

TOWN OF WHITINGHAM
VERMONT

TOWN PLAN

(Plan Adopted July 22, 2015)

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Vision Statement

According to the Whitingham Community Survey conducted in 2001 and again in 2008, 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 Lake Whitingham for its scenic and recreational values ranked very high for those who live and work in Whitingham. Lake Whitingham also plays a role in flood control particularly during the spring months. The electricity generating capacity of Lake Whitingham and the tax revenues paid to the Town by TransCanada and its successors continues 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 improve 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.

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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 Row 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. The highest actual elevation in town, between 2320 and 2340 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.

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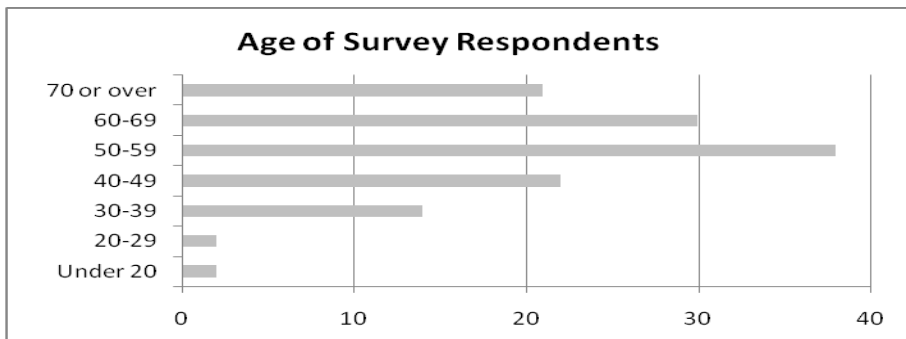
- 1923** Construction of Harriman Dam (former site of Davis Bridge); was reportedly the largest earth-fill dam in the world-200 feet high, 1,300 feet wide at base, and 1,250 feet long at the crest. By 1924, a 2.5-mile tunnel was completed to the powerhouse.
- 1927** Damage by flooding marked the end of the passenger service provided by the HT&W Railroad, 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 '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 Lake Whitingham 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 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.
- 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.
- 2007** Windham Housing Trust completed Sadawaga 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 number of houses in Jacksonville were flooded. There was severe damage to a number of bridges, as well to roads 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 6-year process of merging their school districts. The two towns now share one elementary school building located in Wilmington and one middle/high school building located in Whitingham. 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/>

Whitingham Community Survey

In 2008, the Planning Commission surveyed the community to assist them in the development of the Whitingham Town Plan. Results of the survey are found throughout the Plan in the appropriate section. Of the 125 people responded to the survey 71 % were year round residents, 96% own land in Whitingham and had the following age distribution:

Figure 1: Age of Survey Respondents



Respondents were asked the three things that they liked and least liked about Whitingham. Natural beauty, small town atmosphere and lack of urban congestion were the top three things respondents liked. While taxes, rundown areas of town and job opportunities were the top three items that respondents liked least about Whitingham.

Figure 2: Like About Whitingham

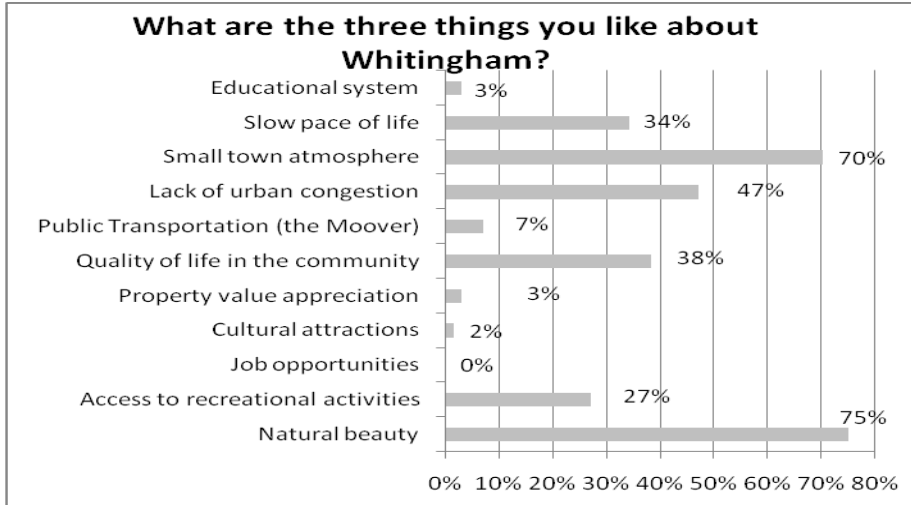
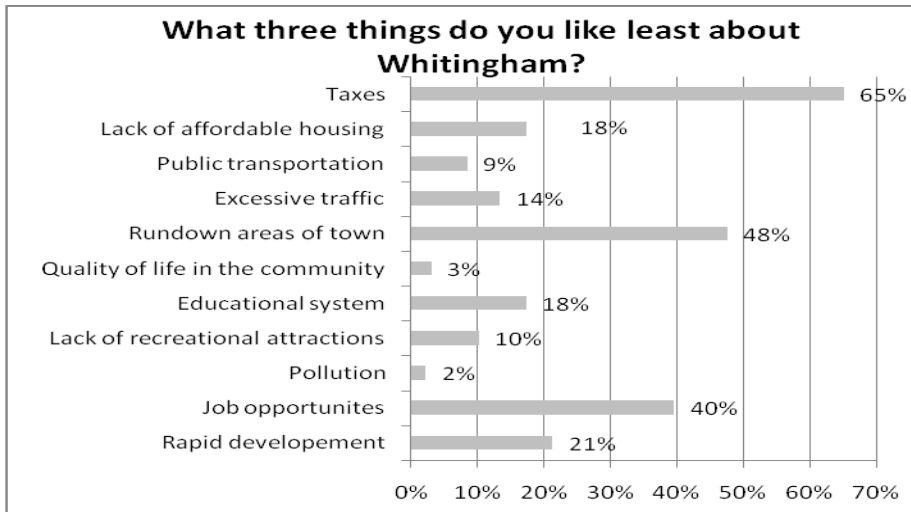


Figure 3: Like least about Whitingham



Population

According to the 2010 Census, The population of Whitingham rose from 1,298 to 1,357 people between 2000 and 2010, an increase of 5%. The 2000 US Census reported that Whitingham had a population of 1,298. In 2000, the Town ranked as the twelfth largest town in the Windham Region, which encompasses 27 towns. In 1990, the Town ranked eleventh with a population of 1,177. Table 1 illustrates the decennial populations beginning in 1900. After experiencing mostly decreases in population thru 1930s, Whitingham began to experience population growth. The most significant increase in population occurred during the period 1960 -1970 (20.6%). The following decade, 1970-1980, saw much less growth (3.2%). By 1980 the population matched the population of 1900.

Table 1: 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)

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 past two decades and make assumptions regarding future fertility, mortality, migration trends, and group quarter's population. These projections are subject to a degree of uncertainty because it is impossible to predict future trends, especially those related to migration. The population projections for Whitingham are shown in Table 2 and the data suggests that Whitingham will continue to experience a steady growth over the next 10years.

Table 2: Whitingham Population Projection 2000-2020

<i>2000 US Census</i>	<i>2010 Projection</i>	<i>2015 Projection</i>	<i>2020 Projection</i>	<i>% Change 2010-2015</i>	<i>% Change 2015-2020</i>
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 shows that for the past several decades Whitingham has experienced steady population growth while several neighboring towns lost population.

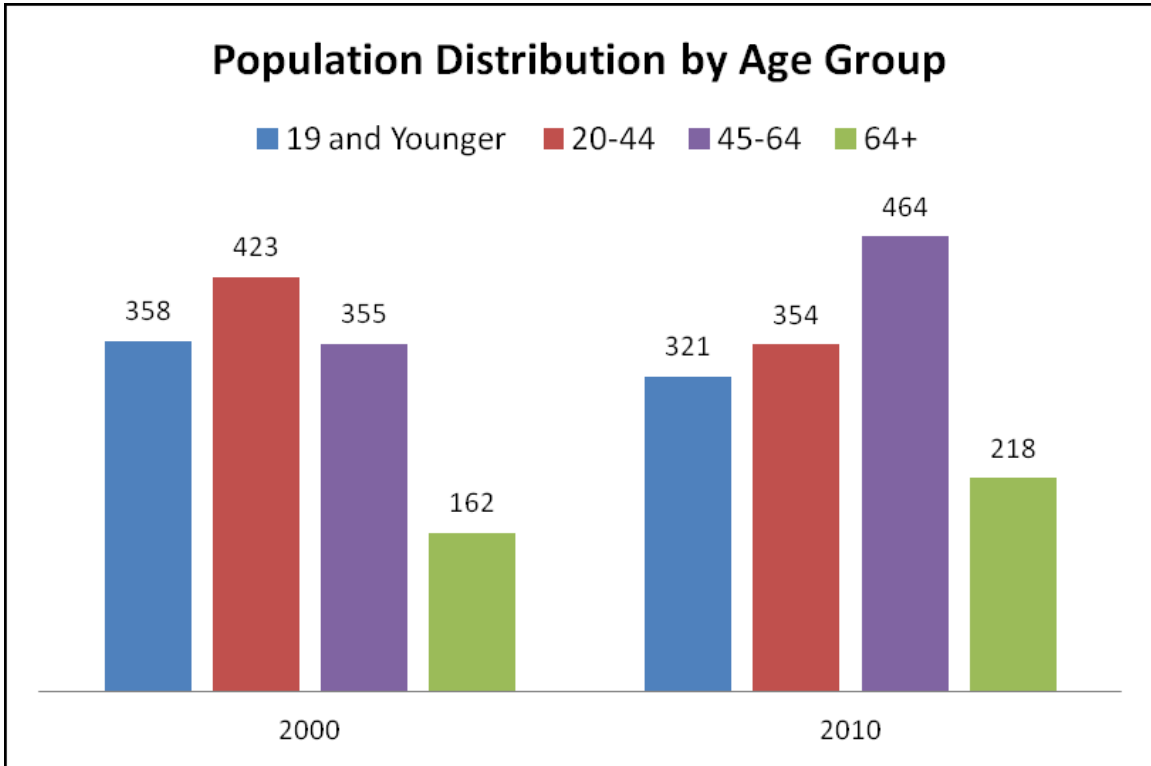
Table 3: Population Trends in Nearby Towns

<i>Town</i>	<i>1990</i>	<i>2000</i>	<i>2010</i>	<i>% Change 1990-2000</i>	<i>% Change 2000-2010</i>	<i># Change 1990-2010</i>
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)

In 2010, the median age of the town was 45, up six years from 2000. Windham County’s median age was 44.9 years. Essentially, data indicate that 19 and younger and 20-44 groups are decreasing while 45-64 and 64+ are increasing rather dramatically.

Figure 4: Town of Whitingham Age Distribution



(Source: 2010 U.S. Census)

Housing

Whitingham had a total of 802 housing units in 2000. An additional 9 units of housing were reported permitted from 2000 – 2006. Table 4 provides a breakdown of the type of housing by year.¹ Between 1980 and 1990 there was a significant increase in seasonal housing. This was concurrent with the expansion of the nearby ski resorts

In 2000, of the 515 occupied housing units, 83% were owner-occupied, with the remaining 17% being renter occupied. The number of owner occupied and renter occupied housing increased between 1990 and 2000. This is an indication that there was growth in the year round residential population of the town.

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

¹ Between the 1980 and 1990 Census the methodology for calculating vacant and seasonal housing changed. Therefore the 1980 number for vacant housing is probably overstated.

2000, seasonal housing has remained a fairly constant percentage of total housing in Whitingham. In 2010, seasonal housing accounted for 33.1% of all housing, 32.3% in 2000, and 36.8% in 1990.

