

TOWN OF WHITINGHAM VERMONT



TOWN PLAN

Adopted by the Whitingham Selectboard December 5, 2018

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VISION STATEMENT

According to Whitingham Community Surveys conducted in 2001, 2008, and 2015, the majority of people in Whitingham wish to keep the town as it is, i.e., a community blessed with a peaceful, beautiful, rural setting, and a clean environment. The two villages have maintained the 19th century appeal, and efforts to restore buildings and property will ensure that these historic villages remain vital. The working landscape of farm and forest, numerous lakes and ponds, and the open space these features provide are important to Whitingham's future. Protecting the Harriman Reservoir for its scenic and recreational values ranked very high for those who live and work in Whitingham. Harriman Reservoir also plays a role in flood control, particularly during the spring months. The electricity generating capacity of Harriman Reservoir and the tax revenues paid to the town by Great River Hydro continue to be fiscally very important to the town. Finally, the Community Survey pointed out that townspeople are very concerned with ground water pollution, destruction of wildlife resources, junk on properties and loss of agriculture. All future growth and development of land, public facilities, and services needs to be in harmony with this vision.

TOWN PLAN GOALS

The statements listed below represent the overall goals of the Town of Whitingham and further establish a foundation upon which specific policies and priorities for action have been based.

It is a GOAL of the Town of Whitingham:

1. To assure that basic needs of public health and safety are met and maintained.
2. To encourage a sound economy to meet the needs of the town's residents.
3. To provide adequate community facilities and services to the citizens and visitors of Whitingham.
4. To maintain the town's characteristic pattern of settlement typified by villages within a rural setting.
5. To encourage affordable housing opportunities for Whitingham residents.
6. To provide a superior, comprehensive education for all students.
7. To maintain Whitingham's road and transportation system in order to promote safety and facilitate the flow of traffic.
8. To encourage energy conservation and the use of renewable, alternative sources of energy.
9. To protect lake shores, stream banks, and other significant natural areas and locations of special educational, scientific, historical, architectural, archaeological, or scenic significance.
10. To encourage the continued use of lands for agriculture and forestry.
11. To encourage compatible development activity that will best serve public and private interests.
12. To cooperate with all surrounding towns in the Windham Region to ensure mutual provision of basic needs and a sound economy.
13. To maintain Village Center designations for Whitingham and Jacksonville in order to further the intent of Goals 4 and 11.

COMMUNITY PROFILE

Geography

The Town of Whitingham is located in the southwest corner of Windham County on the Massachusetts state line. Five towns – Halifax, Wilmington and Readsboro in Vermont and Heath and Rowe in Massachusetts, border Whitingham. The Deerfield River forms a natural western town boundary and the East Branch of the North River is in the east-central section of town. Whitingham is also bounded on its western edge by the Green Mountains.

The headwaters for the East Branch of the North River are located in several natural ponds north and northeast of Jacksonville Village. The highest actual elevation in town, between 2,320 and 2,340 feet, is on the side of a mountain along Whitingham's western border. A gently sloping topography and a number of small lakes, ponds and wetlands make up the majority of the Whitingham landscape.

Brief History of the Town of Whitingham

Whitingham has a rich history and contains many architectural and historic resources. Several local books and pamphlets were used, and individuals were contacted to develop the following time line.

- 1770** Town of Whitingham chartered as formal township; population totaled 14 inhabitants by 1771.
- 1780** First formal town meeting; population totaled 200.
- 1780-1790** Population doubled to 400. Settlers were mostly arriving from Massachusetts.
- 1790** Amos Brown built first brick home in South Whitingham.
- 1789-1800** Whitingham's first village was established at "The Common" on Town Hill. A small schoolhouse was erected (1789) and the first meetinghouse, for all denominations, was built (1799). Later in 1842, the Academy was built, a regional school educating pupils from surrounding towns. Life flourished for about 50 years and then the village gradually deteriorated.
- 1800** Population doubled to 866, log cabins were abandoned and more modern houses built. Jacksonville and Whitingham villages were beginning to become settled.
- 1801** Brigham Young, famed Mormon leader was born.
- 1836** Davis Bridge was built over the Deerfield River.
- 1891** Hoosac Tunnel and Wilmington Railroad completed.
- 1904** Jacksonville Village was incorporated to set up electric service.
- 1908** Survey of Deerfield River drainage by Harry Harriman and Malcolm Chase.
- 1910** Formation of New England Power. By 1912 land and water rights were acquired from Shelburne Falls, MA to Somerset, VT.
- 1923** Construction of Harriman Dam (former site of Davis Bridge); at the time

reportedly the largest earthen dam in the world - 200 feet high, 1,300 feet wide at base, and 1,250 feet long at the crest. By 1924, a 2.5-mile tunnel was completed to the powerhouse.

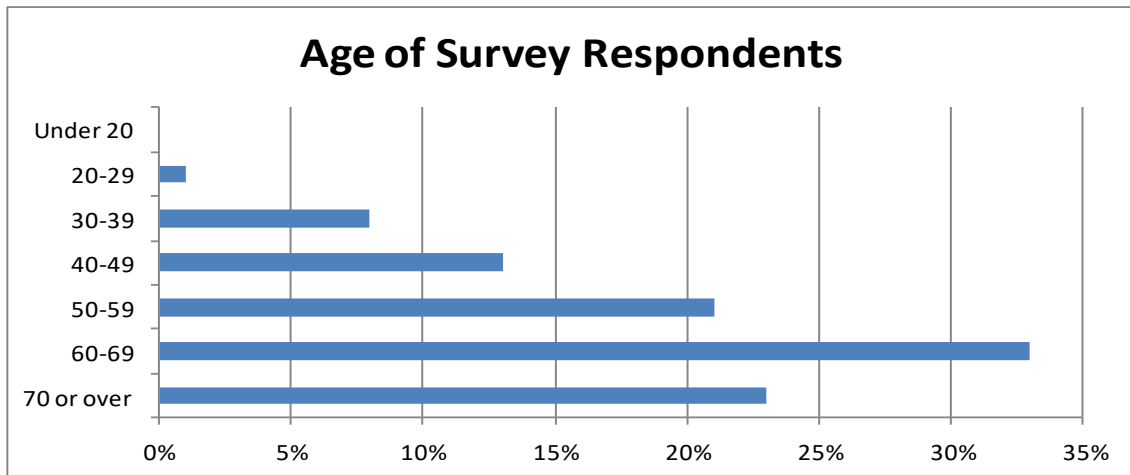
- 1927** Damage by flooding marked the end of the passenger service provided by the Hoosac Tunnel & Wilmington Railroad (fondly known as the Hoot, Toot & Whistle), then owned by New England Power Company.
- 1930** Whitingham celebrated its sesquicentennial (150 years); community members focused their efforts to revitalize Town Hill Common.
- 1938** Major flooding washed out every bridge in town as a result of the '38 Hurricane.
- 1950-1960** Period marked by beginning of recreational development in the Deerfield Valley. Mount Snow was established, land was acquired for vacation homes, and use of rivers and Harriman Reservoir expanded. Two small ski areas, Morse Farm and Burrington Hill, began operation.
- 1954** Floating Island noticeably changed its position in Lake Sadawga.
- 1960** Whitingham Central School for grades 1-12 opened, located about half way between Jacksonville and Whitingham Village. The kindergarten was established in 1971.
- 1969** Whitingham adopted its first Town Plan and later that year voters adopted Zoning Regulations.
- 1973** Whitingham Historical Society formed; a museum was opened in the Green Mountain Hall in Whitingham Village.
- 1983-1984** Sewage treatment facilities in Jacksonville and Whitingham Village began operations.
- 1985** E.J. Roberts Auto Sales, Whitingham's major employer for three generations, went out of business.
- 1990** Whitingham joined the Windham Solid Waste Management District.
- 1996** Acquisition of land in Jacksonville Village for the formation of Eames Park, providing a grassy area as well as additional parking in the Village.
- 1996** Whitingham Historical Society acquired Amos Brown House in Whitingham; Number Nine Schoolhouse moved to new site near Green Mountain Hall in Whitingham Village.
- 1996** Act 60 is passed; created to provide equal education opportunities and having a significant negative financial impact on the Town of Whitingham due to its property tax funding formula.
- 1998** USGen purchases New England Power generating facilities and lands surrounding Harriman Reservoir.
- 2000** Ownership of Amos Brown House transferred to Landmark, Trust, USA.
- 2004** The towns of Wilmington and Whitingham merged their middle and high schools and created the Twin Valley High School in Wilmington and the Twin Valley Middle School in Whitingham.

- 2006** Whitingham Village Historic District was listed on the National Register of Historic Places.
- 2007** Windham Housing Trust completed Sadawga Springs Apartments, nine units of permanently affordable housing, located in Whitingham Village.
- 2011** Tropical Storm Irene caused rivers and streams to overflow. Several businesses and a number of houses in Jacksonville were flooded. There was severe damage to a number of roads, bridges, and culverts.
- 2013** Designation of Whitingham as a Village Center was renewed by the State of Vermont.
- 2014** Designation of Jacksonville as a Village Center was approved by the State of Vermont
- 2014** Whitingham and Wilmington completed the six-year process of merging their school districts. The two towns now share one elementary school building located in Wilmington, Twin Valley Elementary, and one middle/high school building located in Whitingham, Twin Valley Middle High School. Both buildings were enlarged and renovated including installation of Sovernet high speed fiber-optic broadband.
- 2014** The State of Vermont designated the 10 miles of Route 100 in Whitingham as an official Vermont Scenic Byway. Several signs were installed along the route.
- 2014** Whitingham launched a town website: <http://www.townofwhitingham-vt.org/>
- 2017** Great River Hydro purchased the TransCanada hydro facilities and lands surrounding Harriman Reservoir and Sherman Reservoir.
- 2017** Whitingham voted to terminate membership in Windham Solid Waste Management District effective July 1, 2018.
- 2018** The merged school district became the Twin Valley Unified Union School District
- 2018** Whitingham became its own Solid Waste District.
- 2018** Whitingham launched updated and redesigned website www.whitinghamvt.org.

Whitingham Community Survey

In 2015, the Planning Commission surveyed the community to inform the development of the Whitingham Town Plan. Results of the survey are found throughout the Plan in the appropriate sections. Of the 135 people who responded to the survey, 62 % were year-round residents, 94% own land in Whitingham, and they had the following age distribution:

Figure 1: Age of Survey Respondents



Respondents were asked what three things that they liked best and liked least about Whitingham. Natural beauty, small town atmosphere, and lack of urban congestion were the top three things respondents liked, while taxes, junk on property visible from road, and job opportunities were the top three items that respondents liked least about Whitingham.

Figure 2: What are the three things you like about Whitingham?

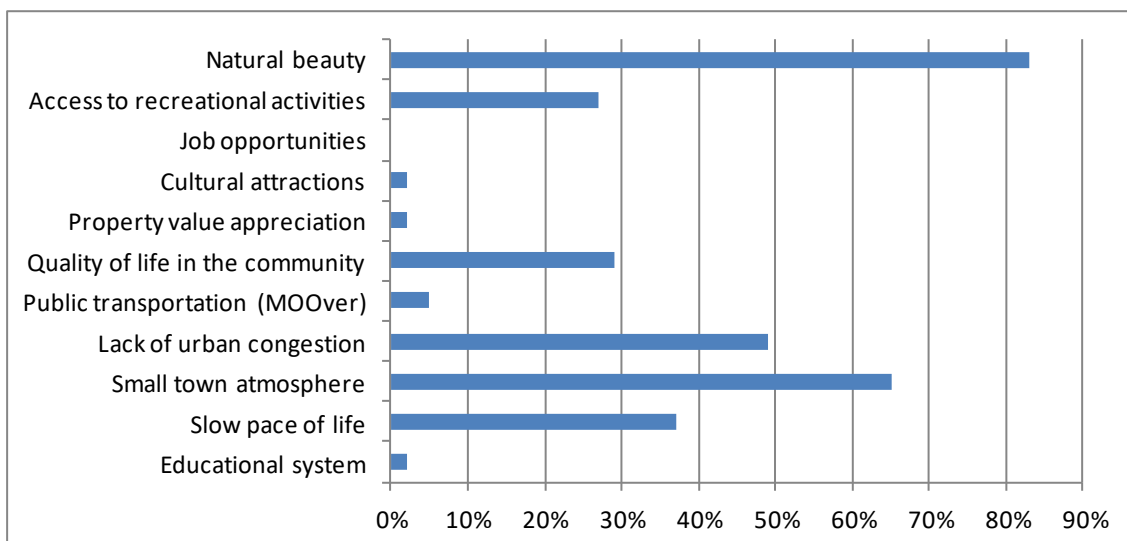
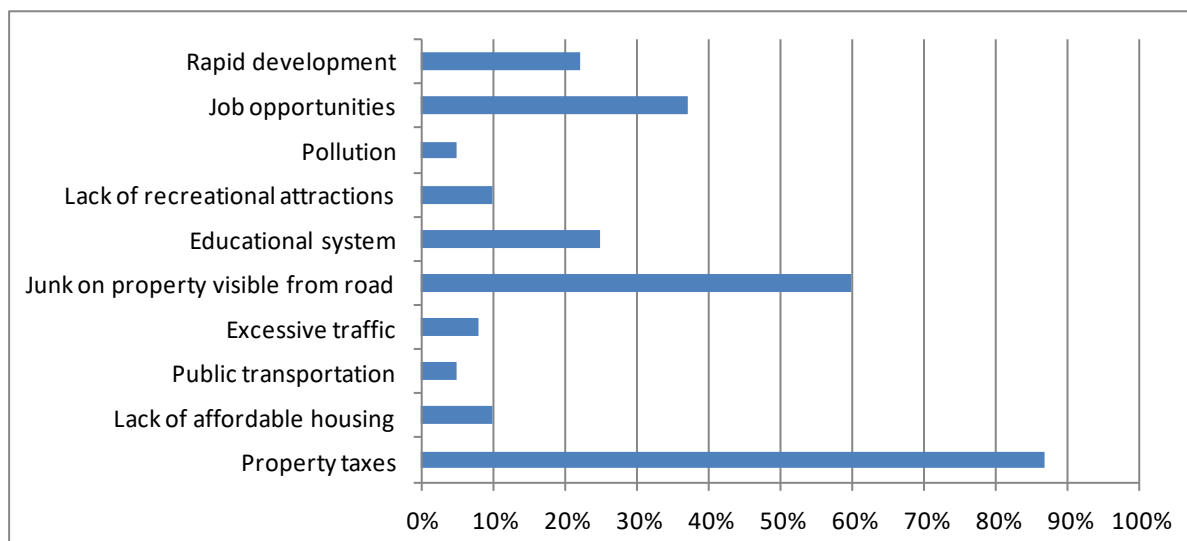


Figure 3: What are the three things you like least about Whitingham?



Population

Population trends are of interest in projecting future housing, facility, and service needs. One method of predicting population trends is to assess demographic trends over the previous decades and make population projections based on future fertility, mortality, cultural, and migratory trends and possible outcomes. Table 1 below, illustrates the known population numbers for Whitingham between the 20th and 21st centuries.

Table 1: Historical Population Trends

<i>Year</i>	<i>Population</i>	<i>Absolute Change</i>	<i>Percent Change</i>
1900	1,042	--	
1910	969	-73	-7.0
1920	811	-158	-16.3
1930	734	-77	-9.5
1940	784	50	6.8
1950	816	32	4.1
1960	838	22	2.7
1970	1,011	173	20.6
1980	1,043	32	3.2
1990	1,177	134	13.0
2000	1,298	121	10.3
2010	1,357	59	4.5

(Source: 2010 U.S. Census)

Historical population *projections* for Whitingham are illustrated below in Table 2, which suggests that the town will continue to experience steady growth over the next few years.

Table 2: Whitingham Population Projection 2000-2020

2000 US Census	2010 Projection	2015 Projection	2020 Projection	% Change 2010-2015	% Change 2015-2020
1,298	1,398	1,450	1,507	3.7%	3.9%

(Source: VT Department of Aging & Independent Living, MISER Population Projections 2003)

Table 3 compares the growth of Whitingham and neighboring towns between 1990 and 2010, showing that for the past two decades Whitingham had experienced steady population growth while some neighboring towns lost population.

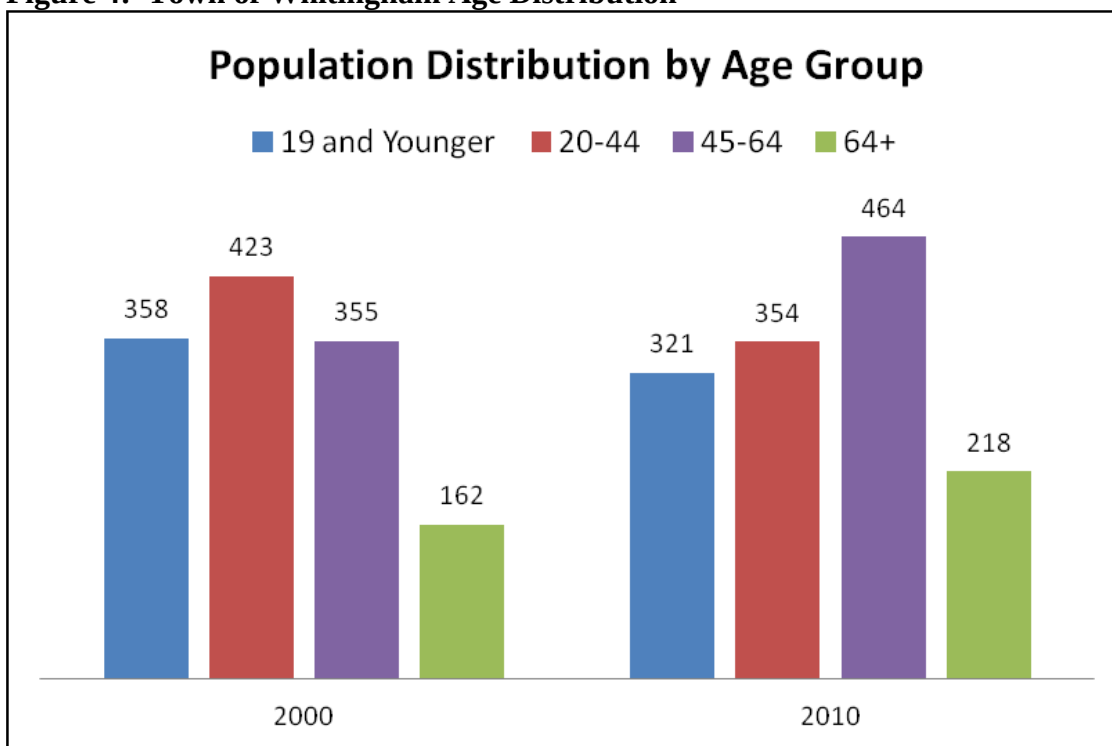
Table 3: Population Trends in Nearby Towns

Town	1990	2000	2010	% Change 1990-2000	% Change 2000-2010	# Change 1990-2010
Whitingham	1,177	1,298	1,357	10.3	4.5	180
Halifax	588	782	728	33.0	-6.9	140
Wilmington	1,968	2,225	1,876	13.1	-15.69	-92
Readsboro	762	809	763	6.2	-5.6	1
Rowe, MA	378	351	393	9.3	11.9	15
Heath, MA	716	805	706	12.4	-12.3	-10

(Source: 2000 and 2010 U.S. Census)

Furthermore, it seems inherently important to consider the age of a town's population and implications of growth within an age group in order to plan for the population's future needs. In 2010, the median age of the town was 45, up six years from the previous decade. The data also indicated that the numbers of people 19 and younger and between 20 and 44 are decreasing, while ages 45-64 and 64+ are increasing dramatically. Table 4 illustrates changes in the age of Whitingham's population between 2000 and 2010.

Figure 4: Town of Whitingham Age Distribution



(Source: 2010 U.S. Census)

Housing

Whitingham saw a significant increase in seasonal housing in the 1980s and 1990s due to the expansion of nearby ski resorts. By the year 2000, Whitingham had a total of 802 housing units. Between 2000 and 2006, permits were filed for an additional nine housing units. Table 4 provides a breakdown of the type of housing by year.

In 2000, of the 515 occupied housing units, 83% were owner-occupied, with the remaining 17% being renter occupied. Both owner occupied housing and renter occupied housing increased between 1990 and 2000, indicating growth in the year-round residential population.

From 2000 to 2010, the number of housing units in Whitingham rose from 802 to 918, a 15% increase, while total house-holds rose from 515 to 574, an 11% increase. Since 1990, seasonal housing has maintained a consistent percentage of total housing in Whitingham. In 1990 seasonal housing accounted for 36.8% of all housing, in 2000 it dropped to 32.3% and, in 2010 rose to 33.1%.

Table 4: Housing by Unit Type

					% change 1980-1990	% change 1990-2010
Unit type	1980	1990	2000	2010		
Seasonal	20	271	259	304	1255	12
Owner occupied	304	357	427	482	17	35
Renter occupied	81	81	88	92	0	14
Vacant	177	28	28	40	-84	43
Total housing units	582	737	802	918	27	25
Average household size	2.71	2.79	2.52	2.36	3	-15
Number of households	371	423	515	574	14	36

(Source: 2000 and 2010 U.S. Census) Note: the definition of seasonal changed from 1980 to 1990.

Whitingham is predominantly comprised of single-family homes. Table 5 shows the number of housing units by the number of units in the structure.

