

SALEM MASTER PLAN

2016 UPDATE



Prepared for:
Town of Salem Planning Board

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I. INTRODUCTION/VISION STATEMENTS

INTRODUCTION

In 2015 and 2016, the Salem Planning Division engaged the services of two Planning Interns to assist with updates to this important planning document. As a result of these efforts, seven chapters were substantially updated to include the most recent census data, and information from numerous federal, state and local studies and reports. Reformatting was also a part of the update process.

We are pleased to provide this updated portion of Salem's Master Plan to the Planning Board, Salem officials, and other Salem departments.

VISION

Per RSA 674:2, master plans must at minimum contain a vision section and a land use section. The vision section serves to direct the various sections of the plan and contain a set of statements which articulate the desires of the citizens affected by the master plan. The last Master Plan updated and adopted by Salem was completed in 2001 and contains goals that are spread throughout the chapters. The goals established in the 2001 Master Plan, along with the updates contained herein, were reviewed for current and future relevancy. The following serve as future planning directives for the Town of Salem to carry forward as vision concepts.

Population and Housing

- Encourage development of more affordable housing to support the local labor force.
- Control the rate of residential development in relation to the Town's ability to provide facilities and infrastructure.
- Continue to educate the public about affordable housing needs and programs.
- Provide opportunities for housing that incorporates supportive services to address the needs of Salem's older population.
- Maintain compliance with statutory requirements for providing reasonable opportunities for the siting of manufactured housing.
- Provide more opportunity for the development of townhouses or other attached housing for both the ownership and rental markets, for both elderly and non-elderly households, and at both affordable and market rates.

Economic Development

- Encourage the redevelopment of obsolete, abandoned, and underutilized commercial and industrial properties, with particular attention to the Depot and South Broadway areas.
- Promote a more diverse economic base with lesser emphasis and dependence on the retail sector.
- Encourage education and training to develop workforce skills needed by local businesses.
- Improve the local infrastructure (roadway, sewer, and water capacity and other utilities) to accommodate future economic development and redevelopment.

- Provide for efficiency in commercial-industrial land development through density, coverage and building height allowances to provide for an adequate land supply for future growth, and to enhance the assessed value per acre of developed properties.
- Provide for a reasonable range of home occupations for uses that do not impact on the residential character of neighborhoods.
- Support the improvement of regional highway capacity, and improve the local roadway capacity in order to accommodate future economic development and redevelopment.

Natural Resources and Conservation

- Preserve, protect, and promote the wise use of the Town's natural resources.
- Promote habitat diversity.
- Manage the Town's public open spaces in order to maximize multiple use and public access to the extent possible without causing adverse environmental impacts.
- Promote flood hazard mitigation through the adoption of regulatory measures, as well as the acquisition of land which is flood prone or acts as flood storage.
- Provide connections between protected open spaces within Salem and linkages to regional greenways.

Historic Resources

- Foster public appreciation and civic pride in the Town's historical resources.
- Promote the use of the Historic Museum for the education, pleasure, and welfare of the citizens of Salem.

Recreation

- Promote long-term development of adequate recreation opportunities for the residents of Salem.
- Promote an extensive variety of recreation opportunities for both current and future citizens of Salem.
- Assure that recreation facilities are provided for all geographic areas in Salem.
- Assure that recreational opportunities and facilities are designed and provided for persons of all ages and all abilities.
- Encourage the expansion of private recreation facilities in the Town.
- Coordinate local efforts to acquire and develop recreation resources in the Town.
- Continue to improve and expand Salem's community-wide recreation programs.
- Create a network of greenways, trails, pedestrian paths and bikeways which link residential areas to recreation facilities and schools.
- Continue to provide educational opportunities for adults and children.

- Provide adequate recreation facilities in accordance with accepted standards, recognizing that the Town is deficient at present with regard to certain facilities, and that additional facilities will be needed to accommodate future growth.

Transportation

- Provide a transportation system that affords accessibility for all and provides good access to employment, housing, services and recreation areas.
- Manage, maintain, and enhance the existing transportation system in order to maximize safety and efficiency and reduce the need for new roadway and bridge construction.
- Minimize the impact of traffic on Salem neighborhoods, commercial areas, and the town street system by maximizing the use of regional highway facilities and transit for such trips.
- Reduce the need for roadway construction by developing viable alternatives that reduce per capita vehicle miles traveled and reliance on the automobile as a mode of travel.
- Improve the integration of land use and transportation planning.
- Continue to participate in the regional transportation planning process established under Federal and State law.

II. POPULATION AND HOUSING

Since the completion of the 2001 Master Plan, Salem's population total has remained relatively unchanged. However, demographics and household composition have shifted as Salem's and the country's average age increased during the first one and a half decades of the 21st century. The information in this update is taken from the 2010 U.S Census, the 2009-2013 5-Year American Community Survey (ACS), and the 2014 New Hampshire Office of Energy and Planning (NHOEP) Population Estimates. The 5-Year ACS surveys a sample of the population over five years in order to ensure the most accurate data possible. This update largely compares changes in population and housing between the latest data available for the 2001 Master Plan and the early 2010s, which is the time period of the most recent data available.

From the Town's founding to the early 1900s, Salem population remained stable while growing at a slight rate. During the second half of the 20th century, Salem experienced very rapid population growth, especially after the construction of Interstate 93 through town in 1963 (Figure II-1). Before 1970, Salem's rate of population change greatly exceeded that of Rockingham County. During the 1970s and 1980s, the Town grew at a considerably slower pace than the region. In the 1990s, the Town's population growth rate was higher than in the 1980s, but was somewhat lower than the rate of increase for the County. In the 2000s, Salem's population grew at about a third of the rate of increase for the County. According to the NHOEP estimate, Salem's population has slightly reduced during the 2010s while the County's increased minimally (see Figure II-1 and Table II-1). The NHOEP estimates population change between 2010 and 2014 through changes in the number of dwelling units and comparing the dwelling unit change by the 2010 Census rates for occupancy and population per household.

Figure II-1: Salem Population (1765-2010)

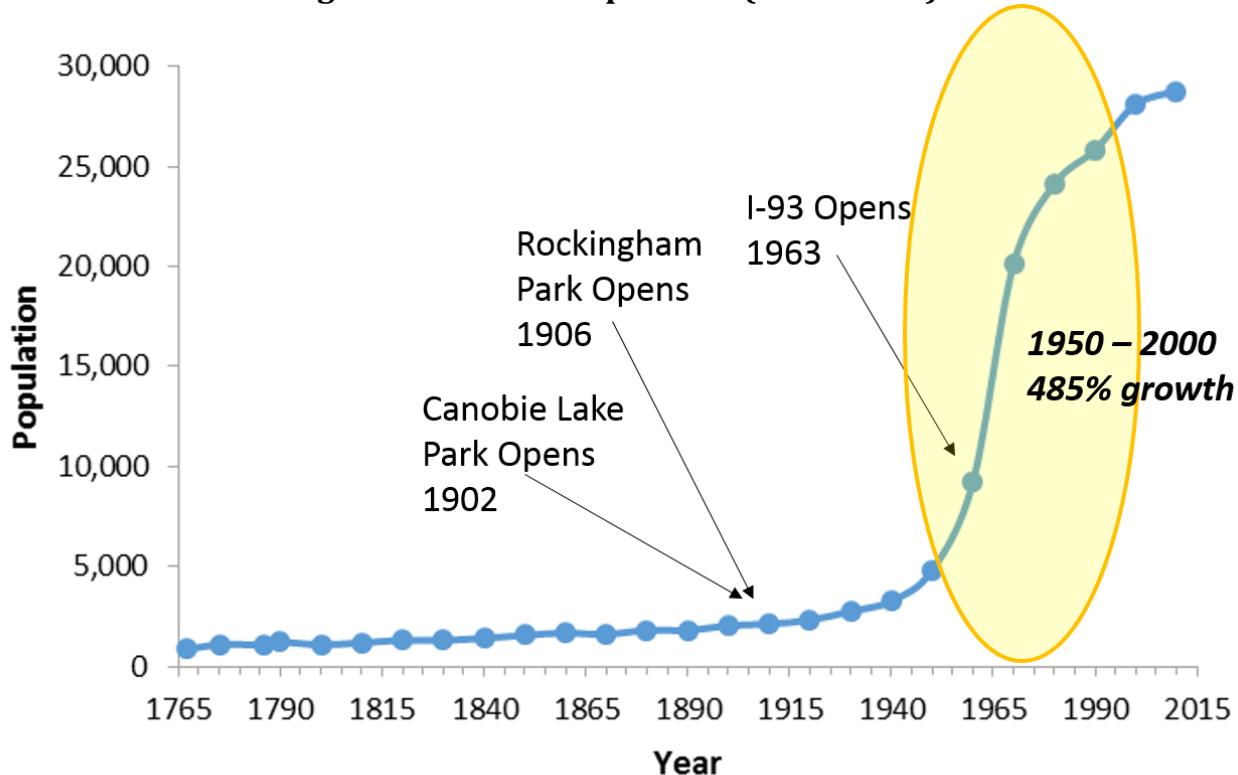
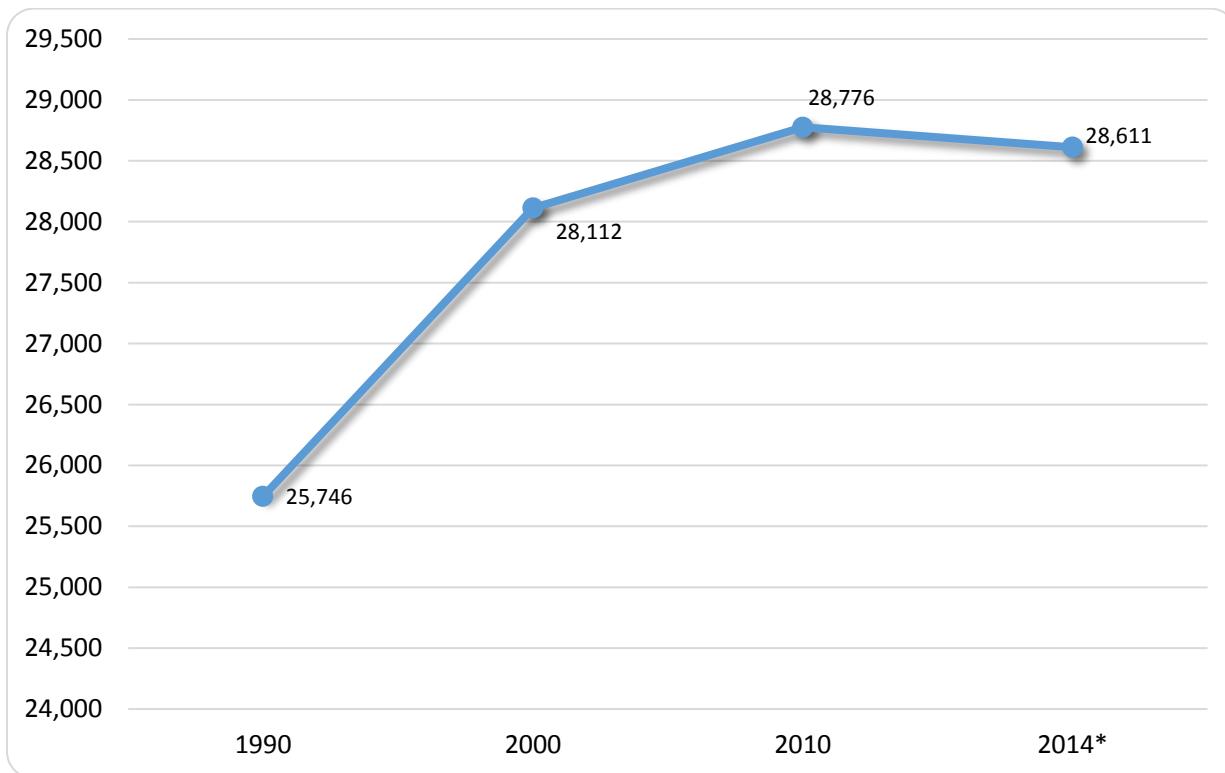


Figure II-2: Population Growth (1990-2014)



*Source: *NH Office of Energy and Planning (Estimates)*

**Table II-1: Percent Change in Population
Town of Salem versus Rockingham County**

Period	Salem	Rockingham County
1950-60	91.7%	41.4%
1960-70	118.7%	40.3%
1970-80	19.8%	37.0%
1980-90	6.7%	29.2%
1990-00	9.2%	12.8%
2000-10	2.4%	6.4%
2010-14*	-0.6%	1.1%

Source: U.S. Census

Consequently, Salem's share of Rockingham County's total population has been declining slowly between 1990 and 2010 to around its level in 1960. (See Table II-2).

These averages have declined with demographic trends, but are also influenced by the mix of housing units and differences in the numbers of persons per unit by type of structure. While average household size has steadily declined from 1980 to 2010, the average number of school age persons per household

dropped significantly from 1980 to 1990, then increased between 1990 and 2000, but substantially dropped again from 2000 to 2010.

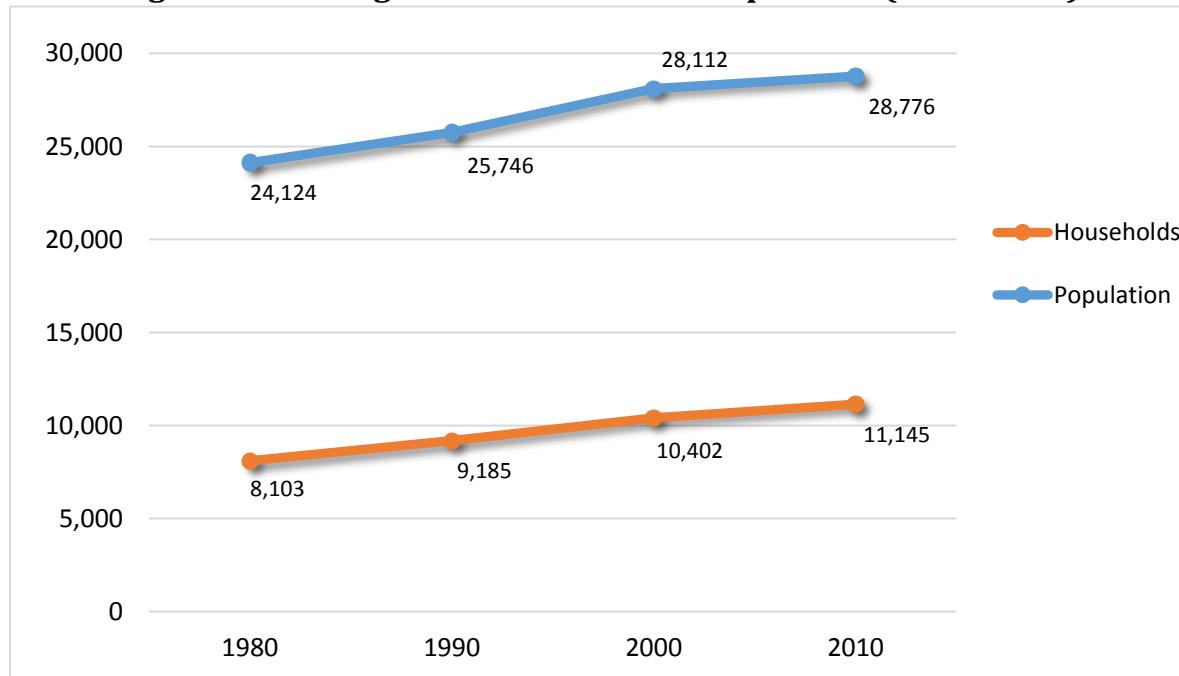
As displayed in Figure II-2, a little over 1,000 households were added in each decade from 1980 to 2000. When population growth slowed in the 2000's, Salem added 740 additional households.

Table II-2: Salem's Population as Percentage of Rockingham County

Year	(Town Percent of County Total)
1960	9.3%
1970	14.5%
1980	12.7%
1990	10.5%
2000	10.1%
2010	9.7%

Source: U.S. Census

Figure II-3: Change in Households and Population (1980-2010)



Source: U.S. Census

The average number of persons living in every type of unit in Salem declined. The average number of individuals living in renter-occupied housing did not lessen as much as those living in owner-occupied housing. In particular, the average number of persons living in single rental-occupied units barely changed from 2.78 to 2.71. The lack of decline in this category compared to other categories suggests that these households contain a greater likelihood of young, growing families.