Table 4: Housing by Unit Type

					% change	% change
Unit type	1980	1990	2000	2010	1980-1990	1990-2010
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)

Whitingham is predominantly a community 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

<i>Units in Structure</i>	<i>Actual Number</i>	<i>Percentage</i>
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	

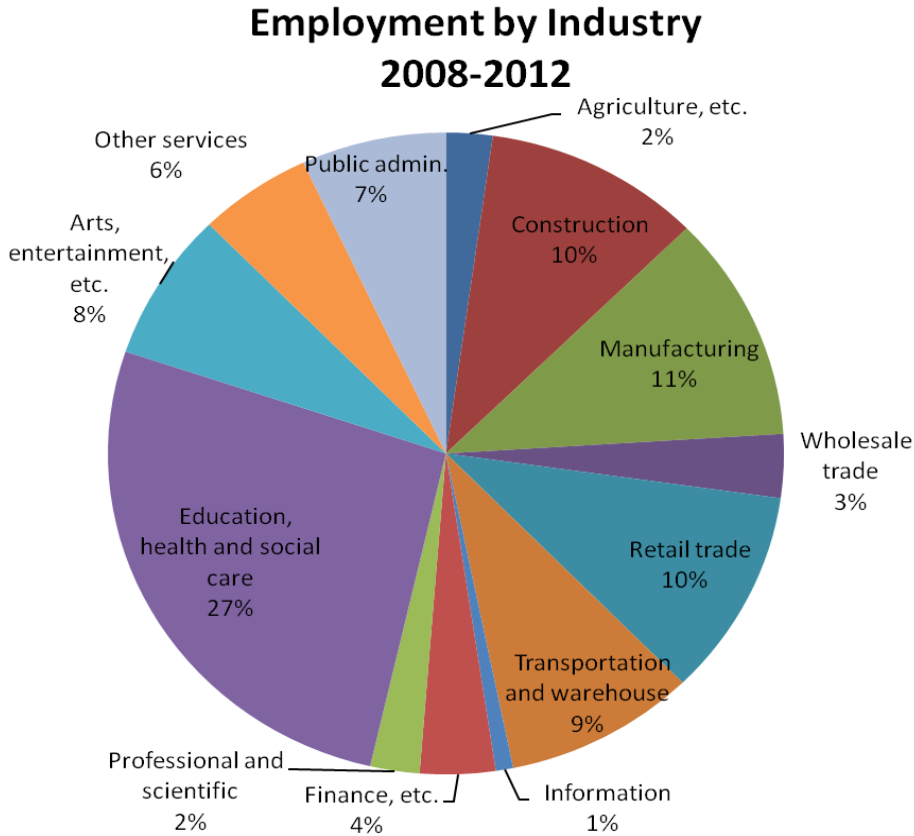
(Source: 2010 ACS 5-year estimates) Note: the total housing units in Tables 4 and 5 differ; Table 4 is Census data; Table 5 is ACS estimate.

Economy

In 2005 Vermont Department of Labor reported that 690 Whitingham residents aged 16 and over were employed in the regional work force. This compares to the 640 reported in 1995 by the Department of Labor. Part of this increase is likely a reflection of the increased population in the Town. The 2000 Census indicated that 33% of the Whitingham residents that are employed work in Town. The majority of residents work outside of Town. During the period 2008-2012, the American Community Survey reports, 24.6% of Whitingham residents worked in Whitingham, including the 4.9% of residents that worked at home.

Whitingham residents are employed in a variety of industries (Figure 5). The 2000 Census indicated that the largest percentage (15%) of Whitingham residents were employed in education, health and social services fields. The ACS reports that education, health and social care industry experienced the largest increase in Whitingham residents employed in those fields between 2000 and the 2008-2012 period.

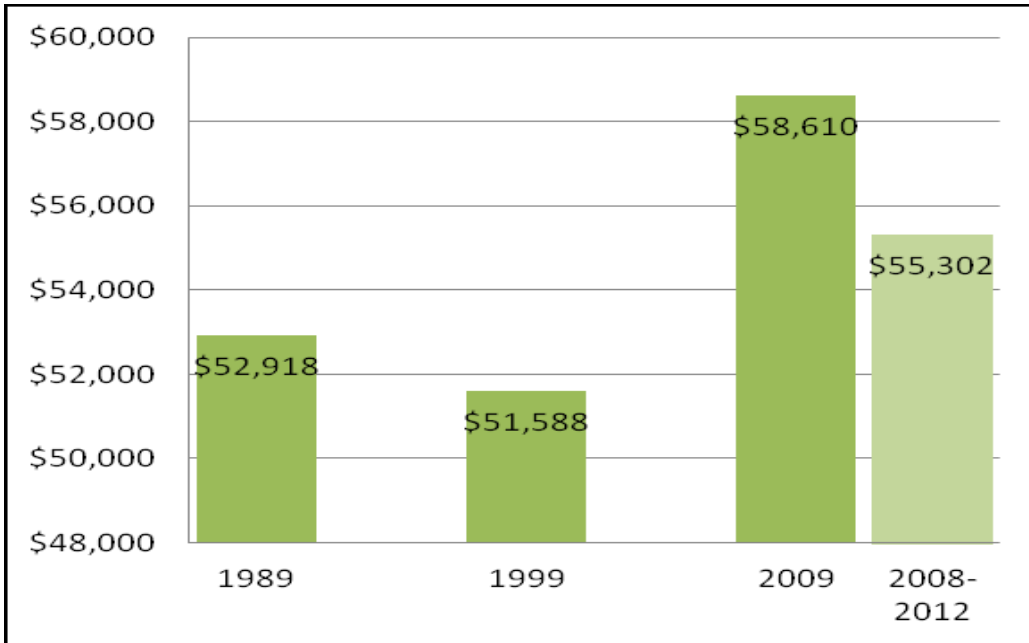
Figure 5: Employment by Industry



(Source: 2008-2012 American Community Survey)

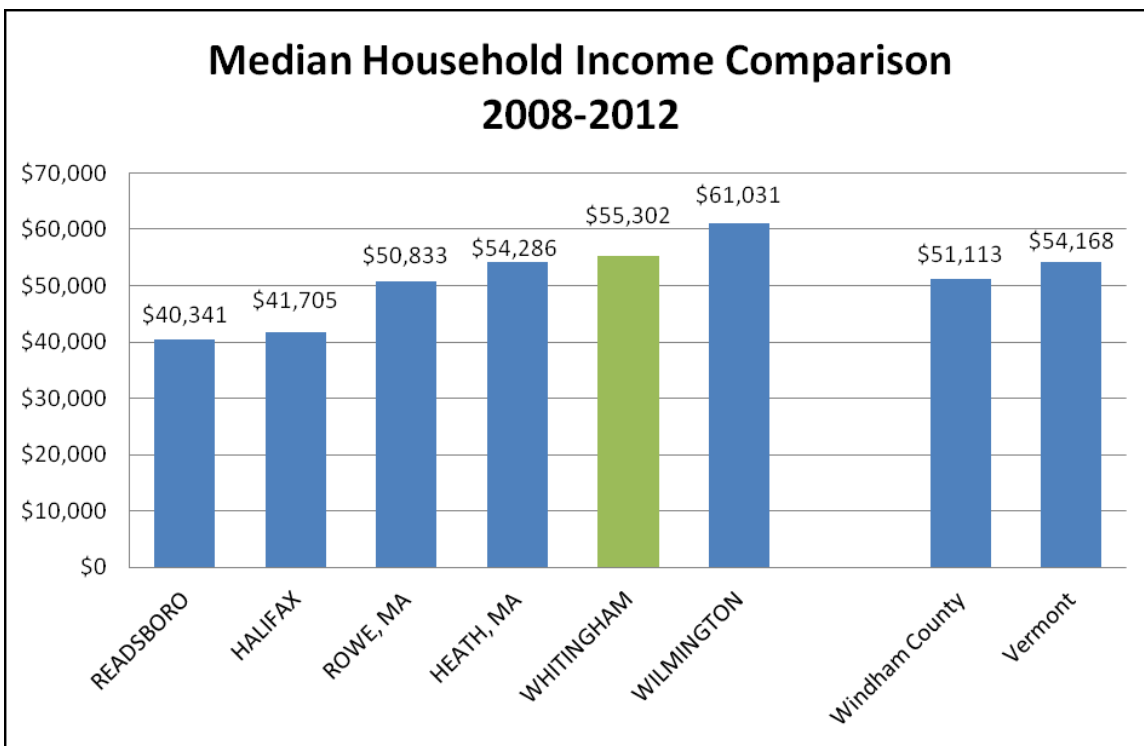
The median estimated household income in Whitingham for the period 2008-2012 increased from \$51,588 in 1999 to \$58,610 in 2009, and has declined since to \$55,302.

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. The section includes a discussion of town property; public safety services; public utilities; library services; health care facilities; 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 2008 Community Survey, residents generally expressed satisfaction for the level of services that are available. The highest level of dissatisfaction was with police services, where 42.5% of the respondent 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	98.3	1.7
Police Protection	57.5	42.5
Education System	62.3	37.7
Recreational Opportunities	76.9	23.1
Health Services	76.1	23.9
Library	91.1	8.9
Transfer station/recycling	87.9	12.1
Ambulance service	83.2	16.8

Town Facilities

The Municipal Center, located on Route 100 in Jacksonville, currently houses the Town Clerk’s office, Selectboard’s 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. The Twin Valley Middle-High School, also on Route 100, is owned by the Town.

Recreational facilities owned and maintained by the Town are limited to the Town Hill Common (playground and picnic area), town trails, and Class 4 roads. The Town owns and maintains 13 cemeteries, which are located throughout Whitingham. Sidewalks are maintained in Jacksonville by the Incorporated Village of Jacksonville.

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 equipment. The firehouse located in Jacksonville Village houses two pumper trucks, a medium rescue 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, Brattleboro barracks, now provide 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 Board of Sewer Commissioners. 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.

Areas not served by the 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. 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 (703 customers as of 2014). 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 4189 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 will be mandated by Act 148, an act passed by the Legislature in 2012, establishing universal recycling of solid waste. Whitingham's transfer station is already compliant with the new law. The Town will have to meet additional requirements of Act 148 including a drop off areas for leaves, grass, brush and food scraps.

Trash is compacted and hauled away to a landfill.

To reduce costs and increase its options, the Town became a member of the Windham Solid Waste Management District (WSWMD) in 1990. Through the WSWMD, the

Town provides residents the opportunity to recycle plastic, glass and metal containers, paper and cardboard. Also available at the Transfer Station is the opportunity to recycle clothing/shoes, books, scrap metal and tires.

The WSWMD also conducts Household Hazardous Waste collection programs, rotating locations among member towns, including Whitingham. WSWMD plans to open a permanent household hazardous waste collection facility by July 2015 at its convenience center in Brattleboro, which will be available to Whitingham residents. WSWMD is also a certified drop-off location for paints and stains.

Library

The Whitingham Free Public Library was first established in 1899. The Library is located at 2948 Route 100 South, 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 4 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+. The library recently 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, copying, 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). The Town provides a visiting Town nurse.

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 VT and NH, 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 Fairpoint Communications. Many residents report that sound quality is poor. Evidently, the Fairpoint copper wiring and switching equipment is quite old. It is unlikely that Fairpoint 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.

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 3 miles out from switching equipment based near the centers of Whitingham and Jacksonville. DSL internet is not available at all locations in town. Evidently, Fairpoint does not plan to extend DSL wire-line capacity to all of Whitingham. 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 180 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. VTel expects the system to be fully operational for data by summer 2015. Some locations in Whitingham already receive VTel internet service, via a router at each customer location. VTel offers a SIM card that provides cell phone service from the VTel router. It is not known if VTel will provide wide-area cell phone and data coverage in the future.
- 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, library and town offices 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 also get the Sovernet broadband 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 a full-day preschool.

Middle and High School Education

The Whitingham facility underwent renovations and additions and since August 2015 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	30	32	29	31	35	30	22							
TVMS								34	37	31				
TVHS											39	40	35	37

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 in Marlboro and School of Graduate and Professional Studies in Brattleboro. The Whitingham Free Public Library offers technology training upon request.

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. With the number of families in which both adults work outside the home increasing, 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. Its heritage was what 88.1% of respondents to the 2008 Whitingham Community Survey wanted to protect.

