Infrastructure

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Map C.2

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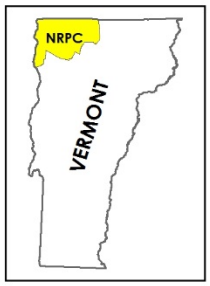

Legend

- Substation
- 3 Phase Power Line
- Transmission Line
- 1/2 Mile Buffer (3 Phase Power Line & Transmission Line)

Sources: VCGI
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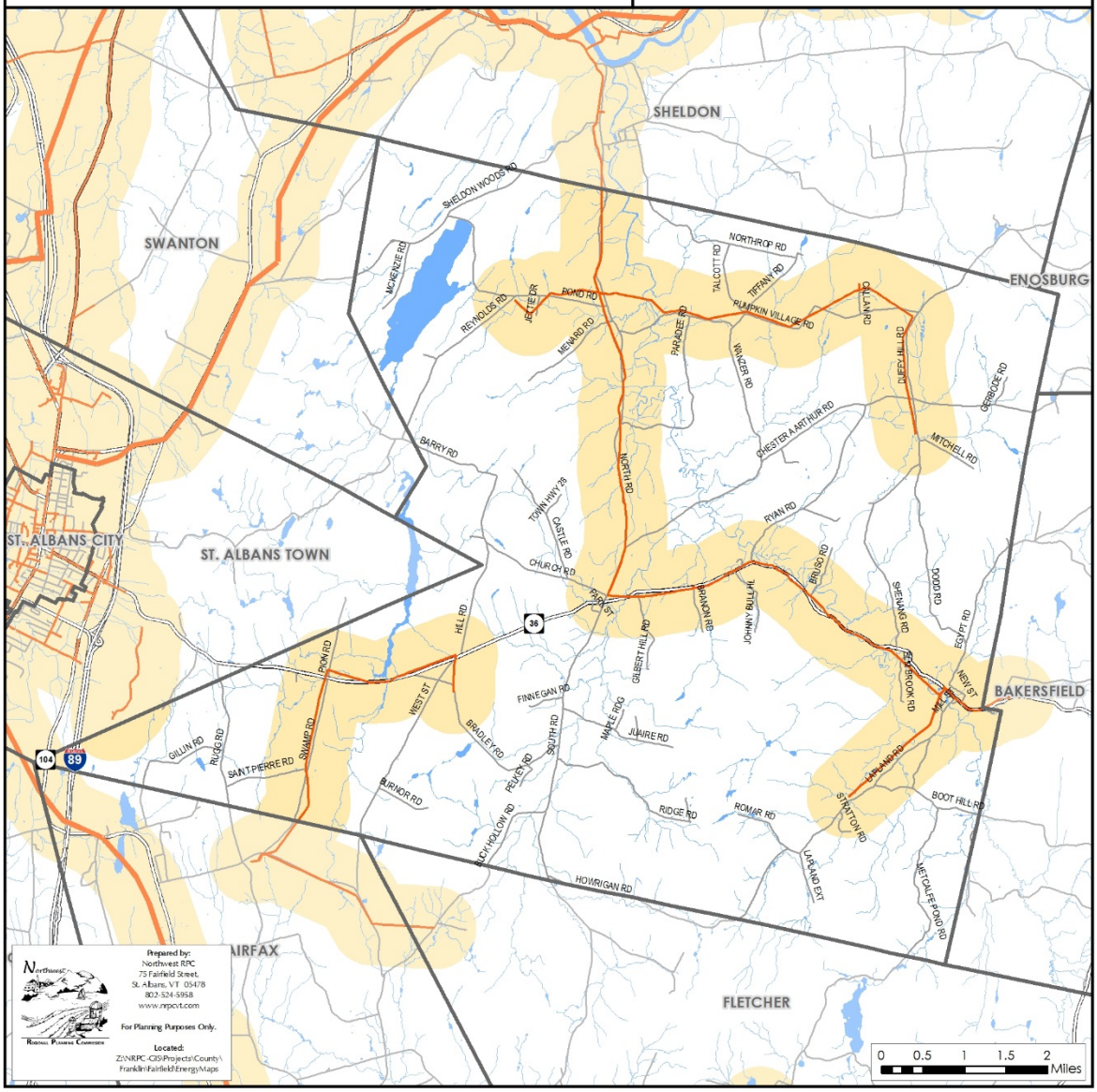

Existing Generation Facilities

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Map C.3

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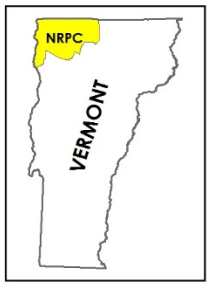

Legend

- Biomass Facility
- Hydro Facility
- Solar Facility
- Wind Facility

Note: Only generators 15kW are shown on the map. A full list of all generators is available.