Table 5: Number of Units in Structures

Units in Structure	Actual Number	Percentage
1-unit, detached	781	89
1-unit, attached	21	2
2 units	13	1
3 or more units	10	1
Mobile home	52	6
Total housing units	877	

(Source: 2010 American Community Survey (ACS) 5-year estimates)

Note: the total housing units in Tables 4 and 5 differ; Table 4 is Census data; Table 5 is ACS estimate.

Understanding the American Community Survey

Data published in the American Community Survey (ACS) are five-year **estimates** and do not reflect actual counts like population, age, or sex, as Census data do. These estimates are useful when analyzing trends in small populations but should be used cautiously when making direct comparisons; they are estimates over a rolling five-year period and have a relatively large margin of error. The ACS is conducted year-round to gather “period” data; the Census, which is conducted every ten years, collects “point-in-time” data.

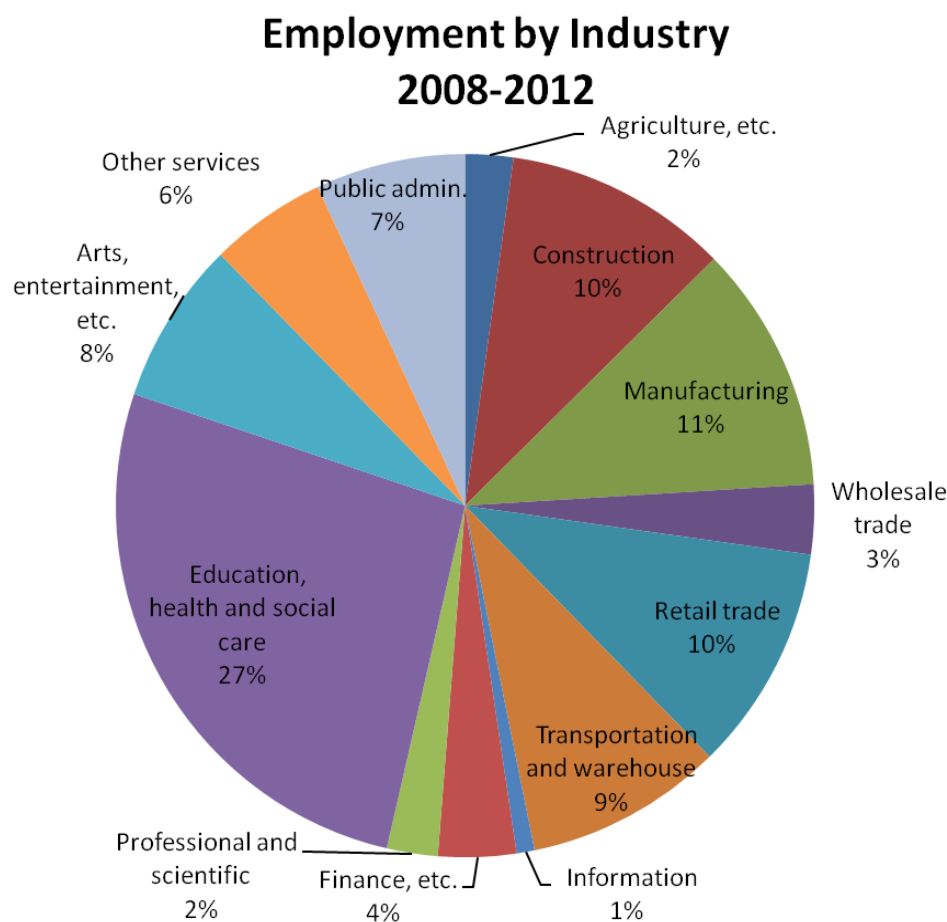
Economy

According to the Department of Labor, Windham County has experienced significant changes in types of employment between 2001 and 2011. Many industries saw sharp decreases while others rose. Employment in the “Goods Producing” sector declined 16.1% overall. This sector includes: natural resources, mining, agriculture, forestry, hunting, manufacturing, etc. Employment in the “Service Providing” sector; including trade, retail, warehousing, transportation, utilities, etc, declined 7.5%. Meanwhile,

construction employment rose 11.4%. Real-estate related jobs rose 17.3%. Education and Health Services saw a 16.3% gain, along with a 21% increase in Health Care and Social Assistance employment. In addition, overall Government employment rose 11.7%.

The 2000 Census indicated that 33% of the Whitingham residents that are employed work in town, while the majority of residents work outside of town. Between 2008 and 2012, the American Community Survey reported, 24.6% of Whitingham residents worked in Whitingham, including the 4.9% of residents that worked at home. According to the Vermont Department of Labor, in 2010 there were 1,099 Whitingham residents age 16 and over. Of them, 817 were in the labor force, with 755 workers employed and 62 un-employed, producing an un-employment rate in Whitingham of 7.5%, lower than the state average, but higher than average for Windham County.

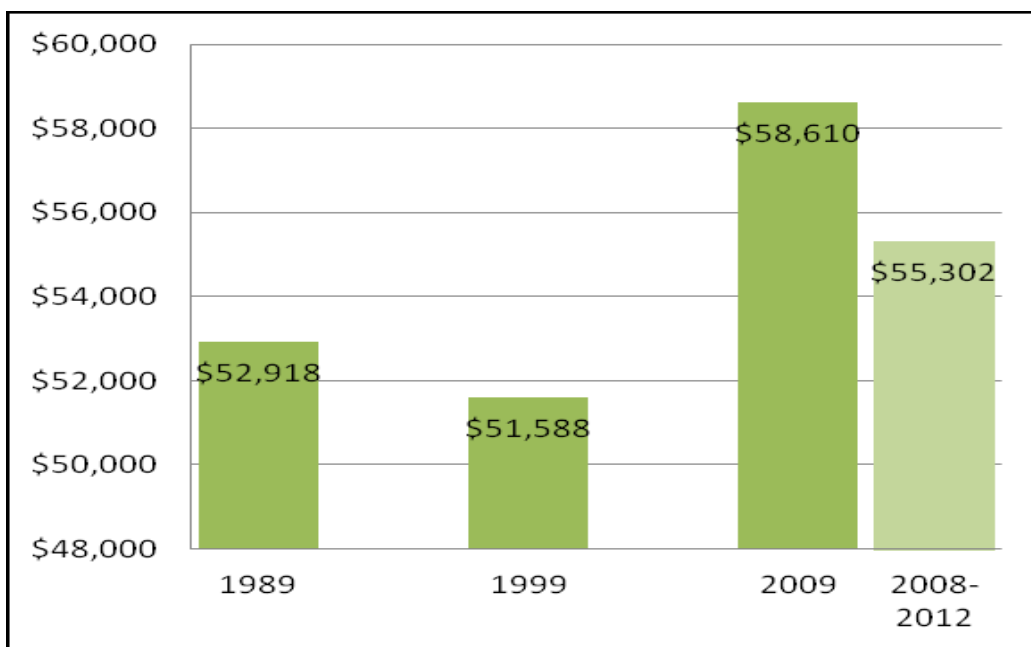
Figure 5: Employment by Industry



(Source: 2008-2012 American Community Survey)

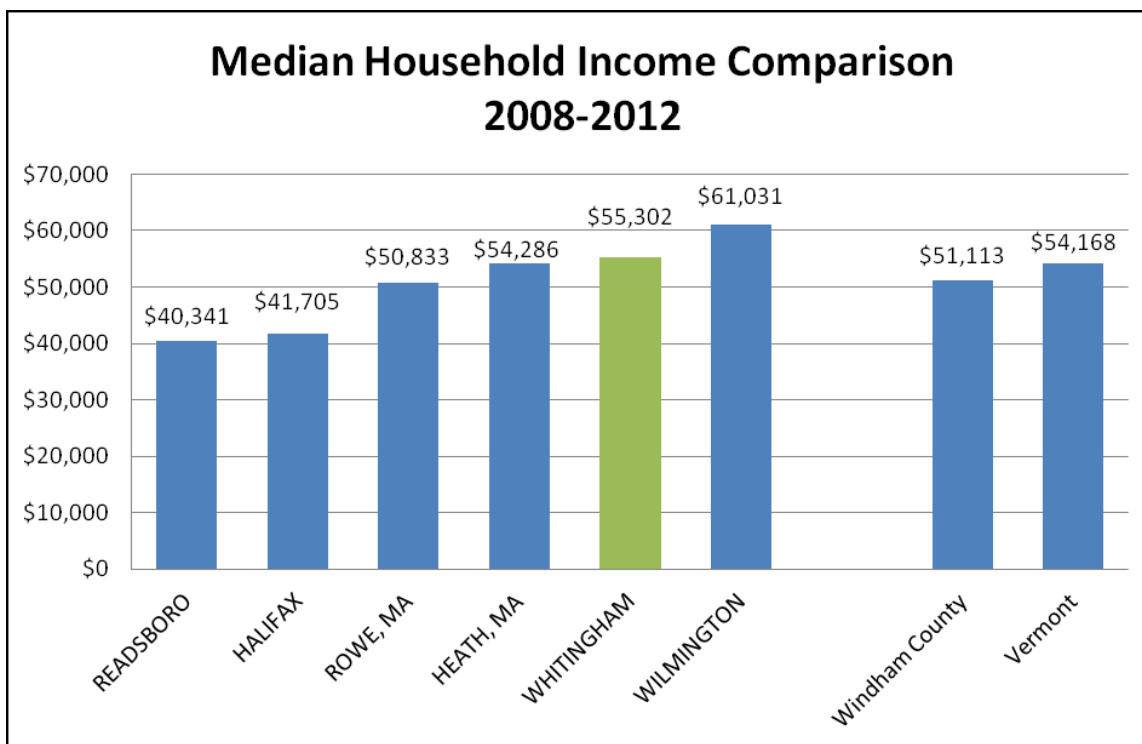
The median estimated household income in Whitingham increased from \$51,588 in 1999 to \$58,610 in 2009, and has since declined over the period 2008-2012 to \$55,302.

Figure 6: Median Household Income (adjusted to 2012)



(Source: 2008-2012 American Community Survey)

Figure 7: Median Household Income Comparison



(Source: 2008-2012 American Community Survey)

COMMUNITY FACILITIES AND SERVICES

Community facilities and services are those facilities owned, maintained or contracted by the Town of Whitingham including structures, land and equipment, as well as any services. This section includes a discussion of town property, public safety services, public utilities, library services, health care facilities, communications, education, and childcare. There is also a discussion of historic, cultural and recreational resources, which are amenities that contribute to the quality of life for Whitingham residents.

In the 2015 Community Survey, residents generally expressed satisfaction for the level of services that are available. The highest level of dissatisfaction was with police services, where 47.5% of the respondents expressed dissatisfaction. Results from the survey are as follows:

Table 6: Satisfaction with Current Level of Service

Are you satisfied with the current level of services?	Satisfied	Dissatisfied
Fire Protection	94.3	5.7
Police Protection	52.5	47.5
Education System	64.8	35.2
Recreational Opportunities	80.5	19.5
Health Services	63.8	36.2
Library	94.0	6.0
Transfer station/recycling	68.3	31.7
Ambulance service	83.0	17.0
Snow removal	92.9	7.1
Traffic flow through villages	89.4	10.6
Affordable housing	69.2	30.8
Elder services	79.2	20.8

Town Facilities

The Whitingham Municipal Center, located on Route 100 in Jacksonville, currently houses the Town Clerk's office, Selectboard office, library, a public hall, kitchen facilities, and several meeting rooms. The Town Garage, located between both villages on Route 100, provides storage for all Town Highway Department equipment.

Recreational facilities owned and maintained by the town are limited to the Town Hill Common (playground, picnic area, and softball field), town trails, and Class 4 roads.

The town owns and maintains 13 cemeteries, which are located throughout Whitingham.

Public Safety Services

The Town of Whitingham has two fire stations. The Whitingham Fire Department is a voluntary unit of approximately 23 members. It is a member of the Keene Mutual Aid System and approved by the Vermont Fire Underwriters. The firehouse located in Whitingham Village houses one pumper truck, brush fire truck, and other equipment. The firehouse located in Jacksonville Village houses two pumper trucks, a rescue vehicle and an ambulance.

Emergency medical services are provided by Deerfield Valley Rescue (DVR). DVR is based in Wilmington and maintains an ambulance at the Jacksonville Firehouse. This is a non-profit organization funded through subscriptions and donations. DVR provides Whitingham and surrounding towns with ambulance service, medical care, transport to and from area hospitals and large regional hospitals. It is primarily staffed by trained volunteers; however, two full-time personnel are employed. The statewide 911 locatable address system provides dispatch service for fire, emergency and ambulance calls.

The Vermont State Police, Westminster barracks, provides police protection. Law enforcement remains an issue under continual review.

Waste Water Disposal

The town has operated two wastewater treatment facilities since 1984. These facilities were originally built for pollution abatement. The plants are operated and managed under the guidance of the Selectboard. The Jacksonville facility is the larger of the two with a design flow of 50,100 gallons per day. The estimated average monthly flow is 50% of the design capacity. The Whitingham facility has a design flow of 12,300 gallons per day. The average monthly flow puts this facility also near 50% of design capacity. Presently, the sludge is being shipped out-of-state for disposal.

Several repairs and updates are needed at the two sewage treatment plants including replacement or repair of the Rotating Biological Contactor (RBC) and the UV Systems. In 2016 a \$20,000 grant was received to create an Asset Management Plan (AMP) for the two treatment plants prepared by an engineer. The AMP will indicate the priority and cost of the updates needed as part of the 20-year evaluation which is due in 2024. This project is vital to the local economy by instilling confidence in local infrastructure. It may create additional sewer capacity and will make properties more marketable for redevelopment. The upgrades will also result in energy savings and less costly maintenance.

Areas not served by the sewage treatment facilities utilize individual, on-site septic systems as the principal means of wastewater disposal. The State of Vermont requires permits for on-site septic systems as well as potable water supplies. The Vermont Department of Environmental Conservation issues these permits.

Electric Distribution

The Village of Jacksonville Electric Co. is a municipal electric distribution system which provides electricity to Jacksonville and a large portion of Whitingham (714 customers as of 2018). The remainder of Whitingham is serviced by Green Mountain Power. The Electric Company contracts with Green Mountain Power to maintain its distribution system.

Solid Waste Disposal

The town offers residents trash disposal and recycling services at the transfer station at 4185 VT Route 100. An attendant oversees use of the facility by residents and collects

tickets based on the amount of trash disposed, which is known as Pay-As-You-Throw (PAYT). As of July 1, 2015, PAYT was mandated by Act 148, an act passed by the Legislature in 2012, establishing universal recycling of solid waste. Whitingham's transfer station was already compliant with the new law. The town has met additional requirements of Act 148 including a drop off areas for leaves, grass, brush and food scraps.

Trash is compacted and hauled away to an incinerator in New York state.

The town became a member of the Windham Solid Waste Management District (WSWMD) in 1990. At a special Town Meeting in 2017 it was voted to terminate membership in WSWMD effective July 1, 2018 in order to reduce costs and gain more control. The town worked with the Windham Regional Commission to develop a Solid Waste Implementation Plan (SWIP) and to update the Waste Disposal Ordinance. The SWIP was approved by the Agency of Natural Resources on May 29, 2018 and the updated Ordinance and SWIP became effective on July 1, 2018 making the Town of Whitingham its own Solid Waste District. Collection of recyclable plastic, glass and metal containers, paper and cardboard, scrap metal, tires, clothing and shoes, and electronics (Ecycle was implemented in 2013) is available at the Transfer Station. Miscellaneous household items are kept out of the waste stream by offering reuse to others through a swap shop. Household Hazardous Waste collection events will be conducted by the town as required by law.

Library

The Whitingham Free Public Library was first established in 1899. The library is located at 2948 VT Route 100, within the Whitingham Municipal Center in the Village of Jacksonville. The facility is 1,680 square feet. The Whitingham Free Public Library is the "hub" of the community, a "gathering" space for many residents and is handicapped accessible. The library is currently staffed by 4 part-time employees and many dedicated volunteers, operating the library 20 hours per week plus additional programming hours. It has a board of six trustees (five Whitingham representatives and one Halifax representative) who are elected annually at Town Meeting. They establish library operating policies, set annual budget, facilitate fundraising events, manage the donations and fundraising account, advocate for the library and review the Director's work performance.

The library currently has about 1,210 registered members. Its collections include books, periodicals, DVD's, audio books and video games with a total of 12,000 volumes and an annual circulation of 10,520. In response to rapid technological changes, the library has been expanding its collection of digital resources in various formats consisting of 59 databases including; The Vermont On-line Library (full-text newspaper, magazine, reference books, and journal articles), Heritage Quest, Listen Up VT, and One Click. As part of the Vermont FiberConnect Project, the Whitingham Free Public Library has become a "community anchor institution" and therefore receives a high-speed fiber-optic service. This expansion will allow for increased opportunities at the library including video conferencing and chatting and the ability to take online courses.

With four public computers and WiFi offered 24/7 the library records over 500 WiFi sessions per month. This public access is an important service offering high-speed connections to the Internet for people in the community who are underserved, and for the economically disadvantaged. In addition to meeting circulation and technological needs, the library fosters community cultural life by sponsoring about 190 public programs per year for a total attendance of 2,050+. In 2016 the library underwent an interior renovation and rejuvenation project to update patron and staff areas including ceiling, lighting, walls, refinishing natural wood shelves, carpeting, adding a new circulation desk, two patron computer desks and a commercial copy machine which increased our printing, coping, faxing and scanning services.

The library continues to assess the community's needs through observation and informal and formal surveys and strives to meet those needs.

Health and Social Services

Health and medical needs of the town can be met through the Deerfield Valley Health Center, which is located in Wilmington and serves towns in western Windham County. More extensive medical services are provided by facilities in Brattleboro, Bennington, Greenfield and North Adams (emergency room only).

Social service agencies are funded annually by the voters of Whitingham. In recent years these agencies have included Deerfield Valley Community Cares, Deerfield Valley Community Partnership, Deerfield Valley Food Pantry, Pool Learning Center, Senior Solutions/Council on Aging, Southern Vermont Community Action, Valley Youth Sports, Visiting Nurse & Hospice of Vermont and New Hampshire, WINGS Community Programs and Women's Freedom Center. In addition, Families First has established a presence in Whitingham.

Communications

Landline Telephone Service

Landline telephone service is provided by Consolidated Communications (formerly Fairpoint Communications). Many residents report that sound quality is poor. Evidently, the Consolidated Communications copper wiring and switching equipment is quite old. It is unlikely that Consolidated Communications will make any major new investments in this outdated communications technology.

Cellular Phone Service

New cell towers built in the Deerfield Valley over the past several years have improved cell phone service, including voice and data, in parts of Whitingham. A signal from several cellular carriers can be obtained at some points in town however no cellular carrier provides full cell phone coverage for voice and data to all locations in Whitingham at this time.

Emergency Communications

For many years, Whitingham has owned and maintained a CB-type radio transmitter that emergency personnel access. Cellular repeaters with a range of up to ½ mile (depending on tree cover) are now being installed on the telephone poles along Route 100, Route 112 and Route 8A, as part a region-wide response to a lack of reliable communications during Tropical Storm Irene. The repeater system has battery and solar power backup located at the Whitingham Municipal Center and is primarily for emergency responders. It has been reported that the public will be able to get a cell signal from these roadside repeaters. It is not known if the repeater system will be for both voice and data. To date the service provided has not been especially reliable.

Internet and Broadband Service

Dial-up internet is still available over the existing landline telephone network.

- 1) DSL internet via the existing Fairpoint landline telephone wires is available approximately three miles out from switching equipment based near the centers of Whitingham and Jacksonville. DSL internet is not available at all locations in town, however a 2017 grant will enable Fairpoint to add about 100 addresses. Service is reportedly poor at times and depends on the old copper telephone wiring/switching system.
- 2) In 2015 a cellular based 4G LTE internet service began in Whitingham, provided by Vermont Telephone Company (VTel). The system is based on 152 cell towers built around the state during the past two years and was funded by Federal and State grants to provide broadband to all unserved locations in Vermont. In 2017 VTel provided service to about 60 homes and has distributed free cell phones to many Whitingham customers. VTel is considering building a second cell tower located on the highest point in town, off Streeter Hill Road.
- 3) ViaStat (Excede) and HughesNet provide satellite-based internet service to all areas of Whitingham with a southwest exposure.
- 4) Several years ago, Sovernet built a fiber optic broadband system along the major state highways in Vermont. The system was funded by Federal and State grants to provide high speed broadband to schools, town offices and libraries located on these state highways. The school and library in Whitingham receive Sovernet fiber optic broadband. Sovernet is now marketing the fiber optic broadband service to businesses along the route which in Whitingham is only on Route 100. A residence on Route 100 (close to the road) can probably get the Sovernet fiber optic service.

Education

Elementary Education

Since consolidation efforts have come to fruition, as of September 2013 elementary education is now provided at the former Deerfield Valley Elementary School and is now

the Twin Valley Elementary School serving Wilmington and Whitingham elementary students. The elementary setting also provides full-day preschool.

Middle and High School Education

The Whitingham facility underwent renovations and additions and since August 2014 now houses the Twin Valley Middle-High School.

Table 7: Twin Valley School Enrollment

School	PreK	K	1	2	3	4	5	6	7	8	9	10	11	12
TVES	27	25	29	31	33	30	33							
TVMS								27	27	33				
TVHS											39	27	46	38

Career Education and Lifelong Learning

Adult education opportunities for Whitingham residents are available regionally. The Community College of Vermont has learning centers in Brattleboro and Bennington that offer associate degrees, career-related certificates, and credit and non-credit training programs. Other opportunities include UVM Extension, the School for International Training, and Marlboro College with its undergraduate campus and School of Graduate and Professional Studies in Marlboro. The Whitingham Free Public Library offers technology training upon request and other educational programming throughout the year.