Table II-3: Change in Household Size

Year	Avg. Household Size	Population Age Group (5-17 Yrs. Old) Per Household
1980	2.97	0.707
1990	2.79	0.476
2000	2.69	0.512
2010	2.57	0.323

*Source: U.S. Census***Table II-4: Persons per Occupied Unit by Tenure and Units in Structure (2009-2013)**

Estimate	Housing Units	Persons in Units	Persons per Occupied Unit (2009-13)	Persons per Occupied Unit (1990)
Owner Occupied				
1, detached or attached	7,167	20,645	2.88	3.12
2 to 4	305	880	2.89	3.09
5 or more	425	773	1.82	1.96
Mobile home	552	799	1.45	1.83
Boat, RV, van, etc.	0	0		
Total Owner-occupied housing units:	8,449	23,097	2.73	2.95
Renter Occupied				
1, detached or attached	635	1,724	2.71	2.78
2 to 4	293	513	1.75	2.17
5 or more	1693	3,252	1.92	2.01
Mobile home	73	103	1.41	1.95
Boat, RV, van, etc.	0	0		
Total Renter-occupied housing units:	2,694	5,592	2.08	2.22
All Occupied Units				
1, detached or attached	7,802	22,369	2.87	3.09
2 to 4	598	1,393	2.33	2.43
5 or more	2,118	4,025	1.90	2.01
Mobile home	625	902	1.44	1.84
Boat, RV, van, etc.	0	0		
Total occupied housing units:	11,143	28,689	2.57	2.79

Source: U.S. Census

AGE DISTRIBUTION

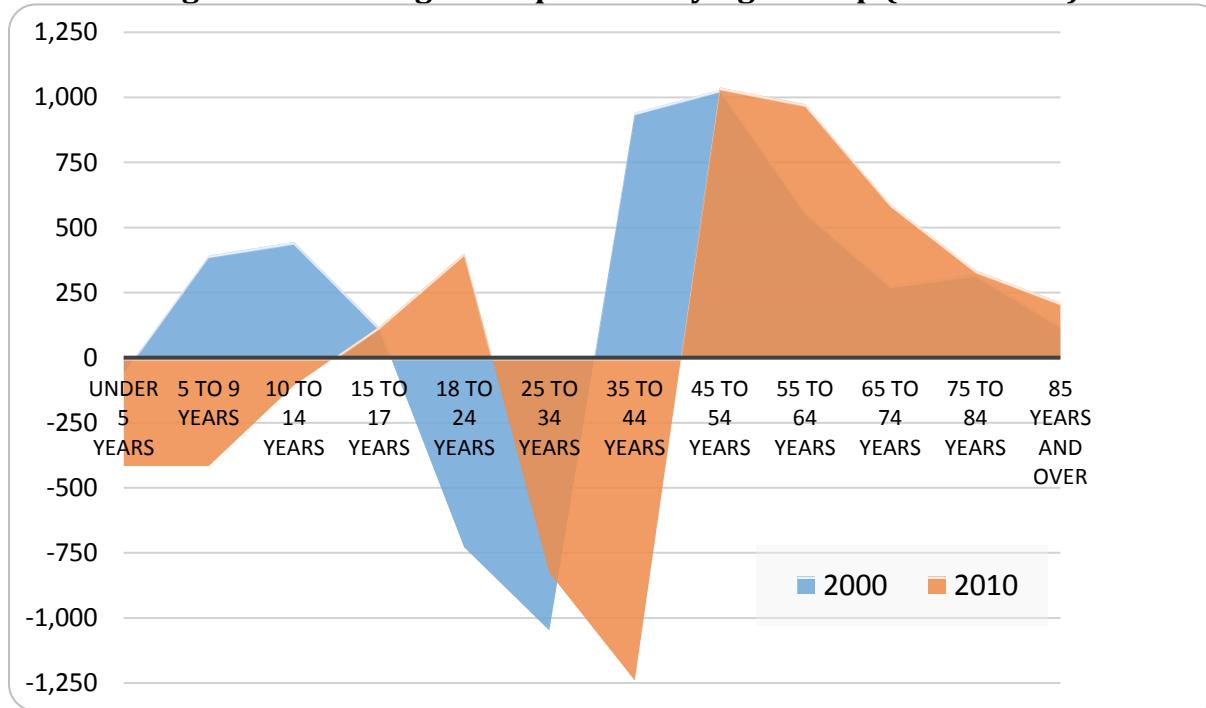
Table II-5 and Figure II-3 on the following page display the shift in age distribution of Salem population. Since 1990, the age distribution in Salem has shifted upward, resulting in 47.1% of the population being over the age of 45 in 2010 compared to 31.3% in 1990. At the same time, the portion of Salem's population under 25 has remained relatively unchanged from 33.9% in 1990 to 31.4% in 2000 to 29.4% in 2010.

Table II-5: Distribution of Population by Age Group (1990-2010)

Age Group	Number of Persons			Percent of Population		
	1990	2000	2010	1990	2000	2010
Under 5 yr. olds	1,842	1,783	1,367	7.2%	6.3%	4.8%
5 to 9 yr. olds	1,667	2,059	1,643	6.5%	7.3%	5.7%
10 to 14 yr. olds	1,663	2,107	2,000	6.5%	7.5%	7.0%
15 to 17 yr. olds	1,046	1,162	1,280	4.1%	4.1%	4.5%
18 to 24 yr. olds	2,466	1,737	2,138	9.6%	6.2%	7.4%
25 to 34 yr. olds	4,619	3,571	2,745	17.9%	12.7%	9.5%
35 to 44 yr. olds	4,389	5,330	4,090	17.1%	19.0%	14.2%
45 to 54 yr. olds	3,225	4,254	5,292	12.5%	15.1%	18.4%
55 to 64 yr. olds	2,309	2,869	3,843	9.0%	10.2%	13.4%
65 to 74 yr. olds	1,566	1,843	2,433	6.1%	6.6%	8.5%
75 to 84 yr. olds	766	1,087	1,423	3.0%	3.9%	5.0%
85 yr. olds and over	188	310	522	0.7%	1.1%	1.8%
Total Population:	25,746	28,112	28,776	100.0%	100.0%	100.0%

Source: U.S. Census

Figure II-4: Change in Population by Age Group (2000-2010)



Source: 2010 U.S. Census, the 2009-2013 5-Year American Community Survey (ACS)

Two main groups increased the population in certain age distributions from 1990 to 2010: people born around 1985 to 1995 and those born around 1945 and 1965. Thus, growth occurred due to these groups in 5 to 14 year olds in 2000, 15 to 24 year olds in 2010, 35 to 54 year olds in 2000, and 45 to 64 year olds in 2010. These two groups reflect the nationwide trend in population from the "Baby Boom" and the "Echo Boom". The greatest growing group in Salem between 1990 and 2010 was 45 to 54 year olds.

The group that had the greatest decline from 2000 to 2010 is 35 to 44 year olds, which was largely due to the fact that the last of the baby boomers have reached 45. In spite of the loss of 35 to 44 year olds, the corresponding population of 25 to 34 year olds from 2000 increased from 3,571 to 4,090 when that age group was between 35 and 44 in 2010. The population under ten also substantially decreased between 2000 and 2010, which suggests that the school age population in Salem will continue to decline in the near future.

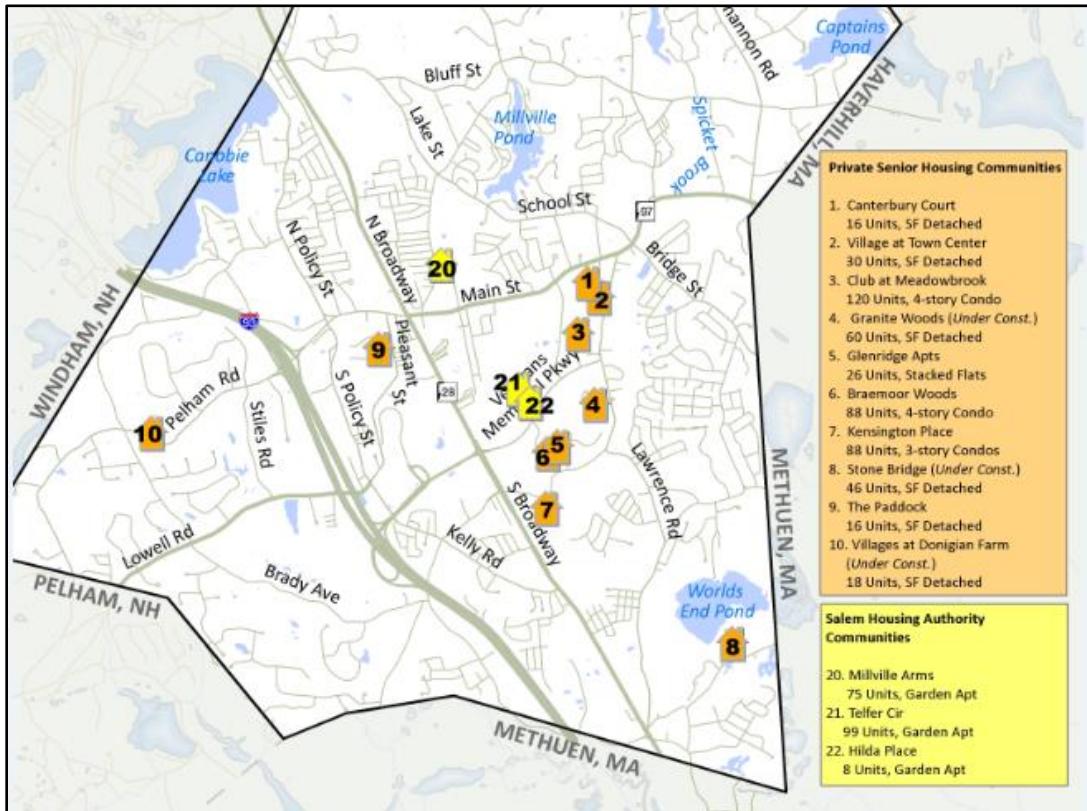
SENIOR SERVICES

Salem Senior Services is a department of the Town of Salem. The mission of Salem Senior Services is "to assist the Town of Salem's Senior Citizens in maintaining self-sufficiency in their homes; acquaint them with local, county, state and federal programs; increase their opportunities to interact in the community; and provide them with a Center which fosters mental, physical, social and nutritional well-being in a wholesome environment."

Senior Citizen weekly programs were established in the summer of 1967 through the Recreation Department at the old Fire Station on the corner of Millville and Main Street. Programs began to expand in 1971, with over 2,875 seniors attending the various programs. On March 4, 1974 the seniors acquired a drop-in center in the Old Town Hall. The new drop-in center saw an average of about 600 seniors using the facility each month. The current Ingram Senior Center was built and donated to the Town of Salem in September of 2001. Initially only the first floor of the building was used for programming, but the second floor was finished and opened in August of 2003 in order to accommodate the increasing senior population.

Today, the Senior Center is arguably one of the most active facilities in Salem. At one time the Ingram Senior Center opened its membership to anyone 60 and over, but now restricts membership to Salem residents and those grandfathered in. As the baby boomers continue to retire, the greater the demand will be for space and activities. Approximately 250 people a day frequent the senior center for its programs, with the help of about 170 volunteers. As of December 1, 2016 the Senior Center serves more than 2,948 seniors, of which 88% are Salem residents and 11% from other communities. The range of activities is robust and includes over 210 programs, such as book clubs, Aquarobics, adult coloring, chair yoga, trips, cell phone tutoring, and foreign language classes. Most activities are free, while some cost a small fee. Also, there are currently thirteen 55 and over communities developed or in construction in Salem. Furthermore, as new 55+ developments continue and with seniors retiring daily, there is a growing demand to expand the Senior Center facilities and parking lot to accommodate the increasing senior population in Salem.

Figure II-5: Senior Housing Developments



TRENDS AND PROJECTIONS: POPULATION, HOUSEHOLDS, TENURE AND HOUSING UNITS

Although previous projections predicted the Town of Salem would substantially increase in population, the NHOEP has revised projections based on Salem's current slow growth pattern that suggests the Town's population will be about the same in 2020 at 28,719. Salem's population would slowly inch upward to 29,861 in 2030 and 30,063 in 2030.

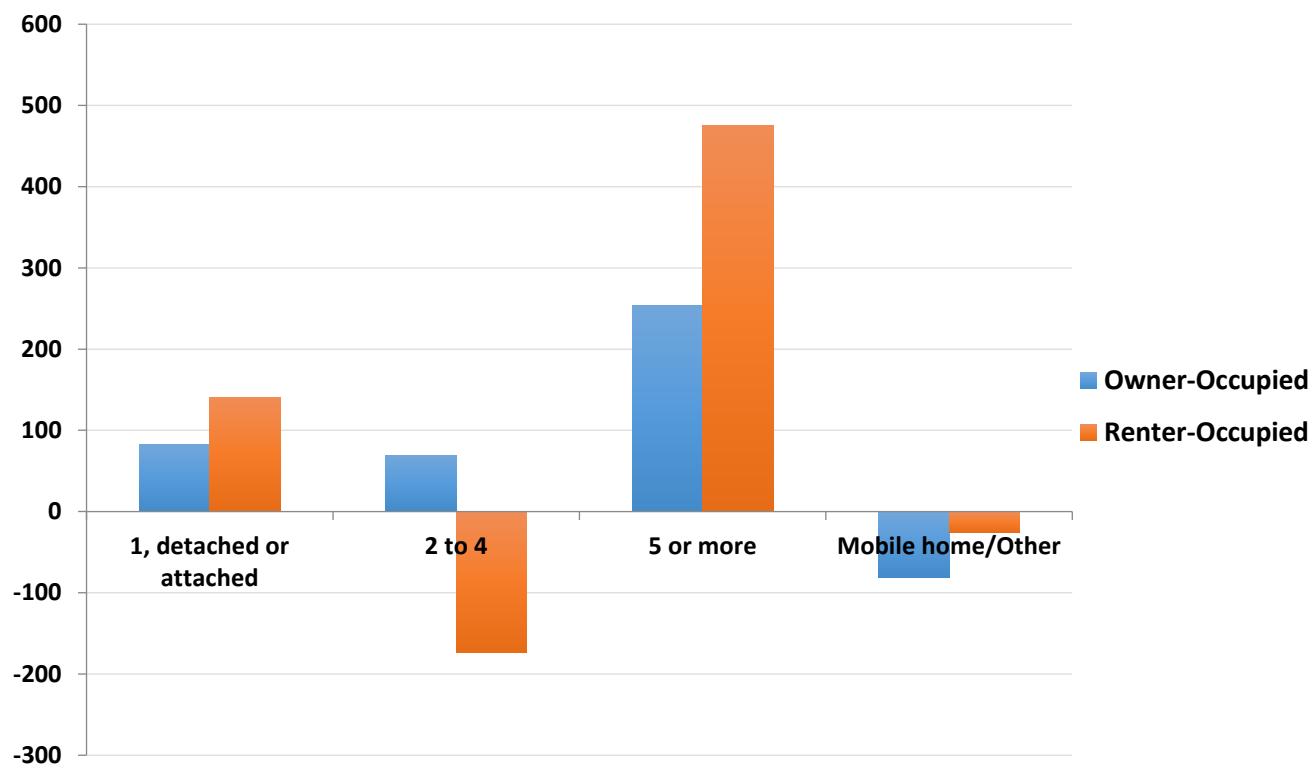
If Salem's growth rate between the years 2000 and 2010 were to stay the same for the years 2010 to 2020, the population would grow at a 2.4% rate to 29,536 and the number of households would grow at a 7.1% rate to 11,941. These figures translate into 680 people and 796 more households. Following current patterns of the split between owner and rental housing units in which 75.8% of occupied units are owned, the additional households would translate into 604 new owner-occupied units and 192 rental-occupied units. A 2014 assessment performed by the NH Housing Finance Authority (NHHFA) and the NH Center for Public Policy projected that 16,523 units will be added between 2010 and 2020 in Rockingham County. Of those new units, 12,938 will be owner units and 3,548 rental units.

HOUSING PRODUCTION

Figure II-6 depicts roughly the change in occupied housing units in the Town of Salem since the completion of the last Master Plan in 2001. Since 2000, the greatest changes have been that the number of units grouped into five or more residences increased substantially more than any other type of unit. The addition of more apartment complexes has led to increased density in some neighborhoods of Salem, which better supports the increased aging population that has less mobility. At the same time, the number of occupied rental units for smaller complexes of two to four residences has declined since 2000. This form of housing appears to have been overtaken by rental units with five or more residences. The number of non-manufactured owner-occupied housing units also increased in all types with the greatest increase

occurring for structures with five or more residences. The number of manufactured or mobile homes in Salem have declined for both owners and renters.