The 1974 Historic Sites and Structures Survey conducted by the Vermont Division of Historic Preservation identified structures having significant local historical value and as 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 recently 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

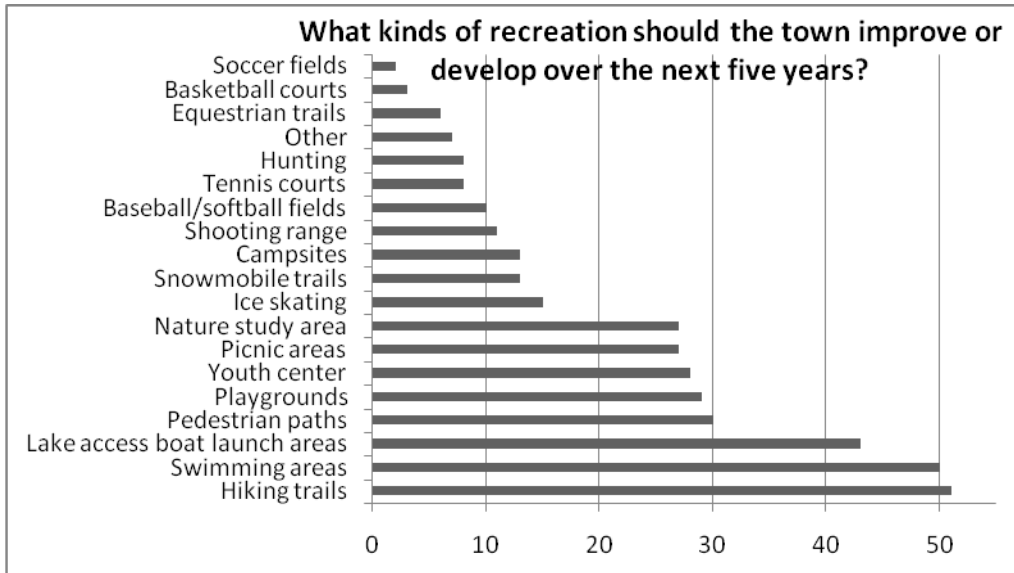
Rural recreational opportunities in Whitingham include water sports, fishing, and skating on Lake Whitingham, Sadawga Lake, Clara Lake, Sherman Reservoir, and Jacksonville Pond; Deerfield Valley Sportsmen Club shooting range; Town Hill Common; Lion's Club Basketball Court; hunting and trapping lands 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 Lake Whitingham and the east side of the Lake into Wilmington. The Club has a recreational agreement through VAST with TransCanada to use trails on company lands and hopes to maintain this agreement with TransCanada 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 2008 Whitingham Community Survey, 76.9% 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 next five years, respondents seemed to favor taking advantage of the natural environment by developing hiking trails, swimming areas and lake boat launch areas.

Figure 5: Recreation the Town Should Improve



Scenic Resources

Whitingham enjoys a wide variety of scenic resources many of which can be viewed from along roadsides. Views of Sadawga Lake and Lake Whitingham 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. The villages also provide a visual setting of a built environment with buildings of historical and scenic interest. Scenic resources are a significant factor in the quality of life as expressed by citizens of Whitingham. Many of these resources are highly sensitive and, because they may be adversely affected by careless development, must be carefully managed.

Policies and Recommendations

Policy 1: The construction or expansion of community facilities and services should take place with minimum impacts on natural resource values of the community.

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. (Whitingham Sewer Commission)

Policy 2: Maintain effective safety services.

Recommendation 2.1: 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: Remain a member of the Windham Solid Waste Management District. (Selectboard)

Recommendation 3.2: Continue to provide recycling bins and additional recycling options at the Transfer Station. (Selectboard)

Recommendation 3.2: Work to meet the requirements of Act 148 to provide collection of food scraps and yard waste.

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 Program. (School Boards)

Recommendation 7.2: Continue to seek education finance reform. (School Boards)

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

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

Recommendation 9.1: Permit childcare facilities as an accessory use for education institutions, churches, and places of employment. (Planning Commission)

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 TransCanada to provide adequate public access points to Lake Whitingham along Route 100 and/or Dam Road for the residents of Whitingham. (Selectboard, Planning Commission)

Recommendation 11.2: Participate in planning efforts to create a parking area and improve the Catamount Trail connection between Readsboro and Whitingham. (Selectboard)

Recommendation 11.4: 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 Vermont Route 100 (VT 100) in Wilmington. VT 100, Vermont’s interior recreational corridor, heads south into Whitingham and links with Vermont Route 112 (VT 112) in Jacksonville.

VT 100 follows the East Branch of the North River southeast to Jacksonville, where it intersects with Route 112. From Jacksonville, VT 100 heads west through the Village of Whitingham, passing between Lake Whitingham and Sherman Reservoir in the Town of Readsboro

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, state maintained roads of 12.3 miles in Whitingham provide regional access to the town’s network of 59.2 miles of Town-maintained roads.

Table 7: Town and State Road Mileage in Whitingham

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

(Source: Vermont Agency of Transportation, 2006)

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. Like many Vermont communities, Whitingham has many Class 4 roads and legal trails that are not mapped on the VTrans Highway Maps. Recent statutory changes require the accounting of mileage and mapping of Class 4 roads and legal town trails. Many Class 4 highways are old, unmapped, and often observable. In response to Act 178, which requires municipalities to identify “ancient roads”² and formally map them if the town wishes to retain them,

² An ancient road is a right-of-way not otherwise clearly observable by physical evidence of its use as a highway or trail.

Whitingham assembled a group of residents to research whether there were any ancient roads in Whitingham. As of the writing of this Plan, this work is still ongoing.

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 “short structures” are 6 to 20 feet in length. Structures shorter than six feet are classified as culverts, regardless of design.

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 0-9 scale (0 is a failed condition and 9 is excellent).

Table 8: National Bridge Inspection/Inventory 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	5	7	5	N	Town
C3064	44	Rolled Bm W Tmbr Dk	3	5	4	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	6	5	6	N	Town
C3066	46	Rolled Bm W Tmbr Dk	4	7	6	N	Town
C3067	47	Rolled Bm W Tmbr Dk	5	6	6	N	Town

In 2004, through a project funded by the Windham Regional Commission, culvert data was collected for sites throughout the Town of Whitingham and were rated by condition

and importance to road function. The information will be updated annually and the results are summarized in Table 8 below.

Table 8: 2004 Culvert Infrastructure for the Town of Whitingham

Importance Of Culvert to Road Function	Condition of Culverts				
	Excellent	Very Good/ Good	Fair/ Satisfactory	Poor	Critical/Imminent Failure
Critical	42	134	43	31	10
Very Important	18	73	22	63	2
Somewhat Important	28	52	33	27	5
Not Important	9	18	4	0	1

This table indicates the impact that the condition of poor and failing culverts will have upon the roadways and hydrology of the town of Whitingham in the years to come. Of the culverts that were critical to road function, 31 were identified as poor and 10 were identified as either critical or imminent failure. This means that about 16% of culverts that are critical to road function are in poor or impaired condition. Of those culverts that are very important to road function nearly 37% were identified as in poor condition or critical/imminent failure.

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:

Whitingham Town

- 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).

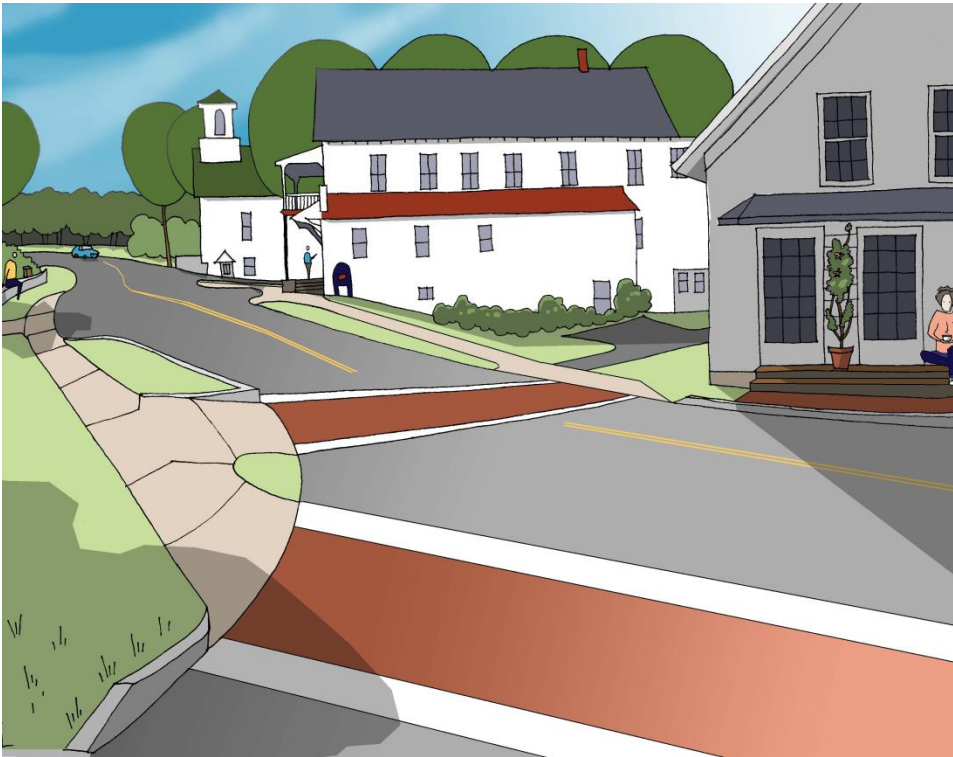
Table 10: Whitingham Village Improvements

	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 6: Improvements at Store



Figure 7: Pedestrian crossing on VT 100



Alternative Transportation

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

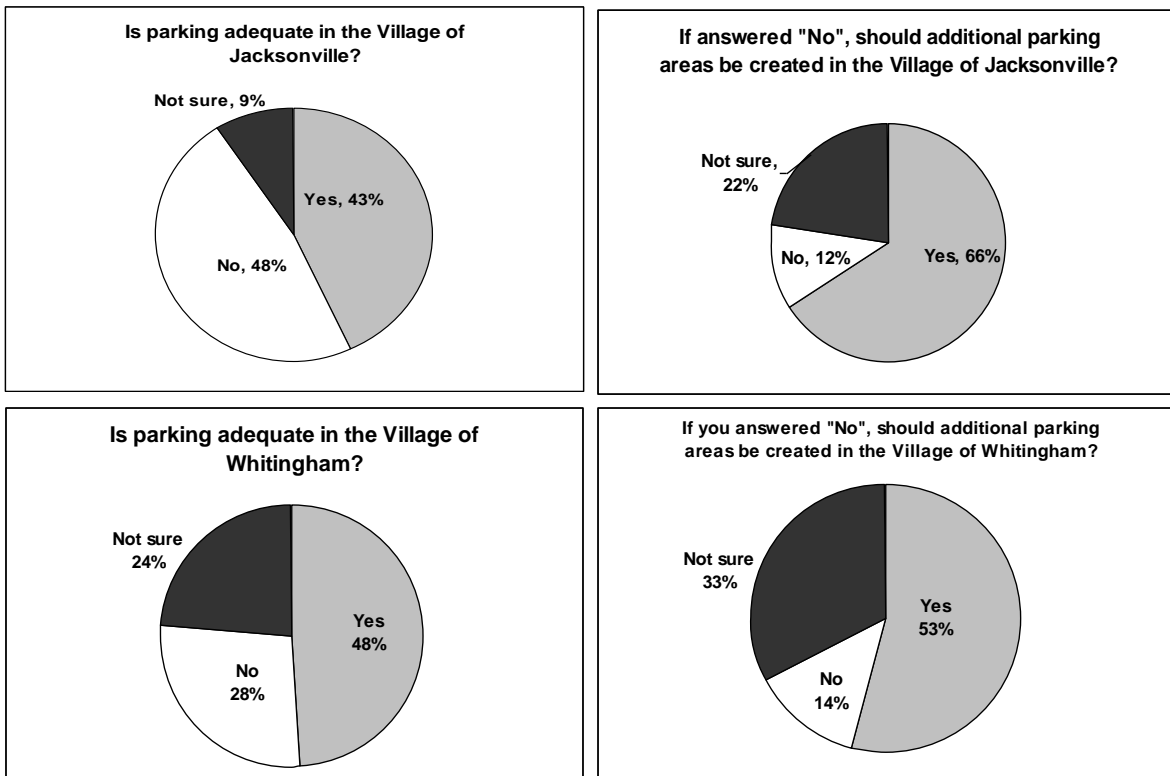
A public bus service, known as the MOOver, is operated by Deerfield Valley Transit Association (DVTA) and serves riders, free of charge, along the VT 100 corridor from Wilmington to Readsboro, with two regular stops in Whitingham and other stops on demand. From Wilmington, riders can catch a bus that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

Parking

The Whitingham Town Offices parking lot is a municipal park and ride lot. The Town maintains parking facilities at other Town owned buildings and the area across from the Jacksonville Church. There has been an expressed need for better parking access at Lake Whitingham.