Child Care

Child care and early childhood education are important components of the Whitingham community and its future. Ensuring accessible, affordable, quality childcare is vital. Availability of child care services can have a direct effect on the vitality of the town by encouraging young families to locate and remain in Whitingham. As the number of families with both adults working outside the home increases, the demand for child care services has also increased.

The local demand for child care services is difficult to measure, but the following statistics might shed light on possible need for childcare. In 2010, the population under age 5 was 80, for ages 5-9 it was 84, for ages 10-14 it was 95, and for ages 15-19 it was 62. In 2000, 25.3% (328) of the population was under the age of 18 with 5.8% (75) under the age of five. In 1990, 9% (106) of the population was under age five. In 2000, 372 families resided in Whitingham with 45.9% (171) of these families having children under the age of 18.

Historic Resources

Whitingham has a unique heritage and a number of sites that are important to its history. 77.1% of respondents to the 2015 Whitingham Community Survey wanted to protect its' heritage.

The 1974 Historic Sites and Structures Survey conducted by the Vermont Division of Historic Preservation identified structures having significant local historical value and deserving protection, maintenance or renovation. These structures, shown on the Utilities and Facilities map, are those listed on the Vermont State Register of Historic Places. Those of local significance are noteworthy because of architectural style or contribution to the character of the town.

In 2006, the Whitingham Village Historic District was listed on the National Register of Historic Places. This listing recognizes the historic importance of the district and assures protective review of Federal projects that might adversely affect its character. The Whitingham Village Historic District is comprised of a group of commercial, institutional, agricultural and residential buildings constructed between 1840 and 1950 that form the core of Whitingham Village along parts of Route 100, School Street, Brook Street, and Stimpson Hill Road.

The Whitingham Historical Society, founded in 1973, is a non-profit organization with 150 members. Green Mountain Hall is the permanent home of documents and artifacts of historical significance to the town. The No. 9 Schoolhouse is also a significant historic structure. It has been moved to Whitingham Village where it is adjacent to Green Mountain Hall. Both of these properties are owned and maintained by the town and are open to the public during posted hours. The restored Amos Brown House is now owned by The Landmark Trust, USA.

Public Recreation

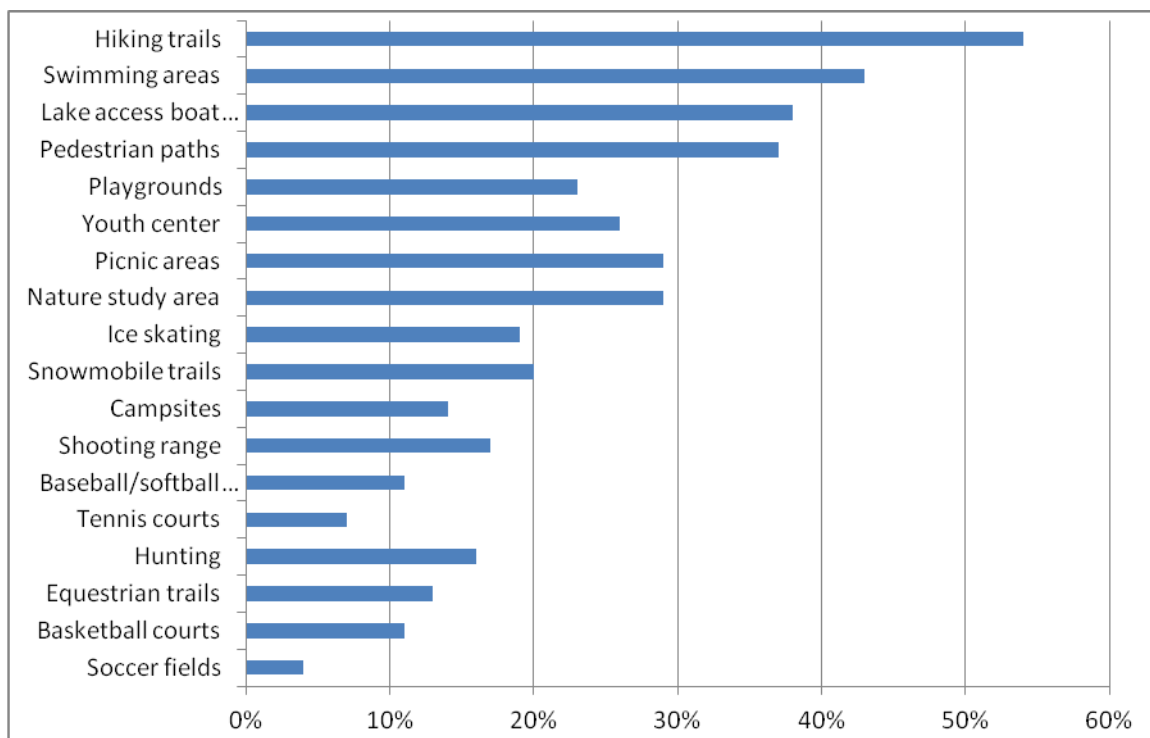
Rural recreational opportunities in Whitingham include water sports, fishing, and skating on Harriman Reservoir, Sadawga Lake, Clara Lake, Sherman Reservoir, and Jacksonville Pond; Deerfield Valley Sportsmen Club shooting range; Town Hill Common; Lion's Club Basketball Court; hunting and trapping lands throughout most of the town and fishing on numerous small streams. Legal trails, Class 4 roads and private lands also offer opportunities for hiking, cycling, cross-country skiing, snowshoeing, and snowmobiling.

The Catamount Trail, a public recreational trail, passes through Whitingham as it runs the length of Vermont. The trail winds its way up along the Green Mountain range, linking together cross-country ski centers and country inns. The trail in Whitingham is complete and the best access point to the trail is at Harriman Dam. The existing Catamount Trail from Readsboro to Whitingham has been targeted by various hiking and cross-country skiing groups as an excellent place to further improve the trail connection.

Snowmobiling is a popular recreational activity in Whitingham. The local EZ Riders Club maintains trails along the west side of Harriman Reservoir and the east side of the lake into Wilmington. The Club has a recreational agreement through VAST with Great River Hydro to use trails on company lands and hopes to maintain this agreement with Great River Hydro and its successors. All of these trails are used with permission by landowners and involve over 100 pieces of property. Other users of these trails include cross-country skiers, hikers and cyclists.

As indicated in the 2015 community survey, 80.5% of respondents were satisfied with the recreational opportunities in Whitingham. When asked to select no more than three recreational improvements or developments that should be pursued in the future, respondents seemed to favor taking advantage of the natural environment by developing hiking trails, swimming areas and lake boat launch areas.

Figure 8: Recreation the Town Should Improve



Scenic Resources

Whitingham offers various scenic resources. Views of Sadawga Lake and Harriman Reservoir are particularly noteworthy. Sprague Falls and Holbrook Pond, Atherton Meadows, and the shores of Clara Lake, Shippee Pond, Jacksonville Pond, Ryder Pond, Laurel Lake, and Gates Pond are also important scenic resources. The Green Mountain Giant, located in western Whitingham, is of special geological interest and possibly the largest glacial erratic in New England. Scenic resources are a significant factor in the quality of life as expressed by citizens of Whitingham. Many of these resources are highly sensitive to development and must be carefully managed.

Policies and Recommendations

Policy 1: The construction or expansion of community facilities and services should take place with minimum impact on natural resources.

Recommendation 1.1: Establish clear policies regarding sewer line extensions. These policies shall reflect the desired development pattern in town as detailed on the Proposed Land Use Map and resource protection needs. (Selectboard)

Policy 2: Maintain effective safety services.

Recommendation 2.1: Continue to periodically review the options and associated costs for police protection in Whitingham. (Selectboard)

Recommendation 2.2: Continue to provide financial support to the Whitingham Fire Department so that an effective fire protection and fire prevention system can be maintained. (Selectboard)

Policy 3: Promote efficient and environmentally sound solid waste disposal.

Recommendation 3.1: Continue to provide recycling bins and additional recycling options at the Transfer Station. (Selectboard)

Recommendation 3.2: Continue to work to meet the requirements of Act 148. Provide information to residents for composting of food scraps and yard waste. (Selectboard)

Policy 4: Support the provision of local library services and programs.

Policy 5: Facilitate the provision of telecommunications services to the town while minimizing the adverse visual effects of towers and other facilities.

Policy 6: Work with other school districts to save money and increase educational opportunities for students.

Policy 7: Support educational programs.

Recommendation 7.1: Continue to promote after school educational opportunities for students such as the 21st Century Community Learning Wings and Fresh Programs. (School Board)

Recommendation 7.2: Continue to seek education finance reform. (School Board and Selectboard)

Policy 8: Provide for education facilities that ensure a healthy and enriching educational experience.

Policy 9: Continue to ensure that land use regulations do not place unreasonable limitations on child care facilities.

Policy 10: Encourage the rehabilitation of significant architectural, historic sites and structures.

Recommendation 10.1: Consider the adoption through zoning of design review districts and/or historic districts and landmarks. (Planning Commission)

Recommendation 10.2: Promote grant opportunities, such as the Vermont Village Designation Tax Credits, to rehabilitate historic resources. (Planning Commission)

Recommendation 10.3: Seek public uses and/or ownership to preserve significant historic sites and structures. (Selectboard, Historical Society)

Policy 11: Recreational resources should be enjoyed by the public in a manner that will not reduce or destroy the value of the site or the area.

Recommendation 11.1: Continue to work with Great River Hydro to provide adequate public access points to Harriman Reservoir along Route 100 and/or Dam Road for the residents of Whitingham. (Selectboard, Planning Commission)

Recommendation 11.2: Continue to maintain town parks. (Selectboard)

Policy 12: Encourage the preservation of significant scenic resources.

Recommendation 12.1: Designate scenic resource areas. Scenic resources can take any of the following forms: scenic view, scenic landscape, scenic area, or gateway. (Planning Commission)

Policy 13: Utilities shall use, wherever possible, existing rights-of-way in order to minimize impacts on the environment and to promote the development patterns specified in this Town Plan.

TRANSPORTATION

Existing Transportation System

Roads

Whitingham's network of roads includes town roads and state highways. The closest federal highway is Interstate 91, which passes through Brattleboro approximately 20 miles to the east. Vermont Route 9, a national highway system road, runs west from Brattleboro to Bennington, intersecting Vermont Route 100 (VT 100) in Wilmington. VT 100, Vermont's interior recreational corridor, heads south into Whitingham and follows the East Branch of the North River southeast to Jacksonville, where it intersects with Vermont Route 112 (VT 112). From Jacksonville, VT 100 continues west through the Village of Whitingham, passing between Harriman Reservoir and Sherman Reservoir in the Town of Readsboro.

Scenic Route 100 Byway

On April 18, 2013 Vermont Route 100 through Whitingham was accepted into the Route 100 Scenic Byway Expansion along with the towns of Granville, Hancock, Rochester, Stockbridge, Weston, Londonderry, Jamaica, Wardsboro, Dover, Wilmington and Stamford. The Scenic Byway designation offers the town inclusion in all the state advertising of the Byway. Specific information about Whitingham's scenic resources, historical and cultural sites, recreation and history are available in brochures produced by the state and on the Byway website (<http://www.yourplaceinvermont.com/scenic-route-100-byway/>). Some of our local businesses are also included on the travel itineraries in print and on the website.

With ski resort and commercial development expansion to the north in the Deerfield Valley, VT 100 and VT 112, through Whitingham, are being used more and more as a primary travel route. In some cases, the roads are being used as a convenient route for visitors, traveling to and from the Deerfield Valley, from western Massachusetts. In other cases, these roads are being used as an alternate route to Interstate 91 south in Massachusetts. Whitingham residents are concerned about safety and speeding along these roads. On occasion, due to the increase in tourist traffic on these roads, traffic congestion is a problem in Jacksonville.

VT 100 and VT 112 are state-maintained roads of 12.3 miles in Whitingham and provide regional access to the town's network of 59.2 miles of town-maintained roads.

Table 8: Town and State Road Mileage in Whitingham

Town					State
Class 1	Class 2	Class 3	Class 4	Legal Trail	State Highway
0	11.2	48.04	4.8	1.45	12.3

(Source: Vermont Agency of Transportation, 2015)

Approximately 4.8 miles of non-contiguous roads in the town are classified as Class 4. No state appropriation is made for maintaining Class 4 roads. These roads are seasonally

functional for normal vehicular traffic and have a dirt surface. Whitingham also has 1.45 miles of Legal Trails.

Of the town-maintained roads 27 miles are paved. The surface of the remaining 31 miles is a mix of gravel and dirt. Unpaved roads tend to limit the amount of traffic and discourage speeding, thereby promoting vehicle and pedestrian safety and, at the same time, helping to preserve the rural character of the town.

Many of Whitingham's roads provide mountain and valley vistas of high scenic quality. Motorists and bicyclists alike enjoy these routes.

Bridges

Bridges in Vermont are classified according to length and by whether the ownership and maintenance responsibility lies with the town or the state. "Long structures" are those over 20 feet in length and eligible for Federal Highway Administration (FHWA) funding, while "short structures" are 6 to 20 feet in length and eligible for state funding only (not for FHWA). Structures shorter than six feet are classified as culverts, regardless of design and are also eligible for state funding only.

The following table is on the condition of the state and town bridges in Whitingham. The rating system is based on the National Bridge Inspection/Inventory 0-10 scale (0 is a failed condition and 10 is excellent).

Table 9: National Bridge Inspection/Inventory Criteria for Bridges in Whitingham

ROUTE	#	BRIDGE TYPE	DECK RATING	SUPERSTR RATING	SUBSTR RATING	CULV RATING	OWNER
Vt100	30	Precast Conc Box	N	N	N	8	State
Vt112		Rolled Beam	8	8	7	N	State
Vt112	13	Rolled Beam	8	7	7	N	State
Vt112	14	Rolled Beam	6	6	6	N	State
Fas 0105	2	Rolled Beam	8	8	8	N	Town
C3063	43	Rolled Bm W Tmbr Dk	6	6	6	N	Town
C3064	44	Rolled Bm W Tmbr Dk	7	5	6	N	Town
C3028	13	Precast Conc Arch	8	8	8	N	Town
C3055	17	Concrete T-Beam	8	8	7	N	Town
C3065	45	Rolled Bm W Tmbr Dk	8	8	8	N	Town
C3066	46	Rolled Bm W Tmbr Dk	8	7	6	N	Town
C3067	47	Rolled Bm W Tmbr Dk	8	6	6	N	Town

VT Route 100 Corridor Study

Whitingham participated in the *VT Route 100 Corridor Study* (Windham Regional Commission, January 2002) which documented lack of access controls, speed, and volume of traffic and safety issues along the corridor. Of particular concern to the town were the following issues:

Town of Whitingham

- Shoulder width and pavement condition overall was rated bad throughout, especially in the western part of town, when the north facing hillside and poor drainage create icy conditions in the winter.
- The highway's junction with Goodnow Road is a problem due to the poor visibility caused by the angled approach, the hill to the west and the curve to the east.
- The pull-off areas providing access to Harriman Reservoir are a problem during peak periods of summer use. Drivers pull out in front of approaching traffic or are unloading next to speeding cars.
- There is no safe parking or pedestrian access to the popular spring water source north of Jacksonville. Cars are often parked partly in the travel lane due to the narrow shoulder.

Whitingham Village

- Village pedestrian facilities are absent in key locations and existing ones need upgrading to current standards.
- The Village is located between two long stretches of open road and many drivers speed through the Village.

Jacksonville Village

- The intersections of VT 100 in Jacksonville with Gates Pond Road and VT 112 present several vehicular/pedestrian conflicts.
- Sidewalks are located in the village center by the general store and north of the Village. However, in some areas, pedestrians are forced to walk in the street because of inadequate sidewalks that have continued to deteriorate and have no crosswalks.
- In general, vehicle access to stores in Jacksonville is undefined and parking is often confusing or difficult. There are several locations with nose-in parking and vehicles back directly into VT 100 to exit.

Whitingham Village Enhancement Study

In 2006, the Town of Whitingham received a Vermont Municipal Planning Grant to work with the community to solicit input on planning issues and design options for Whitingham Village. The primary issues explored were traffic calming and pedestrian circulation, parking for village activities, and potential locations for a park. These issues were broken into near term and long-term improvements at North Gateway and the Village Center (store, church, Stimpson Hill Road, and School Street).

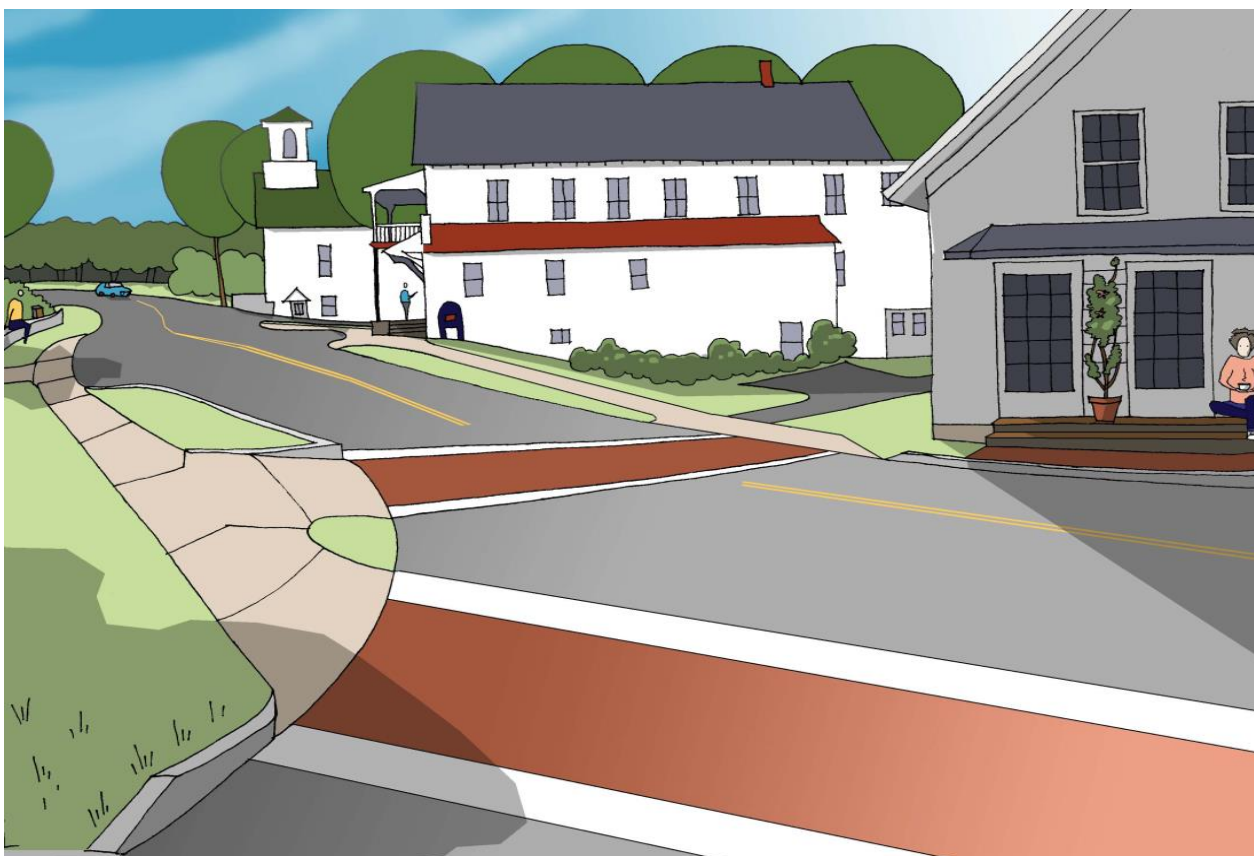
Table 10: Whitingham Village Improvements

	Near-term	Long-term
North Gateway:	Signage and dynamic striping	Improvement at dam
	Vegetation management	
Village Center:	Sidewalks and crosswalks	A park
	Improve parking at the store	Lighting within the village
	Improve entry to church parking	
	Move Brigham Young historical marker	

Figure 5: Whitingham Village Center improvements at store



Figure 6: Whitingham Village Center pedestrian crossing on VT 100



Jacksonville Village Enhancement Study

In December 2012 the U.S. Economic Development Administration awarded funding to the Bennington and Windham regions through the Disaster Recovery Grant Program to bring additional professional capacity to southern Vermont to assist with economic recovery following Tropical Storm Irene. A major focus of the work was to support village and downtown revitalization and assist municipalities with economic recovery.

The assistance provided over the course of several meetings and resulting in a Report for Jacksonville, Vermont January 2014,¹ helped the village identify short term, midterm and long-term projects, outlined initial steps, and provided potential funding sources that would support Jacksonville in building economic resilience.

A topic of considerable concern to community members was the risk of potential conflict between vehicles and pedestrians due to the lack of crosswalks and limited sidewalks. A significant amount of pedestrian traffic crosses Route 100 between the Municipal Center and Post Office at the north end of the Village where vehicles are transitioning from a rural highway to more village-appropriate speeds. Presently there is a lack of pedestrian amenities to support safe crossings. There are also difficult pedestrian crossings in the

¹ Available at: https://strengtheningsouthernvt.files.wordpress.com/2014/06/eda_jacksonville_final-w-cover_lowres.pdf

village core where Route 100 makes a sharp turn and merges with Route 112. Sidewalks exist on the west side of Route 100 throughout most of the Village; however, they lack crosswalk connections. Appropriate use of crosswalks linking the existing sidewalks and installing new sidewalks along the east side of Route 100 would improve the village's walkability and public safety, while creating a more inviting village environment and signaling to drivers that they are entering a populated area. Two conceptual designs are shown below.