Figure II-6: Change in Occupied Units by Tenure (2000-2011*)



Source: 2010 U.S Census, the 2009-2013 5-Year American Community Survey (ACS)

HOUSING COSTS AND AFFORDABILITY

In the 1990s and early 2000s, Rockingham County faced a constraint on rental housing. Since then, Salem has substantially increased the amount of rental housing yet there remains a tighter rental market in Salem and the County compared to nationwide. Salem's rental housing vacancies have become statistically nonexistent. This development suggests the need for more rental units in Salem. Rockingham County's increased rental vacancy rate suggests that possible overflow in people seeking rental housing in Salem could be taken by neighboring communities. The median gross rent rate across each analyzed category in Table II-6 has outpaced the rate of inflation and median monthly rent in Salem and Rockingham County has reached above \$1,000.

Table II-6: Rental Statistics for Salem, Rockingham County, and the U.S.

	2000 Median Gross Rent (in 2011 Dollars)	2009-13 ACS Median Gross Rent (in 2011 Dollars)	2000 Rental Vacancy Rate	2009-13 ACS Rental Vacancy Rate
Salem	926	1,032	2.6	0.0
Rockingham Co.	937	1,095	3.3	4.6
U.S.	786	904	6.8	7.3

Source: NH Housing Finance Authority – 2014 Assessment

The NHHFA's 2014 assessment listed Salem's area median income (AMI) for a four-person household as \$82,800. Based off of that median income, the assessment determined that the top monthly payment for rent for workers who make 60% of Salem's AMI would be \$1,118. According to the U.S. Department of Housing and Urban Development (HUD), families who spend greater than 30% of their income on housing costs are "cost-burdened" and do not live in housing affordable for their income level. In addition, 60% of AMI is often used as the income level to determine the availability of affordable workforce housing.

The greater problem in Salem housing is the affordability of owning a home in Salem. The median home sales price in Salem in 2013 was \$255,000. For a new home, the median price was \$325,500. With a 10% down payment, a minimum income of \$85,000 is necessary to afford the average home, which is greater than Salem's AMI for a four person household. Salem needs to increase the availability of affordable housing since the majority of households cannot afford much of its current housing stock. The median home price for Rockingham County is similar at \$269,653.

Figures II-7 and 8 display data from a 2009 assessment by planning consultant Roger Hawk of Salem's housing conditions for families earning Salem's median income. The amounts listed for median family income have remained largely unchanged during the first half of the 2010s. According to Hawk's assessment, nearly 70% of Salem's housing is unaffordable for a family of four earning the median income level to own while 54% of rental housing was unaffordable to families earning the standard workforce income level.

Figure II-7: Assessed Value of Ownership of Housing Units by Type

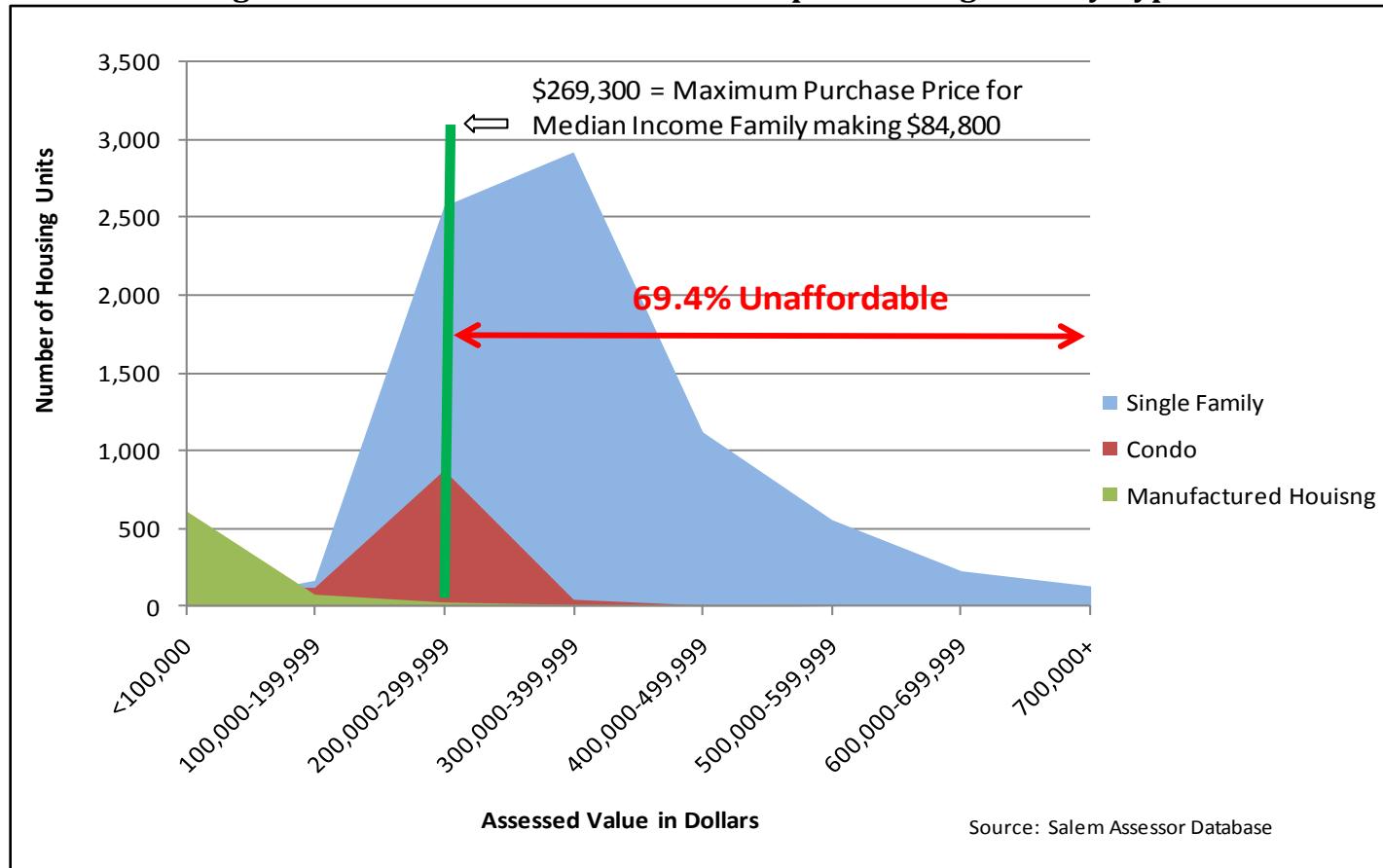
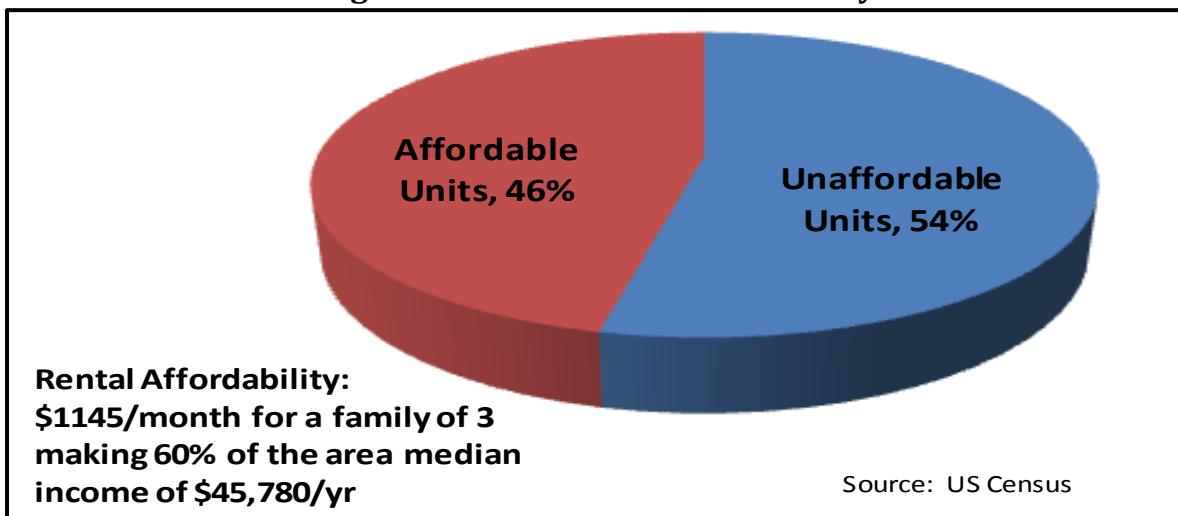


Figure II-8: Rental Unit Affordability



Further analysis provided the Comprehensive Housing Affordability Strategy (CHAS) suggests that an estimated 34% of homeowners and 37% of renters in Salem pay more in housing costs than what is affordable according to their income (according to the 2008-12 ACS). CHAS data determines that families making less than the HAMFI (HUD Area Median Family Income) particularly face overpaying for affordable housing as nearly half of each income group making less than Salem's HAMFI pays over 30% of its income in housing costs.

Table II-7: Salem Households Cost-Burdened -2008-2012

Cost of Housing as % of Income	Owners		Renters	
	Count	Percent	Count	Percent
Housing Costs Less than 30%	5,635	66.1%	1,675	62.9%
Housing Costs Between 30% to 50%	1,635	19.2%	630	23.6%
Housing Costs Greater than 50%	1,260	14.8%	365	13.7%

Source: 2010 U.S Census, the 2009-2013 5-Year American Community Survey (ACS)

Table II-8: Salem Households Cost-Burdened Related to Income Level -2008-12 ACS

Income Level	Households with Housing Costs >30% HAMFI		Households with Housing Costs >50% HAMFI	
	Count	Percent	Count	Percent
Less than 30% HAMFI	780	88.6%	630	71.6%
30% to 50% HAMFI	845	80.9%	425	40.7%
50% to 80% HAMFI	1,055	49.3%	440	20.6%
80% to 100% HAMFI	405	47.4%	65	7.6%
Greater than 100% HAMFI	800	12.7%	65	1.0%

Source: 2010 U.S Census, the 2009-2013 5-Year American Community Survey (ACS)

In 2010, The Town of Salem adopted an ordinance that encourages the creation of workforce housing in more residential zones. From the ordinance, workforce housing projects are subject to review by the

Planning Board through conditional use permits instead of requiring further approval by the Zoning Board of Adjustment. Allocation hearings for affordable housing are no longer required, which allows a developer to apply to the Planning Board at any time.

Multi-family units for workforce housing can be developed in any zone if the parcel is at least 10 acres and contains a substantial buffer. Workforce housing can also be built more densely than other housing types through the allowance of a 50% increase in the number of bedrooms built in a project in which all units meet affordability requirements and a 30% increase in the number of units allowed as long as the additional units meet affordability requirements. Affordability for home ownership is based on housing costs, including mortgage principal, interest, taxes and insurance, not exceeding 30% of the household income for a family of four persons with an annual income below 100% of HAMFI. Affordability for housing rental is based on monthly rental and utility costs not exceeding 30% of the household income for a three-person household with an annual income below 60% of HAMFI.

SALEM HOUSING AUTHORITY

Salem Housing Authority (SHA) was created in 1971 under New Hampshire RSA 203:4, as a public agency operating in the Town of Salem. SHA seeks to provide “decent, safe, sanitary and affordable housing to low and moderate-income households.”

An increasing concern for the Town of Salem and SHA is the affordability of housing. SHA oversees federally subsidized public housing through HUD, and Low Income Housing Tax Credit regulated by the Internal Revenue Service (IRS). According to HUD standards, public housing serves households at 80% or less of the median income. Currently in Salem there are a total of 182 affordable housing units in Salem that include: Millville Arms, Telfer Circle, Hilda Place, and Downing way. The waiting list for access to Salem’s affordable housing is extensive. Table II-10 displays the number of households and the breakdowns on a waiting list as of Fall 2017.

Table II-9: Salem Housing Authority Low-Income Units

Name	Year Built	# of Units	Services	Federally Subsidized
Millville Arms	1977	75 units	Elderly/disabled	Federally subsidized public housing
Telfer Circle	1983	75 units	Elderly/disabled	Federally subsidized public housing
Hilda Place	1995	8 units	Elderly/disabled	Federally subsidized public housing
Downing Way	2007	24 units	Elderly	Low Income Housing Tax Credit

Table II-10: Salem Housing Authority Waiting List: Fall 2017

SHA Waiting List Details	
Total Households on waiting list	203
Waiting for one-bedroom	192
Waiting for two-bedroom	11
Head of Household female	136
Head of Household male	67
Primary race white/non-Hispanic	187

Households with children	5
Extremely low income (<=30%)	50.5%
Very low income (>30% but <=50%)	36.14%
Low income (>50% but <80%)	13.37%

2015 REGIONAL MASTER PLAN – ROCKINGHAM PLANNING COMMISSION

The March 2015 draft of the Rockingham Planning Commission's (RPC) chapter on housing presents recommendations and guidelines for housing problems that are facing both the Town of Salem and the county as a whole.

Since the greying of the population is impacting not only Salem but Rockingham County and the U.S. as a whole, the document outlines some issues that could be faced with an older population inhabiting more of a community's housing. The first issue is that many older citizens remain in the same residence even though the housing no longer best fits their needs in terms of maintaining finances, health, or an accessible community. A second issue is that the recent increase in housing complexes designated for those 55 and older may not be placed close enough to municipal services or shopping to make it accessible for a community that generally has less mobility. A third issue is that the predominance of an older population in the community could result in limited interest in assisting the needs of other age groups such as improved educational services for children. With nearly half of the population in 2010 above 45, the Town needs to keep these issues in mind to maintain a livable community for all age groups.

RPC also suggests several recommendations for future housing needs that should be reviewed by the Town:

- Encourage the availability of diverse types of housing and making sure growth in housing matches growth in employment.
- Develop programs to educate residents about local regulations and the importance of affordable housing.
- Allow mixed-use developments.
- Encourage the construction of homes using energy efficient materials.
- Provide affordable housing that is diverse in style and has quality architecture.
- Balance the need for additional housing with the need to maintain open spaces and conservation land.
- Promote the development of infill housing and the redevelopment of previously used sites.
- Promote mixed-income, multi-family housing along major corridors and employment centers.
- Propose the use of low income or historic preservation tax credits to encourage greater workforce housing.
- Encourage the use of Community Development Block Grant and other funds to improve the availability and quality of housing for low to moderate income homeowners and renters.

In spite of the changes in population and housing described in this update, the recommendations of the RPC and the needs reflected by recent data suggest that the recommendations for housing suggested in

the 2001 Master Plan continue to be largely relevant today. The only substantial adjustment from the 2001 recommendations is that Salem's population is not expected to grow as quickly as was proposed in 2001. Thus, the need for additional residential developments is less immediate. However, the high cost of owning a house and the low vacancy rate and low availability of low-cost rental units suggests that increased affordable housing is a necessary improvement to make sure the Town is a livable community for people of all ages and all types of employment.

RECOMMENDATIONS

- Provide more opportunity for construction of affordable housing for non-elderly households.
 - i. Permit more townhouse and multi-family units for both the rental and ownership markets.
 - ii. Work with the Salem Housing Authority to provide more affordable units for non-elderly households.
- Review the Workforce Housing Ordinance and other regulations to create better incentives, waive some fees for workforce housing.
- Create additional programs to assist low and moderate income people, utilizing the Affordable Housing Trust fund and other means.
- Utilize some town-owned parcels for affordable housing.
- Monitor the need for an emergency housing shelter and explore potential sites.
- Explore the feasibility of allowing existing manufactured housing projects to expand or allowing new parks to be developed in selected areas.
- Revise zoning to allow multiplex housing (2 - 4 unit single family attached structures) in selected areas.
- Explore the feasibility of allowing taller, multi-story residential buildings in certain areas.

SOURCES

- *2008-2012 Comprehensive Housing Affordability Strategy Data Sets*; U.S. Department of Housing and Urban Development.
- *2009-2013 5-Year American Community Survey*; US Census Bureau.
- *2014 Population Estimate of New Hampshire Cities and Towns*; New Hampshire Office of Energy and Planning; August 2015.
- *Census of Population and Housing* (Decennial Census data for 1970, 1980, 1990, 2000, and 2010); US Census Bureau.
- *County Population Projections, By Municipality*; New Hampshire Office of Energy and Planning; fall 2013.
- *Hawk, Roger, "Salem Workforce Housing Issues and Options;"* October 20, 2009.
- Hawk, Roger, "Salem Fair Share Housing Calculation;" October 22, 2009.
- *Hawk, Roger, "Workforce Housing Opportunities Report;"* October 27, 2009.