In the 2008 Community Survey, respondents were asked if parking was adequate in the villages of Jacksonville and Whitingham. From the responses it appears that more people saw the Village of Jacksonville parking as not adequate (48%) compared to the Village of Whitingham (28%). Those that did not see Jacksonville’s parking as adequate, overwhelmingly felt (66%) that additional parking areas need to be created in the Village.

Figure 8: 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 will be enhanced in Whitingham where feasible, along VT 100 and 112, the road shoulders should be expanded to accommodate bicycling. In both Jacksonville and Whitingham, where appropriate and feasible, sidewalks, crosswalks, parking and traffic calming treatments will be added.

Public transportation will continue to be provided to and from Whitingham along VT 100. Transportation for the elderly and disabled will continue and be enhanced. Carpooling as a possible alternative to driving alone will 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: Carry out construction of new roads or road improvements in strict conformance with Whitingham's Road Specifications.

Recommendation 2.1: Improve and bring 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: Coordinated 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: Make legal town trails available for public recreational use. (Selectboard)

Recommendation 4.2: Work with TransCanada and its successors to plan for improved parking access at Lake Whitingham. (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: 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 2008 survey, were asked to state the three things they liked about Whitingham and the natural beauty of the town had the highest response rate (75%)

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. Destruction of wildlife resources and ground water pollution were the most important issues with a rating average of 1.61 and 1.66 respectively. 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 9: Support for Techniques to Protect Land

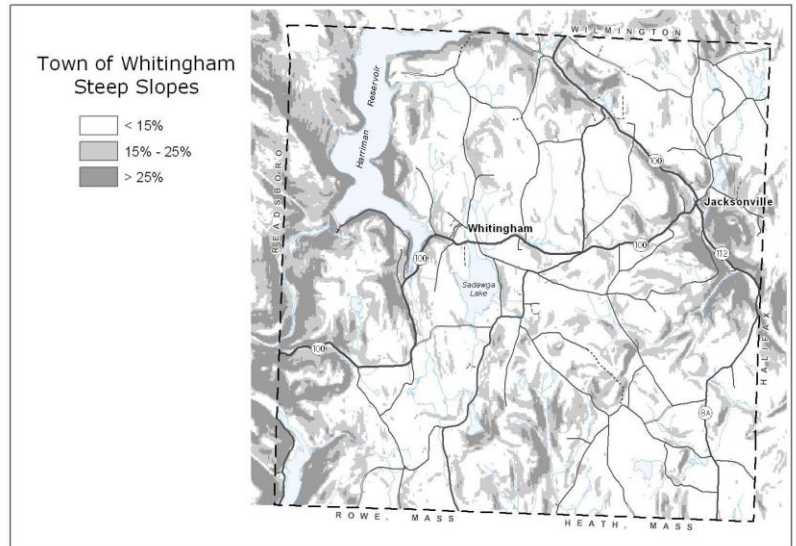
	Yes	No	Not Sure
Purchase of lands by the town	63.4 %	17.1%	19.5%
Purchase, donation or transfer of development rights (land trust, current use, etc.)	74.4%	10.7%	14.9%
Adjust zoning in those areas	60.8%	20.8%	18.3%
No changes are needed	25.6%	24.4%	50.0%

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 Lake Whitingham 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 (Lake Whitingham), Sherman Reservoir, Sadawga Lake, Clara Lake, Shippee Pond, North Pond, Gates Pond, Jacksonville Pond, Laurel Lake, Ryder Pond and Holbrook Pond.

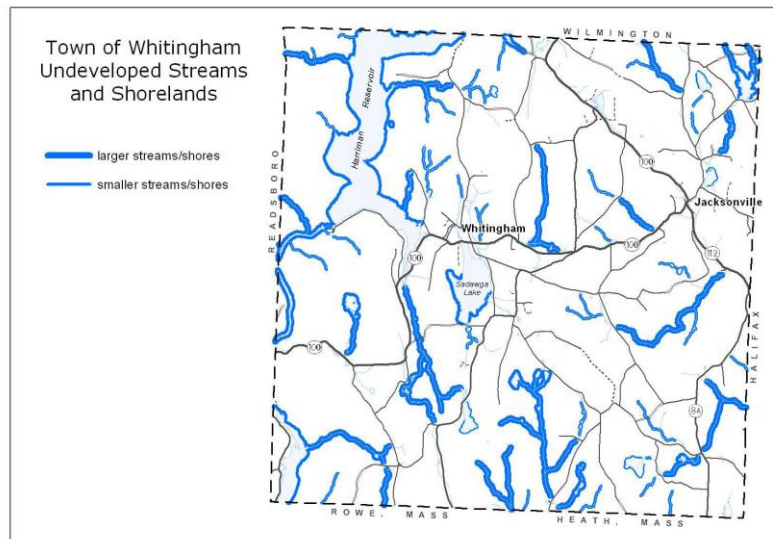
The headwaters for the East Branch of the North River are located in several natural ponds within a two-mile radius north and northeast of Jacksonville (Ryder Pond, Laurel Lake, Gates Pond and Jacksonville Pond). The Deerfield River is dammed for power generation forming Harriman and Sherman Reservoirs. 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 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 previous map are areas in town that do not have development along stream. 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.

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.

Wetlands are identified on the National Wetlands Inventory maps located at the Whitingham Town Offices. The Town does not regulate wetlands. Nonetheless, the Vermont Wetlands Office 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.

Flood Hazard Areas

Inundation Flood Hazards

The Town participates in the National Flood Insurance Program (NFIP) and has adopted and enforces a Flood Hazard Area Regulation as part of the zoning. Maps published by the Federal Emergency Management Agency (FEMA) in 2007 show flood information for town, including Special Flood Hazard Areas. These are defined as locations that have a 1% chance of flooding in any given year (i.e., they are expected to be inundated by a 100-year flood).

NFIP is a Federal program enabling property owners in participating communities to purchase insurance protection against losses from flooding. This insurance is designed to provide an insurance alternative to disaster assistance to meet the escalating costs of repairing damage to buildings and their contents caused by floods. Participation in the NFIP is based on an agreement between the Town and the Federal Government that states if a community adopts and enforces a floodplain management ordinance to reduce future flood risks to new construction in Special Flood Hazard Areas, the Federal Government will make flood insurance available within the community as a financial protection against flood losses.

The Flood Hazard Area Regulations impose design standards on development within the FEMA-defined flood hazard areas that are intended to minimize property damage during flood events. By adopting and implementing them, the town is able to participate in the NFIP and property owners in Whitingham are able to obtain federal insured flood insurance at affordable rates and flood disaster assistance. Official Flood Hazard Maps are available at the Town Office.

Fluvial Erosion Hazards

In addition to inundation hazards, flooding can cause fluvial erosion hazards. While some flood losses are caused by inundation (i.e., waters rise, fill and/or damage low-lying structures), most flood losses in Vermont are caused by “fluvial erosion,” erosion caused by rivers and streams, which can range from gradual bank erosion to catastrophic changes in river channel location and dimension during flood events. The Vermont Agency of Natural Resources (ANR) notes that NFIP “floodway” and “flood fringe” areas are often inadequate as an indicator of flood hazards, especially erosion.

Areas subject to fluvial erosion hazards, from gradual stream bank erosion to catastrophic channel enlargement, bank failure, and change in course, due to naturally occurring stream channel adjustments, can be identified and mapped in accordance with accepted state fluvial geomorphic assessment and mapping protocols. Whitingham should seek resources to determine fluvial erosion hazard areas associated with streams, such as the North River. The state ANR has released maps of modeled River Corridors identifying flood hazard and fluvial erosion hazard areas and Whitingham should update the town’s Flood Hazard Area Regulations to include regulation of these flood hazard areas.

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 rising community concern over the continued availability of groundwater particularly in the Whitingham Village area. Since many wells probably share common aquifers, an interference can occur if the recharge rate is insufficient.

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.

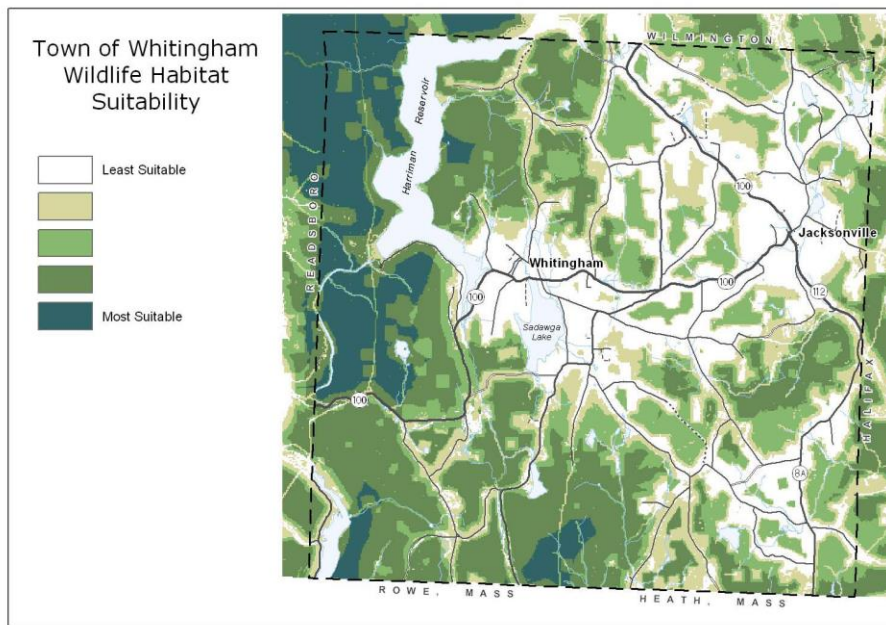
Geologic Sites

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 Meadow Wildlife Management Area and on lands west of Lake Whitingham owned by TransCanada 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. 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.

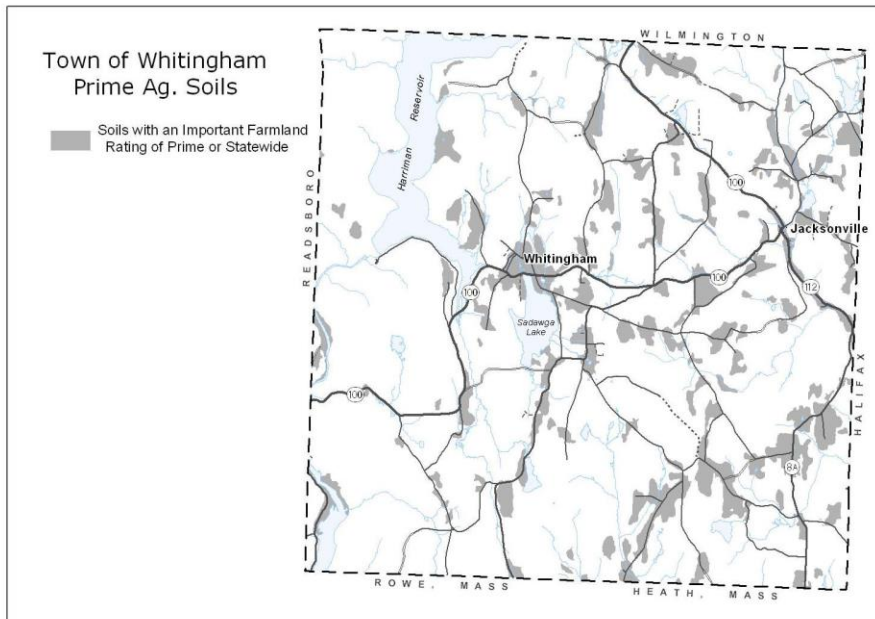


Three sites in Whitingham are considered rare or threatened plant species. The sites are found along the Deerfield River, Jacksonville Pond and Ryder Pond. In addition, Ryder Pond is also a location for a Significant Natural Community.³

³Each example of a natural community that is evaluated by the Department's Fish & Wildlife's (DFW) Nongame and Natural Heritage Program (NNHP) is also assigned a quality rank. This measure is intended to compare occurrences of a particular community type with others statewide or with types in a particular biophysical region in the state. The quality ranks range from excellent (A) to poor (D) and are based on specifications developed for each of the 80 natural community types. These rankings are based on an assessment of the natural community's size and current condition and the landscape context. In general, the higher the rank, the more likely it is that the community will be viable over long time periods. The overall

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.