Figure 7: Jacksonville Village Conceptual Design 1



[illegible]

There are, at present, limited sidewalks in Jacksonville and no crosswalks or bike paths in the Town. However, there are the Catamount Trail and some groomed snowmobile trails, which are noted in the Recreation Section of this Plan.

A public bus service, known as the MOOver, is operated by Southeast Vermont Transit Association (SEVT) and serves riders, free of charge, along the VT 100 corridor from Wilmington to Readsboro, with two regular stops in Whitingham and other stops on demand. From Wilmington, riders can catch a bus that travels along the VT 9 corridor to Brattleboro. For elderly or disabled riders, SEVT provides both an on-demand van service and volunteer drivers for medical appointments.

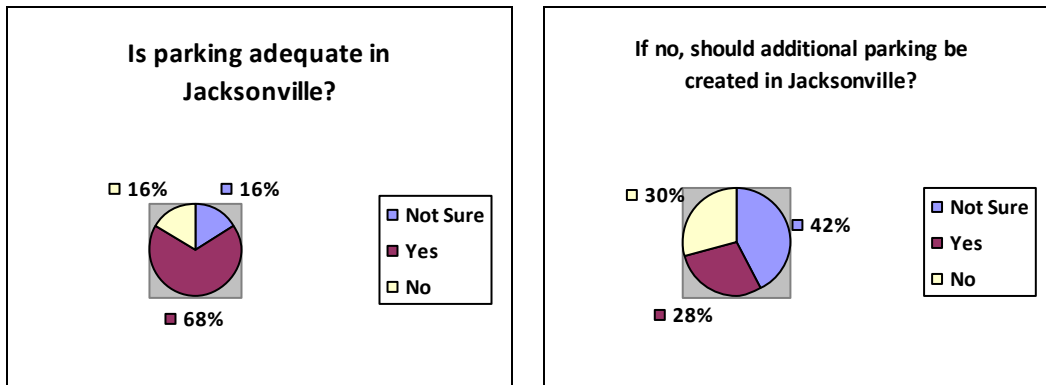
Parking

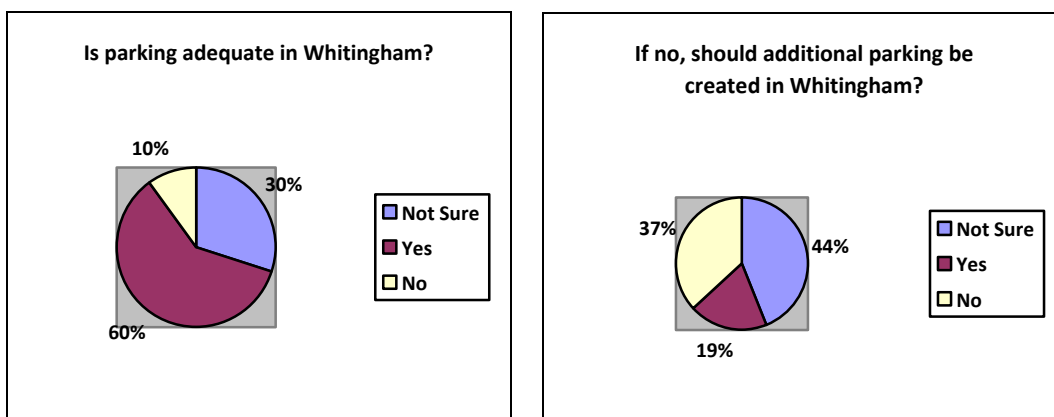
The Whitingham Municipal Center parking lot is a municipal park and ride lot. The town also maintains parking facilities at other town owned buildings, including the area across from the Jacksonville Church. In addition, there has been an expressed need for better parking access at Harriman Reservoir.

In the 2015 Community Survey, respondents were asked if parking was adequate in the villages of Jacksonville and Whitingham. From the responses, it appears that 16% of respondents felt the Village of Jacksonville parking was not adequate, while 10% felt the Village of Whitingham parking inadequate. Of those that did not see Jacksonville's parking as adequate, 28% felt that additional parking areas need to be created in the Village.

It seems that parking is currently considered adequate in the village for the amount of businesses present. While parking is now sufficient, additional capacity could support future growth.

Figure 9: Parking in Villages





Access Management

Truck traffic, high speeding vehicles, and lack of pedestrian safety are all concerns that have a negative impact on the quality of life in Whitingham. The town realizes that a number of businesses are dependent on traffic along VT 100 and as the number of curb cuts or driveways increase, so does the rate of accidents.

Access management is a process for controlling access to roadways, such that the function and safety of the transportation system is preserved while reasonable access is provided for the development of land. Developing access management guidelines could improve safety conditions along VT 100, promote desirable land use patterns, reduce traffic congestion, and improve pedestrian safety.

Future Transportation System

Whitingham, as a rural town, will continue to rely on motor vehicles as the predominant form of transportation. Existing roads in the town will continue to be maintained as they are currently, and no new town roads are planned.

Bicycling and walking as a form of transportation would be enhanced in Whitingham if, where feasible, along VT 100 and 112 the road shoulders were expanded to accommodate bicycling. In both Jacksonville and Whitingham, where appropriate and feasible, sidewalks, crosswalks, parking and traffic calming treatments should be added.

Public transportation will continue to be provided to and from Whitingham along VT 100. Transportation for the elderly and disabled should continue and be enhanced. Carpooling as a possible alternative to driving alone should be promoted.

Policies and Recommendations

Policy 1: Adequately maintain Whitingham roads and bridges for safety and good traffic flow.

Recommendation 1.1: Review and update road and bridge condition statuses annually to reflect the priority of needed improvements. Make recommendations for short and long-term improvements. (Selectboard and Road Commissioner)

Recommendation 1.2: Avoid unnecessary new road intersections or curb cuts by sharing driveway access. (Road Commissioner)

Recommendation 1.3: Research and consider developing access management guidelines (Selectboard, Road Commissioner, and Planning Commission)

Policy 2: Continue to carry out construction of new roads or road improvements in strict conformance with Whitingham's Road Specifications.

Recommendation 2.1: Continue to maintain all town roads up to Whitingham's Road Specifications. (Selectboard and Road Commissioner)

Policy 3: Maintain adequate road capacities without damage to the rural environment of Whitingham.

Recommendation 3.1: Continue to coordinate with the Vermont Agency of Transportation and neighboring towns in planning for road improvements along VT 100 and 112 and Route 8A. (Selectboard and Road Commissioner)

Policy 4: Promote and encourage pedestrian and bicycle use and any other alternative modes of travel.

Recommendation 4.1: Continue to make legal town trails available for public recreational use. (Selectboard)

Recommendation 4.2: Work with Great River Hydro and its successors to plan for improved parking access at Harriman Reservoir. (Planning Commission)

Policy 5: Encourage the development of sidewalks, crosswalks, parking and traffic calming solutions in the Jacksonville and Whitingham Villages.

Recommendation 5.1: Work to add sidewalks, crosswalks, parking and traffic calming treatments in the Villages of Whitingham and Jacksonville. (Planning Commission and Selectboard)

Policy 6: Continue to support community services that provide transportation for elderly and physically handicapped residents of Whitingham.

NATURAL RESOURCES

Natural Resources in Whitingham are abundant and form the backdrop of the town. Residents of the town, in a 2015 survey, were asked to state the three things they liked about Whitingham and the natural beauty of the town had the highest response rate (83%)

In the same survey respondents were asked to rank their concern from 1 to 5 (1 being the most important) about environmental issues that affect Whitingham. Visual pollution (signs, windmills, etc.) and traffic were the most important issues with a rating average of 1.96 each. Also asked was the support for certain techniques to protect large tracts of undeveloped land important for agriculture, the environment and wildlife and the following were the responses:

Table 11 Support for Techniques to Protect Land

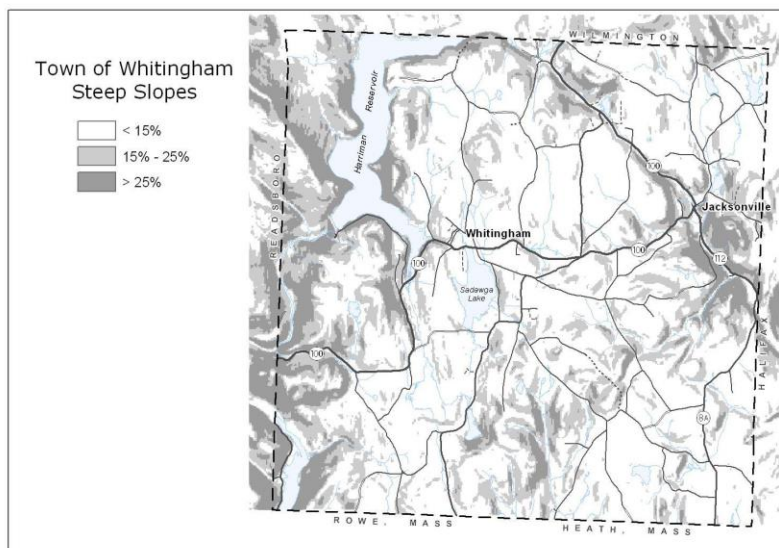
	Yes	No	Not Sure
Purchase of lands by the town	45 %	26%	29%
Purchase, donation or transfer of development rights (land trust, current use, etc.)	66%	14%	20%
Adjust zoning in those areas	56%	12%	31%
No changes are needed	10%	42%	48%

Topography and Slopes

Whitingham is bounded on its western edge by the Green Mountains. The highest actual elevation in town, between 2320 and 2340 feet, is on the side of a mountain along Whitingham's western border. A fair portion of the town is of gently sloping topography, except for the side of the two river valleys that tend to be somewhat steep. This is especially true southeast of Jacksonville, adjacent to parts of Harriman Reservoir, and near the Harriman Power Plant.

As slopes increase, the suitability of the land for development decreases. While the development constraints of building on steep slopes can be overcome, the environmental risks remain. In areas of steep slopes, the velocity of runoff and, therefore, the erosion potential, increases. The ability of the soil to filter septic system leachate is decreased.

According to the U.S. Natural Resources Conservation Service, slopes of less than 8 percent are generally the most suitable for building. The erosion potential of such



slightly sloping land is low, their ability to absorb runoff is high, and soils are usually of adequate depth and composition for septic systems. Exceptions are extremely flat areas, some of which may be classified as wetlands, where drainage is poor. In addition to the potential for sedimentation and erosion, development on steep slopes is likely to be more visible from a greater number of locations throughout town.

Water Resources

Surface Waters: Rivers, Streams, Lakes, and Ponds

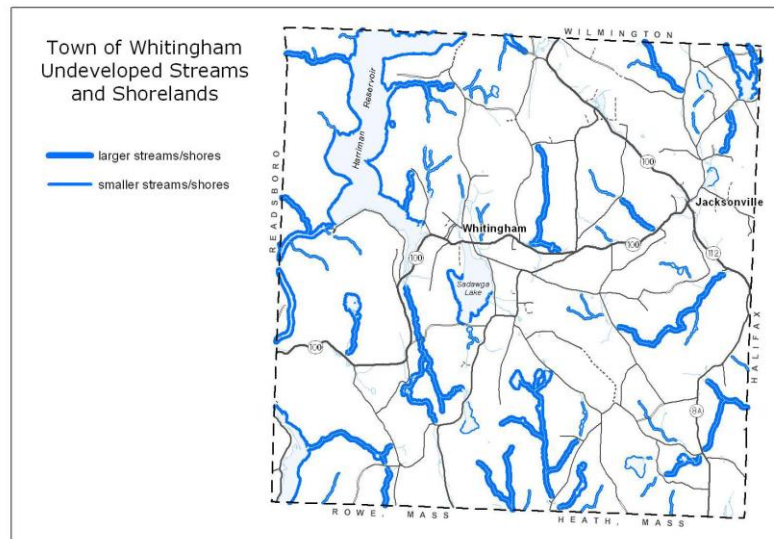
Surface waters are predominant landscape features in Whitingham. Maintaining their high-water quality is critical for human use (both recreation and drinking) and for fish and wildlife habitat. The major surface waters in Whitingham include the East Branch of the North River, North Branch of the Deerfield River, Harriman Reservoir, Sherman Reservoir, Sadawga Lake, Clara Lake, Shippee Pond, North Pond, Gates Pond, Jacksonville Pond, Laurel Lake, Ryder Pond, and Holbrook Pond.

The headwaters for the East Branch of the North River are located in several natural ponds within a two-mile radius north and northeast of Jacksonville (Ryder Pond, Laurel Lake, Gates Pond and Jacksonville Pond). The Deerfield River is dammed for power generation forming Harriman and Sherman Reservoirs. Harriman Reservoir is over eight miles long, holds more than 38 billion gallons of water and is the largest body of water that lies entirely within the State of Vermont. Downstream is the northern end of the Sherman Reservoir that is formed by the Sherman Dam located in Rowe, Massachusetts.

The following are surface water features important for protection:

Shore Lands

Shore lands are lands adjacent to surface waters and are important for maintaining water quality and providing wildlife habitat; valuable in reducing soil erosion and excessive siltation; and tend to be highly vulnerable to excessive and poorly planned development. The resource value of watercourses and shorelines can be diminished or destroyed



by improper development activity. Shown on the map² above are areas in town that do not have development along streams and shorelands. Maintaining undisturbed naturally vegetated buffer strips along streams provides many functions, including: stabilizing streambanks (by reducing erosion), providing food and shelter for fish and wildlife, filtering and absorbing pollutants (such as silt, fertilizers and livestock wastes) prior to reaching surface waters, maintaining cool water temperatures required to support fisheries, reduce flood and ice damage to streambanks and adjacent structures, as well as preserving the natural character of the water.

The Vermont Shoreland Protection Act

Effective July 1, 2014, the Shoreland Protection Act (Chapter 49A of Title 10 §1441 et seq.) established a state regulation for guiding development within Protected Shoreland Area (PSA), 250 feet from the mean water level, of all lakes greater than 10 acres in size. The intent of the Act is to prevent degradation of water quality in lakes, preserve habitat and natural stability of shorelines, and maintain the economic benefits of lakes and their shorelands.

Wetlands

Wetlands are seasonally or permanently wet areas that have saturated soils at least part of the year, support wetland plants and contain aquatic life. Marshes, swamps, bogs, and seasonally flooded fields are examples. Wetland values include fish and wildlife habitat, flood and erosion protection, nutrient and pollution filtration, ground water recharge, and sites for educational activities and recreational and scenic enjoyment.

Currently, the Vermont Wetland Rules regulate development within and adjacent to wetlands areas. Under the rules, three classes of wetlands were established to determine the level of protection. They are as follows:

- **Class One:** These wetlands are considered to be exceptional or irreplaceable in their contribution to Vermont's natural heritage and merit the greatest amount of protection. The Wetland Rules establish a 100-foot buffer around all Class One Wetlands and also establish conditional uses allowed within the wetlands and buffer areas. To date, there are no Class One Wetlands in Whitingham.
- **Class Two:** These wetlands are protected under the Wetland Rules due to their significance alone or in conjunction with other wetlands. The Wetland Rules establish a 50-foot buffer around all Class Two Wetlands and also establish conditional uses allowed within the wetlands and buffer areas. Class Two Wetlands are depicted on Vermont Significant Wetland Inventory Map and make up 770 acres in town.
- **Class Three:** These wetlands have not been determined to be significant enough to merit protection either because they have not yet been evaluated or because they were determined not to be so.

² From Undeveloped Waters in Southeastern Vermont, the full text of the report and associated maps are available at: <http://windhamregional.org/publications>

Wetlands are identified on the Vermont Significant Wetlands Inventory maps which are on the VT Agency of Natural Resources (ANR) Natural Resources Atlas (<http://anr.vermont.gov/maps/nr-atlas>). The town does not regulate wetlands. Nonetheless, the Vermont ANR is required to review projects for work that is proposed to be done in a wetland or buffer area. Many activities such as hunting, fishing, hiking, boating, bird watching, scientific and education research or activities, and wildlife, fisheries, or silvicultural management do not require state or federal review provided that they do not influence the water levels in a wetland and do not involve draining, filling, or grading.

Groundwater

Groundwater is a critical resource in Whitingham because it provides the primary supply of potable drinking water. Bedrock fractures, saturated sand and gravel deposits, and springs are the most common source of groundwater. The locations of aquifers and the land surface area needed to protect them, however, are not mapped for Whitingham. While most groundwater users have reported adequate supply, there is community concern over the continued availability of groundwater particularly in the Whitingham Village area. Since many wells probably share common aquifers, interference can occur if the recharge rate is insufficient.

Flood Hazard Areas – Flood Resilience Plan

Background

In 2013 Vermont enacted Act 16, “An act relating to municipal and regional planning and flood resilience, which requires that all municipal and regional plans effective after July 1, 2014 include a “flood resilience element” pursuant to the purpose and goals of 24 V.S.A. § 4302 - Purpose; Goals - subsection (c)(14):

(14) To encourage flood resilient communities.

(A) New development in identified flood hazard, fluvial erosion, and river corridor protection areas should be avoided. If new development is to be built in such areas, it should not exacerbate flooding and fluvial erosion.

(B) The protection and restoration of floodplains and upland forested areas that attenuate and moderate flooding and fluvial erosion should be encouraged.

(C) Flood emergency preparedness and response planning should be encouraged.

Act 16 also amended 24 V.S.A. § 4382 - The plan for a municipality - adding a twelfth element to the requirements for a municipal plan, specifically to include a flood resilience plan:

(a) A plan for a municipality . . . shall include the following:

(12)

(A) A flood resilience plan that:

(i) identifies flood hazard and fluvial erosion hazard areas, based on river corridor maps provided by the Secretary of Natural Resources pursuant to

10 V.S.A. § 1428(a) or maps recommended by the Secretary, and designates those areas to be protected, including floodplains, river corridors, land adjacent to streams, wetlands, and upland forests, to reduce the risk of flood damage to infrastructure and improved property; and

(ii) recommends policies and strategies to protect the areas identified and designated under subdivision (12)(A)(i) of this subsection and to mitigate risks to public safety, critical infrastructure, historic structures, and municipal investments. (emphasis added)

(B) A flood resilience plan may reference an existing local hazard mitigation plan approved under 44 C.F.R. § 201.6.

Fluvial Erosion

By statutory definition, “fluvial erosion” means the erosion or scouring of riverbeds and banks during high flow conditions of a river. Most of the flooding damage experienced in Vermont is from the power of moving water causing the sudden destruction of under-sized culverts and erosion of stream banks supporting roads and buildings. Providing a river the room it needs to slow the flow, over time can allow it to function as a responsive system and avoid repeated losses to public infrastructure and investments.

Erosion (and deposition) along a stream or river is natural. Sometimes, efforts to stop this process in one place can make it worse in others. Rivers, streams, and their channels are changing constantly in response to the inputs of water, energy, sediment and debris that pass along them. Every few years a stream fills to bankfull and the shape of the channel responds to this force by cutting deeper into some streambanks and also by depositing sediments in the quiet inside bends. This process is visible as an “S” shaped form that slowly changes position.

If the stream cannot spill out of its banks, the power of the trapped water increases and the channel either digs down or cuts out further to the sides. Where the roads and buildings are nearby these adjustments to the channel’s shape can become dramatic and costly.

A river is in geomorphic equilibrium when its water, energy, sediment, and debris are in balance. In this condition a river is neither building up sediment in the channel nor losing sediment from its bed. Importantly, a river in equilibrium has not become overly deep and can continue to overflow onto its floodplains. The water that spills onto the floodplain slows down, and the velocity of the water still in the channel does not become excessively powerful.

In order to protect roads and buildings it is important to be sure that the river is able to function as well as possible upstream and downstream. We need functional streams and rivers with room to adjust (river corridors) and intact floodplains to moderate the impact of high water events.

River Corridors and Floodplains

River corridors and floodplains are different but related. The river corridor is the area that provides the physical space that the river needs to express its energy and meander without it having to dig down. The river corridor includes a 50-foot buffer on either side of the fluvial erosion hazard area to prevent disturbance in this area and allow for bank stabilization. In statute the area is defined as: *"River corridor" means the land area adjacent to a river that is required to accommodate the dimensions, slope, planform, and buffer of the naturally stable channel and that is necessary for the natural maintenance or natural restoration of a dynamic equilibrium condition and for minimization of fluvial erosion hazards, as delineated by the Agency of Natural Resources in accordance with river corridor protection procedures.*

A floodplain is the area where water flowing out over a river bank can spread out and slow down. The floodplain as defined by FEMA is the area that will be inundated by the flood event having a 1-percent chance of being equaled or exceeded in any given year. The 1-percent annual chance flood is also referred to as the base flood or, most commonly, the 100-year flood.

River corridors and floodplains overlap a great deal. One on top of the other there might be 60 – 90% overlap. However, there are areas in the river corridor that will be eventually shaped by the channel - although they may be currently high and dry - and other areas in the floodplain that will be under water during a large flood, but which the river channel may not need to access to maintain its geomorphic equilibrium.