Sources: VCGI
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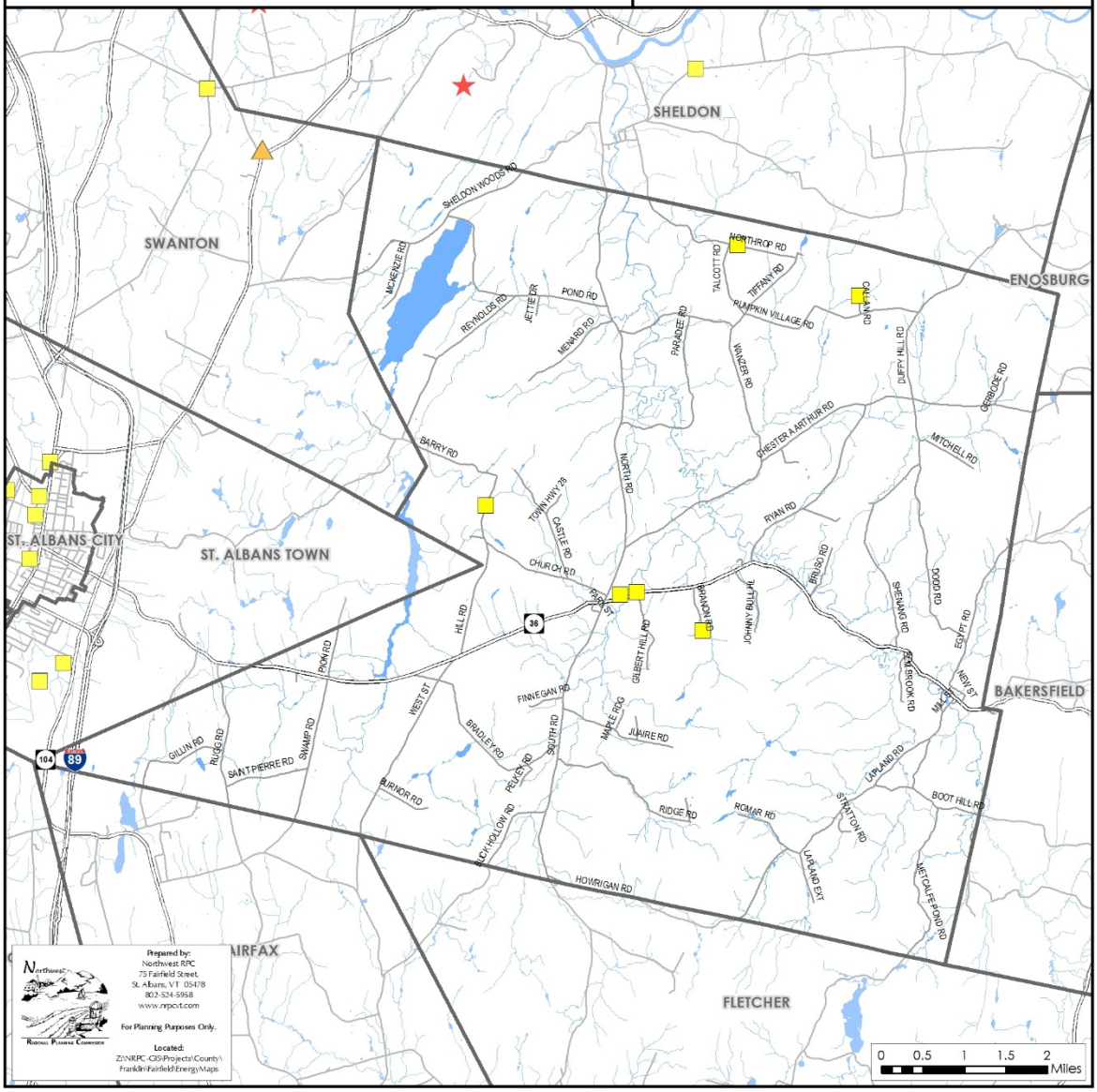