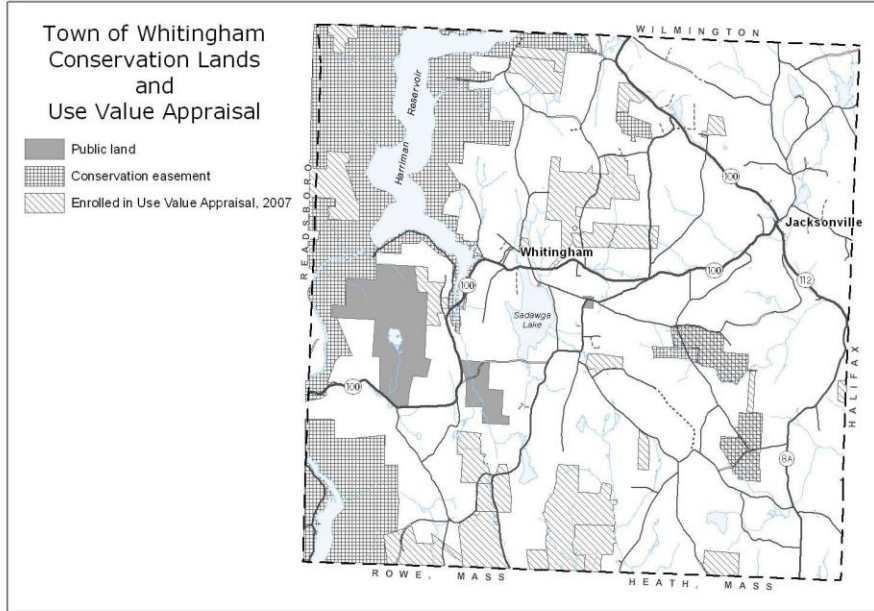
Forestry Resources

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 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

significance of a natural community occurrence is tied both to its state rank - how rare it is in Vermont - and to its quality rank, a measure of the size and condition of that particular occurrence

Current Use). For forestland to be eligible, participating owners must have a minimum of 25 contiguous acres to enroll in the program (not counting the 2 acres surrounding any dwelling) and must manage the forestland according to the provisions of a 10-year forest management plan.



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 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 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: Reduce the potential for flood damage.

Recommendation 4.1: Continue to administer and enforce the standards in the Flood Hazard Area Regulations in the Whitingham Zoning Ordinance. Update as necessary to maintain eligibility in the National Flood Insurance Program. (Planning Commission)

Recommendation 4.2: Update, the Flood Hazard Area Regulations to incorporate protection of ANR-defined River Corridors (fluvial erosion hazard areas).

Policy 5: Protect ground water resources throughout Town.

Recommendation 5.1: 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 5.2: Develop specific techniques, once mapped, to protect groundwater in Whitingham (Planning Commission).

Policy 6: Protect mineral resources, when identified, and regulate their removal so as to make maximal use of the Town's resources over time.

Recommendation 6.1: 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 7: Protect Whitingham's wildlife habitat and discourage the fragmentation of large forest blocks areas.

Recommendation 7.1 The Town should consider the feasibility of implementing Conservation Overlay Districts to establish a network of connecting habitat areas within Whitingham that connects undeveloped lands, conserved lands, and lands under long-term stewardship. (Planning Commission, 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 2008 survey. A majority of the survey respondents (Figure 9) would like to protect the historical resources and architectural character of the town; encourage management of the productive agricultural and forestlands; and support keeping commercial development in the villages. Over 60 % of the respondents (figure 12) 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 effect on adjacent property, effect on natural environment and loss of agricultural land were the most important criteria to evaluate proposed development for the town.

Figure 9: Land Use Responses

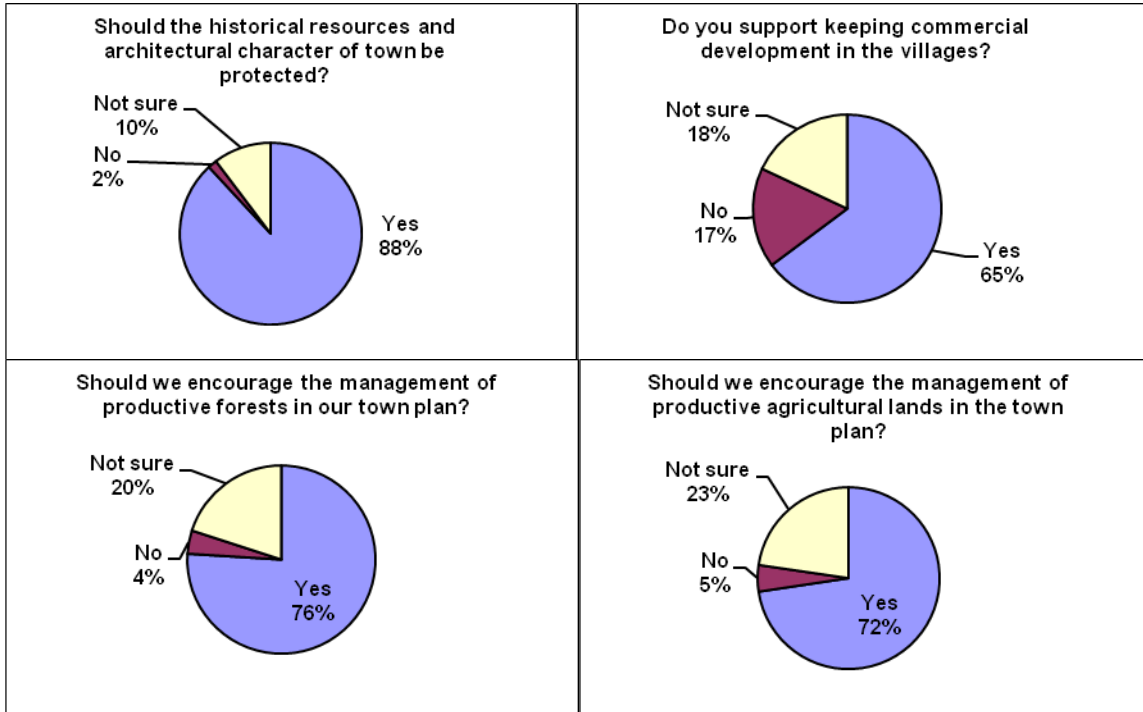
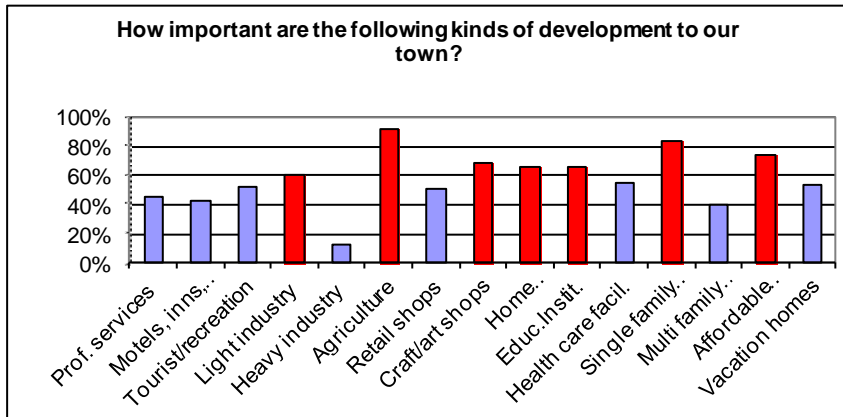


Figure 10: Important Development in Town



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 is summarized in the following table.

Table 10: 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 products, game for hunting, maple products 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. TransCanada currently owns 4,502.6 acres of forestland, chiefly surrounding Lake Whitingham, on which the Vermont Land Trust 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 660 acres of private land in 3 different locations in Town.

Approximately $\frac{1}{4}$ 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 TransCanada 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 regulations. Last updated in 2014, the Whitingham Zoning Regulations provide the following Land Use Districts:

- Conservation
- Rural Lands
- Rural Residential
- Villages

Proposed Land Use

The proposed land use area, 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 Regulations, and therefore, the Zoning Regulations 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 TransCanada 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 Lake Whitingham 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 also 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 which are already committed to moderate density rural residential development, easily accessible from the existing road system, or which 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.

Village Center designation of Whitingham was renewed by the State of Vermont on February 25, 2013. While Whitingham Village has seen some improvements, there remains some work to be done. Jacksonville received approval as a new designated Village Center on January 27, 2014. The designated Village Centers are shown on the Downtown Board-approved maps attached to this Plan.

Village center designations achieve the following goals:

- Furthering the intent of the Land Use Chapter – Whitingham and Jacksonville Villages are important mixed-use districts. The Town Plan identifies the need to make public and private physical improvements in these areas. Continued designation will focus additional resources to help these areas thrive, including the ability to have priority consideration for several grant programs.
- Preserving significant historic, architectural, and cultural heritage – The access to historic tax credits and code improvement tax credits will support redevelopment of older and historic properties, preserving the historic character of the Designated Village Center districts.

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 comprises land that links 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.

Flood Resilience

Whitingham has land, homes and businesses that are susceptible to the two types of flooding impacts: inundation and fluvial erosion. Inundation flooding occurs during high water events on extensive acreage along the North River. Fluvial erosion occurs in areas both in and out of the mapped flood hazard area. Both fluvial erosion (when river or stream jumps its bank and rips through an area) and inundation flooding are potential 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.

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

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

(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.

(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 and 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 trying to protect roads and buildings we need 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 meander belt/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 Areas

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

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. Since the FEMA maps are only concerned with inundation, and these other areas are more at risk from flash flooding and fluvial erosion than from inundation, these areas are often not

recognized as being flood-prone. Property owners in such areas outside of SFHAs are not required to have flood insurance. Flash flooding in these reaches can be extremely erosive, causing damage to structures and road infrastructure and to topographic features including stream beds and banks and the sides of hills and mountains, and also creating landslide risk.

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 fluvial erosion hazard risk mapped by ANR.

Flood Hazard Area Regulation

Inundation

In order to enable property owners to be eligible for federal flood insurance 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 satisfy the intent of Act 16, to protect citizens, infrastructure, and the environment, as well as to qualify for maximum Emergency Relief Assistance Fund match from the state in the event of a disaster, a town must adopt and administer River Corridor protection in its flood hazard area regulations. These can be within local zoning regulations or adopted as a free-standing bylaw.

Addressing flood resilience

This plan identifies as flood hazard areas 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 incorporates by reference the town's Local Hazard Mitigation Plan approved under 44 C.F.R. § 201.6. Finally, this plan recommends the following policies and strategies to protect the designated areas to mitigate risks to public safety, critical infrastructure, historic structures, and municipal investments.

Policies and Recommendations

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

Recommendation 1.1: Review the existing Whitingham Zoning Regulations 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;
- and to allow for expanded and well-defined opportunities for home occupations throughout the Town

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 Village. Allow new development, 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.

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.

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 Areas of Special Concern.

Policy 8: It is the policy of the Town to foster the protection and restoration of river corridors, floodplains, wetlands, and upland forested areas that attenuate and moderate flooding and fluvial erosion.

Recommendation 8.1: The Town will 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, Zoning Administrator)

Policy 9: It is the policy of the Town to 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 9.1: The Town will 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, Zoning Administrator)

Policy 10: 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.

Recommendation 10.1: The Town will 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, Zoning Administrator)

Policy 11: The protection and restoration of floodplains and upland forested areas that attenuate and moderate flooding and fluvial erosion should be encouraged.

Recommendation 11.1: The Town will 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, Zoning Administrator)

Policy 12: Flood emergency preparedness and response planning are encouraged.

Recommendation 12.1: The Town will 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, Zoning Administrator)

HOUSING

Existing Conditions

The Community Profile section of the Plan provides information and statistics about housing in Whitingham. In 2000, the U.S. Census documents that 1,298 people live in Whitingham. In 2007, the U.S. Census estimates the population at 1,214. Between 1990 and 2000, the Town's population increased by 121 people, a 10% increase. Previously, between 1980 and 1990 the population increased 13% (134 people).

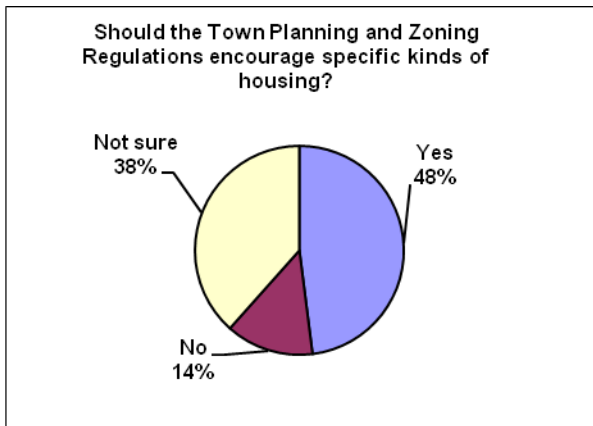
Some key housing figures from the 2000 US Census include:

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

In the 2008 Community Survey respondents were asked to rank the type of land use patterns they would prefer for housing development from 1 to 5 (1 being the most important). Large single-family lots were the most important at a rating average of 2.01, followed by high density near villages (2.89) and clustered housing with large plots of open land (2.98). The least important was high density in specific areas outside of villages (3.35).