The extent of a river corridor is based on calculations including such things as the meander belt of the stream, soils, watershed size and gradient, and channel width. The extent of floodplains is based on calculations such as stream peak flow history and frequency.

Regulatory Flood Hazard Designations

There are two types of regulatory flood hazard designations and two sets of official maps that identify those flood hazards in Vermont: inundation hazard areas are identified by the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs); fluvial erosion hazard areas are identified by the VT Agency of Natural Resources on river corridor maps.

Whitingham has land, homes, businesses, and infrastructure that are susceptible to the two types of flooding impacts: inundation and fluvial erosion. Inundation flooding occurs during high water events on the North River. Fluvial erosion occurs in areas both in and out of the flood hazard area (floodplain) as mapped by FEMA. Both inundation flooding and fluvial erosion are potential hazards along the North River, Deerfield River and brooks including but not limited to, Brown, Butler and Sprague Brooks, as well as along the streams that drain watersheds extending to our borders with Halifax and Wilmington.

Inundation Hazard

Towns participating in the National Flood Insurance Program (NFIP) must regulate development in areas designated on the FIRMS that show the floodplain that FEMA has calculated would be covered by water in a 1% chance annual inundation event, also referred to as the “100-year flood” or base flood. This area of inundation is called the Special Flood Hazard Area (SFHA). FIRMS may also show expected base flood elevations (BFEs) and floodways (smaller areas that carry more current). FIRMS are only prepared for larger streams and rivers. The Town of Whitingham has areas of inundation hazard flood risk mapped by FEMA.

Fluvial Erosion Hazard

A significant portion of flood damage in Vermont occurs outside of the FEMA mapped floodplain areas and along smaller upland streams, as well as along road drainage systems that fail to convey the amount of water they are receiving. Property owners in such areas outside of SFHAs are not required to have flood insurance. Vermont ANR’s river corridor maps show the area needed to address the fluvial erosion hazards, which may be inside of FEMA-mapped areas, but often extends outside of those areas. River corridor maps delineate areas where the lateral movement of the river and the associated erosion may be more of the threat than inundation by floodwaters. Elevation or floodproofing alone may not be protective of structures in these areas, as erosion can undermine structures. ANR released statewide river corridor maps in late 2014. The Town of Whitingham has areas of River Corridor mapped by ANR.

Flood Hazard Regulation

Inundation

For federal flood insurance to be available to property owners through the National Flood Insurance Program (NFIP), a municipality must adopt and administer flood hazard area regulations. These can be within local zoning regulations or adopted as a free-standing bylaw. A community’s flood hazard regulations must apply to at least the Special Flood Hazard Areas identified by FEMA. They regulate new structures and place restrictions on other types of activities, such as fill within the floodplain. They specify land, area and structural requirements to be adhered to within the SFHA.

Erosion

To address Act 16, to protect citizens, infrastructure, and the environment, and to qualify for maximum Emergency Relief and Assistance Fund state match in the event of a disaster, a town must adopt and administer river corridor protection standards as part of its flood hazard area regulations. The town is working to update the Flood Hazard Area Regulations to address river corridor protection.

FLOOD HAZARD MITIGATION

The state designated Village of Jacksonville was severely flooded by Tropical Storm Irene. Town representatives, including the Whitingham Economic Development Group, Road Commissioner, and Selectboard members have had several meetings with VTrans, Agency of Natural Resources and Windham Regional Commission staff regarding the East Branch of the North River that runs along VT Route 100 in Jacksonville. An emergency repair of the retaining wall in front of the Jacksonville Fire House was completed by VTrans in 2016 because the wall was crumbling, a minor weather event

could have caused serious damage to the roadway, sidewalk and buildings nearby. A hydraulic study of the culvert in front of the Municipal Center was completed by VTrans, also in 2016. The North River Corridor Plan, based on geomorphic assessments and hydraulic modeling, has identified a number of projects to improve flood resilience in Jacksonville. The next steps will be grant finding/writing for engineering plans and construction funding for implementing those projects, including replacing undersized bridges and/or culverts and restoring access to floodplain storage areas and culvert replacements. For more information and details, please see the River Corridor Plan for the East Branch of the North River in Halifax and Whitingham, Vermont, December 21, 2017. The goal of these projects is to prevent flood damage in the Village of Jacksonville. It will create confidence that flooding will not be detrimental and make properties more marketable for redevelopment.

Addressing Flood Resilience

This plan identifies flood hazards as the Special Flood Hazard Areas (SFHAs) shown on the NFIP FIRMs and identifies fluvial erosion hazard areas as those shown on the ANR river corridor maps. Further, this plan designates both those identified areas as areas to be protected, including floodplains, river corridors, and land adjacent to streams, wetlands, and upland forests, to reduce the risk of flood damage to infrastructure and improved property. In addition, this plan will incorporate by reference the town's Local Hazard Mitigation Plan approved under 44 C.F.R. § 201.6. Finally, this plan recommends the policies and recommendations at the end of this chapter to protect the designated areas to mitigate risks to public safety, critical infrastructure, historic structures, and municipal investments.

Additional information is available at <http://floodready.vermont.gov/>.

Soils

Soils are one of the most important environmental factors that govern the use of land in rural areas. A soil's depth to water table, susceptibility to flooding, depth to bedrock, stone cover, and permeability present potential constraints on the construction of roads, buildings, and septic systems.

Whitingham's soils can be generally described as:

- **Houghtonville-Rawsonville-Mundal:** This soil unit encompasses the majority of the town and generally found on hills and mountains. It is comprised of very deep/moderately deep soils that are well drained/moderately well drained. In most areas these soils are wooded and productivity for trees on these soils ranges from moderate to very high. These soils are generally not suited to cultivate crops, hay and poorly suited for pasture because of stones and boulders on the surface.
- **Worden-Wilmington:** This soil unit is comprised of gently sloping to moderately steep and are generally poorly drained. In most areas these soils are wooded and productivity for trees on these soils ranges from moderate to very high. These soils are generally not suited to cultivate crops, hay and poorly suited for pasture because

of stones and boulders on the surface. The seasonal high-water table is the main limitation to use these soils as sites for dwellings.

Minerals

Sand and gravel deposits are minimal in Whitingham and the town must rely on outside sources for a supply to handle municipal needs. Known deposits are located along the East Branch of the North River. There are several limestone deposits in the southwestern part of town; however, no quarrying activity has occurred in many years.

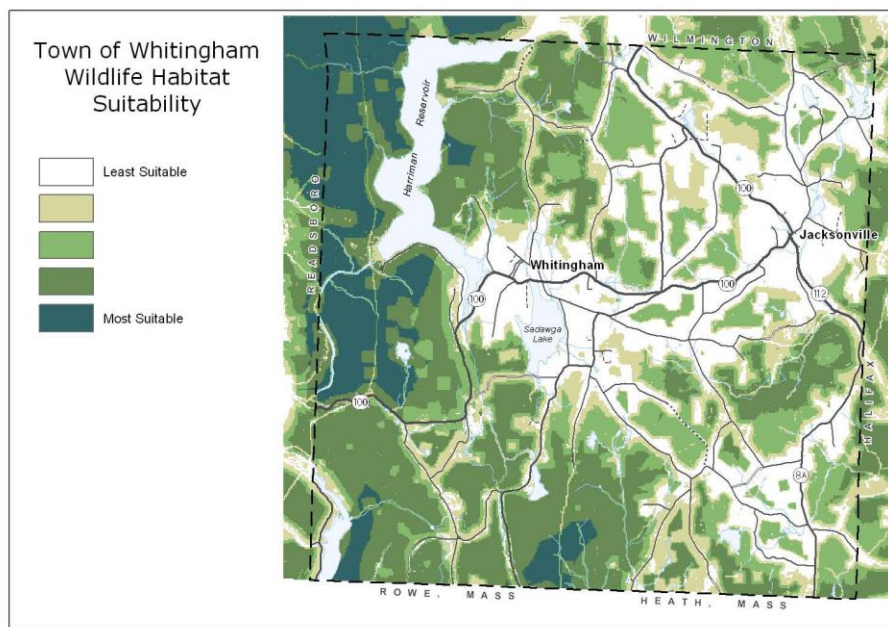
Geologic Sites

Several sites of interest to naturalists and geologists include Green Mountain Boulder, abandoned lime works and silver mine, Ryder Pond Kettle Hole and Bog, and the Floating Island in Sadawga Lake.

Wildlife Habitat and Endangered Species

In addition to habitats mentioned under water resources, large forested tracts have significant habitat potential for large mammals (bear, moose, deer, bobcat, fisher, and coyote) and many valued songbirds. Deer wintering areas have been identified by state biologists in the Atherton Meadows Wildlife Management Area and on lands west of Harriman Reservoir owned by Great River Hydro and its successors. These large habitat areas are further enhanced when interconnected by wooded stream corridors. At the present time, Whitingham is fortunate to maintain large tracts of forest that support these and other wildlife species. Sustaining these tracts in healthy forest cover is important for wildlife, as well as numerous other values such as water quality/quantity. Poorly planned development could, however, unnecessarily dissect these habitats, diminishing their wildlife value.

The Wildlife Habitat Suitability analysis conducted by the Vermont Department of Fish and Wildlife and the Vermont Agency of Transportation, used a statewide, landscape scale model that considered housing density, land use/land cover, and core habitat information. The resulting data show the probability of finding suitable contiguous and linkage wildlife habitat in an area, but it does not describe the quality of habitat.



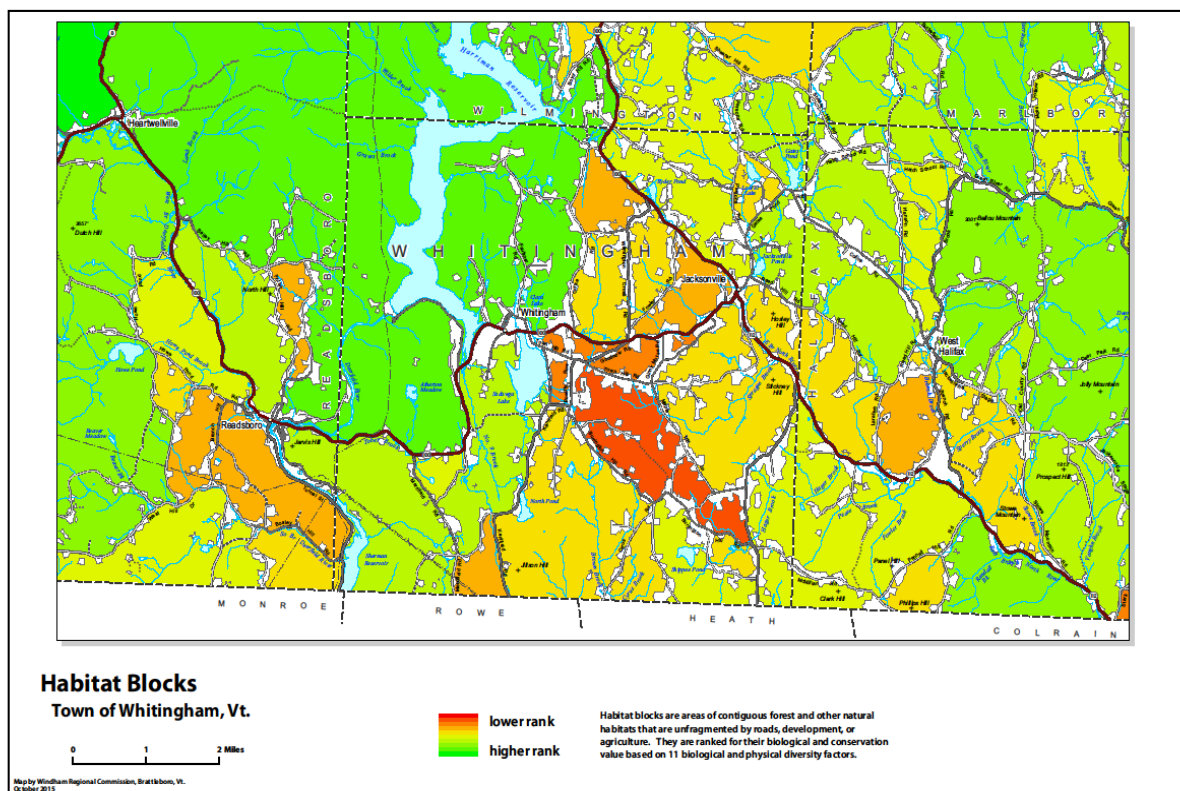
Habitat Blocks

Habitat blocks are areas of contiguous forest and other natural habitats that are unfragmented by roads, development, or agriculture. They are ranked for their biological and conservation value based on 11 biological and physical diversity factors. Habitat blocks have been mapped throughout the state for the Vermont Fish and Wildlife Department by the Vermont Land Trust.

Whitingham contains all or part of 28 different habitat blocks ranging from 23 acres to around 2,000 acres, along with one block over 20,000 acres. The largest, and highest-ranked, block in Whitingham - the one with the highest biological and physical diversity - is in the northwestern part of town. This block encompasses a large area of undeveloped lands in Whitingham, Readsboro, Searsburg, and Wilmington. The portion of this block east of Harriman Reservoir (and particularly west of Corse Road), however, is isolated from the main core of undeveloped lands, and so likely does not share the characteristics of the majority of the block.

The lands that provide connections that link larger patches of habitat within a landscape, allowing the movement migration and dispersal of animals and plants in a larger region, are also important. The Critical Corridor Areas discussed in the Land Use chapter and shown on the Proposed Land Use map highlight those locations along roads or between large blocks of probable contiguous habitat that have been identified by the Vermont Wildlife Habitat Suitability analysis as probable linkage habitat³. Regardless of the land use district, new uses that are proposed must respect the sensitive nature of the blocks and connecting links and must be designed to preserve, or enhance, the values of these areas.

³ This includes areas in Whitingham and adjacent towns that had medium to high probability of wildlife habitat.

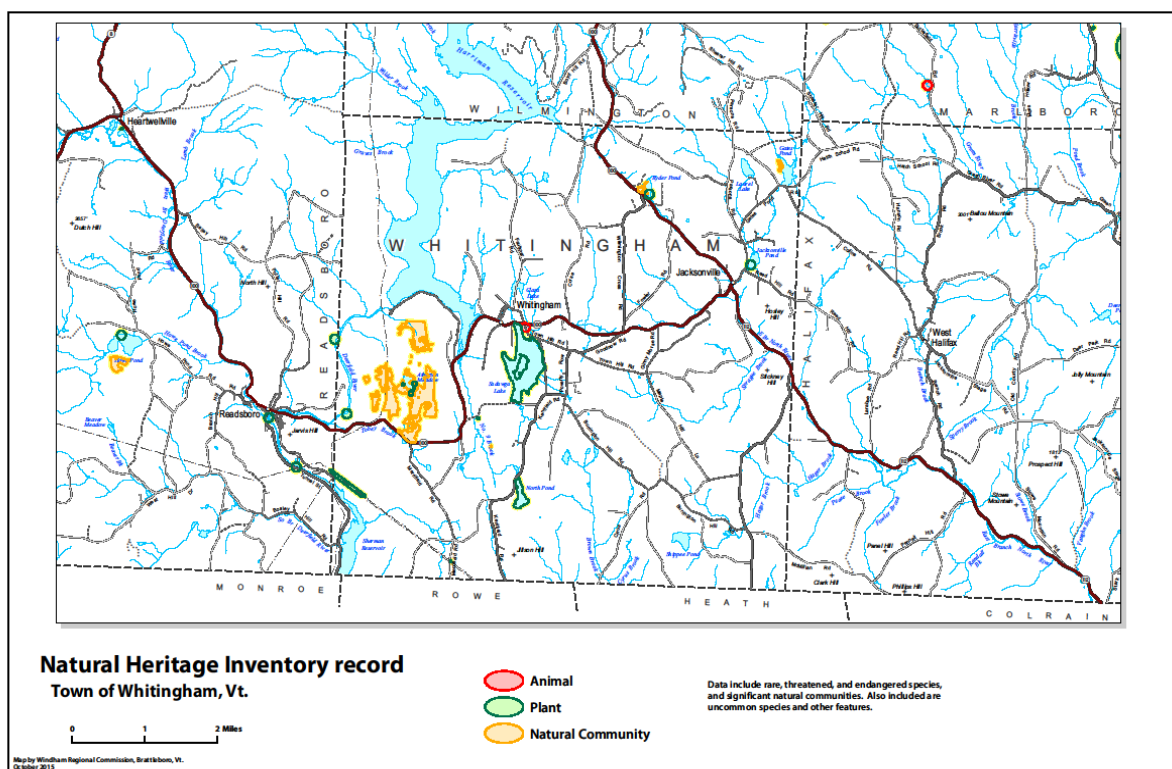


Natural Heritage Data

Whitingham contains several element occurrences in Vermont's Natural Heritage Inventory, maintained by the Vermont Fish and Wildlife Department. The Inventory is a database of rare, threatened, and endangered plant and animal species, and significant natural communities.

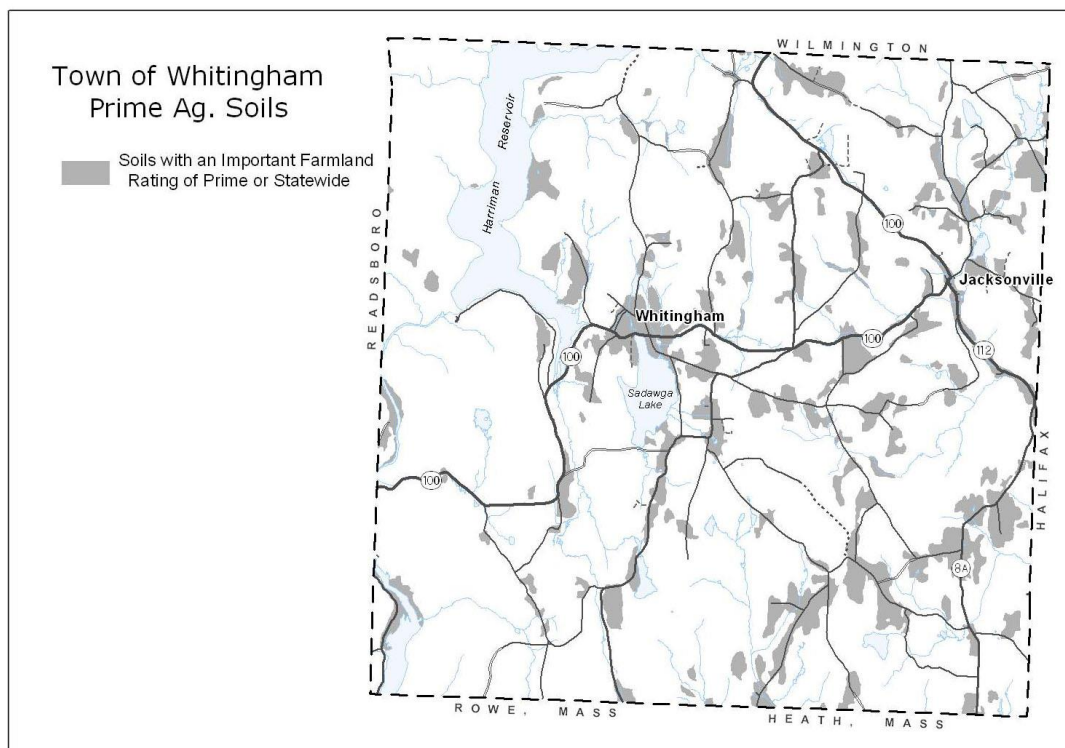
The Inventory identifies six significant natural communities in Whitingham, three of which are ranked as rare in the state (two poor fens and a dwarf shrub bog), two ranked as common (hemlock-balsam fir-black ash-seepage swamp and a seep), and one as very common (hemlock-northern hardwood forest). Note that occurrences of common and very common natural communities can be considered significant because they are excellent examples of such communities. Ten occurrences of plant species (two of which are state threatened species) and one occurrence of an animal species exist. The inventory also contains information on uncommon species and other features, including poorly documented rare species. There are nine records in this category, four plants and five natural communities, all but one of which is in Atherton Meadows Wildlife Management Area.

Note that while the Natural Resources Inventory documents where rare, threatened, and endangered species and significant natural communities have been found, no comprehensive survey, except for state lands, has been conducted to find such occurrences. The absence of a record in the Inventory at a specific location area does not mean there are no occurrences of species or communities at that location.



Agricultural Resources

The US Department of Agriculture Soil Conservation Service has identified soil types that are best suited for crop production based on soil quality, growing season and moisture supply. Important farmland inventories identify soil map units that are Prime Farmland, Unique Farmland, Additional Farmland of Statewide Importance, and Additional Farmland of Local Importance. The prime agricultural soils are likely to produce the highest crop yields using the least amount of economic resources and causing the least environmental impact. Whitingham has scattered pockets of agricultural soils that could be classified as either prime (28 acres or 1 % of town) or statewide (3136 acres or 12.5% of town). Soils with an Important Farmland rating of 'prime' or 'statewide' have the potential to be Primary Agricultural Soils under Act 250.