- *Housing Chapter: 2015 Regional Master Plan (Public Comment Draft); Rockingham Planning Commission; March 2015.*
- *Housing Needs in New Hampshire, New Hampshire Center for Public Policy Studies, New Hampshire Housing Finance Authority, 2014.*
- Ingram Senior Center
- Salem Housing Authority
- *Updates by Planning Intern; 2015-2016.*

III. ECONOMIC DEVELOPMENT

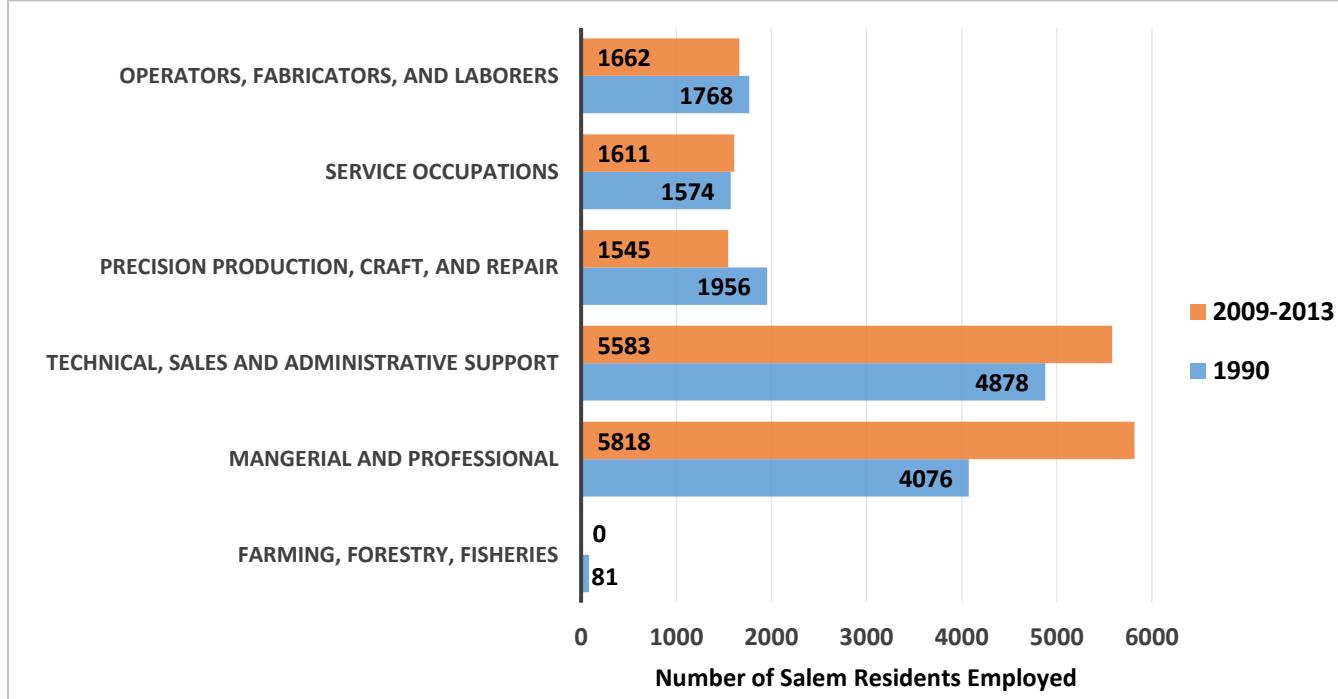
Since the creation of Salem's Master Plan in 2001, Salem's economy has further diversified through a greater number of industries and occupations, but there remains some economic aspects that have room for improvement in the future. Job growth has been stagnant in many occupations and industries over the last decade and a half and has substantially declined in the manufacturing industry. To help promote stronger job growth, Salem's residents should strive to exceed the rates of college and graduate school education compared to the rest of the population in Rockingham County and New Hampshire.

As the economic characteristics of Salem and the region have shifted through the start of the 21st century, the data show some similarities and key differences in Salem's economic base from the turn of the century to the recent present. The information in this update is taken from estimates and samples developed by New Hampshire organizations and the U.S. Census Bureau from 2009 to 2013. Much of the U.S. Census Bureau data comes from the 2009-2013 5-Year American Community Survey (ACS), which surveys a sample of the population over five years in order to ensure the most accurate data possible.

RESIDENT WORKERS BY OCCUPATION

Changes in the occupation of Salem's working residents between 1990 and 2009-2013 are illustrated in Figure III-1. Technical, sales and administrative support occupations and managerial and professional positions continue to be the largest principal occupational categories in Salem. The number of Town residents working in managerial and professional positions has substantially increased by nearly 2,000 people, the largest change in residents' employment. Technical, sales, and administrative support had a smaller net increase of around 700 jobs among Salem residents. People working in precision, production, craft, and repair occupations made up a sizably smaller number of Salem's working residents compared to 1990, a change of about 400 people. The number of Town residents working as operators, fabricators, or laborers also declined slightly by around 100 jobs. One group not listed on the table below are self-employed workers who make up 3.9% of the Town's working residents.

Figure III-1: Number of Employed Salem Residents Aged 16 Years and Older by Occupation



Source: NH Dept. of Emp. Security (Estimates)

In 2014, the New Hampshire Department of Employment Security issued employment projections for 2022 by each occupation based on job data from 2012 that estimate the net changes in each occupational category. These projections represent totals for the state of New Hampshire.

Table III-1: Projected Change in NH Employment by Occupation (2012-2022)

Occupational Title	Change Projected 2012-22	Percent Change 2012-22	Share of Total Employment Change
Management	4,458	9.6%	6.5%
Business and Financial Operations	3,935	13.0%	5.7%
Computer and Mathematical	3,854	21.2%	5.6%
Education, Training, and Library	3,672	8.4%	5.3%
Healthcare Practitioners and Technical	7,387	20.3%	10.7%
Healthcare Support	4,388	22.6%	6.4%
Food Preparation and Serving	5,781	10.7%	8.4%
Building and Grounds Cleaning and Maintenance	3,181	12.7%	4.6%
Personal Care and Service	4,728	20.0%	6.9%
Sales and Related Occupation	5,287	6.3%	7.7%
Office and Administrative Support	7,103	6.7%	10.3%
Construction and Extraction	3,386	14.5%	4.9%
Installation, Maintenance, and Repair	2,204	8.5%	3.2%
Transportation and Material Moving	3,111	9.2%	4.5%
Other	6,266	N/A	9.1%
All Occupations	68,741	10.3%	100%

*Source: New Hampshire Employment Security, June 2014
New Hampshire Employment Projections by Industry and Occupation*

Four occupational categories are expected to increase by 20% or more: healthcare support, computer and mathematical, healthcare practitioners and technical, and personal care and support. These four occupational categories exist within two of the fastest growing employment sectors across the nation: health care and STEM work (science, technology, engineering, and mathematics). In relation to these projections, the Regional Economic Development Center of Southern New Hampshire's 2014 Comprehensive Economic Development Strategy calls for greater focus on encouraging STEM education. With Salem's large population of professional and technical workers, firms that need practitioners and technical workers in health care, mathematics, computers, and other fields are more likely to locate in or around Salem.

RESIDENTIAL WORKERS BY INDUSTRY

The 2009-13 ACS estimates that Salem had 16,101 residents age 16 and older that were employed. The largest industry sectors were educational services and health care and social assistance; manufacturing; and retail. The percentages of Salem residents working in different employment industries are generally similar to those same statistics for Rockingham County and statewide workers. Some small distinctions are worth noting. A greater percentage of Salem residents work in manufacturing compared to Rockingham County and New Hampshire as a whole. While 24.4% of New Hampshire workers are employed in educational services and health care and social assistance, only 20.5% of Salem residents work in this industry category, suggesting room for growth for Salem in a field that has several occupations that are projected to grow by 2022.

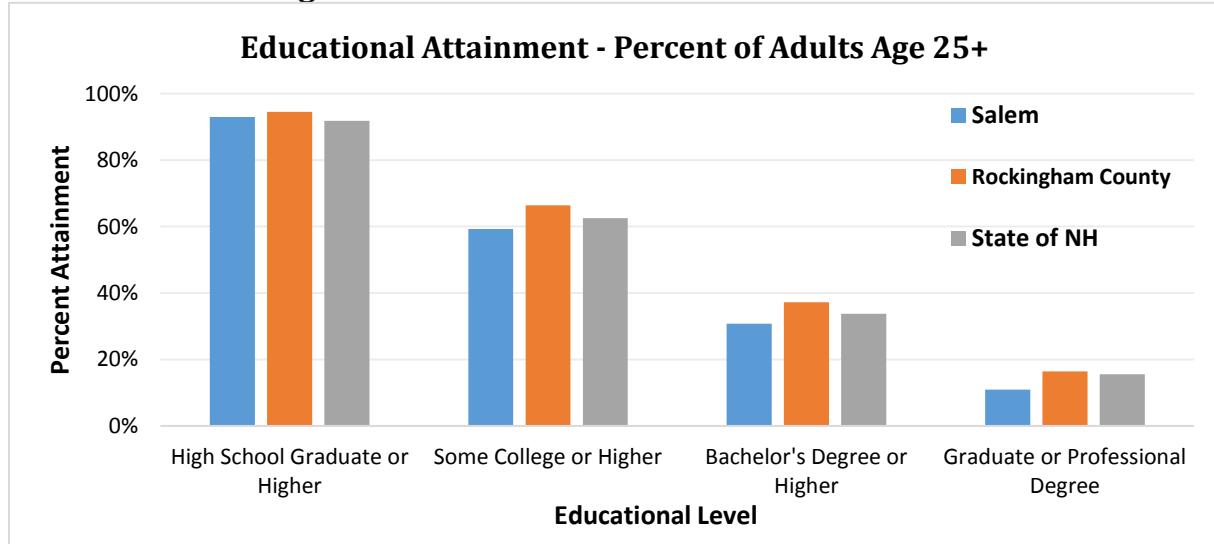
Table III-2: Percent of Persons Aged 16+ Employed by Industry (2009-2013)

Industry	Town of Salem	Rockingham County	State of NH
Agricultural, forestry, fishing, hunting, and mining	0%	0.60%	0.80%
Construction	8.00%	7.10%	6.90%
Manufacturing	14.20%	12.50%	13.10%
Wholesale Trade	4.50%	3.80%	2.90%
Retail	13.20%	13.30%	12.80%
Transportation, warehousing, and utilities	3.20%	4.30%	4.00%
Information	3.60%	2.60%	2.00%
Finance, Insurance, and Real Estate	5.50%	6.70%	6.40%
Professional, Scientific, and Management, and Administrative, and Waste Management Services	8.40%	11.20%	10.10%
Educational Services, and Health Care, and Social Assistance	20.50%	22.00%	24.40%
Arts, Entertainment, and Recreation, and Accommodation, and Food Services	7.50%	7.80%	8.30%
Other services, except Public Administration	5.00%	4.50%	4.30%
Public Administration	4.80%	3.80%	3.90%

Source: 2009-13 5-Year American Community Survey

EDUCATIONAL ATTAINMENT

Figure III-2 illustrates the relative educational attainment of residents age 25 and over according to the 2009-13 ACS. Over 90% of Salem residents have graduated from high school and over 30% have graduated college. Overall, the percentages of Salem residents who have received bachelors and graduate and professional degrees are slightly lower than that of Rockingham County and New Hampshire residents.

Figure III-2: Levels of Educational Attainment

Source: 2009-13 5-Year American Community Survey

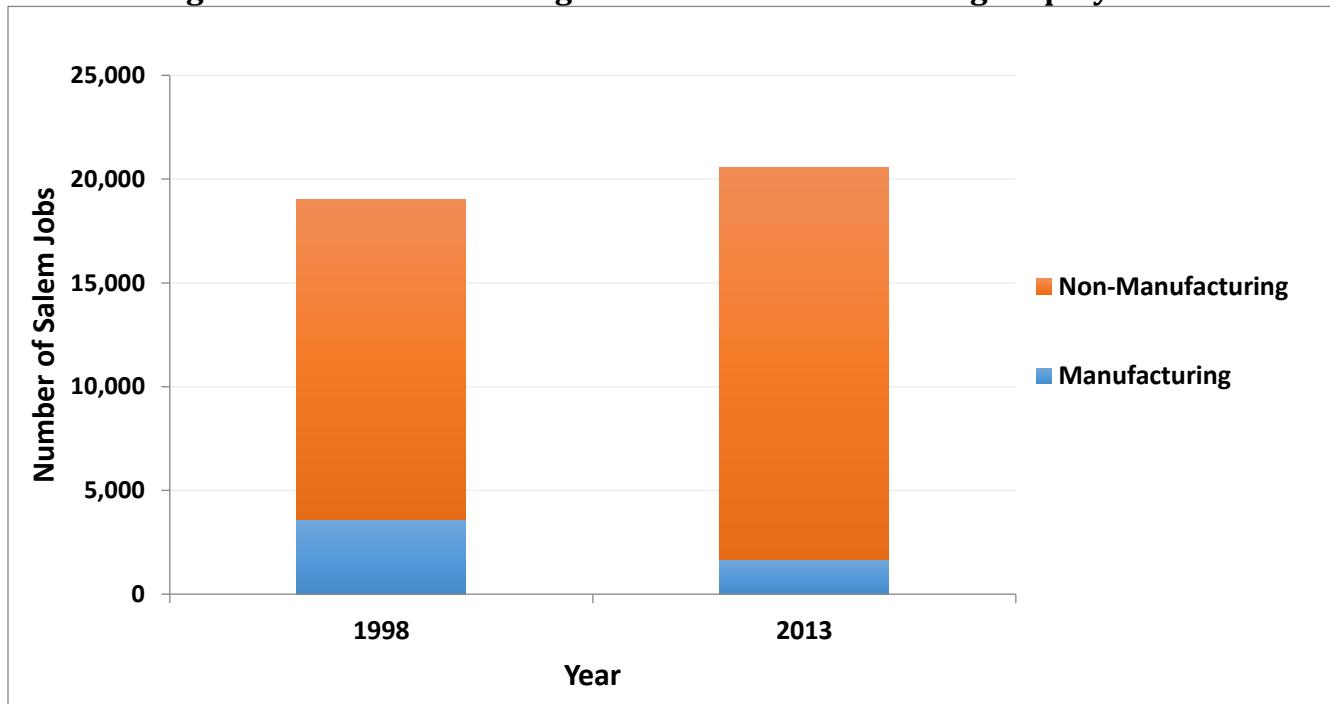
EMPLOYMENT BY INDUSTRY IN SALEM

This section describes Salem's economic base in terms of the number and type of jobs and businesses located within the Town of Salem. As noted earlier in this chapter, only about 12% of the primary jobholders in Salem are Town residents while the vast majority of those employed locally live elsewhere.

Manufacturing and Non-Manufacturing Employment 1998-2013

In the 1980s, Salem's largest private employment industry was manufacturing. Like much of the nation, Salem has been faced with negative growth in the manufacturing sector over the last three decades while employment in other private sector industries has significantly grown. Figure III-3 illustrates the number of jobs in private wage and salary employment based in Salem in manufacturing and non-manufacturing sectors in 1998 (the latest year of data from the Salem Master Plan) and 2013 (the latest year of data currently available). Between 1998 and 2013, Salem lost over its half of its manufacturing jobs or about 2,000 jobs. During the same time, about 3,500 jobs were added across the rest of the private sector. While more manufacturing jobs may be added in Salem as the economic recovery from the Great Recession continues, other private sector industries appear to be growing faster.