When respondents were asked if the town plan and zoning regulations should encourage specific kinds of housing the response was:

Figure 11: Town Planning and Zoning to Encourage Housing



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 mortgage principal and interest, property taxes, property insurance and utilities. Since

affordability is determined by monthly costs, interest rates, the age of the home, and maintenance costs are factored into the overall costs.

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 today⁵ 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 Rent⁶ 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,⁷ was \$924. This monthly cost requires a renter to earn an hourly wage of \$17.77 (assuming a 40 hour work week) to afford. This would equal an annual income of \$36,960. Table 12 helps put the affordability gap for rental units in perspective.

Table 11: Occupational Wage Estimates for the Southern Balance of Vermont, May 2007

Occupation	Mean Hourly Wage	Mean Annual Wage
Recreational Workers	\$13.08	\$27,200
Cooks, Restaurant	\$12.08	\$26,630
Maids and Housekeeping Workers	\$10.59	\$22,030
Child Care Workers	\$9.62	\$20,000
Bookkeeping, Accounting, and Auditing Clerks	\$15.25	\$31,720
Carpenters	\$17.61	\$36,630
Elementary School Teachers	N/A	\$45,840
Police and Sheriff Patrol Officers	\$20.41	\$42,468

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

The cost of homeownership continues to rise. According to the Vermont Department of Taxes, the median purchase price for a primary residence in Whitingham in 2007 (based on 15 home sales) was \$185,000 with an average purchase price at \$159,643.⁸ To purchase a home at the median price, an annual household income of \$58,819 would be needed.⁹ However, the median household income in Whitingham was \$37,434 a year

⁵ However, at the writing of this original plan (in 2009) there was uncertainty of the effect of the economic down turn on Vermont housing prices.

⁶ Fair Market Rent is the 40th percentile and what is commonly used by US Housing and Urban Development's (HUD). Median rent would be the 50th percentile.

⁷ HUD calculates county values only.

⁸ The median price of primary residences sold is the middle of selling price of all primary residences sold in ascending order for the given year.

⁹ This has been calculated using the Vermont Housing Data online Home Mortgage Calculator (www.housingdata.org). It assumes a 5% down payment, average interest rates, average property taxes, average property and private mortgage insurance premiums, average closing costs, and that a homebuyer can afford to spend 30% of their income for housing expenses.

according to the 2000 US Census. In 2006 the median family adjusted gross income was calculated to be \$48,789 for Whitingham.¹⁰

Thirty-two (32%) percent of the housing units are seasonal in Whitingham and they tend to be sold at higher prices than year round housing. In 2007, the median purchase price for a vacation residence in Whitingham (based on 12 home sales) was \$195,000 with an average price at \$279,492.

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 has risen to on average \$2.87 per gallon in December 2008, an increase of 114% in five years.

One subset of Whitingham's population that may be struggling to afford housing in the community is elderly on a fixed income and single parent families. The 2000 Census indicated that Whitingham had 114 householders were living alone, 43 of whom were over the age of 65. There were 28 single female heads of household in Whitingham, in 2000, which had children living with them under 18 years of age.¹¹ Each of these figures represents an increase from 1990, which could result in an increased demand for more affordable housing.

Special Needs Population

The special needs population for the purposes of a housing analysis includes 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.

Affordable Housing Programs

Currently, housing affordability in Whitingham is addressed through regional programs. The Windham Housing Trust (formerly Brattleboro Area Community Land Trust) has created and manages affordable housing through a variety of programs that serve low and moderate-income residents. Sadawaga Springs Apartments, nine units of permanently affordable housing, located in Whitingham Village was completed by Windham Housing Trust in 2007.

Windham 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 Agency (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

¹⁰ The median measure of adjusted gross incomes from the Vermont State tax forms of families, including those filing as Married filing jointly, Civil union filing jointly, Head of household, and Widow(er) with dependent children.

¹¹ The U.S Census does not report information on single male head of household with children under 18.

income-eligible homeowners and renters. West River Habitat For Humanity (WRHFH) builds simple, affordable, houses together in partnership with families in need and has completed their first house in Whitingham.

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 repair 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 (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.

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.

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 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 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.

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

Whitingham's local economy has been based in the past on small-scale manufacturing (principally wood products), forestry and agriculture. These activities continue today, but do not dominate the economy. The Town of Whitingham is not a major job center and so its labor force spreads out widely—from Sawyer Bentwood, Bemis Line Construction, Briggs Auto and TransCanada, all in Whitingham; to Mount Snow in Dover. There are those who are employed with the Town, and others who have jobs in surrounding towns as far away as Bennington, Brattleboro, Greenfield and North Adams. Many wage earners are self-employed and work out of their homes.

Jacksonville is the major commercial and residential center. Town government activities, a utility company, small contractors, gas and service station, auto repair, machinists, manufacturers, gift shops, winery, a Bed and Breakfast establishment and a restaurant are based there. The Village of Whitingham is less populated and contains a furniture manufacturer/supplier, and historical museum. Both villages have a post office, general store, church, firehouse, sewer treatment plant, and numerous homes.

The recreation industry plays a low profile in Town as compared to resort activities further north in Wilmington and Dover. However, Whitingham is well known for its swimming and boating on Lake Whitingham. Approximately one-third of Whitingham's homes are vacation houses used during only part of the year by non-residents.

Employment

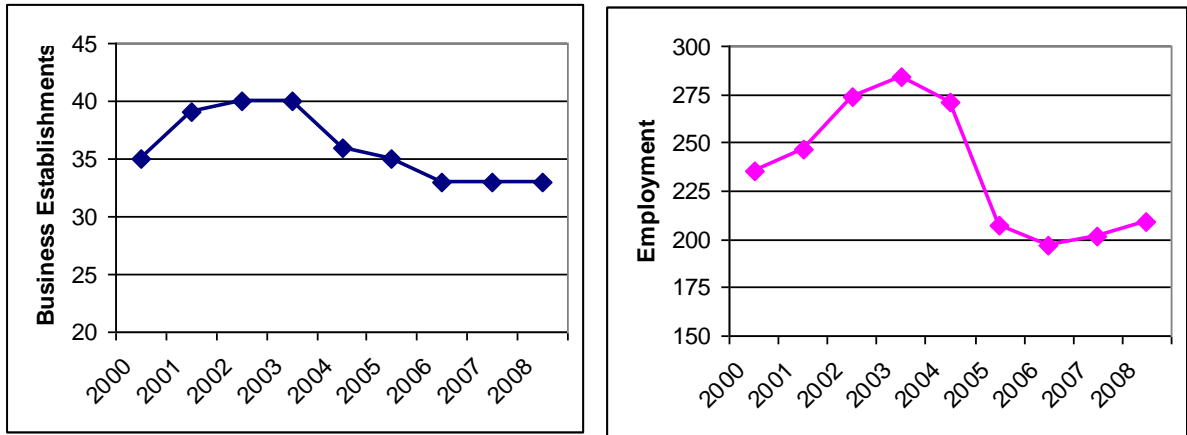
The 2005 Vermont Department of Labor estimated that 690 residents of Whitingham were in the labor force (individuals 16 years and older). In 2000 the U. S. Census data indicated that about 33% of the people lived and worked in Whitingham. Approximately, 30% commute out to Dover/Wilmington and 15% to Brattleboro. This data indicates that Whitingham primarily "exports" labor to other communities.

Whitingham residents are employed in a variety of industries. The 2000 Census indicated that the largest percentage (15%) of Whitingham residents are employed in education, health and social services fields; 14% in retail trade; and 13% each in construction and manufacturing. The 2000 Census employment data can be found in the Community Profile section

Existing Business

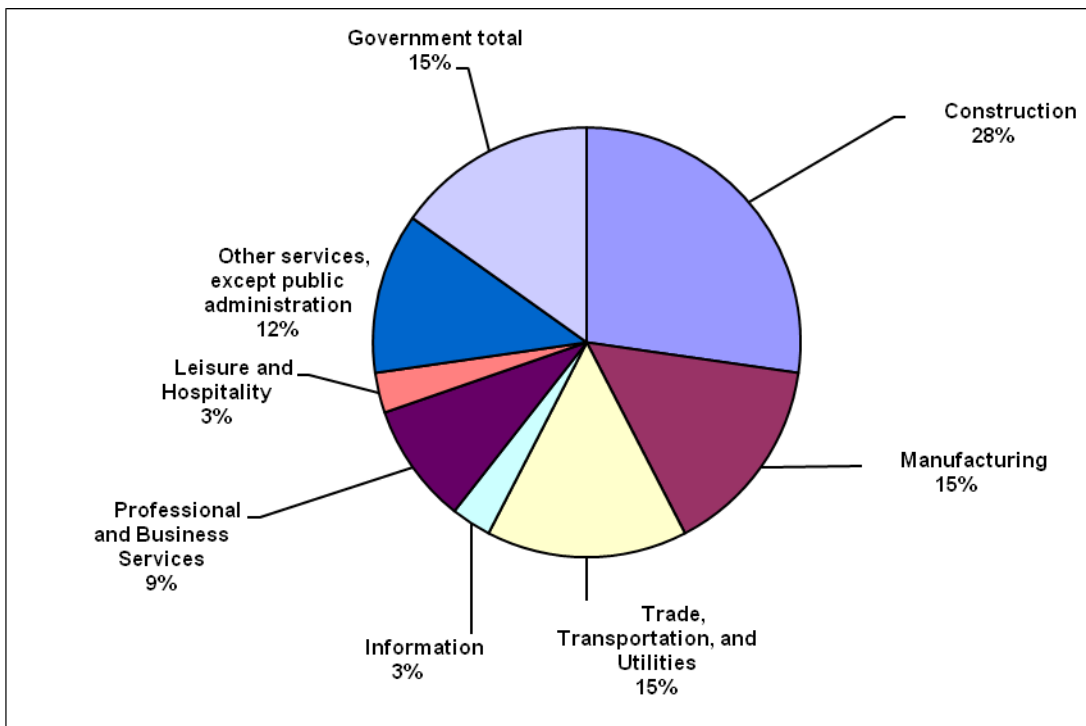
In 2008, there were approximately 33 establishments in the community employing 209 workers in a variety of industries and jobs. The number of establishments and employees peaked in 2002 and 2003 at 40 establishments with 274-284 employees (figure 14). In 2007, 28% of the businesses in Whitingham were part of the construction sector (figure 15).

Figure 12: Whitingham Business Establishment and Employment Trends: 2000-2008



(Source: Vermont Department of Labor)

Figure 13: Whitingham Business Establishments by Sector 2007



(Source: Vermont Department of Labor)

Agriculture and Forestry

Several dairy farms and maple sugar products businesses continue to operate. In recent years, Whitingham has seen the growth of small farms raising sheep, goats, alpacas, and horses. Much of the land used to support the dairy farms of the past has still managed to support the small farms of today.

The trend in agriculture throughout the State has been for farmers to seek small-scale, diversified and direct-market opportunities.¹² This trend is reflected in Whitingham where there was an increase in the number of small farms from 1997 to 2002 (Table 13).

Table 12: Whitingham Farms by size - 1997 to 2002

	1997			2002		
	All farms	1 to 49 acres	50 to 999 acres	All farms	1 to 49 acres	50 to 999 acres
Jacksonville ¹³	12	3	9	19	13	6
Whitingham	7	4	3	6	N/A	N/A

(Source: U.S. Census of Agriculture)

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 of 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.

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.
- Policy 2:** Maintain and strengthen the economic climate for agriculture and forest products industries.
- Policy 3:** Support tourism that draws on the character of Whitingham itself: its beauty, culture, history, wildlife and outdoor recreation.
- Policy 4:** Assist local businesses by providing economic development information, permit guidance, and community facilities and services improvements when appropriate.

¹² University of Vermont Extension, 2006

¹³ The U.S Census of Agriculture collects information via zip code. The Jacksonville zip code (05342) includes a small portion of southwestern Halifax. Therefore the numbers for Jacksonville farms may be higher than they are actually.