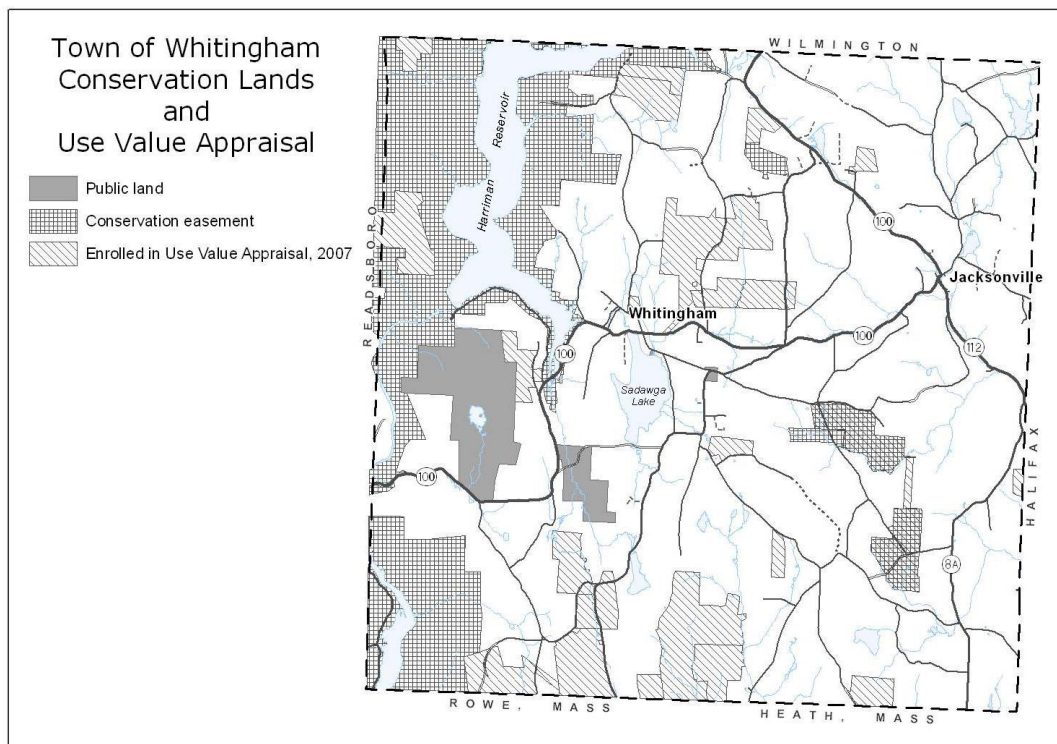


Although agriculture is not extensive in Whitingham, the agricultural lands are an important resource that serves many functions including: providing local seasonal produce and planting materials; serving as an educational resource; and contributing to the rural character of the town.

Forestry Resources

The total acreage of forestland in Whitingham is estimated at 20,021 acres (nearly 80% of the town). This includes woodland associated with existing residential uses. The forestland of Whitingham serves many functions including providing ecosystem services, forest jobs and/or forest-based professions, and biodiversity, as well timber production, wildlife habitat, and recreation.

According to the Vermont Department of Taxes, in 2013 Whitingham had a total of 4,772 acres classified as forestland enrolled in the Use Value Appraisal Program (also known as Current Use). For forestland to be eligible, participating owners must have a minimum of 25 contiguous acres to enroll in the program (in addition to the 2 acres surrounding any dwelling) and must manage the forestland according to the provisions of a 10-year forest management plan. UVA enrollment shows areas of known working lands (forest management and/or agriculture), lands that have a lien against development for the period in which the property is enrolled. For more information on UVA, as well as other forest topics, see the [Landscape-Based Forest Stewardship Planning – A Regional Approach](http://www.windhamregional.org/forestry) report available at <http://www.windhamregional.org/forestry>.



Policies and Recommendations

Policy 1: Carefully review all development proposals to ensure minimal negative impacts on Whitingham's natural resources.

Recommendation 1.1: Continue to review existing zoning bylaws and make changes as necessary to ensure techniques are in place to minimize negative impacts on the town's natural resources (Planning Commission).

Policy 2: Maintain the natural course, condition, or function of watercourses and shore lands except for necessary crossings for adequate bridges or culverts.

Recommendation 2.1: Provide information about best management practices that can be implemented voluntarily to comply with state water quality standards or to address water quality problems. (Conservation Commission, when established)

Recommendation 2.2: Continue to use road maintenance methods and materials that will maintain or improve water quality, such as those described in the *Vermont Better Backroads Manual*. (Selectboard and Road Commissioner)

Policy 3: Maintain undisturbed buffers of native vegetation along streambanks and shorelands.

Recommendation 3.1: Review and develop land use and development controls to ensure that development along stream banks and shorelines is controlled to prevent

point and non-point pollution, minimize adverse aesthetic impacts, and to protect riparian habitats. (Planning Commission)

Policy 4: Foster the protection and restoration of river corridors, floodplains, wetlands, and upland forested areas that attenuate and moderate flooding and fluvial erosion.

Recommendation 4.1: The town should be familiar with up-to-date ANR river corridor maps that delineate the land areas adjacent to streams and rivers that are required to accommodate a stable channel. (Selectboard, Planning Commission, Zoning Board of Adjustment, and Zoning Administrator)

Policy 5: Protect floodplains, river corridors, land adjacent to streams, wetlands, and upland forests through adoption and administration of flood hazard area regulations governing development in designated Special Flood Hazard Areas and river corridors, in order to reduce the risk of flood damage to infrastructure, improved property, people, and the environment.

Recommendation 5.1: The town should be familiar with Flood Insurance Rate Maps (FIRMs) that delineate areas that could be covered or inundated by water during flooding. (Selectboard, Planning Commission, Zoning Board of Adjustment, and Zoning Administrator)

Policy 6: Avoid new development in identified flood hazard, fluvial erosion, and river corridor protection areas. If new development is to be built in such areas, it should not exacerbate flooding and fluvial erosion.

Recommendation 6.1: The town should regulate any new development in identified flood hazard areas, fluvial erosion hazard areas, and/or river corridors to ensure that development does not exacerbate flooding and fluvial erosion and extend these provisions to development activities that might increase the amount and/or rate of runoff and soil erosion from upland areas. (Selectboard, Planning Commission, Zoning Board of Adjustment, and Zoning Administrator)

Policy 7: Encourage the protection and restoration of floodplains and upland forested areas that attenuate and moderate flooding and fluvial erosion.

Recommendation 7.1: The town should update the Flood Hazard Area Regulations to include regulation of river corridors and include provisions for advance notification of and specific limits on new development activities in identified flood hazard areas, fluvial erosion areas, river corridors and/or upland forested areas based on regulatory templates developed by the ANR Department of Environmental Conservation Rivers Program. (Selectboard, Planning Commission, Zoning Board of Adjustment, and Zoning Administrator)

Policy 8: Encourage flood emergency preparedness and response planning.

Recommendation 8.1: The town should pursue a flood resilience management approach whose essential components are to identify and map flood hazard areas, fluvial erosion hazard areas, and river corridor protection areas based on stream geomorphic assessment studies and maps provided by the Vermont ANR Rivers Program and designate those areas for protection to reduce the risk of flood damage to infrastructure and private property. (Selectboard, Planning Commission, Zoning Board of Adjustment, and Zoning Administrator)

Policy 9: Protect ground water resources throughout town.

Recommendation 9.1: Working with the Vermont Geological Survey and the Windham Regional Commission, map locations of aquifers and the land surface area needed to protect groundwater in Whitingham (Planning Commission).

Recommendation 9.2: Once groundwater resources are mapped, develop specific techniques to protect groundwater in Whitingham (Planning Commission).

Policy 10: Protect mineral resources, when identified, and regulate their removal.

Recommendation 10.1: Review and update, where necessary, standards regulating the extraction of mineral resources, impacts on adjacent uses, and the reclamation of the site. (Planning Commission)

Policy 11: Protect Whitingham's wildlife habitat and discourage the fragmentation of large forest blocks areas.

Recommendation 11.1 The town should consider the feasibility of protecting designated Critical Corridor Areas to maintain a network of connected habitat areas that includes undeveloped lands, conserved lands, and lands under long-term stewardship. (Planning Commission and Selectboard)

LAND USE

Land use in Whitingham is characterized by large rural areas and compact settlement in villages. The following series of charts are taken from the response to the land use related questions in the 2015 survey. A majority of the survey respondents (Figure 9) would like to protect the historical resources and architectural character of the town (77%); encourage management and protection of the productive agricultural lands (80%); encourage management and protection of productive forests (84%); and support keeping commercial development in the villages. Over 60 % of the respondents (Figure 10) felt that light industry, agriculture, craft/art shops, home occupations, educational institutions, single-family homes and affordable housing are the most important type of development for the town. The respondents felt that the effects on adjacent property, natural environment and loss of agricultural land were the most important criteria to evaluate proposed development for the town.

Figure 10: Land Use Responses

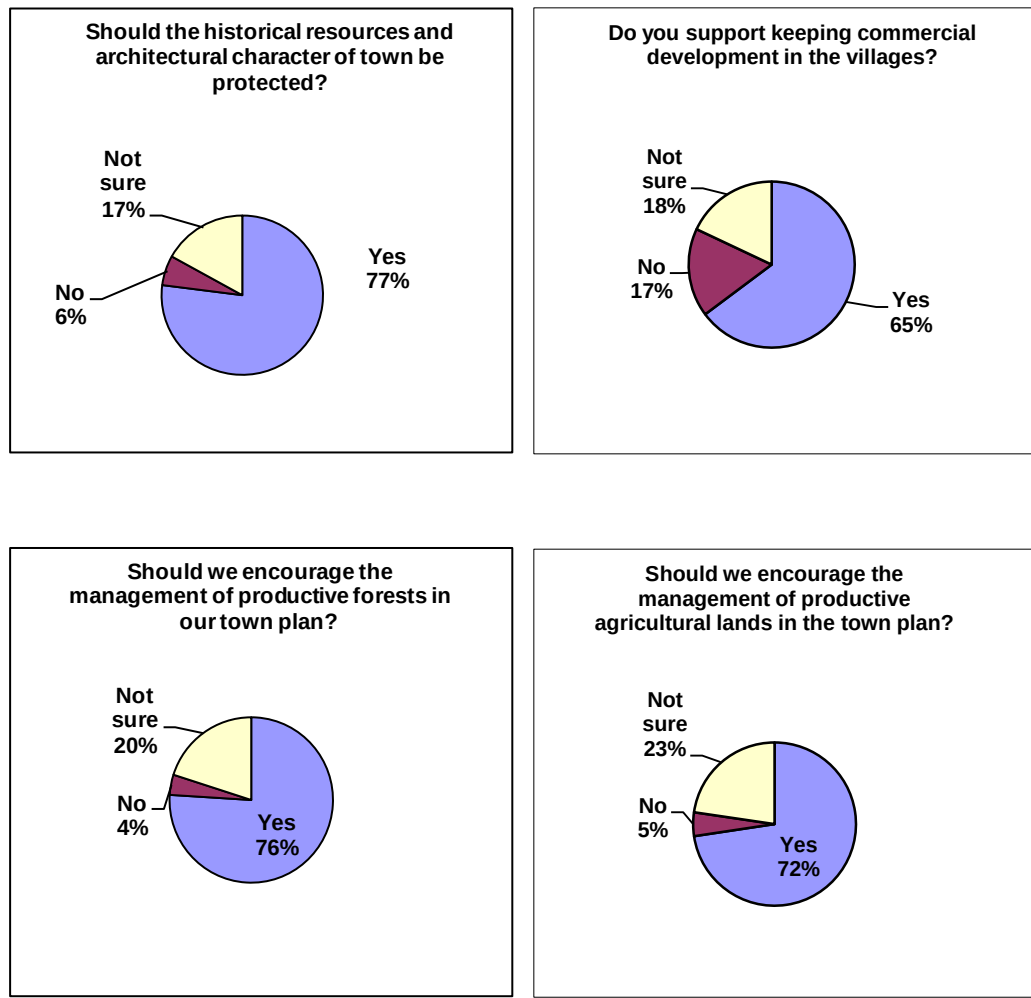
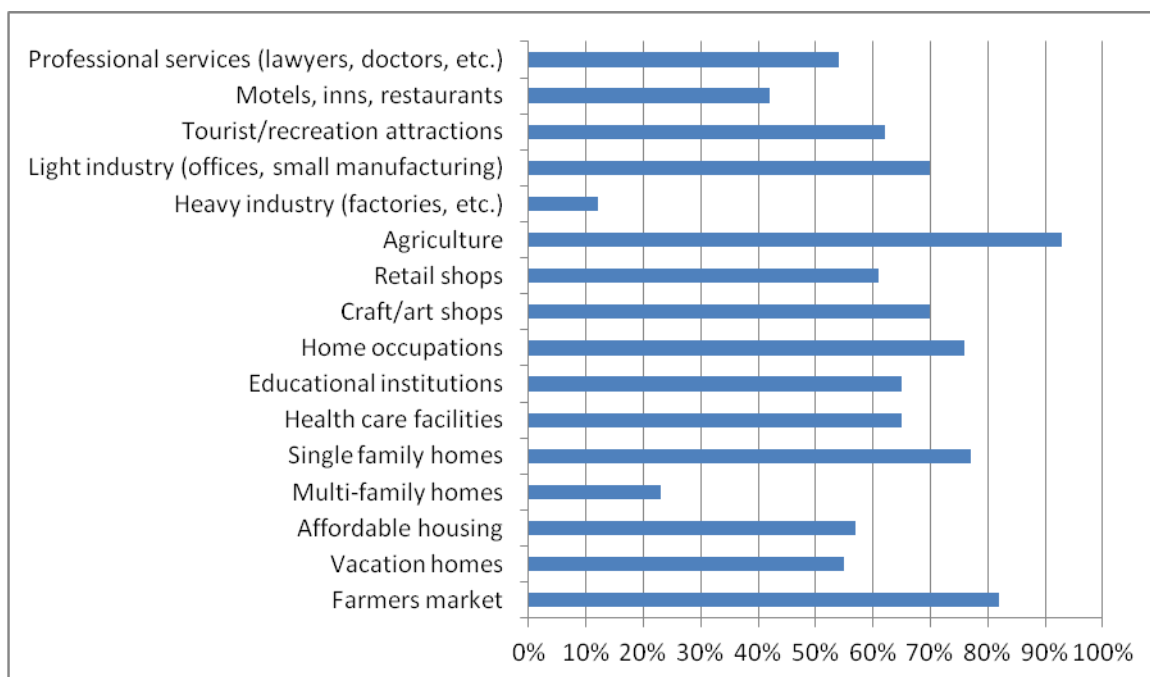


Figure 11: Important Development in Town



Existing Land Use

The Town of Whitingham contains 25,046 acres and its existing land use/land cover was mapped using aerial photographs, orthophotos and GIS data in 2002. Whitingham's existing land use/land cover and acreage at that time are summarized in the following table.

Table 12: Land Use/Land Cover and Acreage

Land Use Classification	Acres	% of Total Acres
Forest	20,021	79.94
Industrial	9	0.04
Open/Agriculture	2,481	9.91
Residential	890	3.55
Village	84	0.34
Water	1,524	6.08
Public/government	37	0.15
Total	25,046	100

Land use in Whitingham is characterized by large rural areas in which compact settlement exists chiefly in Jacksonville and Whitingham villages. A concentration of seasonal residential development is located on the eastern shore of Sadawga Lake. Elsewhere, homes are located along rural routes in a linear pattern. Some of these homes are located on small parcels, clustered together and surrounded by working lands.

Woodlands are predominant in Whitingham and cover a vast acreage of land. These forestlands provide the scenic backdrop for the town, as well as provide wood and maple products, game for hunting, and recreation. Most forestland is in private non-industrial ownership.

Agricultural lands are located principally in the eastern two-thirds of the town. A few working dairy farms still exist, along with several small farms operating chiefly in livestock, hay and maple sugaring.

Whitingham has several land areas that are conserved, either publicly or privately. Great River Hydro currently owns 4,502.6 acres of forestland, chiefly surrounding Harriman Reservoir, on which the Vermont Land Trust (VLT) holds a conservation easement. The State of Vermont (Department of Fish and Wildlife) owns and manages the 800-acre Atherton Meadows Wildlife Management Area. These forestlands are used for recreation, wildlife habitat, and timber harvesting. The Vermont Land Trust also holds conservation easements on approximately 800 acres of private land (this does not include Great River Hydro easements) in six different locations in town. There are about 230 acres of new projects in three different locations since 2010 (according to VLT's data).

Approximately one-fourth of the Town of Whitingham is located within the Green Mountain National Forest (GMNF) Proclamation Boundary. This area of land is along the western edge of the town and includes already conserved Great River Hydro and Atherton Meadows properties. Lands within the Proclamation Boundary can be purchased by the United States Forest Service for inclusion in the GMNF if the federal government is interested and the town agrees to the sale.

In the late 1970's, the State of Vermont created the Use Value Appraisal Program, better known as Current Use. The Current Use Program is administered by the VT Department of Taxes and offers landowners use value property taxation based on the productive value of land rather than the traditional "highest and best" use of the land. Approximately 19% of overall town acreage is enrolled in the Use Value Program.

Scattered throughout the town are small to medium sized areas with poor soils and steep slopes. These areas present severe limitations to development. Other areas of the town have slight to moderate limitations to development. These areas can handle low to moderated density of development.

In 1969, Whitingham adopted its first Town Plan and zoning regulation. Last updated in 2014, the Whitingham Zoning Regulation provide the following Land Use Districts:

- Conservation
- Rural Lands
- Rural Residential
- Villages

Proposed Land Use

The proposed land use areas, defined below and found on the Proposed Land Use map, are a guide for the growth and development in the Town of Whitingham. In order to encourage a pattern of residential, working lands, commercial, industrial and recreational development that conforms to the goals and policies outlined in this Town Plan, the following land use classification has been developed and shown on the Proposed Land Use Map:

- Conservation
- Rural Lands
- Rural Residential
- Villages.

The Town Plan is the basis for the Whitingham Zoning Regulation, and therefore, the Zoning Regulation should be modified when found to be inconsistent with the stated land use policies and future vision for the town.

Conservation

Conservation areas are large, essentially undeveloped areas without access to an improved public road and to necessary facilities and services. They are predominantly forested and are important aquifer recharge areas and contain significant wildlife habitat. This class includes Great River Hydro and its successors' lands which are maintained for the purpose of power generation, reservoir and watershed protection, and public recreation under license granted by the Federal Energy Regulatory Commission; State of Vermont lands which are managed by the Department of Fish and Wildlife including Atherton Meadows (an 800 acre wildlife management area) and Lake Sadawga Access Area and Dam Site; Town Hill and Harriman Reservoir Boat Launch. Conservation areas should be used for forestry, low-intensity recreation and open space. These areas should be settled only at very low densities.

Rural Lands

Rural Lands are comprised of Whitingham's working lands and consists of farm, field and forestlands that are being used in a manner that provides an economic benefit. Many of these working lands also provide a scenic backdrop for the community and serve to maintain contiguous tracts of open space.

Rural Lands should continue to be used for agriculture, forestry, low-intensity recreation and open space. Despite a decline in agriculture, prime agricultural soils are nevertheless valuable, and the better areas need protection. Residential development should only occur at low densities. Development should be carefully planned to ensure that it does not prevent or infringe upon existing or potentially productive working lands and does not generate excessive municipal service demands such as road maintenance and the provision of fire service.

Rural Residential

The Rural Residential areas are those that are already committed to moderate density rural residential development, easily accessible from the existing road system, or that appear capable to be developed at a low to moderate density. Rural Residential areas should be used to accommodate a major proportion of the growth of year-round residences and vacation homes and associated uses.

The development of rural areas should not damage the natural environment and should not ignore the physical limitations to development. Agriculture, forestry, open space and recreational uses should be maintained and encouraged. Road construction should be carefully planned so as to respect the natural environment and to promote the clustering of houses on appropriate sites.

Villages

This class includes all lands within the villages of Jacksonville (incorporated boundaries) and Whitingham where a concentration of residential, commercial, industrial, and governmental uses are served by roads, sewer, and power. Appropriate village uses include residential and commercial uses, public buildings and public facilities, and associated services. Small, light industrial uses may be accommodated as well; but they should be carefully planned to minimize undesirable impact on village character.

In keeping with Whitingham's Town Plan goals "to maintain characteristic pattern for settlement typified by villages within a rural setting" and "to encourage compatible development activity that will best serve public and private interests," it is also the intent to improve the ability of the Whitingham and Jacksonville Villages to attract residents and businesses by enhancing their livability and sense of place, as well as safe parking and sidewalks. New and renewed village designations will follow statutory rules regarding these designations as above, including diverse housing needs, support reliable and economical transportation plans, minimize strip development, and increase economic development activities, such as the seasonal farmers' market.

The Village Center designation of Whitingham was renewed by the State of Vermont on February 25, 2013 and again on January 22, 2018. While Whitingham Village has seen some improvements, there remains work to be done.

Jacksonville received approval as a new designated Village Center on January 27, 2014; it is due for renewal in 2019. The designated Village Centers are shown on the Downtown Board-approved maps attached to this Plan.

Areas of Special Concern

The following areas, which are highlighted on the Proposed Land Use map, have been identified as Areas of Special Concern. These areas should be considered by landowners in their own planning, as well as further studied by the Planning Commission to determine if regulatory approaches are warranted.

Critical Corridor Areas

The Critical Corridor Areas comprise lands that link larger patches of habitat within a landscape, allowing the movement, migration, and dispersal of animals and plants in a larger region. Critical Corridor Areas highlight those locations along roads or between large blocks of probable contiguous habitat that have been identified by the Vermont Wildlife Habitat Suitability analysis as probable linkage habitat⁴. Regardless of the land use district, new uses that are proposed must respect the sensitive nature of the system and must be designed to enhance the values of the area.

Policies and Recommendations

Policy 1: Provide for effective land development opportunities while allowing for innovative land solutions in the Zoning Regulation.