Solar

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Map C.4

Legend

- Substation
- 3 Phase Power Line
- Transmission Line
- 1/2 Mile Buffer (3 Phase Power Line & Transmission Line)
- Prime Solar/No Known Constraints
- Base Solar/Possible Constraints

Sources: VCGI
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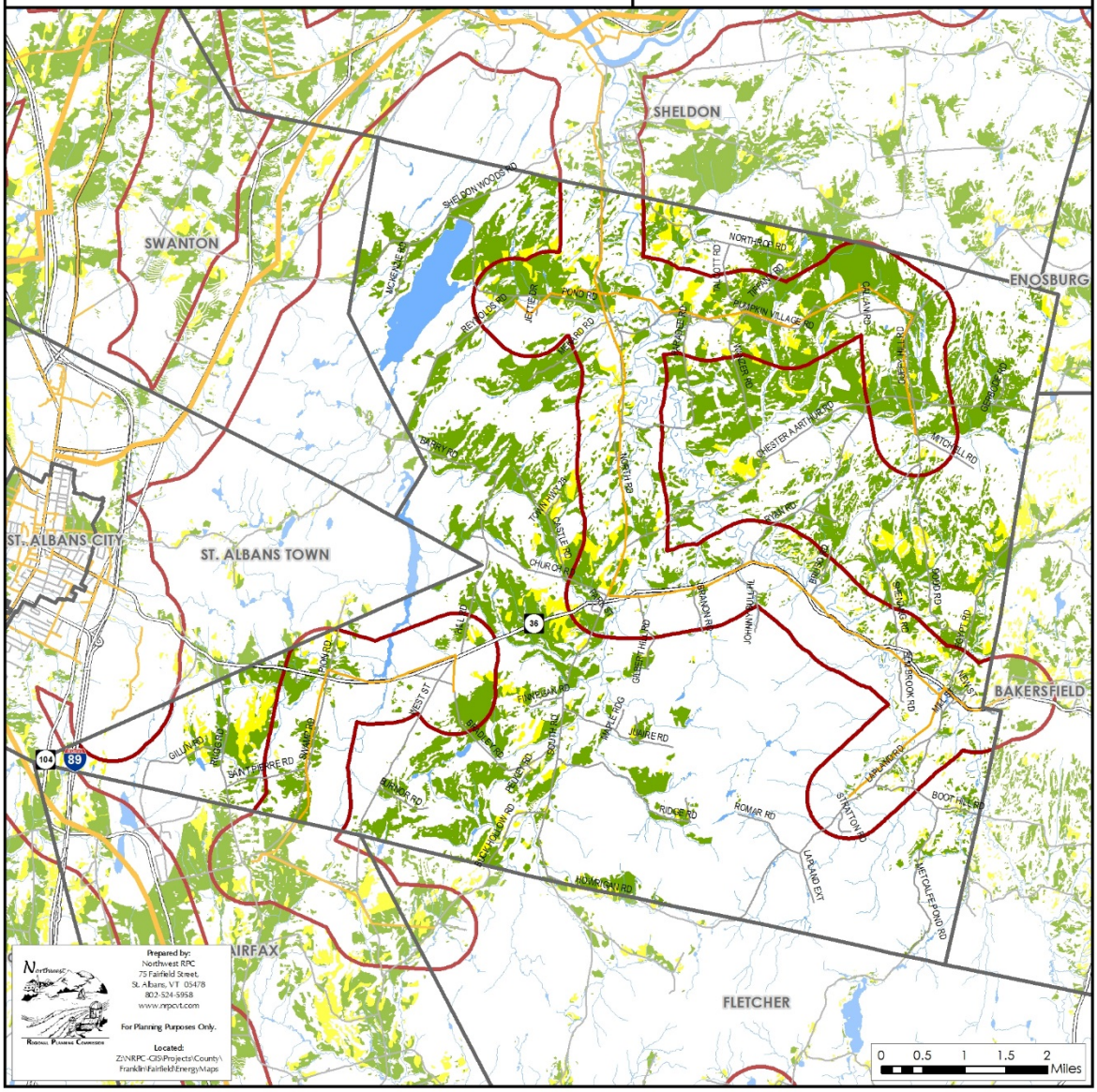

Wind

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Map C.5

Legend

- Substation
- 3 Phase Power Line
- Transmission Line

Prime Wind
Areas of high wind potential and no known constraints.
Darker areas have higher wind speeds.