Figure III-3: Manufacturing versus Non-Manufacturing Employment



Source: NH Employment Security Annual Profiles

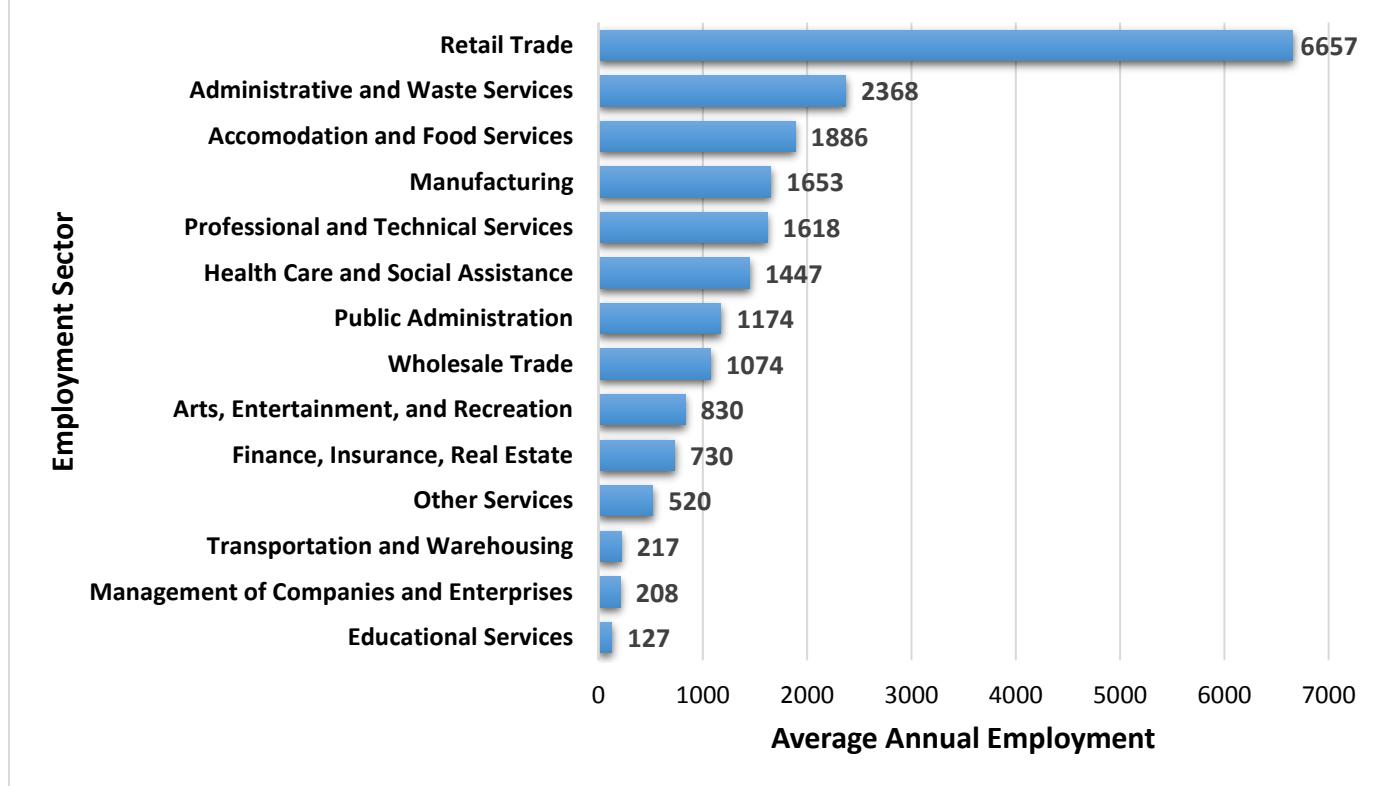
Employment by Industry Sector

New Hampshire Employment Security's 2013 data indicate a total employment base in Salem of 21,741 in private sector and government employment. As of 2013, there were 1,261 establishments providing employment in the Town of Salem. These numbers are nearly identical to those listed from 1999 in the last completed master plan update. Salem is the location of approximately 13% of Rockingham County establishments having employment, and the Town hosts approximately 16% of the County's jobs. Figure III-4 illustrates 2013 local employment by industry sector.

As shown in Figure III-4, retail trade makes up by far the largest portion of Salem's job base, which makes up 31% of local employment. Salem's retail trade accounts for such a large portion of local employment largely due to the Mall at Rockingham Park and the Town's advantage of being the first community in

New Hampshire on the I-93 corridor when drivers leave Massachusetts. The services sector, which is split among administrative and waste; accommodation and food; professional and technical; and other services, comprises another 30% of employment in the Town. Figure III-5 illustrates, for each of the major industry sectors, Salem's share of Rockingham County employment. Salem has comparatively high shares of arts, entertainment, and recreation; retail trade; and administrative and waste services employment.

Figure III-4: Average Annual Employment by Sector (2013)

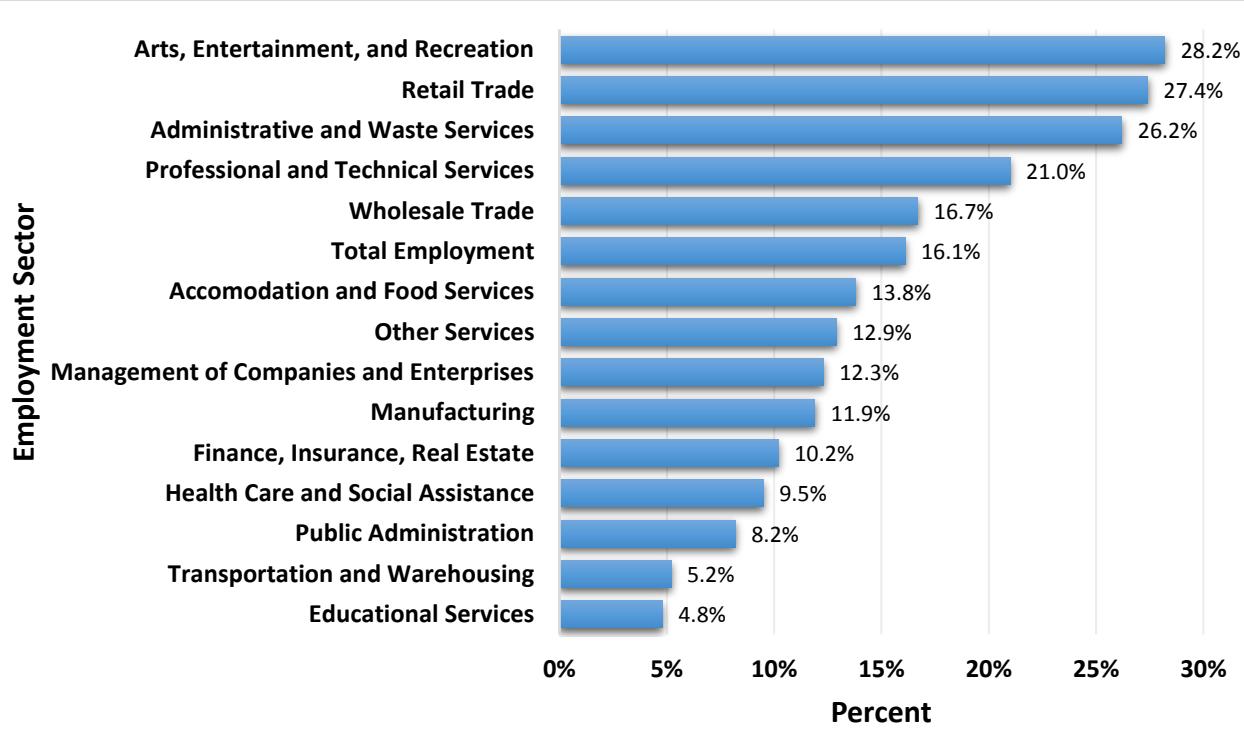


Source: NH Employment Security

Figure III-6 indicates wages in Salem in 2013 within the major industrial sectors. The average for all jobs in Salem is approximately \$874 per week for all sectors combined, the equivalent of about \$45,500 annually.

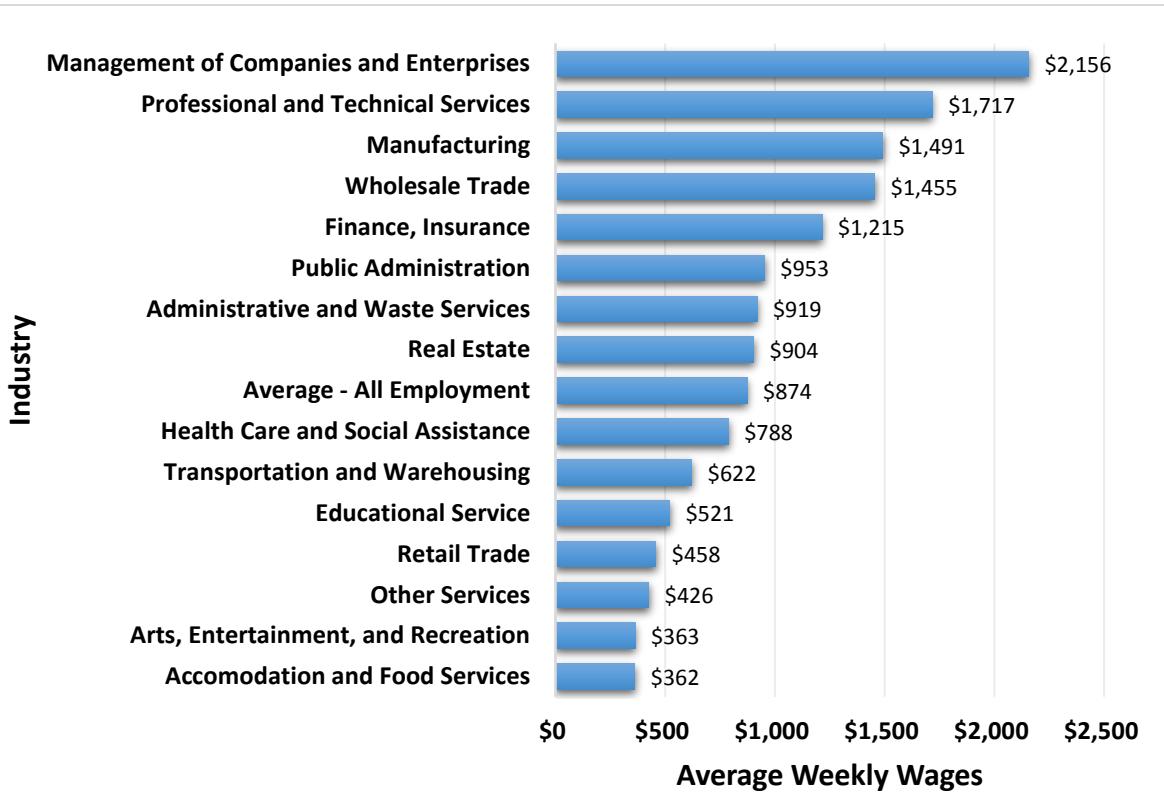
In Salem, the management of companies and enterprises, professional and technical services, and manufacturing industries have the highest weekly wages. The lowest weekly wage of Salem employment industries is accommodation and food services, which is the third largest number of average annual jobs in Salem. The management of companies and enterprises is the second smallest number of average annual jobs in the Town. The average weekly wage for the retail sector is \$458, making it one of the lowest paid industries. Since nearly a third of jobs in Salem are in the retail sector, diversification away from retail jobs would have a significant impact on increasing average earnings.

Figure III-5: Salem's Share of Rockingham County Employment (2013)



Source: NH Employment Security

Figure III-6: Average Weekly Wages by Industry (2013)



Source: NH Employment Security

Employment by Sector and Size of Firm

Similar to data in the previous master plan update from 1997, about 65% of Salem private sector business establishments employed fewer than 10 persons and nearly half employed less than 5 persons in 2013. Table III-5 lists the number of firms in each industry sector by size of establishment in 2013. The largest firms tended to be found in retail trade or administrative and support and waste management and remediation services. The largest employers in retail trade were supermarkets, department stores, and warehouse clubs or supercenters. The largest employers in administrative and support and waste management and remediation services were temporary help services, collection agencies, and security guards.

Table III-5: Employers by Size of Establishment (2013)

Economic Sector	Total	1-4	5-9	10-19	20-49	50-99	100-249	250-499	500-999
Total for all sectors	1,261	565	271	192	144	51	27	7	4
Utilities	2	0	0	2	0	0	0	0	0
Construction	95	63	10	7	10	3	2	0	0
Manufacturing	52	18	6	6	12	8	2	0	0
Wholesale Trade	107	51	21	16	13	3	2	0	1
Retail Trade	315	91	89	64	44	12	11	3	1
Transportation and Warehousing	22	13	4	2	1	2	0	0	0
Information	19	6	5	2	4	2	0	0	0
Finance and Insurance	53	25	9	10	5	2	1	1	0
Real Estate and Rental and Leasing	34	26	4	2	2	0	0	0	0
Professional, Scientific, and Technical Services	131	78	18	20	7	5	3	0	0
Management of Companies and Enterprises	14	10	1	0	2	1	0	0	0
Administrative and Support and Waste Management and Remediation Services	70	37	11	9	5	2	2	2	2
Educational Services	17	7	4	4	2	0	0	0	0
Health Care and Social Assistance	98	45	30	13	7	1	1	1	0
Arts, Entertainment, and Recreation	19	7	3	2	2	3	2	0	0
Accommodation and Food Services	108	29	28	21	23	6	1	0	0
Other Services (except Public Administration)	105	59	29	11	5	1	0	0	0
Percent of Establishments	100.00%	44.8%	21.5%	15.2%	11.4%	4.0%	2.1%	0.6%	0.3%

Source: County Business Patterns. 2013, Zip Code Business Patterns for 03079 (Salem) and 03073 (North Salem)

Table III-6 compares the number of Salem business establishments in 1997 to 2013. There are about the same number of firms in the Town in both years. However, most industry sectors have fewer businesses in Salem then they did in 1997. The services industry is the only industry that has a substantially greater number of firms in 2013 than in 1997.

Table III-6: Number of Firms by Industry Sector (1997 & 2013)

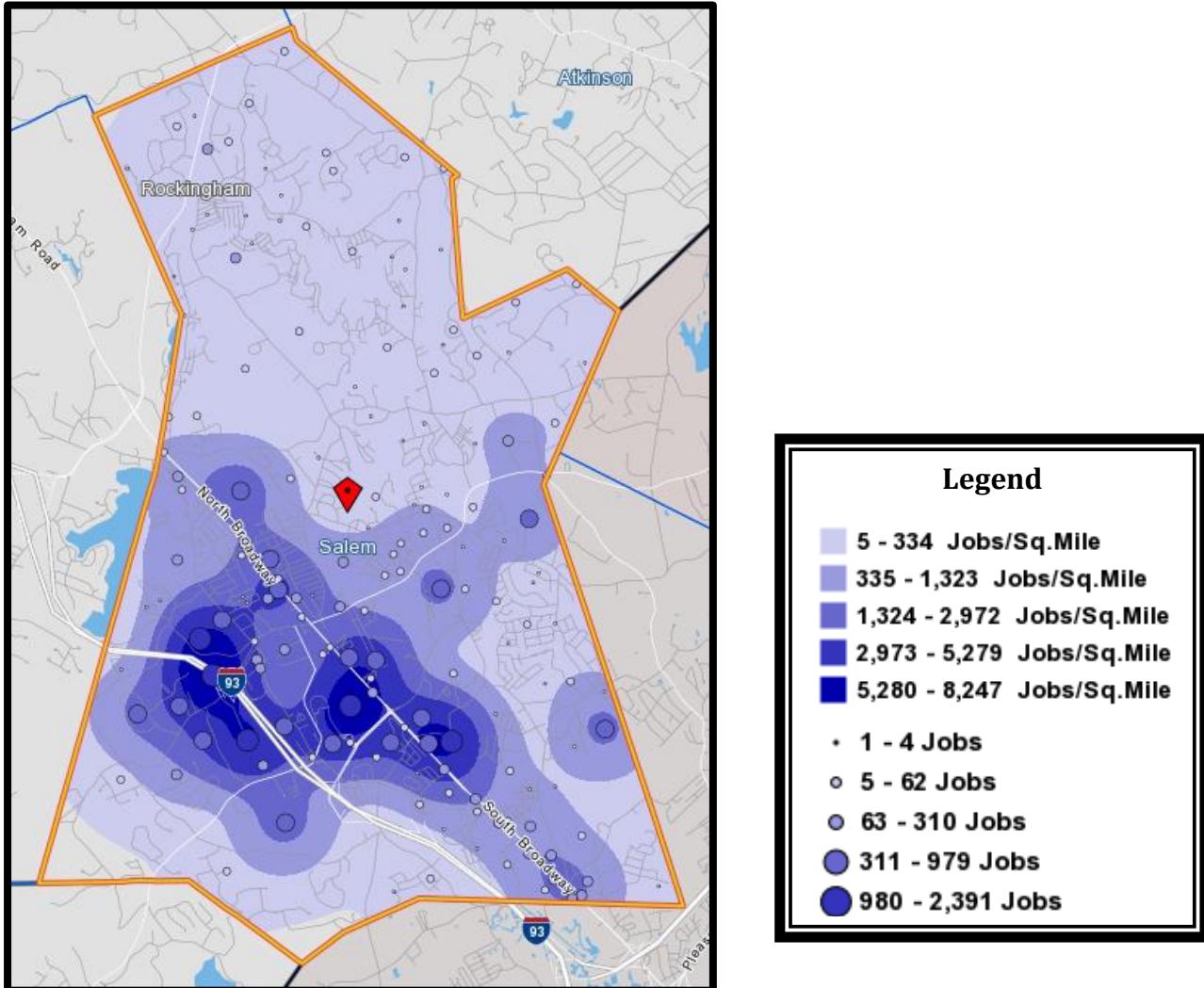
Industrial Sector	1997	2013
Agriculture, Forestry, and Fishing	20	0
Construction & Mining	112	95
Manufacturing	75	52
Transportation and Utilities	29	24
Wholesale Trade	130	107
Retail Trade	399	315
Finance, Insurance, and Real Estate	86	87
Services	403	476
Total (including Other and Unclassified)	1,256	1,261

Source: County Business Patterns. 1997 and 2013, Zip Code Business Patterns for 03079 (Salem) and 03073 (North Salem)

Figure III-7 is a map of Salem that highlights where the greatest concentration of employment exists by square mile and by location according to a 2015 Work Area Profile Analysis. The map suggests that most of Salem's largest job centers are along Route 28 (North Broadway and South Broadway), Veterans Memorial Parkway, and the southern side of I-93.