Recommendation 1.1: Review the existing Whitingham Zoning Regulation and propose amendments to: (Planning Commission)

- refine and implement the Proposed Land Use map;
- create development review standards for signs, parking, landscaping, and Critical Corridor Areas;
- allow for expanded and well-defined opportunities for home occupations throughout the Town;
- increase allowable accessory dwelling size.

Policy 2: Continue to use conservation areas for multiple resource use.

Recommendation 2.1: Propose zoning amendments that outline appropriate uses and development review standards for these conservation areas. (Planning Commission)

Policy 3: Maintain and encourage agriculture, forestry, and open space and recreational uses in rural lands.

Recommendation 3.1: Investigate uses of regulatory and non-regulatory tools to protect working lands (Planning Commission)

Recommendation 3.2: Explore and utilize various farms and forestland protection strategies. (Planning Commission)

Recommendation 3.3: Explore using clustering of buildings and structures as a design tool to provide an appropriate means for conserving open space and natural resources. (Planning Commission)

Policy 4: Encourage both infill development and appropriate reuse of vacant or underused existing structures in the Villages. Allow new development,

⁴ This includes areas in Whitingham and adjacent towns that had medium to high probability of wildlife habitat.

alterations or reconstruction only if it enhances the village setting and is compatible with in-village residences and is planned with regard to available services and facilities.

Recommendation 4.1: Review village zoning district boundaries and the capability of lands and facilities within and adjacent to the villages to determine if boundaries could be expanded. (Planning Commission)

Policy 5: Continue to support the traditional role of the Jacksonville and Whitingham Villages as a focus of town economic, cultural and social activities and to provide for mixed residential and commercial/small industrial uses. Of critical importance is the preservation of the historic character of the villages.

Recommendation 5.1: Facilitate landowner access and understanding of State, Federal, and non-governmental incentive programs for structure rehabilitation and historic preservation. (Planning Commission and Zoning Administrator)

Recommendation 5.2: Encourage compliance with Junk Ordinance and work with village property owners to improve deteriorating village property. (Selectboard)

Recommendation 5.3: Create a walkable community by working toward safe and convenient pedestrian access to all portions of the villages. (Planning Commission and Selectboard)

Recommendation 5.4: Maintain and renew Village Center designations for Whitingham and Jacksonville. (Planning Commission and Selectboard)

Policy 6: Restrict strip development and minimize its negative impacts.

Recommendation 6.1: Utilize techniques such as shared access points, increased landscaping, sign control, and emphasis on pedestrian movement. (Planning Commission and Selectboard)

Policy 7: Target public conservation efforts to the Critical Corridor Areas.

HOUSING

Existing Conditions

The Community Profile section of this plan provides information and statistics about population and housing in Whitingham.

Key housing figures from the 2010 US Census include:

- Housing growth has been relatively equal with population growth.
- 87% of Whitingham's housing units are single family homes.
- 25% of all the housing units in Whitingham were built before 1940.

In the 2015 Community Survey respondents were asked to rank the type of land use patterns they would prefer for housing development from 1 to 3 (1 being the most important). Large single-family lots were the most important, rating at an average of 2.31 for 25+ acres, 2.08 for 10-24 acres, and 1.67 for 3-9 acres, followed by high density near villages (2.07) and clustered housing with large plots of open land (2.10). The least important was high density in specific areas outside of villages (2.42).

Housing Affordability

Traditionally, housing is considered affordable when a household spends no more than 30 percent of its gross income on housing. Housing costs for renters include rent and utilities (heat, hot water, trash disposal, and electricity). Housing costs for homeowners include a mortgage, ever rising property taxes, property insurance, utilities, and maintenance.

There are several factors to consider when discussing housing affordability in Whitingham. First, what type of dwelling is it: a rental property, a vacation home, or does a full time resident reside in the dwelling? Furthermore, is the full time resident on a fixed income or a single head of household, or a family? Essentially, who is it that can or cannot afford the housing and what are the implications thereof?

In the 1980's and 90's there was high demand for second homes in Vermont by non-residents. This factor has significantly contributed to high housing costs in Whitingham. The inflationary effect it had on local housing and development can still be felt today by local residents. "As the population increases, so do housing costs as there is increased demand and a limited supply. The median price of a single-family home in Vermont rose 97 percent between 1996 and 2006, and the average Fair Market Rent for a modest two-bedroom apartment rose 42 percent. (Klyszeiko, 2007)"

*Klyszeiko, Casey. (September, 2007). *Housing and the needs of Vermont's aging population: Third in a series of VHFA issue papers*. Retrieved from: www.vhfa.org/documents/housing_elderly.pdf

According to *Windham Regional Seasonal Housing Profile, 1980-2010*, in 1980, there were 582 housing units in Whitingham, 20 of those units, or 3.4% of them, were only used seasonally. From 1980 to 2010 there was a steady rise in newly built housing units. By 2010 there were 918 housing units total, out of which 304 were for seasonal use, bringing the seasonal housing percentage up to 33.1% of Whitingham's dwellings.

In 2007, *The Vermont Department of Taxes* reported, the median purchase price for a primary residence in Whitingham (based on 15 home sales) was \$185,000 with an average purchase price at \$159,643. To purchase a home at the median price, an annual household income of \$58,819 would be needed. According to the *2010-2014 American Community Survey 5-year Estimates*; Vermont's Median Household Income in 2014 was \$54,447, while here in Whitingham the Median Household Income was lower than the State average, at just \$49,514.

Special Needs Populations

Three specific subsets of the population in Whitingham that may be struggling to afford housing in the community are the elderly, single parents and our special needs population.

- According to the *Profile of General Population and Housing Characteristics: 2010*, in 2010 there were 150 households in Whitingham with individuals 65 or older. Thirty percent of elder Americans relied on Social Security for more than 90 percent of their annual incomes in 2004. In 2005, the average annual social security payment for retired workers in Vermont was only about \$12,000. That means many of our elderly are living below the poverty line, unless they have home equity, a retirement, pension, or land to lease or sell.
- In 2010, there were 52 Single Parent Households with children under 18. In a single parent home, the Male Median Income is \$32,685, and the Female Median Income is \$22,426. Therefore, in Whitingham, the average single mother in 2010 could only afford \$560 a month towards housing.
- Other populations to consider are those with special needs; physically and mentally impaired persons and the homeless. In addition to requiring certain services that differ from the typical households (i.e. physical accessibility, assisted living), these groups also tend to have limited potential for income, and therefore affordable housing is of great importance to them.

There are several factors that have contributed to these increased housing costs, including higher costs of labor and building supplies, costs related to building permits, and costs related to providing waste and water systems and utilities that meet applicable standards. An additional factor which made a significant contribution toward high housing costs in the late 1980's and that is still felt today is the inflationary effect caused by the demand for second homes in Vermont by non-residents.

The hourly wage a household must earn in order to afford a rental unit at Fair Market Rent and only pay 30% of its income towards housing costs varies depending on the number of bedrooms in a unit. Fair Market Rent in 2009, for a two-bedroom unit in Windham County, was \$924. This monthly cost requires a renter to earn an hourly wage of \$17.90 (assuming a 40-hour work week) to afford. This would equal an annual income of \$36,960. Table 13 helps put the affordability gap for rental units in perspective.

Table 13: Occupational Wage Estimates for the Southern Balance of Vermont, May 2015

Occupation	Mean Hourly Wage	Mean Annual Wage
Recreational Workers	\$15.01	\$31,210
Cooks, Restaurant	\$14.37	\$29,890
Maids and Housekeeping Workers	\$12.12	\$25,210
Child Care Workers	\$12.20	\$25,380
Bookkeeping, Accounting, and Auditing Clerks	\$15.25 not incl. - '15	\$31,720
Carpenters	\$21.17	\$N/A
Elementary School Teachers	N/A	\$52,100
Police and Sheriff Patrol Officers	\$23.15	\$48,150

(Source: Vermont Department of Labor (<http://www.vtlni.info/public/occprjsbos.xls>))

In addition to home prices rising, homeownership costs are also increasing. According to Vermont Department of Public Service's Fuel Price Report in December 2003, No. 2 Fuel Oil (commonly used for home heating) was on average \$1.34 per gallon. This rose to an average \$2.87 per gallon in December 2008, an increase of 114% in five years. In May 2016 it was \$2.04; as of October 2016, it was \$2.24.

Affordable Housing Programs

Currently, housing affordability in Whitingham is addressed through regional programs. The Windham & Windsor Housing Trust has created and manages affordable housing through a variety of programs that serve low and moderate-income residents. Sadawga Springs Apartments, nine units of permanently affordable housing, located in Whitingham Village was completed by the Trust in 2007.

Windham & Windsor Housing Trust can also provide income-eligible homebuyers with a subsidy towards the purchase of a qualifying home. In addition, homebuyers under this program have access to below market rate mortgages as well as financial assistance with closing costs. Southeastern Vermont Community Action (SEVCA) provides referrals to area shelters, landlord lists, and assists in completing applications for affordable housing possibilities. SEVCA also operates weatherization and fuel assistance programs for income-eligible homeowners and renters. West River Habitat For Humanity (WRHFH) builds simple, affordable, houses together in partnership with families in need and completed their first house in Whitingham in 2006.

The town is currently engaged in an ongoing revolving loan fund (Housing Rehabilitation Committee) with the towns of Marlboro and Halifax which is aimed at providing low interest loans, addressing the housing repair needs of lower income residents in town. These needs might include roofing, foundations, wells, septic systems, and heating systems. The Housing Rehabilitation Committee has discussed investigating affordable housing projects, should separate funds become available.

The Southeast Vermont Housing Rehabilitation Loan Fund, based at the Windham Housing Trust, also provides loan funding for low and moderate-income homeowners to maintain safe and affordable housing. This source of funding is available to co-fund a

project with the Housing Rehabilitation Committee, or if the local program does not have funds available, be a source of funds.

Housing Needs

It is important to assure that existing and future town residents and the workforce are served by a range of housing opportunities. Whitingham's special needs population has grown and if this trend continues, it could result in an increased demand for lower rents and more affordable housing. The costs of developing housing combined with the high cost of raw land indicate that the free market cannot provide affordable housing. If the town wishes to accommodate the housing needs of a diverse population then public or private programs may be needed to assist the free market to meet this community need.

Policies and Recommendations

Policy 1: Plan for a diversity of housing types and coordinate it with the adequate provision for public utilities, facilities, and services.

Recommendation 1.1: Inform homeowners about the change to state law that encourages development of accessory apartments and increase the allowable size of such (Planning Commission)

Recommendation 1.2: Work with the Windham Regional Commission on the housing needs assessment for the region. (Planning Commission)

Recommendation 1.3: Investigate whether any public land or buildings could be used for the development of affordable housing. (Planning Commission)

Policy 2: Promote the creation and preservation of housing that is and will continue to be affordable for all socioeconomic groups within the community.

Recommendation 2.1: Increase the number of affordable housing units while providing information and recommendations on local housing needs. (Planning Commission and Selectboard)

Recommendation 2.2: Continue the town's participation, with the towns of Marlboro and Halifax, on the Housing Rehabilitation Committee. (Housing Rehabilitation Committee)

Recommendation 2.3: Investigate working with the Southeast Vermont Housing Rehabilitation Loan Fund to expand housing rehabilitation options for Whitingham's residents. (Housing Rehabilitation Committee)

Recommendation 2.4: Support the use of public resources (such as the Vermont Community Development Program and locally-based Housing Rehabilitation Committee) to provide financing to lower income residents to maintain their housing. (Planning Commission and Selectboard)

Recommendation 2.5: Employ the services of existing non-profit organizations (such as the Windham & Windsor Housing Trust) for the administration of affordable housing. If there is local initiative and interest, establish a local community land trust. (Selectboard)

Policy 3: Support affordable residential development proposals of non-profit organizations (such as the Windham & Windsor Housing Trust) as well as those of private-sector developers.

Recommendation 3.1: Utilize reduction of permit fees, allocation of public sewer services, donation of public lands or buildings, and other techniques to guarantee the long-term affordability of the affordable housing developments. (Housing Rehabilitation Committee)

Policy 4: Support the housing needs of special populations such as the elderly, low income, and residents with disabilities.

Recommendation 4.1: Assess the need for special population housing and establish future planning criteria based on results. (Planning Commission)

ECONOMIC DEVELOPMENT

Historically, Whitingham's economy was based on small-scale manufacturing (principally wood products), forestry, agriculture and mills. Today, many of these traditions of Vermont's working landscape are still an integral part of our local economy and thriving, often by the same family for generations including the Corse, Morse and Allan/Reed Farms. New farms such as Millie's Heritage Farm are also thriving.

The Town of Whitingham's labor force ranges from large scale businesses to home industry. Large companies include Riggs Distler and Great River Hydro (power company). Sawyer Bentwood is a mid-sized local business. The Twin Valley Middle/High School and the town provide a strong employment base. Others travel to surrounding towns as far away as Bennington, Brattleboro, Greenfield and North Adams. Many locals work in Wilmington and Dover providing a variety of services related to the ski industry at Mount Snow and Hermitage Club. A large percentage of locals are self-employed and work out of their homes including IT/computer operations, consulting, art/crafts, artisanal foods, light manufacturing and other small businesses. Some of these small businesses include construction companies, plumbers, carpenters and electricians, loggers and excavators.

The Village of Jacksonville is the major commercial center. Town government activities, a utility company, small contractors, gas and service station, machinists, general store, manufacturers, gift shops, winery and brewery are based there. The Village of Whitingham contains a furniture parts manufacturer, a metal fabricator and historical museum. Both villages have a post office, firehouse, sewer treatment plant and numerous homes. The Town of Whitingham is known for some of the best pottery makers.

Since Tropical Storm Irene in 2011, Whitingham has seen a great deal of building renovation, business expansions, and new business owners. New to the Village of Jacksonville are Dean's Auto Body, Spoonwood Cabin Creamery, The Village Beauty Shoppe, and J'ville Brewery. The Jacksonville General Store has new ownership.

Since 2013 a Farmers Market has been held in the Municipal Center lot on Friday, late afternoons during the summer months. This small group of dedicated business owners are working together to create a true Vermont experience for their families, locals, second homeowners and visitors alike.

Whitingham has an active Economic Development Group (EDG) looking for new opportunities to increase local business investment, development and jobs. Looking forward, the EDG is seeking to attract and capture much of the recreation industry happening further north in Wilmington and Dover by promoting that Whitingham is well known for its swimming and boating on Harriman Reservoir; as well as ice fishing in the winter months. Miles of recreational trails are available for hiking, biking, snowshoeing, cross country skiing and snowmobiling.

Employment

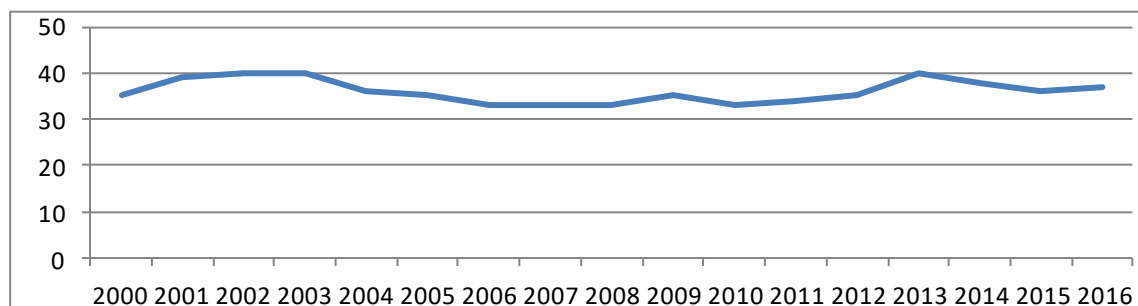
The 2017 Vermont Department of Labor estimated that 710 residents of Whitingham were in the labor force (individuals 16 years and older) with 690 employed and 20 unemployed (2.3% unemployment rate). Approximately, 30% commute out to Dover/Wilmington and 15% to Brattleboro. This data indicates that Whitingham primarily “exports” labor to other communities.

Whitingham residents are employed in a variety of industries. The 2008-2012 American Community Survey indicated that the largest percentage (27%) of Whitingham residents are employed in education, health and social services fields; 10% in retail trade; and 10% in construction, and 11% in manufacturing. The employment data can be found in the Community Profile section

Existing Business

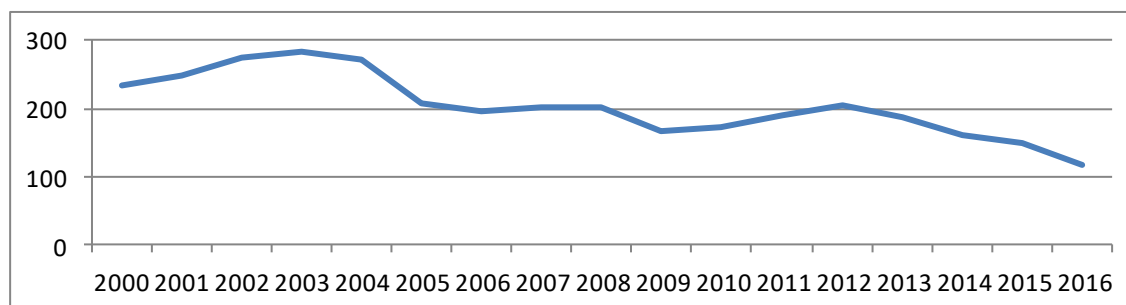
In 2008, there were approximately 33 establishments in the community employing 209 workers in a variety of industries and jobs. The number of establishments and employees peaked in 2002 and 2003 at 40 establishments with 274-284 employees (Figure 12). In 2007, 28% of the businesses in Whitingham were part of the construction sector (Figure 13).

Figure 12: Whitingham Business Establishment Trends: 2000-2016



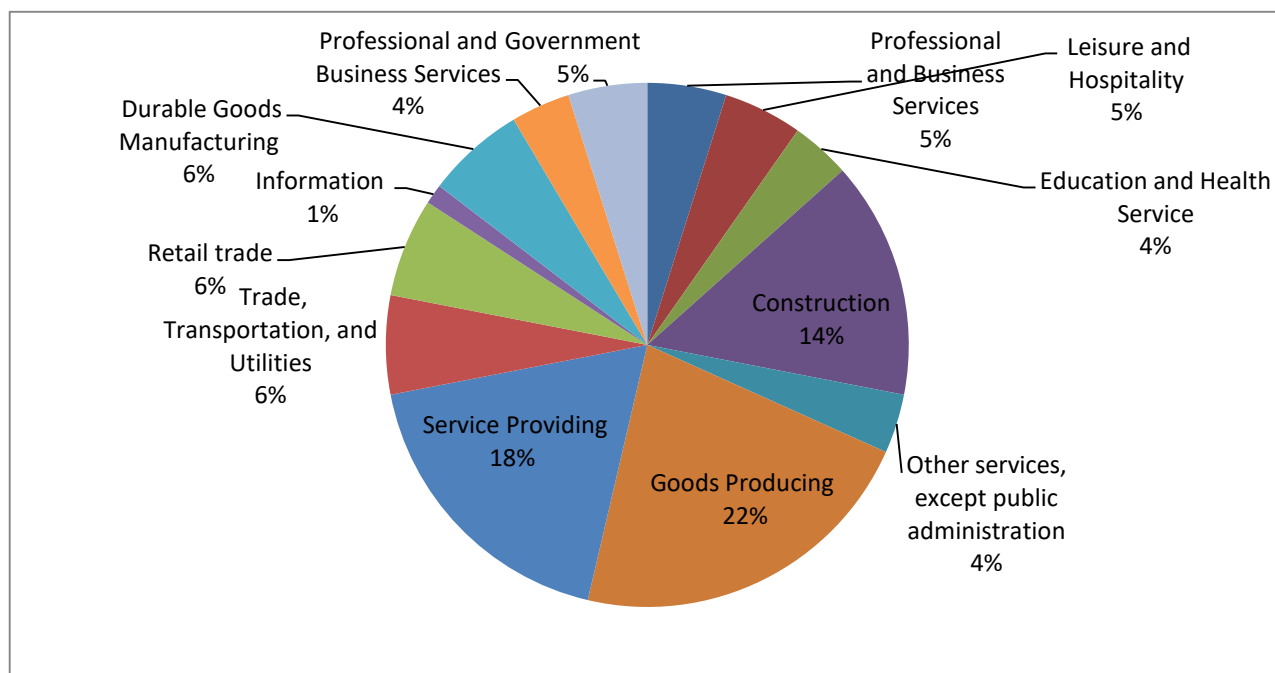
(Source: Vermont Department of Labor)

Figure 13: Whitingham Business Employment Trends: 2000-2016



(Source: Vermont Department of Labor)

Figure 14: Whitingham Business Establishments by Sector 2016



(Source: Vermont Department of Labor)

Agriculture and Forestry

Several dairy farms and maple sugar products businesses continue to operate. Whitingham has seen the growth of small farms raising livestock. Much of the land used that supported the dairy farms of the past is still responsibly managed and supports the small farms of today. The trend in agriculture throughout the State has been for farmers to seek small-scale, diversified, “Farm to Table,” and direct-market opportunities.

Agricultural, forestry and pastoral qualities remain important to the town. Whitingham’s working lands will continue to provide varied opportunities for farm and forestry-related employment. Not only do these land-based industries provide employment opportunities, but they also contribute to a quality of life in Whitingham.