Recommendation 4.2: Review and update zoning regulations and other town ordinances and propose improvements, where applicable, to provide greater economic development opportunities and appropriate development review standards. (Planning Commission)

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.

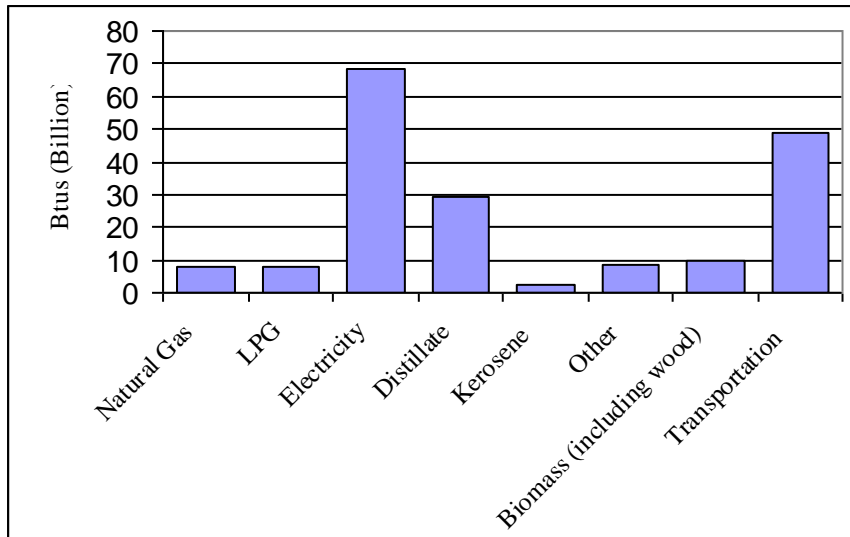
Energy

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 Draft *2008 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 show 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 *Vermont Draft Energy Plan (2008)*, the per capita demand for energy in Vermont has shown steady growth. Between 1990 and 2004, per capita energy demand rose roughly 30%.

Figure 14: Vermont Energy Consumption by Selected Categories, 2006



(Source: Energy Information Administration)

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 2000 Census, 63% of homes in Whitingham were primarily heated with fuel oil or kerosene. Other home heating sources include LP Gas (15%), wood (18%), 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 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 648 customers (as of 2006). The remainder of Whitingham is serviced by Central Vermont Public Service (CVPS).

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.¹⁴ 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 it does not meet all of the criteria for the siting of a large scale generating facility. The neighboring town of Readsboro does have promising sites for wind generation. Currently, there is a wind generating facility in Searsburg.

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 do not connect 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 their bylaws.

¹⁴ *Vermont Residential Fuel Wood Assessment 1997-1998*, Vermont Department of Public Service, December 2000.

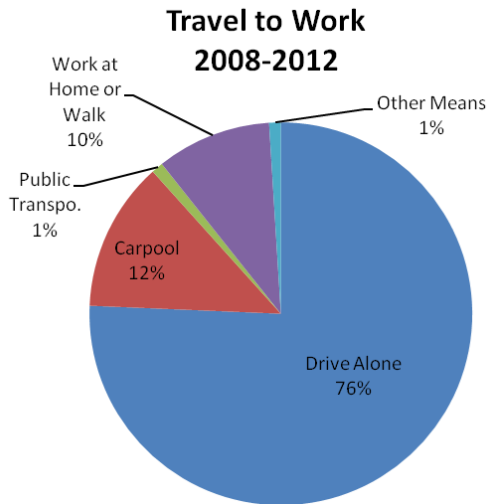
Net metering is one way in which homeowners can realize savings from operating a residential wind or photovoltaic system. Under net metering, a homeowner is permitted to connect suitable generating equipment to the public power grid. During periods when more energy is generated than the property is using, 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 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.¹⁵

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 2000, 73% of Whitingham residents commuting to work drove alone. As discussed in the transportation chapter, the Deerfield Valley Transit Authority (DVTA) operates a free public transit system (MOOVER) within the towns of Dover, Wilmington, Wardsboro, Readsboro, and Whitingham.

Figure 15: Whitingham Residents Commute to Work



(Source: U.S. Census)

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

¹⁵ *Energy Efficiency Resource Standards: Experience and Recommendations*; American Council for an Energy-Efficient Economy; March 2006.

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.

Energy savings can also be realized by retrofitting existing buildings with insulation, more efficient doors and windows, weather-stripping, compact fluorescent 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.
- Vermont Housing Finance Authority's Energy Saver Loan Program - Administered by Windham Housing Trust, this program offers low interest loan funding for homeowners for an energy audit and improvements specified in the audit.

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)

Recommendation 2.2 Evaluate, and as appropriate, propose amendments to the bylaws 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 Town energy coordinator regularly assembles and distributes educational material.

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)

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)

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

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

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 regional plan and compatible with approved plans of other municipalities in the region.

Compatibility with Adjacent 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, solid waste 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 September 5, 2010): 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 September 1, 2010): 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 the 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 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 Commission:** The policies of the Commission relating to sewer line extension, plant expansion, hookups and

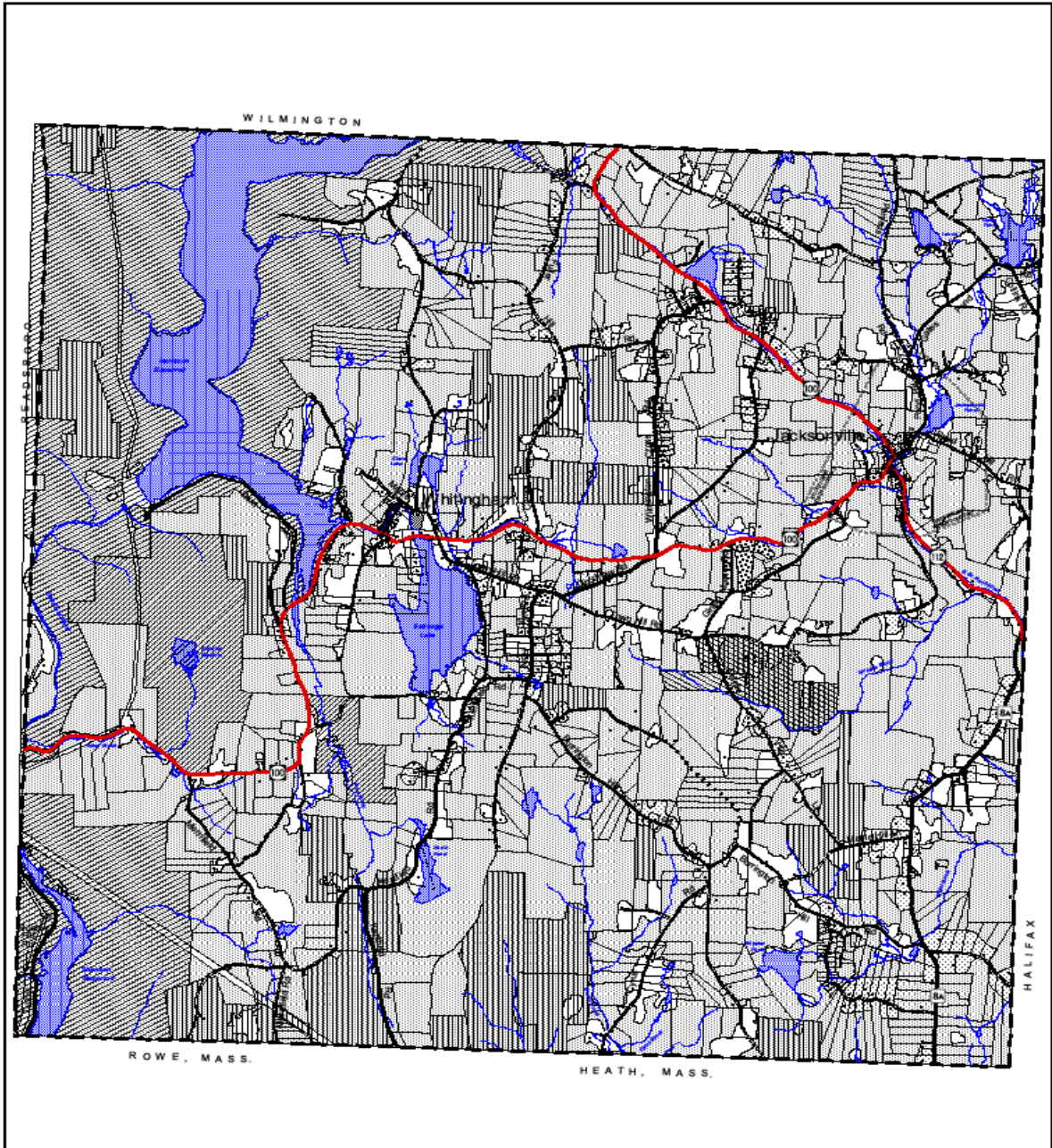
allocation of reserve capacity have definite impacts on future growth in Whitingham. Planning and coordination is a critical component in Town Plan implementation.

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



Existing Land Use Town of Whitingham, Vt.

Note:
- This map should be used for planning purposes and general reference only.
- A large scale color version of this map is available in the Whitingham Town Office.



Structures
Parcel boundary

State land
Conservation easement - no public access
Conservation easement - public access allowed
Parcel enrolled in Use Value Appraisal program - 2007

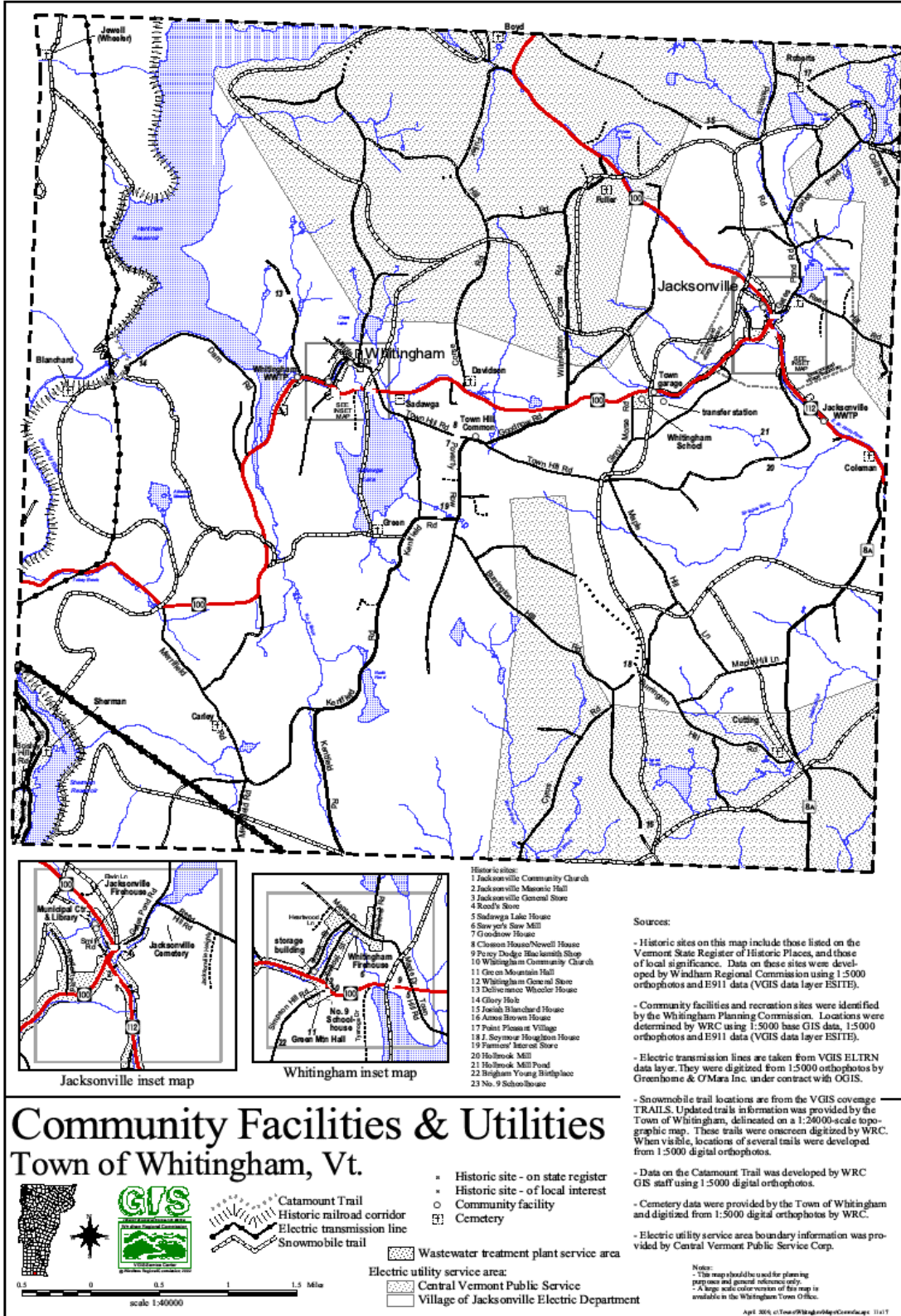
Forest
Industrial
Open
Residential
Village
Water
Public/Government