Base Wind
Areas of high wind potential and a presence of possible constraints.
Darker areas have higher wind speeds.

Sources: VCGI
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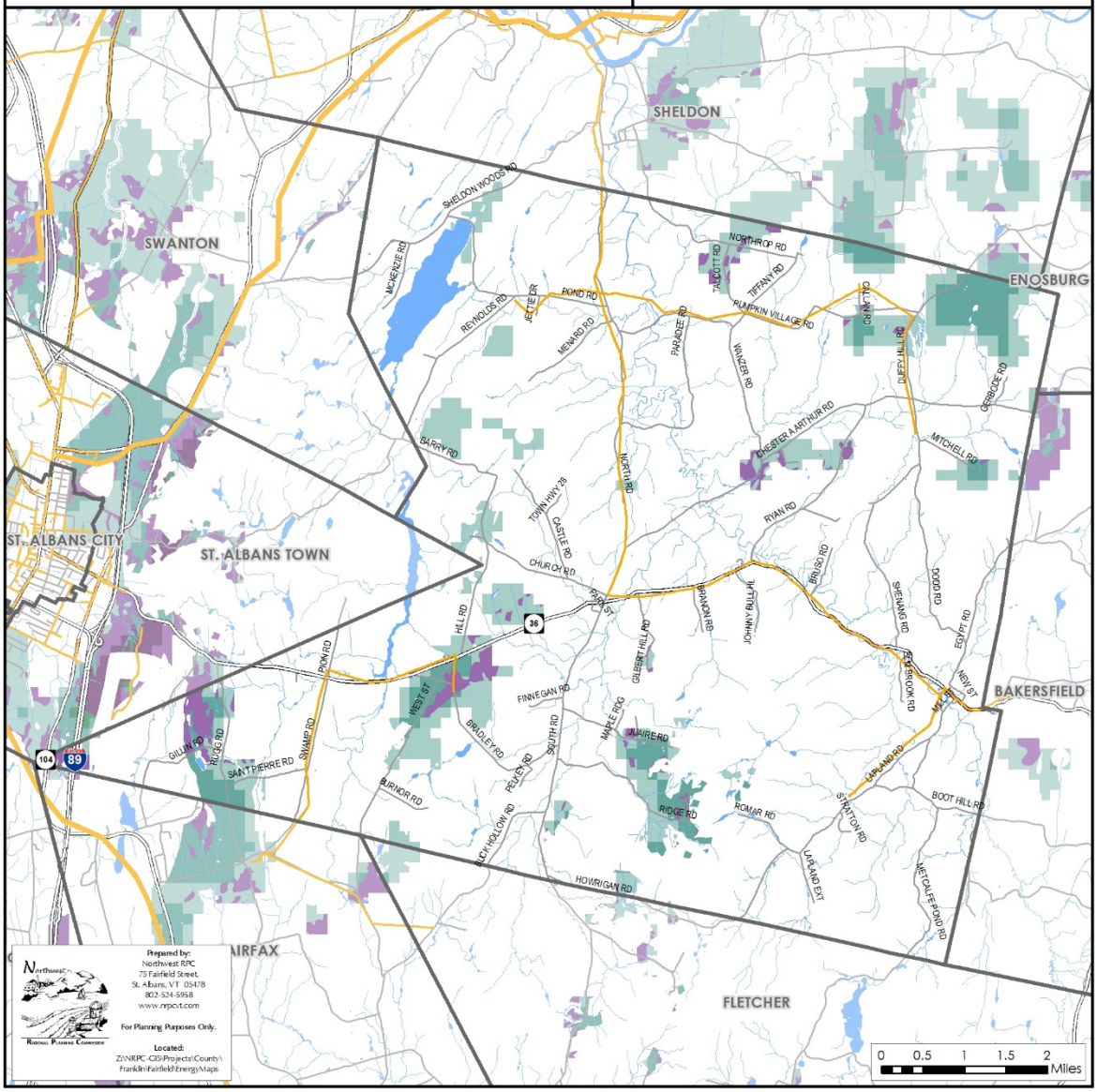

Hydro

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Legend

- Substation
- 3 Phase Power Line
- Transmission Line
- Designated Outstanding Resource Water
- Known Constraint - Designated National Wild & Scenic River
- Possible Constraint - Stressed or Impaired Water
- Possible Constraint - RINAs