The close concentration of many of Salem's jobs and transportation resources suggest the opportunity for greater potential collaboration to spur economic growth. The close proximity could also mean these areas are over-congested. Currently, 115,000 vehicles pass through Salem's I-93 corridor daily. While traffic problems around I-93 are a concern, the large number of people passing through Salem in vehicles presents an opportunity to further economic growth through increased employer concentration.

Figure III-7: Location of Employers



Source: On the Map 2015 Selection Area Analysis, U.S. Census Bureau, Center for Economic Studies

TAXABLE VALUATION

Equalized assessed valuation per capita is often used as a measure to compare the relative tax base wealth of communities and their relative tax effort. Salem has a high-equalized assessed valuation compared to other communities of its size and larger. Although Salem is the 7th largest community in the state by population, its equalized assessed valuation of about \$3.9 billion makes it the fifth largest valuation of any state community and second largest in Rockingham County (after Portsmouth).

Table III-7: NH Equalized Assessed Valuation (2013)

Salem Equalized Assessed Valuation (EAV)	\$3,933,431,434
Percentage of Rockingham Co. EAV	9.38%
Percentage of New Hampshire EAV	2.54%
Salem EAV Per Capita	\$137.111
New Hampshire Total EAV	\$156,228,298,852
New Hampshire EAV Per Capita	\$118,045

Source: New Hampshire Department of Revenue Administration and New Hampshire Office of Energy Planning (2013 population estimates).

2014 COMPREHENSIVE ECONOMIC DEVELOPMENT STRATEGY (CEDS)

The Comprehensive Economic Development Strategy (CEDS) recommends focusing on several key issues to further improve Southern New Hampshire's economy:

- Economic Development
- Infrastructure Development
- Regional Cooperation
- Workforce Development
- Workforce Housing
- Environmental Preservation

As New Hampshire has not regained all of the jobs lost in the Great Recession, economic development is essential for creating more jobs. The CEDS recommends furthering job growth in six industry clusters for which job growth rates are growing faster than that of the Rockingham County economy: advanced materials, biomedical/biotechnical (life sciences), chemicals and chemical based products, information technology, and fabricated metal product manufacturing.

The CEDS report also recommends greater infrastructure development through increased public transit to reduce congestion on I-93 and more comprehensive broadband internet service. Suggestions for improving regional cooperation is deemed essential to the local economy through working with local regional planning commissions to identify resources that need to be protected and opportunities that could best help Southern New Hampshire. Increased regional cooperation links environmental conservation with determining what resources need to be most protected in the area and how best to resolve problems with stormwater runoff.

CEDS calls for improved workforce development through greater emphasis on STEM education, as learning those disciplines is essential to getting jobs in many of the fastest growing industries. Strongly related to workforce development is the creation of workforce housing that is affordable to new workers. The absence of affordable housing near Salem and the region's major employers leads to increased traffic congestion and sprawl development as people move to homes that are farther from where they work. Rockingham County had the highest median sales price for all homes in New Hampshire with \$269,243 in 2013, which increased by 9% from 2009 to 2013. Salem's average home sales price in 2013 was \$255,000 and the average sales price for new home sales was \$325,500 in 2013. Average monthly rent costs for the county have also increased by 2.7% from 2012 to 2013. In 2013, the average monthly home rent in Rockingham County was \$1,099. While high housing prices are good for Salem's taxable valuation, a larger portion of housing needs to be accessible for those who cannot afford increasing rents and sales prices.

2015 REGIONAL MASTER PLAN – ROCKINGHAM PLANNING COMMISSION

The 2015 Rockingham Planning Commission (RPC) Regional Master Plan includes an Economic Development Chapter. In it, they advocate for the six goals promoted by CEDS and include two additional goals for the county: 1) Resilience to climate change and 2) Possessing a secure and efficient energy supply. While Salem does not have to confront sea-level rise head-on like the county's coastal communities, the Town needs to be aware of how sea-level rise might shift the direction of the county's economy. In order to create a more resilient energy supply, the RPC wants to provide greater assistance

to municipalities to retrofit municipal buildings, infrastructure, and other facilities to reduce costs and energy consumption.

The Regional Master Plan's chapter on Economic Development concludes by outlining ways to implement nine recommendations that are very similar to the recommendations suggested by CEDS:

- Improving regional infrastructure to address current and future needs of the region.
- Develop service models to share and consolidate municipal services where outcomes would be improved.
- Develop skills and education of the workforce to meet the needs of the region's employers.
- Protect the region's high quality of life and cultural amenities.
- Eliminate unnecessary barriers to the development of workforce affordable housing in all parts of the region.
- Take actions immediately to adapt to future climate change.
- Implement regional strategies for transportation, land use, and the built environment that improve energy efficiency and increase cost effective renewable energy production and utilization.
- Coordinate infrastructure and development project priorities to maximize funding and investment opportunities.
- Work with communities, service providers at the University of New Hampshire, and the state and federal government to ensure adequate broadband access for future generations.

The chapter also includes a statewide sample survey conducted by the UNH Survey Center in 2013 that provided some key ideas for directions to take for Salem. Respondents saw quality schools as the most important aspect to have in a community. Seventy percent supported increased public investment in roads and bridges, the most important infrastructure need respondents favored. The most favored aspect of revitalizing local places by respondents was increasing support for local agriculture.

The Regional Master Plan paints a picture of slow but steady economic growth with a projected growth of the county's economy by about 1% a year. Some problems across the county and state are concerns that need to be addressed for the future. For example, New Hampshire has the highest level of student debt and average weekly wages in Rockingham County have remained stagnant.

However, Rockingham County's economy has several bright spots in job growth. From 2011 to 2013, the labor force in Rockingham County grew more than twice as fast as the population, 0.7% to 1.8%. From 2005 to 2013, the county's labor force grew by 3.7%, a rate faster than any state in New England. Since 1990, Rockingham County's employment has grown faster than its population and the county's reliance on employment in Massachusetts has lessened. Salem has the third highest jobs to household ratio in the county at 1.77 after Newington and Seabrook. Overall, the top industry clusters in Rockingham County are glass/plastic ceramics, computer/electronic manufacturing, electrical equipment, appliance manufacturing, and chemicals and chemical based products.

The most important aspect of increasing job growth the RPC stressed was increasing links between the public and private sector such as the successful development of an advanced materials and manufacturing curriculum and private sector partnership at the Great Bay Community College. Health

care and social assistance is projected to be the largest growing job industry in the County in the 2010s, with an expected growth of nearly 3,000 jobs. Second is retail trade with around 1,700 jobs.

RECOMMENDATIONS

- Encourage the redevelopment of older commercial and industrial areas, with particular attention to the Depot and South Broadway areas.
- Consider creating a public redevelopment authority or supporting a non-profit redevelopment corporation in order to facilitate local redevelopment activities.
- Focus on a more diverse economic base with less emphasis and dependence on the retail sector.
- Encourage the development of more affordable housing to support the local labor force with a focus on entry level homes for the younger workforce.
- Work with the Regional Economic Development Center of Southern New Hampshire and other groups to assist existing and new businesses.
- Establish a Business Retention and Expansion program to form relationships with existing businesses.
- Form partnerships with the Salem School District, local colleges, and trade schools to ensure that businesses have access to the educated and skilled workforce they need.

SOURCES

- *2009-2013 5-Year American Community Survey*; US Census Bureau.
- *CEDS 2014*; Regional Economic Development Center of Southern New Hampshire.
- *County Business Patterns, 1997 and Zip Code Business Patterns for 03079 (Salem) and 03073 (N. Salem)*; 1997 and 2013.
- *Economic Development Chapter: 2015 Regional Master Plan (Public Comment Draft)*; Rockingham Planning Commission; March 2015.
- *On the Map 2011 Selection Area Analysis*; U.S. Census Bureau, Center for Economic Studies.
- *New Hampshire Employment Projections by Industry and Occupation*; June 2014, New Hampshire Employment Security.

IV. NATURAL RESOURCES AND CONSERVATION

"Before the insatiable bulldozers eat up much more of Salem's natural beauty, the town should acquire as much open space and water frontage as it can beg or buy. It is one of the tragedies of our times that few communities recognize the need for open space until they have none left. Most of the suburbs of Boston, which not very long ago were open, green, rolling countryside, today constitute an uninterrupted sea of pavement, roof tops and television antennae. The movement is only beginning in New Hampshire and it can be controlled. Open space is one of the most important assets of the state and of Salem. It has decided economic value. The green and beautiful town is usually the pleasant town to live in, other things being equal. The pleasant town to live in is the one industry likes best."

--- 1962 *Salem Comprehensive Plan*

Conservation of land and open space are both needed to allow for the protection of natural resources. This chapter speaks in detail about the open spaces and conservation lands and how they interrelate to the Town's natural resources.

CONSERVATION HOLDINGS

In 2017, there were approximately 90 conservation areas which encompassed 1,585.4 acres in Salem (See Table IV-1). Such areas include Town-owned land for conservation, which includes those properties actively set aside for protection by Town vote, private properties with Town-held conservation easements, and State-owned land for conservation. The Town is aware of other areas that are associated with open space subdivisions or age-restricted communities, however a full accounting of these areas is not available at this time.

Thanks in part to the Open Space Development Ordinance, private ownership of conservation lands has increased significantly since the '90s and now encompasses an area of over 1,000 acres. This represents land that was set aside by developers, with easements granted to the Town providing for their use as open space in perpetuity. The mix of these easements and other town-owned conservation lands provide protection to numerous natural areas which include wetlands, floodplains, prime wildlife viewing, and other sensitive resources. Figure IV-1 provides a map of the areas.

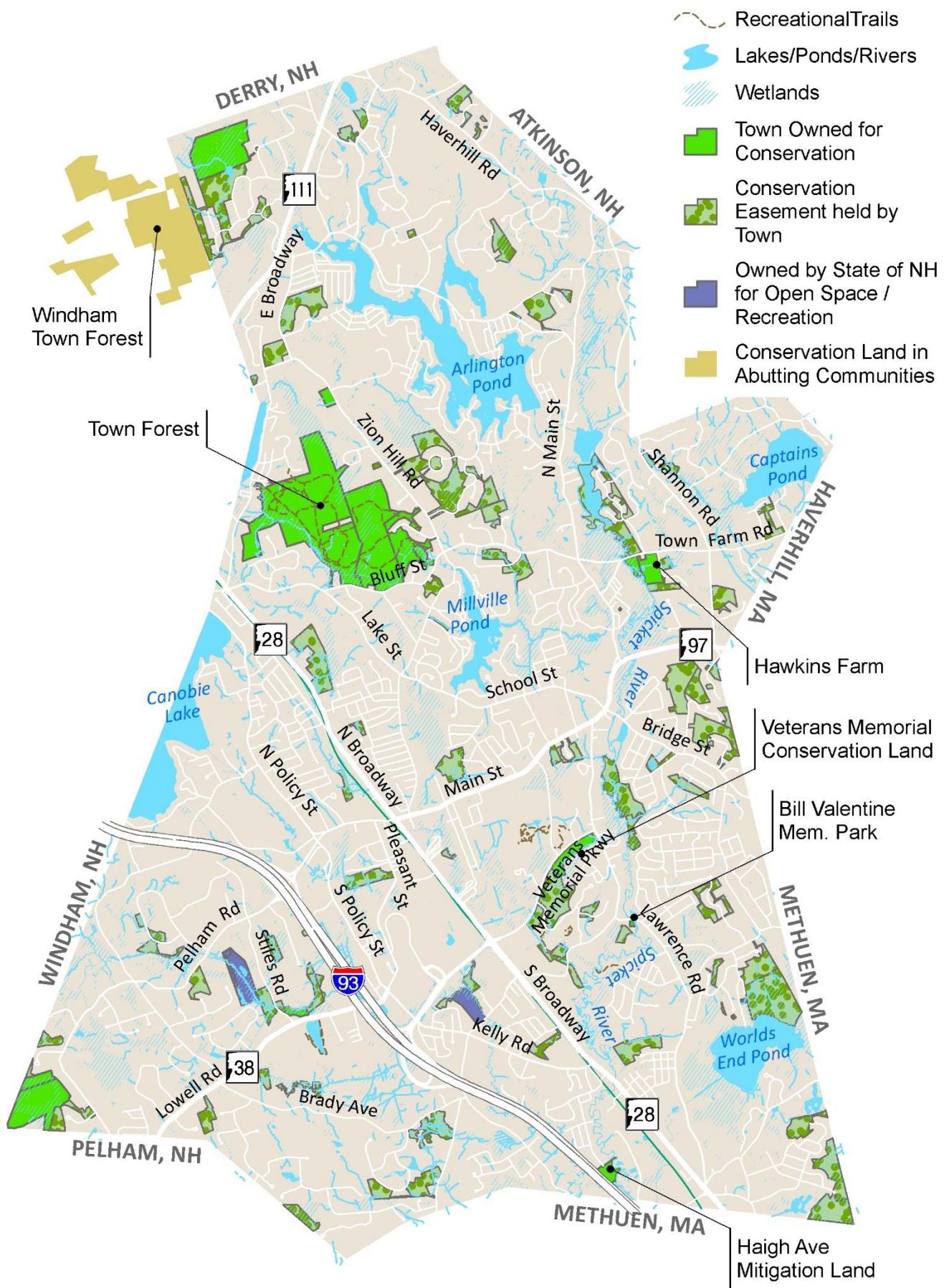
Table IV-1: Conservation Lands by Category

Ownership	2017 Count	2017 Acres	% Total
Private (Town Easement)	65 Areas*	1,069.5	67.5
Town-Owned for Conservation	21 Parcels	475.8	30.0
State of New Hampshire	4 Parcels	40.05**	2.5
Total		1,585.4	100

*Areas may represent multiple parcels within approved subdivisions plans or aggregated in recorded deeds

**Includes entirety of parcel 127/8877 (Morse Fields) which includes a disturbed area for recreational fields

Figure IV-1: Conservation Areas Map



2001 MASTER PLAN

The Town has implemented many of the recommendations that were included in the 2001 Town of Salem Master Plan, specifically, recommendations to conserve, protect, and manage the natural resources. The following is a synopsis of the implementation action items associated with these recommendations:

- Preservation of over 350 acres under the Town's Open Space Preservation Ordinance.
- Purchase of property for flood water storage and initiating drainage maintenance programs to reduce flood damage risk.
- Amendments to ordinances and regulations to better protect, conserve, and manage the Town's natural resources and conservation lands.
- Preparation of an Open Space Master Plan by the Rockingham Planning Commission, in conjunction with the Town's Conservation Commission.
- Town Meeting vote to put 100% of the Land Use Change Tax into the Conservation Fund.
- Completion of an update to the Town Forest Management Plan.
- Preservation of farm land through purchase of a 15 acre farm field on Town Farm Road and lease to a local farmer.
- Implementation of a conservation easement monitoring program.
- Preparation of a Canobie Lake Drainage Watershed Study.
- Preparation of Environmental Impact Reports by the NH Department of Transportation in preparation for the relocation of NH Route 111 and Interstate I93 widening.

In-depth information on each of the above action items, as well as future recommendations are described in the balance of this update.

CONSERVATION COMMISSION

Town-Owned Conservation Land

- a. Salem's Conservation Commission has been purchasing land since 1979 starting with the Town Forest. Early purchases from the Conservation Fund were accomplished with funds from State and Federal grant programs and warrant articles voted on at Town Meetings. Later purchases were enabled with proceeds from the Land Use Change Tax. Property acquisition decisions are made based on the Town's Open Space Master Plan and available funds.

In the past eight years, significant efforts have resulted in the expansion of and improvements to conservation areas. The Salem Conservation Commission has been recognized with several awards for their extensive work to protect open space and conservation lands.

- b. Since the 2001 Master Plan several properties have been acquired including:
 - i. Hawkins Farm. This 15 acre parcel adjacent to the Spicket River was purchased in 2008 and preserved for farming. A large portion of the farm is leased to a local farmer, while a smaller portion is used for free community garden plots for Salem residents, and a recreational trail has been created around the perimeter of the property.