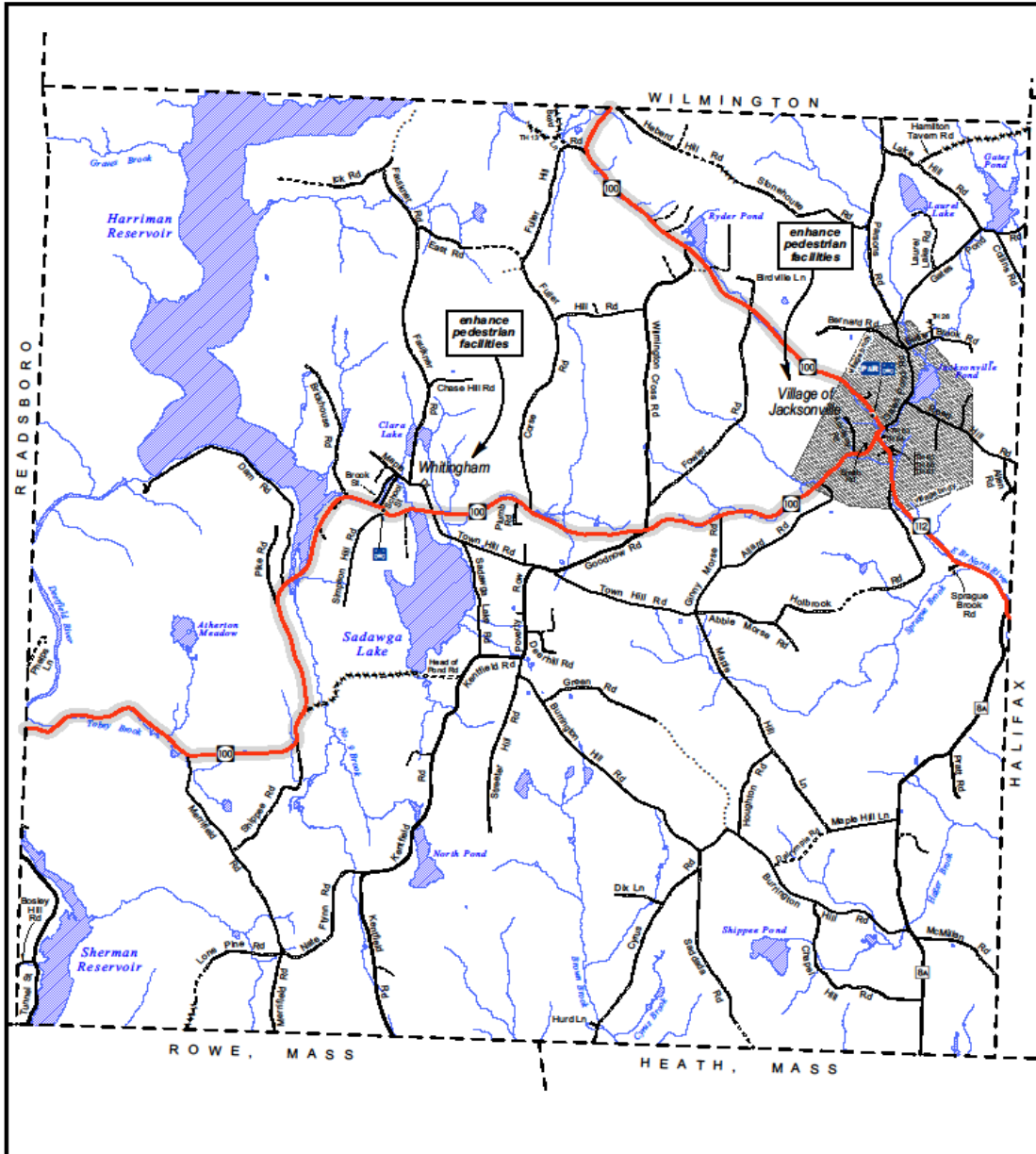
0.5 0 0.5 1 1.5 Miles
scale 1:40000

Sources:

- Land use/land cover areas were delineated by WRC GIS staff using 2001 Vermont digital orthophotos (taken in Spring 2000) and ESRI data.
- Information on parcels enrolled in the Use Value Appraisal Program for 2001 was obtained from the Whitingham lists.
- Building locations were captured using Global Positioning System technology by microDATA, St. Johnsbury, VT for Vermont's Enhanced 9-1-1 program. Location errors in these data have been corrected by WRC GIS staff using 1:5000 digital orthophotos.
- Parcel lines are from GIS data developed by Cartographic Technologies, Inc. (CTI) Brattleboro, Vt. Whitingham's tax maps, at 1:5000 scale, were scanned, vectorized, then updated in 2006 by CTI.
- Surface waters were digitized from 1974 1:5000 orthophotos by the University of Vermont's School of Natural Resources under contract with OGIS (VGIS data layer SWmm). The data have been attributed and have received limited editing by WRC.

MAP 002, C TOWN OF WHITINGHAM, VERMONT, JULY 2007





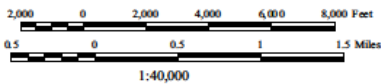
Transportation System
 Town of Whitingham, Vt.
 July 2009



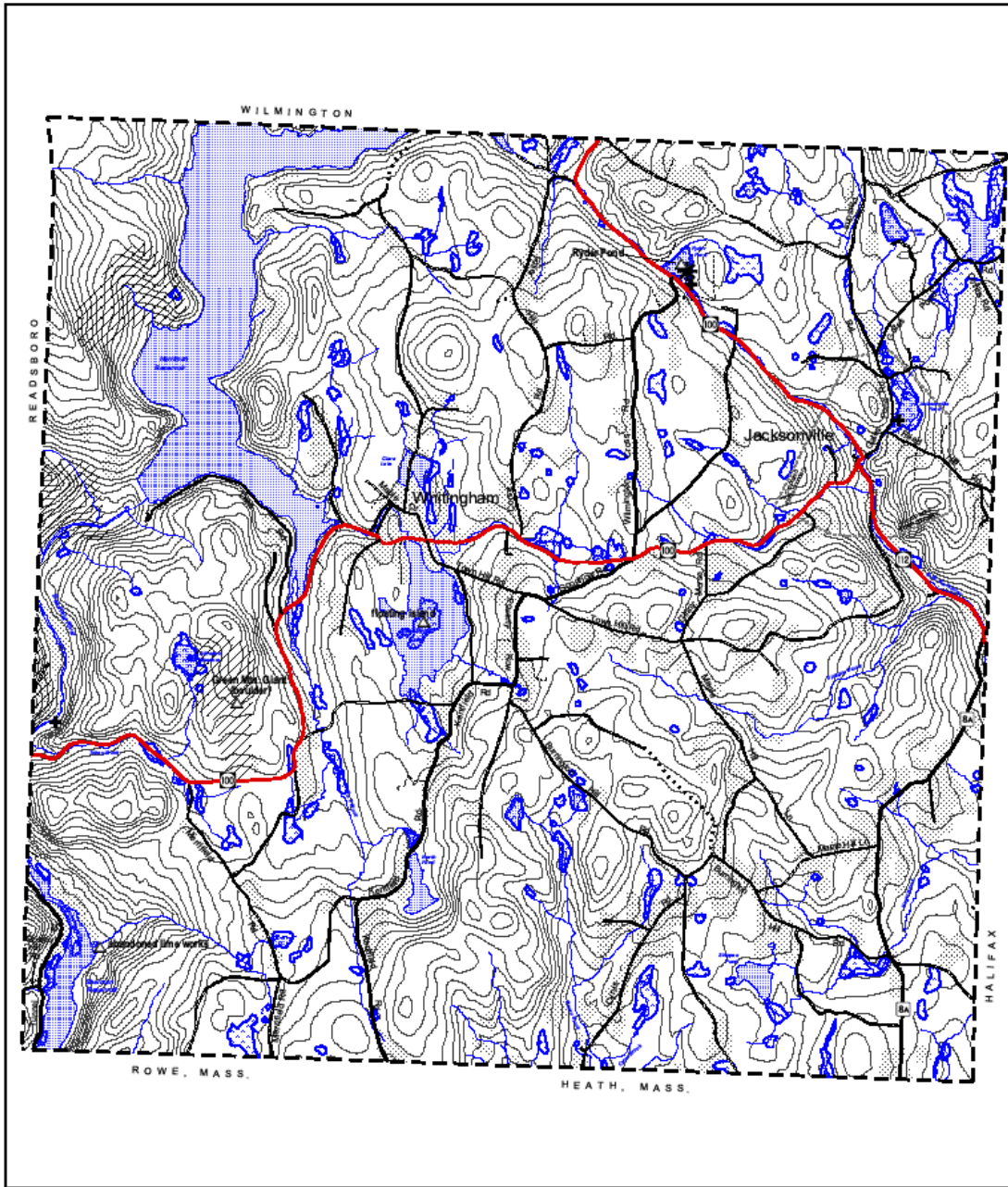
- Federal or state highway
- Class 2 town highway - paved
- Class 3 town highway - paved
- Class 3 town highway - unpaved
- Class 4 town highway (unpaved)
- Legal Trail
- Private road/drive
- Impassable road (Class 4 Town Highway's only)
- Bus Route - The MOOver (Deerfield Valley Transit Authority)
- Bus stop
- Municipal Park and Ride
- Stream
- River or pond

Data sources:

- Highway data are from Vt. Agency of Transportation sources (VGSIS data layer R200000). Data were corrected and updated by Windham Regional Commission in 2008 using information provided by the Town of Whitingham, data from Vermont's Enhanced 911 Board, and Vermont digital orthophotos.
- Surface water are from the Vermont Hydrography Dataset (VGSIS data layer SW000000). The dataset was generated at a scale of 1:5000 and was developed using digital orthophotos, topographic maps, color ink-and-aerial photography and other auxiliary data sources.



May 2010: c:\town\wilmington\TP_3.wma.mxd



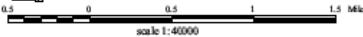
Natural Resources

Town of Whitingham, Vt.

April 2009



Note:
 - This map should be used for planning purposes and general reference only.
 - On-site investigation is required to verify the existence and extent of the wetlands and soils data shown on this map.
 - A large scale color version of this map is available in the Whitingham Town Office.



- △ Site of natural or geologic interest
- * Significant Natural Community
- ✱ Rare or threatened plant species
- Deer wintering area
- Wetland
- Important farmland soil *
- 50' Contour, generalized
- Stream
- Pond

* these soils qualify as Primary Agricultural Soils under Act 250

Sources:

- Wetlands are from US Fish and Wildlife Service's National Wetlands Inventory (NWI) maps. These maps show approximate locations of wetlands that are generally 3 acres or larger in size.
- Agricultural soil delineations are derived using soil data. Soil boundaries were digitized from 1:20,000 orthophotos for the Windham County Soil Survey.
- Contour lines were generated from Vt. Mapping Program Digital Terrain Models by WRC using ESRI's Spatial Analyst. They are intended to portray the general topography of the area and should not be used to determine actual elevations.
- Locations of rare plant species were taken from VT ANR Department of Fish and Wildlife, Nongame and Natural Heritage Program's Rare, Threatened and Endangered Species and Significant Natural Communities database. The database is current to February 1997. Locations are approximate, but generally within 200 meters. For further information, contact the Nongame and Natural Heritage Program.
- Deer wintering areas were delineated by VT ANR, Department of Fish and Wildlife. Digital data released in April 1997 were used.
- Sites of natural or geologic interest were identified by Whitingham Planning Comm.
- Surface waters were digitized from 1974 1:5000 orthophotos by the University of Vermont's School of Natural Resources under contract with GIS (VGS data layer SWnum). The data have been attributed and have received limited editing by WRC.