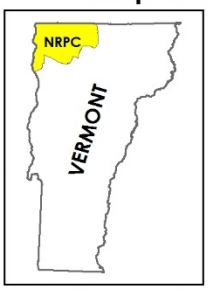
Potential Hydroelectric Facility

- < 50 kW Capacity
- > 50 kW Capacity
- High Hazard with < 50 kW Capacity
- High Hazard with > 50 kW Capacity

Operating Hydroelectric Facility

- Dam not on National Wild and Scenic River
- Dam on National Wild and Scenic River

Map C.6



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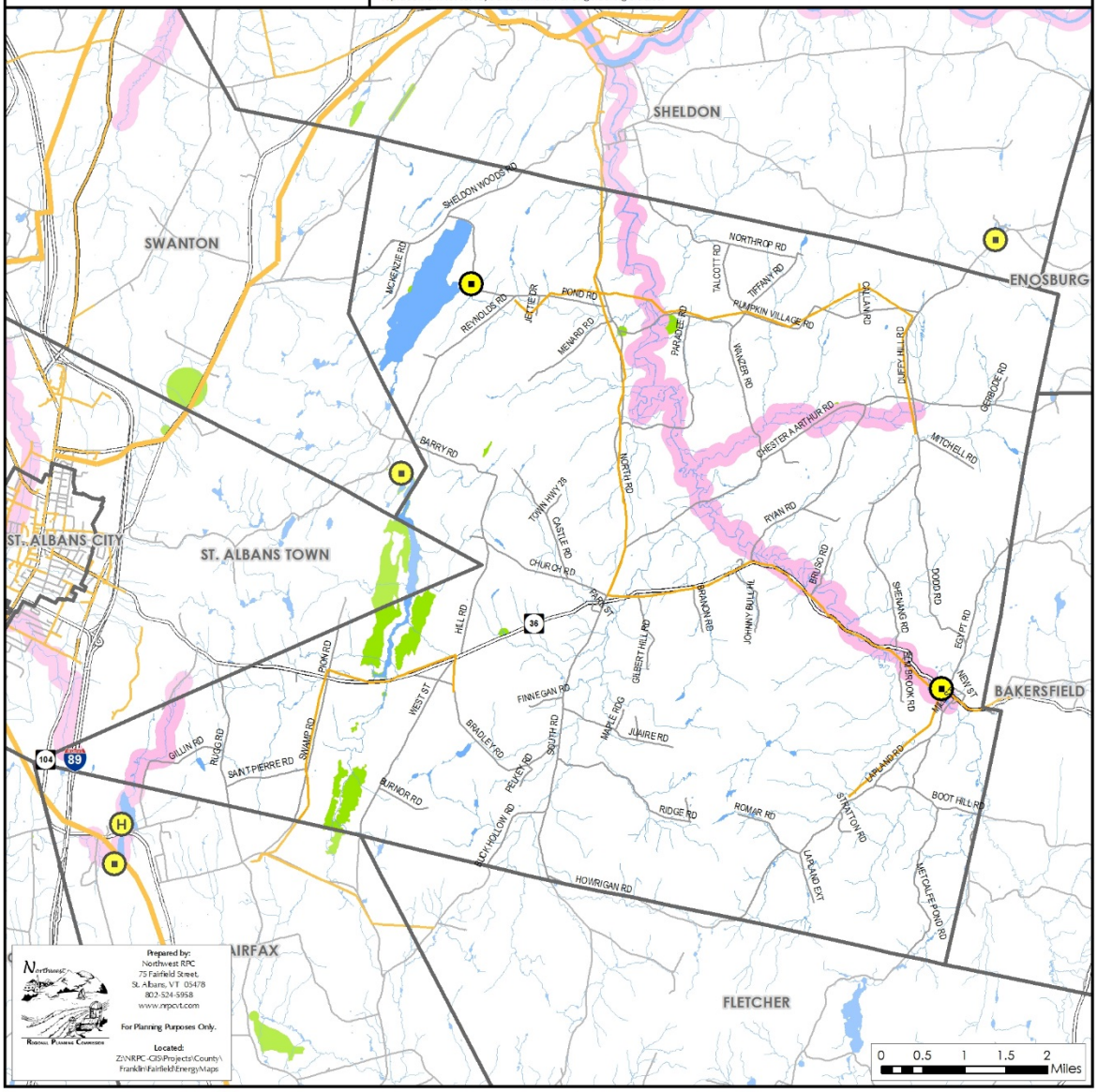