Economic Development Strategy

When outlining an economic development strategy for Whitingham, it is important to balance the desire to increase income, employment, and fiscal strength of the community with the desire to maintain Whitingham’s small-town, rural character. Economic development is the process of creating wealth through mobilizing human, capital, financial and natural resources to generate marketable goods and services. Economic development is successful when it is linked to town efforts involving a partnership of citizens, private enterprise and local government. Diversifying Whitingham’s economy will involve retaining and expanding existing businesses and industries and encouraging new ones to locate in Whitingham. The Economic Development Group has been working to create incentives to help grow the economy here in Whitingham.

Policies and Recommendations

Policy 1: Plan for and promote development of small businesses including home industries, home-based work, and entrepreneurial ventures that fit into Whitingham's small-town rural character.

Recommendation 1.1: Improve the quality and range of cell and internet services.

Recommendation 1.2: Create incentives to draw businesses to re-develop, expand, or start new in Whitingham.

Recommendation 1.3: Redevelop town website and promote incentives and lifestyle of Whitingham to draw families.

Policy 2: Maintain and strengthen the economic climate for agriculture and forest products industries.

Recommendation 2.1: Work with "Farm to Table" organizations. Continue to support the Farmer's Market in Jacksonville (Economic Development Group).

Recommendation 2.2: Whitingham should become a designated "right to farm" community.

Policy 3: Support tourism that draws on the character of Whitingham itself: its beauty, culture, history, wildlife and outdoor recreation.

Recommendation 3.1: Expand and promote the existing trail system.

Policy 4: Assist local businesses by providing economic development information, permit guidance, and community facilities and services improvements when appropriate.

Recommendation 4.1: Review and update zoning regulation and other town ordinances and propose improvements, where applicable, to provide greater economic development opportunities and appropriate development review standards. (Planning Commission)

Recommendation 4.2: Work with the Vermont Downtown Program to help promote our designated Village Centers. Promote and take advantage of resources available through this program (Planning Commission and Economic Development Group).

Policy 5: Focus recruitment efforts on companies, which provide jobs that are stable, and year-round, with competitive wages and skills training programs, are environmentally conscious, and that support efforts to provide child care, family leave, and flex time.

Recommendation 5.1: Work with Southeastern Vermont Economic Development Strategies (SeVEDS) associated with the Brattleboro Development Credit Corporation to recruit young people and businesses to our area

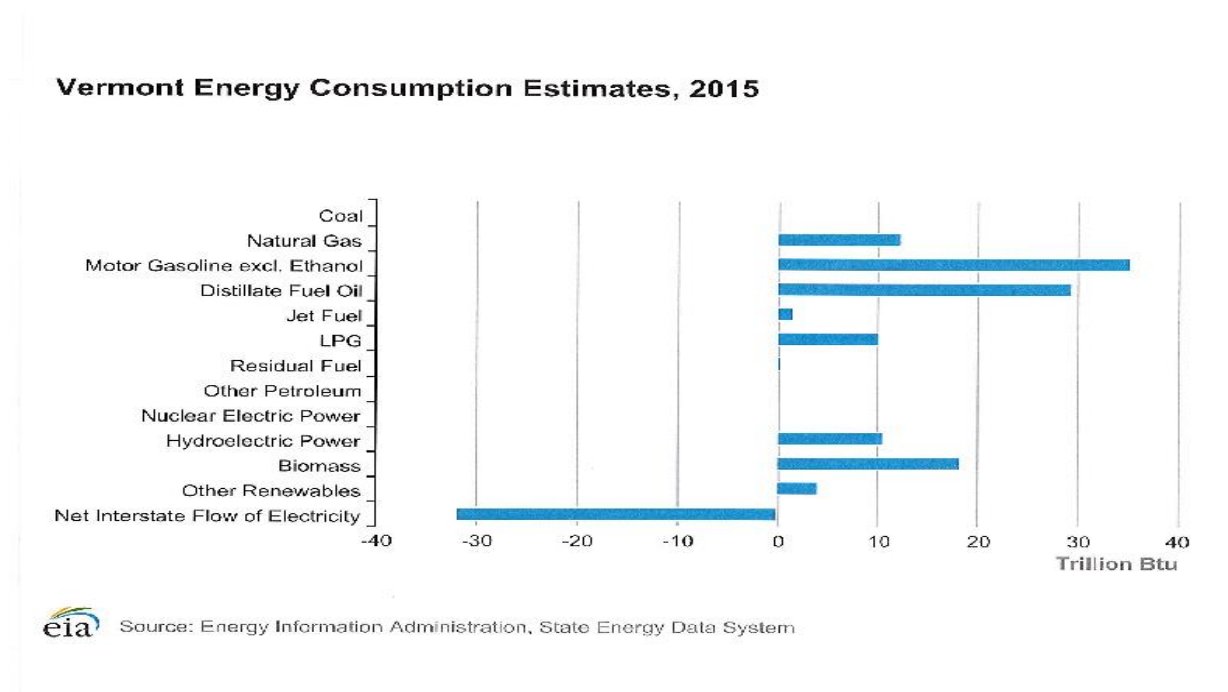
ENERGY

State and Federal government have far more control of energy supplies, sources, and pricing than regions or towns; however, regional and local efforts can play an important role in energy conservation and use of energy in residential and commercial development. Demand for energy in Vermont continues to grow, according to the *2016 Vermont Comprehensive Energy Plan*, and is driven largely by population growth, economic development, and increase in vehicular miles traveled. This section will focus on energy uses and sources and those local initiatives that Whitingham can take to have the greatest impact.

Energy Uses

Whitingham's energy use patterns closely match those of Vermont, which are shown in the following figure. In Whitingham, natural gas is not available, so the proportion of oil, propane, and electricity might be slightly higher than that shown for the entire state. According to the *2016 Vermont Comprehensive Energy Plan*, the per capita demand for energy in Vermont has shown steady growth. Between 1990 and 2004, per capita energy demand rose roughly 30%.

Figure 15: Vermont Energy Consumption by Selected Categories, 2015



Home heating and automobiles account for the greatest energy use. The residents of Whitingham use a variety of sources for home heating. According to the 2011-2015 American Community Survey 5-Year Estimates, 51% of homes in Whitingham were primarily heated with fuel oil or kerosene. Other home heating sources include LP Gas (15%), wood (28%), electricity (1%), and the remaining from other sources such as coal/coke, or other fuels. No homes were reported as being heated by solar energy. These figures only represent the primary heating source and do not illustrate whether or not there are multiple fuel sources being used.

Energy use for the town government is much easier to quantify, since the Town budget includes energy line items. Increases in the price of heating and transportation fuels has accounted for a close to doubling of energy costs in five years.

Energy Sources

The Village of Jacksonville Electric Company contracts with Green Mountain Power to operate its municipal electric distribution system. The system provides electricity to a large portion of the town, furnishing service to approximately 709 customers (as of 2017). The remainder of Whitingham is serviced by Green Mountain Power (GMP).

Renewable energy sources that are also available for use include solar, wood, and wind. Passive solar designs and siting can increase the use of solar energy and the conservation of other heating fuels in homes and businesses. No mechanical means are employed in passive solar heating. Instead, siting and design measures, such as south facing windows, open floor plans, and ventilation is used. Photovoltaic systems can be used to convert sunlight to electricity.

Wood is a relatively low-cost source of renewable energy. The Vermont Department of Public Service reported in 2000, the last time the state reported the data, that approximately 50% of the households in the region contained at least one wood-burning appliance.⁵ Continued rising oil and electric costs will likely spur new growth in the use of wood as a home heating fuel, both in the form of traditional cordwood and wood pellets. Whitingham has a large amount of woodland that, if effectively managed, could supply a reliable, local source of wood.

Wind is another source of renewable energy that is being developed in Vermont on both large and individual scales. There are several factors that contribute to the siting of large-scale wind-generating facilities: elevations greater than 2,000 feet, proximity to electric transmission lines, ridgeline locations, and wind speed. In 2002, Vermont Environmental Research Associates developed the “State of Vermont Wind Resources and Transmission Map” by overlaying US Department of Energy/National Renewable Energy Lab’s wind resource data with Vermont’s transmission line data to identify particularly promising sites for wind energy generation. While Whitingham does have elevations greater than 2000 feet it does not meet all of the criteria for the siting of a large scale generating

⁵ *Vermont Residential Fuel Wood Assessment 1997-1998*, Vermont Department of Public Service, December 2000.

facility. The neighboring town of Searsburg has a wind generation site that has recently been expanded into Readsboro.

Small, home-based wind energy systems are being used in the region, but high costs have restricted their growth. Towns may only regulate wind facilities that are not connected in any way to the public power supply. The height of wind turbines with blades less than 20 feet in diameter cannot be regulated unless a town specifically addresses them in its bylaws.

Net metering is one way in which homeowners can realize savings from operating a residential wind or photovoltaic system. Under net metering, a homeowner is permitted to connect suitable generating equipment to the public power grid. During periods when more energy is generated than the property is using, the metered amount of electrical energy provided to the grid reduces residential electric bills. In order to net meter, the homeowner must receive a Certificate of Public Good from the Vermont Public Service Board under Section 248.

Conservation may be our most readily accessible “source” of additional energy and is further discussed below. Avoiding increases in energy demand through effective conservation measures is equivalent to developing new sources. Estimates of how much energy can be conserved without significantly affecting lifestyles or convenience vary. Some estimates say that 20% is attainable by 2020, 10% of that in annual electricity and natural gas use alone.⁶

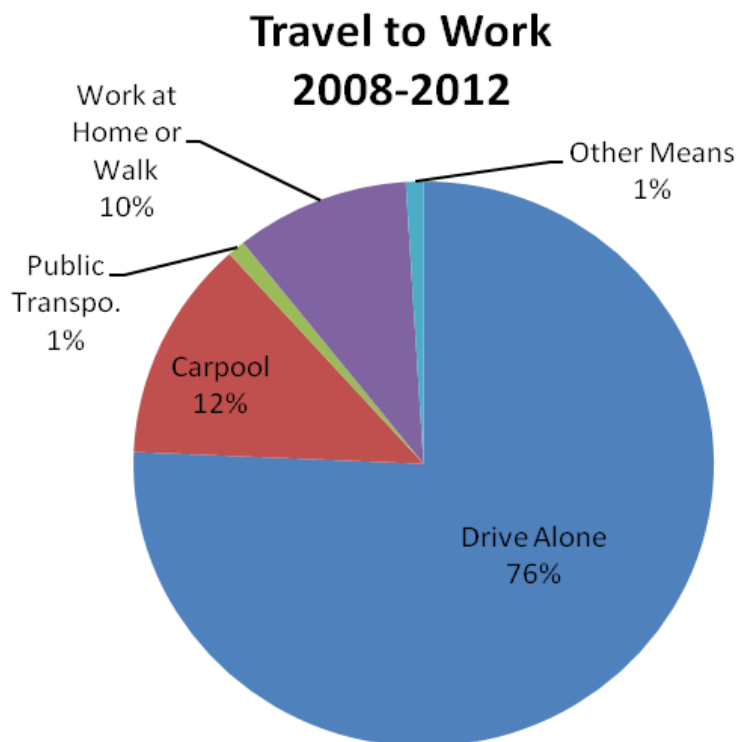
Energy Conservation

Regional and local efforts can play an important role in energy conservation. Reducing automobile dependency will go a long way towards reducing transportation energy consumption. In 2012, 76% of Whitingham residents commuting to work drove alone. As discussed in the transportation chapter, the Southeastern Vermont Transit Association (SEVT) operates a free public transit system (MOOver) within the towns of Dover, Wilmington, Wardsboro, Readsboro, and Whitingham and extending to Bennington and Brattleboro.

Effective land use planning can promote energy conservation. Concentrated development in the villages could reduce reliance on the automobile and encourage people to walk, rather than drive, to nearby destinations. The siting, design, and construction of buildings strongly influences the amount of energy needed for heating as well as the amount of electricity needed for lighting. Separate subdivision regulations, which could include such siting standards, have not been adopted in Whitingham.

Figure 16: Whitingham Residents Commute to Work

⁶ *Energy Efficiency Resource Standards: Experience and Recommendations*; American Council for an Energy-Efficient Economy; March 2006.



(Source: U.S. Census)

Energy savings can also be realized by retrofitting existing buildings with insulation, more efficient doors and windows, weather-stripping, compact fluorescent or LED lights, and energy efficient appliances. The following programs are available to residents of Whitingham:

- Southeastern Vermont Community Action (SEVCA) - SEVCA offers a variety of programs that are designed to assist low-income residents with their energy costs. These programs include seasonal fuel assistance, emergency fuel assistance, and free weatherization services to reduce heating costs. In addition, SEVCA also works with electric companies in order to prevent disconnection and help negotiate payment plans.
- Efficiency Vermont - Efficiency Vermont is the State's provider of energy efficiency services. They provide technical and financial assistance to electrical consumers for the purpose of improving the efficiency of existing and new facilities. Additional programs that support low-income housing and households are available through Efficiency Vermont.
- ENERGY STAR Home Rebates - Energy Star Homes meet strict energy efficiency guidelines set by the U.S. Environmental Protection Agency and U.S. Department of Energy. Efficiency Vermont provides free financial, design, and technical assistance to help build an ENERGY STAR qualified home. Benefits of being an ENERGY STAR home include financial incentives such as product rebates; utility savings; higher resale value; increased comfort and air quality; and other environmental benefits.

Policies and Recommendations

Policy 1: Maintain land use patterns that will conserve energy.

Recommendation 1.1 Review existing regulations and make changes as necessary to ensure techniques are in place to enhance energy conservation. (Planning Commission).

Recommendation 1.2 Encourage developers to construct new buildings, if possible, in locations that are sheltered from the wind and are oriented to the south. (Planning Commission)

Policy 2: Promote the use of alternative forms of energy that respect the built and natural environment.

Recommendation 2.1 Promote the use of wood as a space heating fuel source and for small scale industrial fuel uses as long as it meets all applicable emission standards. (Town Energy Coordinator, when appointed)

Recommendation 2.2 Evaluate, and as appropriate, propose amendments to the Zoning Regulation to regulate the siting of systems that make use of renewable energy, such as solar panels and wind energy systems. (Planning Commission)

Policy 3: Reduce energy consumption and increase energy efficiency.

Recommendation 3.1 Regularly assemble and distribute educational material. (Town Energy Coordinator, when appointed)

Recommendation 3.2 Provide residents with energy information at central locations in town regarding:

- conservation of water and other resources
- areas in the home which lose heat
- weatherization methods, appropriate materials, and installation techniques
- siting and design of new homes to maximize natural heating
- utilization of solar and water power. (Town Energy Coordinator, when appointed)

Recommendation 3.3 Encourage funding for energy programs to enable existing homes and community buildings to receive energy audit and weatherization services. (Town Energy Coordinator, when appointed)

Recommendation 3.4 Support car-pooling, public transportation, and van-pooling initiatives and programs. (Town Energy Coordinator, when appointed)

Recommendation 3.5 Promote and encourage pedestrian and bicycle use as alternative modes of travel. (Town Energy Coordinator, when appointed)

- Policy 4:** Construct new energy transmission corridors within or adjacent to existing utility and public rights-of-way.
- Policy 5:** Relocate existing distribution lines, whenever they are updated or replaced, within road corridor rights of way.

COMPATIBILITY WITH OTHER PLANS

When Vermont's Growth Management Law, Act 200, was passed in 1988, Vermont set up a system for communities to work in concert with their neighbors, and with agencies of state government, to shape the future. As envisioned, decisions on local growth issues are to be made by the local communities; decisions of regional significance are to be made by the region's communities working together. Town Plans are to be compatible with the Windham Regional Plan and compatible with approved plans of other municipalities in the region.

Compatibility with Adopted Town Plans

Whitingham shares borders with Halifax, Wilmington, and Readsboro. Whitingham relies directly on its neighbors and the other towns in the Windham Region to provide many of the services that townspeople depend on. Therefore, this plan strives to strengthen the relationships with the neighboring towns, as Whitingham shares rivers, roads and recreation facilities, as well as education and safety services with its neighbors.

Halifax (Plan adopted March 4, 2014): Whitingham shares its eastern border with Halifax. Halifax's vision for this area is rural residential and to accommodate significant portion of Halifax's residential growth, with special care to locate development off of productive agriculture lands. The southern and northern portion of land in Whitingham, along this border area, is proposed to be rural residential and compatible with Halifax. Lands along the center portion of the border in Whitingham are proposed as conservation and a small section is considered a critical corridor area and should be settled at very low densities. The towns of Halifax and Whitingham should further discuss their vision for the areas along this section of the border

Wilmington (Plan adopted August 19, 2015): Whitingham shares its northern border with Wilmington. Wilmington's vision for this area emphasizes conservation on the Harriman Reservoir that is compatible with Whitingham's vision. The remainder of the border area in Wilmington is proposed to be residential and will be compatible with the rural residential (eastern portion of the border) in Whitingham. The remaining central section of this border in Whitingham is proposed as conservation and rural. The towns of Wilmington and Whitingham should further discuss their vision for this area along the border.

Readsboro (Plan adopted August 26, 2015): Whitingham shares its western border with Readsboro. Whitingham's vision for this border area is conservation, which is compatible with the forest and resource districts on Readsboro's future land use map. Readsboro proposes the southern section and a small portion of the middle section as residential and to be developed at a moderate density residential development. The towns of Readsboro and Whitingham should further discuss their vision for this area along the border

Compatibility with the Regional Plan

The Regional Plan is intended to provide guidelines for the planning and coordination of change and development that will, in accordance with present and future needs and resources, best promote the health, safety, and welfare of the citizens of the Region. As proposed, the Whitingham Town Plan is compatible with the Windham Regional Plan adopted September 30, 2014.

IMPLEMENTING THE TOWN PLAN

Effective implementation of this Town Plan requires careful consideration and action by the townspeople, the Selectboard, Planning Commission, and other organizations. Managing growth is a conscious process of directing development to appropriate locations and in appropriate ways. The process requires a commitment on the part of a community to set a course for its future and to employ all the tools available to stay on that course. This Town Plan shall provide the framework for managing Whitingham's future growth. Tools and techniques for implementing the Town Plan follow.

1. **Priorities for Action:** In each of the Elements of the Town Plan a set of steps and responsible parties is included to give various town officials direction in implementing immediate needs in the town. Setting a schedule for those items in the next five years will guarantee implementation of the Town Plan.
2. **Land Use Regulation:** Land use regulation at the local level is most effective when it is specifically directed to public health and safety, the prohibition of unsuitable uses, the protection of water quality and highly valuable natural resources, and the provision of land use incentives for affordable housing. Whitingham has had zoning since 1969 and has been revised. The subdivision of land is enforced through zoning.
3. **Capital Budgeting:** Budgeting provides for control of development pressure by providing public services and facilities according to projected need and the town's ability to fund improvements. Capital budgeting also increases the efficiency and economy of town government by foreseeing and planning needed capital expenditures well in advance.
4. **Land Acquisition:** The most certain methods for protecting and assuring controlled public use of valuable recreational and scenic lands are by gift, purchase in fee simple, lease, or by acquisition of easements or development rights.
5. **Taxation:** Vermont's Use Value Appraisal Program (Current Use) enables landowners who choose agriculture or forestry as long term uses of their property to have that land taxed accordingly. The program encourages the maintenance of undeveloped lands for farming, forestry, and public recreation. Towns may also provide property tax relief for qualifying farm, forest, and open space landowners by adopting tax stabilization programs to reduce local property tax burden.
6. **Voluntary Action:** The following methods would ensure plan implementation: (1) privately-agreed restrictive covenants binding on purchasers of land; (2) special attention and consideration given by private landowners to the objectives of the plan and its policies when they decide to build or subdivide; (3) participation in the Act 250 review process by abutting landowners; (4)

- participation in the town planning process by organizations concerned with the future of Whitingham; and (5) setting aside a percentage of new development for affordable housing.
7. **Coordination with Whitingham Sewer Department:** The policies of the Sewer Department relating to sewer line extension, plant expansion, hookups and allocation of reserve capacity have definite impacts on future growth in Whitingham. Planning and coordination is a critical component in Town Plan implementation.
 8. **Coordination with neighboring towns:** Whitingham must take the initiative to work with its neighbors on issues that cross town borders. This is particularly important in dealing with such issues as transportation, housing, education, and land use.

TOWN PLAN MAPS AND EXPLANATIONS

Maps have been produced in large scale for the purpose of the Town Plan public hearings and office use. Smaller scale maps are enclosed as part of the Town Plan.

1. **Existing Land Use**-Includes networks of roads, surface waters, buildings, open lands, villages, forestland, residential, industrial, and public government.
2. **Community Facilities and Utilities** -Locations of community facilities and services including: waste water treatment facilities and service areas, electric transmission line, electric utility service area, town lands, school, town buildings, cemeteries, shore land, recreation trails, historic railroad corridor, and historic sites and districts.
3. **Transportation System**-Includes road network showing road classification (Class 1-4), paved and gravel roads, bus route and stops, municipal park and ride, and areas to enhance pedestrian facilities.
4. **Natural Resource**- Includes sites of natural or geologic interests, significant natural community, rare or threatened plant species, deer winter area, wetland, important farmland soil, generalize 50-foot contour, streams, ponds, reservoirs and lakes.
5. **Proposed Land Use**- Includes proposed areas for village, rural residential, rural and conservation land uses and critical corridor areas. Description of these proposed land uses can be found on the land use chapter.
6. **Whitingham Village Center renewal designation:** approved boundaries map
7. **Jacksonville Village Center new state designation:** approved boundaries map