- ii. Bill Valentine Memorial Park. The home on this Lawrence Road property, adjacent to the Spicket River, was destroyed in the 2006 flood event. The property was purchased in 2008 to avoid re-development and preserve flood storage area.
- iii. Haigh Avenue Mitigation Land. Homes within this land triangle, surrounded on two sides by the Spicket River and Policy Brook, were severely damaged by the 2006 flood event. Using a FEMA grant, the Town and NHDOT purchased several homes, removed all structures and asphalt, and returned the land to a natural state as wetland and floodplain mitigation for the Interstate 93 widening project.
- iv. Veteran's Memorial Conservation Land. This 15 acre parcel, adjacent to Veteran's Memorial Parkway, was purchased in 2014 to preserve the viewscape and provide additional protection to a prime wetland.
- v. Salem Town Forest. Working with a developer, the Town has managed to add approximately 132 acres of land to the Town Forest, through purchase and donation. This substantially increased the size of the protected area and opened up a whole new area for public enjoyment. The Town is working with a licensed forester consultant to update the existing forest management plan. A new trails map was prepared by the Community Development Department to document the new addition and existing trail network (Figure IV-3).

c. Table IV-2 lists the conservation land that is Town-owned as of the end of 2017:

Table IV-2: Town Owned Parcels in Conservation (2017)

Map/Lot	Location	Acres	Deed Book/Page	Date Stamp	Comments
4/5903	Green Haven Rd.	54.00	3447/0720	12/30/1999	Open space plan
4/11999	Green Haven Rd.	0.33	3447/0717	12/30/1999	Open space plan
32/6384	Zion Hill Rd.	4.80	3191/2365	12/20/1996	Acquisition, Viewscape
46/6494	Town Forest	200.90	Various	Various	Acquisition, Tax Liens
47/6874	Town Forest	100.99	5718 /1256	5/27/2016	Acquisition
47/12526	Town Forest	32.38	5811/2363	04/17/2017	Donation
56/6890	Town Forest	4.5	2474/1546	08/31/1983	Donation
58/6918	Town Farm Rd.	4.25	3222/1356	06/27/1997	Acquisition
59/12433	Town Farm Rd.	14.26	4956/1834	10/17/2008	Hawkins Farm Acquisition
65/2370	Millville St.	1.47	2066/0403	05/04/1971	Millville Pond Drainage
67/2068	Sand Ave.	0.08	3168/2648	07/31/1996	N/A
100/7515	Veterans Memorial Parkway	8.75	5571/0922	10/30/2014	Acquisition, Viewscape
110/7943	Lawrence Rd.	0.75	4886/2733	02/15/2008	Acquisition, Flood Plain
112/8502	Pelham Rd.	8.30	3477/0193	12/28/1999	Donation
115/10865	Stiles Rd.	3.74	3273/1942	03/06/1998	N/A
122/8501	Pelham Rd.	43.54	3447/0193	12/28/1999	Donation
130/416	Theresa Ave.	0.13	3643/2704	09/18/2001	Donation

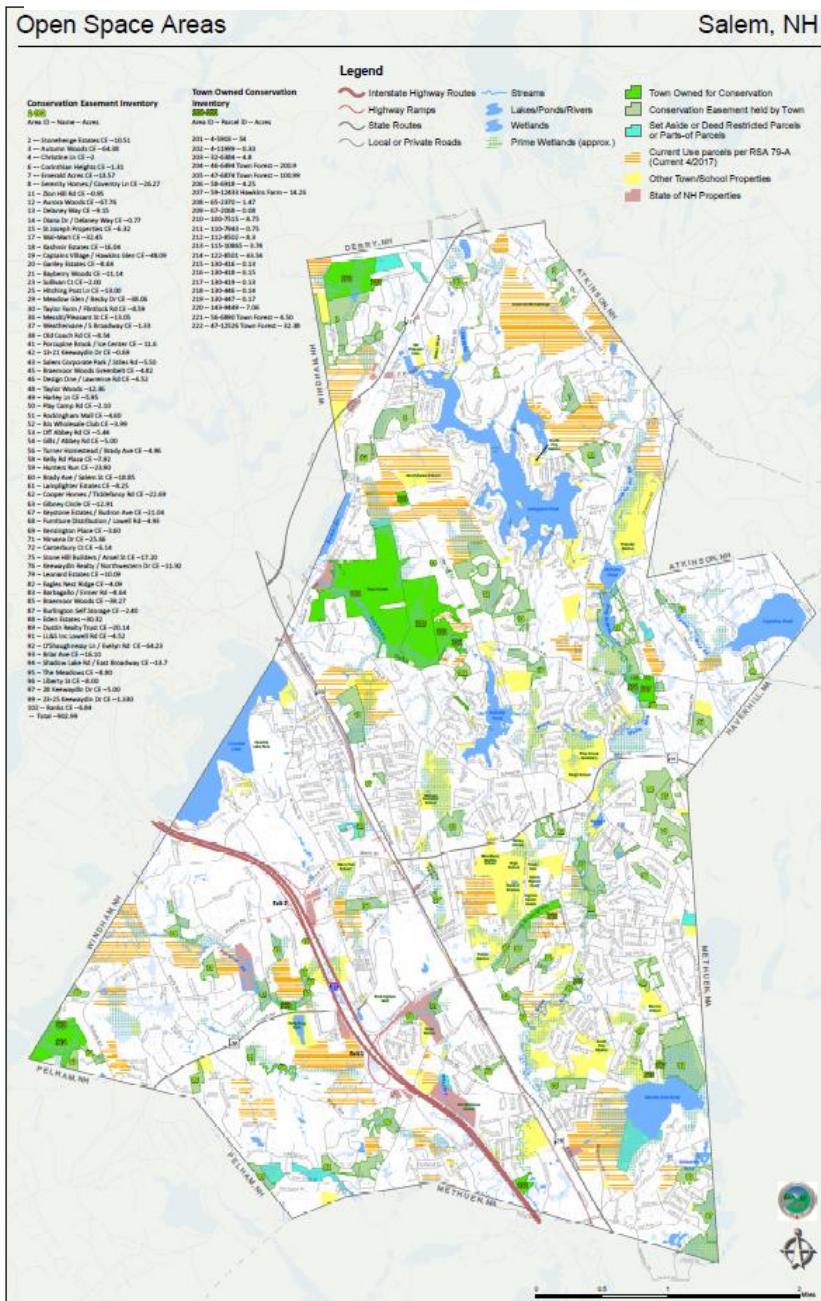
130/418	Evelyn Rd.	0.15	3643/2704	09/18/2001	Donation
130/419	Evelyn Rd.	0.13	3643/2704	09/18/2001	Donation
130/446	Theresa Ave.	0.14	3972/1709	03/11/2003	Donation
130/447	Theresa Ave.	0.17	3972/1709	03/11/2003	Donation
143/9449	Haigh Ave.	7.06	5131/2080	08/04/2010	Acquisition
155/9568	Budron Ave.	21.87	3259/2814	12/30/1997	Acquisition
Total Acres		475.81			

Source: Salem Conservation Commission

Town Conservation Easements

The Town has preserved 1,069.5 conservation easement acres through 2017. Preserved acreage includes two purchases:

Figure IV-2: Open Space Map



a. A 100-foot deep strip totaling 4.8 acres was purchased from the Lord Family in 1994 to help preserve the viewscape adjacent to Veteran's Memorial Parkway.

b. In 2012, an easement covering 16.1 acres off Royal Circle was purchased from the Gudek family to protect floodplains, wetlands and open space and to provide a future mitigation area for floodplain storage.

The Salem Planning Division and the Conservation Commission have worked diligently over the years to improve mapping and baseline records of the conservation areas. In 2011, the Commission began working with a consultant to perform monitoring duties and to update property records. Information from the contractor was reviewed by the GIS Manager and assembled into a new conservation map. This map, used as a working tool by the Conservation Commission, shows the conservation land (Town-owned, easements, and other), lakes, streams, prime and other wetlands. The map is on a base GIS layer that includes streets and lots. The map also shows all Town, School and State owned property. See Figure VI-2 (Full size copy available at Town Hall).

SALEM CONSERVATION FUND

A conservation fund, authorized under RSA 36-A:5, was approved by the 1969 Town Meeting vote. Town appropriations, donations, proceeds from the LUCT, grants, and interest have all added to the fund since it was started.

By law, any money placed in a conservation fund is allowed to accumulate from year to year. This permits accrual of funds; disbursement is authorized by a majority vote of Conservation Commission members, without further approval of town meeting or Board of Selectmen. Funds are used to purchase, monitor, and manage Town-owned conservation lands and easements, plus associated expenses. Funds are also used to manage and maintain the Town Forest.

Table IV-4 is a summary of the Town's Conservation Fund income and expenditures for the years 1969-2015:

Table IV-4: Conservation Fund Income and Expenditures (1969-2015)

Income Source	Amount
LUCT	\$1,852,267.00
Bank interest	\$244,903.00
General fund	\$164,000.00
Donations	\$7,267.96
Grants	\$1,125
Town Forest Timber Harvests	\$13,657.80
Sale of Farm House	\$150,000.00
No Details/Other	\$26,970.44
Total Income	\$2,460,191.20
Expenditures	
Purchase Town-owned Land	\$2,016,890.10
Purchase Easements	\$37,200.00
Other (Management Costs)	\$294,786.66
Total Expenditures	\$2,348,876.76
2016 Balance of Conservation Fund	\$111,314.44

Source: Salem Town Reports

Notes:

1. *Income from 1977 - 1988 was funded by warrant at Town Meetings. No general fund amounts have been added to the conservation fund since that time. (A warrant authorized \$79,000 to purchase town forest land in 1979. This amount was not placed in the fund.)*
2. *In 2011, the farm house and land were subdivided from Hawkins Farm, sold, and the proceeds were put in the conservation fund.*
3. *Other expenditures' details are not known until 2004 at which time the Conservation Commission started keeping detailed records of Conservation Fund transactions. Since 2004, these amounts are primarily costs associated with land acquisitions (legal, survey, environmental review, appraisal); and amounts for maintenance of managed properties (the Town Forest and Hawkins Farm). Starting in 2011, amounts include costs to a consultant to monitor the Town's conservation easements.*

CURRENT USE ASSESSMENT AND LAND USE CHANGE TAX

First enabled by the State in the early 1970s, the Current Use (CU) Statute, RSA 79-A, permits lower assessments and therefore lower property taxes on private open space land such as farms, forests, and wetlands. The intent of the statute was to retain open space by alleviating the burden of market level assessments, and the concomitant high tax burden which could result in the sale and development of these previously undeveloped lands. The law also provided for a change of use tax which penalized the

conversion and development of current use land that had benefited from the lower assessment and taxes. While the CU program has slowed the loss of open space, and the Land Use Change Tax (LUCT) has acted as a disincentive to remove land from the program, attrition has not been stopped.

One feature of RSA 79-A is to allow the LUCT to be placed in a town's Conservation Fund for the purpose of open space acquisition. In 2004, the citizens of Salem voted at Town Meeting to place 100% of the LUCT, with no cap, into the Conservation Fund.

While it is desirable to have this fund available to assist in acquisition of open space, the Town continues to experience the conversion of open space to development. Changes in CU acreage since 1990 reveals that a total of 974 acres has been converted, the largest share coming from the "Forested Land" category, as represented in Table IV-5 below: Presently (2017) a total of 1,522 acres remains in the Current Use program, down from 2,496 acres in 1990.

Table IV-5: Acres in Current Use Categories Removed or Added (1990-2014)

Year	Acres Farmland	Acres Forest	Acres Wetland	Total Acres in CU	Acres Added	Acres Removed from CU
1990	529	1,628	339	2,496	-	-
1999*	364	1,429	285	2,078	-	-418
2010	343	988	365	1,696	-	-382
2017	319	855	348	1,522		-174
Total(s)	N/A	N/A	N/A			-974

**Year 2000 Information not readily available*

Source: Salem Town Reports (1990, 1999), Salem Assessing (2010, 2017)

TOWN FOREST MANAGEMENT PLAN UPDATE

Salem's Town Forest, totaling 338 acres of forested lands, wetlands and a gravel pit, is the largest single parcel of Town-owned land. The Town Forest is located in the vicinity of Shadow Lake Road, Bluff Street and Zion Hill Road and is accessible to the public along the northwest side of the Forest off of Shadow Lake Road.

The majority of the property was originally acquired in 1979 for a well field to provide drinking water for the residences around Shadow Lake. That plan was eventually abandoned and the Town decided to use the land as Town Forest to protect open space. The importance of the Town Forest as protected open space with the various habitats and recreational opportunities that it offers has grown over the years despite the conversion of surrounding forestland into house lots.

Following the decision to use the land as Town Forest, an existing hiking trail system was expanded and the Conservation Commission hired a forester consultant to conduct a forest inventory. That inventory was used to develop a Forest Management Plan that outlined various management options. As the manager of the Town Forest, the Conservation Commission chose to manage the forest under a "Multiple Use" concept where consideration is given to timber production which can provide a source of income to help cover forest management costs; forest recreation; wildlife habitat improvement; watershed protection; environmental education; and cultural preservation. Multiple Use provides the public with a variety of benefits that are both sustainable and compatible.

Since 1994, two timber harvests have occurred in the northeast portion of the forest that produced a total of 145,480 board feet of saw timber. This has helped to reduce the overgrowth of trails and allowed

better access to the network of trails. Other areas within the forest have been set aside from the harvesting program and allowed to develop into stands of old growth trees.

In the past 8 years, significant improvements have occurred to expand and improve the conservation areas. Most notably are the improvements to the Salem Town Forest mentioned below.

Based upon many of the recommendations included in the 1997 Recreation Master Plan, a number of improvements to the Town Forest have occurred. Most significant are the improvements to the entrance area located off Shadow Lake Road. A new parking lot and signage were installed to allow more access and create a more welcoming appearance to the Town Forest. Use of this trail system by the public increased dramatically after a new trailhead was built from the parking lot along Shadow Lake Road.

The use of the trail system has also been enhanced through the work of several community organizations such as the Boy Scouts who have worked with the Conservation Commission in managing the Town Forest. Projects include the 4"x4" trail markers in the Town Forest, the erection of the bulletin board kiosk, and creation of nature trails.

One noted problem is that the Town Forest has been plagued with vandalism. This concern has affected some of the interpretive programs such as map distribution at trailheads and educational nature trail signs throughout the trail network.

In 2016, the Salem Conservation Commission purchased 101 acres of the former Putnam Farm parcel to add to the Town Forest. Grants totaling \$330,000 were received from the State to help pay for the acquisition costs. Another 32 acres adjacent to the parcel was donated to the Commission. The newly-acquired land encircled a previously town-owned 4.5-acre lot. In March 2017, Town Meeting voted to add all this land to the Town Forest and place a conservation easement on the entire property.

Figure IV-3: Salem Town Forest Map



2010 Forest Management Plan Recommendations

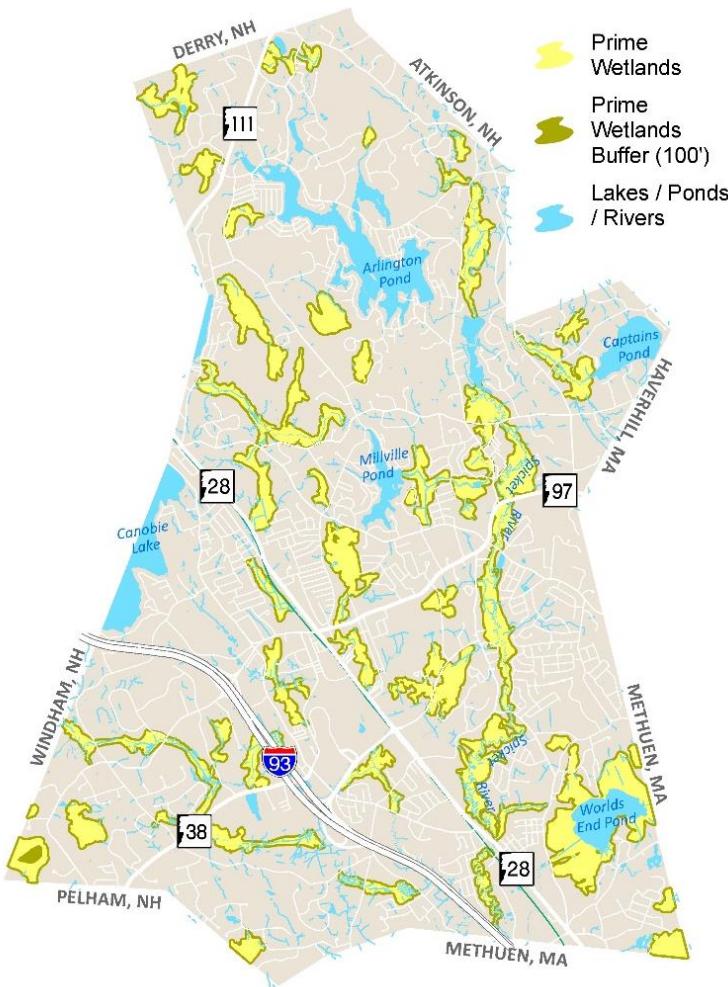
In October 2010, a licensed forest consultant with FORECO completed a new Forest Management Plan for the Salem Town Forest. The recommendations contained in the 2010 Town Forest Report were broken down into eight categories including Wildlife, Recreation, Water Resource Protection, Education, Cultural and Historical Features, Threatened and Endangered Species, Invasive Species and lastly, Forest Fire Protection and Emergency Access. Specific recommendations for each of these general categories are described in detail in the 2010 Town Forest Plan.