Woody Biomass

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Map C.7

Legend

- Biomass System
- Cow Power
- Substation
- 3 Phase Power Line
- Transmission Line
- Prime Woody Biomass/No Known Constraints
- Base Woody Biomass/Possible Constraints

Sources: VCGI
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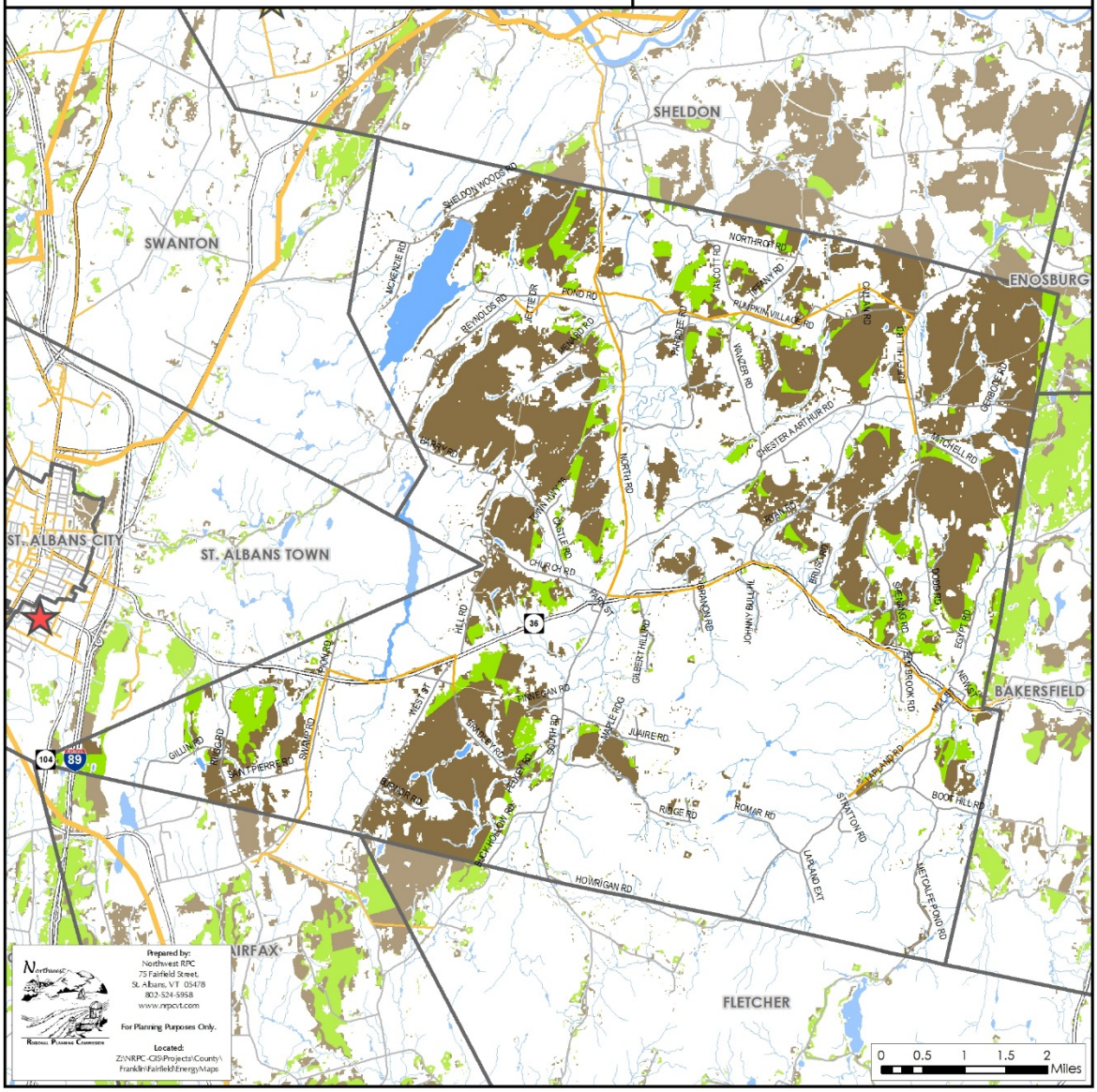

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