PRIME WETLANDS

The Town started adopting prime wetlands in 1989 when 26 separate wetland areas were adopted by Town Meeting. These wetlands are defined using aerial surveillance maps using criteria set forth by New Hampshire statutes in effect at that time. Between 2002 and 2007, 2 prime wetland extensions and 14 new prime wetlands were adopted by Town Meeting bringing the total to 40 prime wetlands. Both aerial photography and wetland survey methods were used for these new prime wetlands. The criteria used for selecting the new wetlands included a heavy emphasis on floodplains. This was done to provide additional protection to these lands from further development due to the Town's recurring flooding problems.

In 1997, the Town adopted a 100 foot undisturbed natural buffer area around all prime wetlands except in cases where the buffer was already disturbed.

Figure IV-4: Salem Prime Wetlands Map



Between 1998 and 2001, Prime Wetlands #16 and #17 were re-delineated twice based on actual wetland delineation surveys accomplished by wetland scientists. These re-delineations were done to (1) remove a Porcupine Brook wetland section from prime status to facilitate bridge construction over Porcupine Brook and connect Pelham and Lowell Roads using Stiles Road (2000); and (2) remove Porcupine and Policy Brook wetland sections from the highway corridor to facilitate the I-93 expansion.

In 2006, the Town's Wetland Conservation Ordinance was amended to state that prime wetlands must be re-delineated using RSA 482 methods. Since that time, there have been multiple re-delineations approved that reflect more accurate, site specific mapping and field review.

CANOBIE LAKE WATERSHED DRAINAGE STUDY (2011)

Being the primary source for Salem's drinking water, Canobie Lake is a prime example of the importance of a watershed approach to resource protection. Canobie Lake and its watershed are located within the

Towns of Salem and Windham, NH. The watershed is largely developed with residential and commercial land uses plus an interstate highway corridor. As the lake has many competing uses, it is critical to manage the water resources wisely to ensure clean, fresh drinking water for present and future generations. This study, completed in 2011 by the Granite State Rural Water Association for the Canobie Lake Protective Association, was done to identify stormwater runoff patterns and drainage infrastructure in the watershed. An analysis of land used within the watershed identified potential sources of contamination from both stormwater runoff and groundwater infiltration, including phosphorus which is a key nutrient for natural organic matter growth.

The report recommended work be done between Windham and Salem to ensure that the watershed is equally protected in both towns. A review of current zoning, site plan, and subdivision regulations should be completed to identify any gaps between the two towns.

Canobie Lake Study Recommendations

- Educate local land use boards and public officials about the importance of sound regulations and some of the gaps that may exist with regards to stormwater management.
- Increase homeowner awareness about stormwater impacts through education.
- Increase homeowner awareness of septic system maintenance.
- Encourage soil testing prior to fertilizer applications.
- Promote household hazardous waste collection events.
- Schedule catch basin cleaning based on field experience to ensure that the stormwater system operates as intended.
- Investigate stream restoration work in areas where erosion has widened stream channels.
- Educate Town and State employees about salt application upgrades and equipment for winter maintenance to reduce road salt impacts on Canobie Lake.
- Promote best management practices to protect groundwater at businesses that are likely to be handling regulated substances.

Further information included in this study is referenced and incorporated throughout various Master Plan chapters as they are updated.

HAIGH AVENUE FLOOD MITIGATION PROJECT

In May 2006, one of the worst rain storm events in Salem resulted in the evacuation of the Haigh Avenue area. Located at the confluence of the Spicket River and Policy Brook, this area consists of a neighborhood that has a history of severe flood impacts over the past 30 years.

In June of 2006, owners of 23 homes located along a portion of Haigh Avenue petitioned the Town to seek funding to acquire their homes. As a result, the Town applied for grants from the Federal Emergency Management Area (FEMA), and the N.H. Office of Emergency Management (NHOEM).

The FEMA funding criteria for acquisition was based upon a cost benefit model that determines whether or not the acquisition was less costly than the potential future damage costs from flooding if the home were to remain in a flood prone area. Based upon FEMA's Benefit-Cost test, the Town of Salem received \$2,533,352 in FEMA grant monies (\$1,889,802 Federal Share, \$643,550 Grantee Share) to acquire 9 homes located at the end of Haigh Avenue.

The overall positive impacts of this project were:

- Substantial positive environmental mitigation through the removal of homes and restoration of the area to natural state and/or flood detention.
- Acquiring the homes eliminated emergency response and evacuation costs from the end of Haigh Avenue.
- The project was a rare opportunity where flood mitigation for the Town, wetland mitigation for the State's I-93 widening project, mitigation of impacts on homes and the occupants, and the enhancement of an environmental resource area could be accomplished concurrently.
- The project eliminated payments from the Federal Emergency Management Act (FEMA) Flood Insurance program for flood damages.

Working with staff of FEMA and the NHOEM, the acquisition and demolition of the homes occurred in 2009 and 2010.

Also in response to the May 2006 flooding, several floodplain and wetland zoning amendments were proposed and passed in 2007, increasing the requirement for compensatory floodplain storage and prohibiting new buildings in floodplains.

NATURAL RESOURCE AND CONSERVATION RELATED ORDINANCES

The Town uses various methods to preserve open space including innovative land use incentives (ordinances), set-asides or easements requested during site plan and subdivision development, acceptance of donations, and purchase of land or easements by the Conservation Commission.

The Town has several zoning ordinances and regulations intended to guide development in such a manner that the Town's natural resources are preserved or protected.

- Senior Housing Overlay District Ordinance. Adopted in 1998, this overlay district ordinance recognizes the need to provide for appropriate housing alternatives for active adults age 55 and over; elderly persons living independently; frail elderly persons; elderly persons requiring skilled or specialty nursing facilities; and to also provide for appropriate supportive health care and services for older persons. The ordinance requires at least 50% of sites used for Senior Housing be reserved in perpetuity as common open space.
- Open Space Preservation Ordinance. Adopted in 1990 and amended in 1996, 2000, and 2003. The intent of this ordinance is to preserve undeveloped land in its existing natural state in order to protect valuable land and water resources for conservation, forestry, agriculture, aquifer recharge, watershed protection, wildlife habitat, outdoor recreation, and scenic and historic values beyond the extent provided by existing regulations.

The Ordinance requires that at least 50% of the site must be preserved in perpetuity as common open space. Since 1990, at least 23 developments were approved under the Open Space Preservation Development ordinance.

- Floodplain Development Ordinance. A 2010 reorganization combined policies previously located in different sections of other zoning ordinances. These sections were adopted or amended in 1989, 1991, 1994, 2002, 2005, 2007, and 2009. The intent of this ordinance is to regulate development

in the Town's floodplains that are defined in Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps.

- Wetlands Conservation Ordinance. Originally adopted in 1976, a new version was re-adopted in 1987 and amended in 1989, 1996, 1997, 2006, 2007, 2012, and 2013. The intent of this ordinance is to protect public health, safety, and general welfare, by controlling and guiding the use of land areas which have been found to be wetlands. Amendments have included adding or changing buffer requirements, adding or changing wetland filling compensation requirements, changing wetland requirements subject to Town regulations (for instance drainage ditches removed and vernal pools added), and changes resulting from revisions to State regulations.
- Proximity to Water Bodies. Adopted in the early 1980s and amended in 2010 and 2015. The intent of this regulation is to regulate distance from water bodies for structures: "No structure shall be constructed within 40 feet from the high-water mark of any lake, stream, or surface water system, except that no structure shall be constructed within 50 feet from the high-water mark for the protected shorelands defined by the NH Department of Environmental Services in accordance with RSA 483-B."

2015 REGIONAL MASTER PLAN – ROCKINGHAM PLANNING COMMISSION

The Natural Resources Chapter of the Rockingham Planning Commission (RPC) examines natural resources throughout the RPC region and provides detailed information, including statistics and maps, on the following topics:

- Water resources
- Land use issues
- Water infrastructure
- Wildlife and habitats
- Waste-related issues
- Air resources
- Agriculture, forestry and fisheries
- Recreation and open space
- Climate change impacts on natural resources

Key issues and challenges discussed in the Chapter include:

- Increases in impervious surfaces
- Maintaining hydrologic connectivity (floodplains, fluvial erosion, groundwater infiltration)
- Cost of maintaining water infrastructure
- Loss of open spaces
- Adapting to climate change
- Support for local food production

It is noted that the significant land use change and growth seen in the RPC region has put increasing pressure on remaining natural spaces. RPC determined that the highest priorities identified in local master plans in the RPC region include protecting natural resources for water quality, recreation, open space, and wildlife.

As growth continues in the region, development is working its way into difficult areas, those with marginal soils, adjacent to wetlands and aquifers, and with other environmental constraints. It was often believed that these lands would remain open space because of the expense and difficulty to develop them. However, these marginal lands are now being developed, particularly in areas where water and sewer lines have been extended.

The Regional Master Plan Natural Resources Chapter contains the following natural resources goals:

Goal 1: Development and redevelopment practices minimize impacts on natural resources and improve those resources when possible.

Goal 2: Development and land use change impacts on water resources are minimized and improved when possible.

Goal 3: The region develops and redevelops in ways that allow waterways to flow as naturally as possible and precipitation to infiltrate into the ground.

Goal 4: Open spaces are preserved for agriculture, wildlife habitat, recreation, environmental services, and to maintain community character.

Goal 5: Large, undisturbed blocks of land are protected and interconnected, particularly lands with sensitive habitats or lands of local importance.

Goal 6: The region promotes new and continued use of agricultural lands and resources.

Goal 7: Public and private drinking water supply sources are protected from overuse and pollution.

Goal 8: Water and wastewater system owners, including municipally-owned systems, collaborate with each other on management and system improvement projects.

Goal 9: The region is minimizing its contribution to air pollutants.

Goal 10: Waste generation is minimized and sites with past hazardous waste issues are restored to a usable condition.

The following recommendations are provided in the Chapter:

Recommendation 1: Decrease the amount of stormwater runoff by limiting impervious surfaces allowed with new development, requiring onsite treatment of stormwater runoff, and retrofitting existing development.

Recommendation 2: Minimize potential sources of surface water and groundwater pollution by limiting development within drinking water source protection areas, increasing natural buffers around surface waters, and increasing protection of wetlands areas to help filter pollutants.

Recommendation 3: Evaluate cost-saving potential of coordinating and collaborating with other systems on management and system improvements for municipal water infrastructure operations, including drinking water, wastewater, stormwater and dam infrastructure.

Recommendation 4: Encourage communities to protect existing agricultural operations and promote new agricultural uses of land by adopting zoning and site plan regulations that minimize restrictions on agriculture.

Recommendation 5: Encourage communities to adopt open space plans and zoning regulations that protect those areas identified as locally or regionally important for wildlife, recreation, agriculture, and scenic quality. Whenever possible, areas that are important for multiple factors should be prioritized.

Recommendation 6: Communities should evaluate current land use and zoning ordinances to determine how current and potential future development may negatively affect the ability of surface waters to flow across the landscape or for precipitation to infiltrate the ground.

Recommendation 7: Municipalities should manage solid waste generated in the region as a sustainable material in order to find cost savings and conserve natural resources.

Recommendation 8: Communities should incorporate the impacts a changing climate will have on natural resources and environmental services into all planning activities, including zoning, infrastructure investments, emergency planning, and economic development.

An additional resource that will assist communities to prioritize areas in need of protection is entitled: Merrimack River Valley Land Conservation Plan (2013) and can be found on the internet at the following address: <http://www.forestsociety.org/landconservation/merrimack-watershed.asp>.

NEW HAMPSHIRE'S 2015 WILDLIFE ACTION PLAN

The New Hampshire Wildlife Action Plan is a document that serves as a 10-year blueprint for conserving non-game wildlife throughout the state. The first Wildlife Action Plan became available in 2005, and as of 2015 has been completely updated.

New Hampshire's newly revised Wildlife Action Plan guides conservation actions and identifies NH's most important conservation goals. Of significance, the Plan identifies species that are threatened or endangered, and shows an increase in species of greatest concern in New Hampshire from 118 in 2005 to 169 in 2015. Much of that increase is a result of greater knowledge gained about what rare species exist in the state.

What is in the New Hampshire Wildlife Action Plan?

- Species of Greatest Conservation Need and habitat profiles.
- Current distribution and abundance of wildlife species & habitats.
- Threats to species and habitats.
- Conservation actions needed to recover & protect SGCN and habitats.
- Monitoring of wildlife populations & habitats, and success of conservation actions.
- Partner & public participation in Plan development and implementation.
- Information, data and maps that state and federal agencies, municipalities, regional planners, universities and conservation organizations can use as they make decisions about land use, development and conservation.

- Identification of 117 actions that span monitoring, research, species and habitat management, land protection, education and technical assistance.
- Actions everyone can take to help protect wildlife in New Hampshire, from homeowners and educators to local commissions, non-profits and businesses.

Since the publication of the first Wildlife Action Plan in 2005, more than 230,000 acres of land identified as important habitat for protection in the Plan have been conserved throughout the state.

In lieu of any goals, the Plan utilizes a multi-process approach to implement the actions outlined throughout the report. Species and habitats must be monitored to document changes in populations or habitat condition. This monitoring can identify trends, geographic areas of concern, and new threats or changing threat levels. In addition, performance monitoring measures the efficacy of actions towards improving species and habitat conditions.

All this information will be used to adapt actions to address the changing needs of species and habitats, using the best available methods for conservation, recovery, restoration efforts, and collaboration with partners within and outside the state to protect the diversity of wildlife and habitats in New Hampshire.

INTERSTATE 93 (I-93) CTAP NATURAL RESOURCES ASSESSMENT REPORT

An Interstate 93 CTAP Natural Resources Assessment Report was presented to the Town of Salem on May 22, 2007. The Town of Salem Open Space Report was part of Phase II of the I-93 Community Technical Assistance Program (CTAP). This program was developed in cooperation with the N.H. Department of Transportation (NHDOT), N.H. Office of Energy and Planning (NHOEP), N.H. Department of Environmental Services (NHDES), and the Rockingham Planning Commission (RPC) to provide planning assistance to the I-93 corridor communities expected to experience additional growth resulting from the I-93 expansion. The findings of the Natural Resources Assessment Report included:

- Strategies and actions taken to protect natural areas included the Open Space Preservation Ordinance, Wetland Ordinance and Prime Wetlands designation, and Floodplain Ordinance.
- The Town did not conduct its own Natural Resources Inventory but rather relied on the Rockingham Planning Commission Regional Open Space Plan conducted as part of 1998 REPP Year One Report.
- The Town has a Conservation Commission and Planning Board, both active in environmental protection.
- The Town participates in the National Flood Insurance Program.
- The Town's Land Use Regulations prohibit development within the floodplain.
- The Town's Subdivision Regulations regulate erosion control, and references the Stormwater Management and Erosion and Sediment Control Handbook for Urban and Developed Areas in New Hampshire.
- The Town's Subdivision Regulations require the submittal of drainage calculations and Stormwater Management Plans.
- The Town's Subdivision Regulations require erosion and sediment control during construction and post-construction.

- The Town has not adopted a Stormwater Management Ordinance. Provisions for stormwater management are in the Town's other regulations. The Site Plan Regulations reference the Subdivision Regulations for stormwater management provisions.
- The Town has a regulation for gravel excavation operations.
- The Town has adopted a Wetlands Conservation Ordinance.
- The Town has adopted wetland buffer and setback requirements.
- Prime Wetlands have been inventoried and mapped, and regulations are in place protecting Prime Wetlands and their buffers.
- The Town does not have an Aquifer Protection Ordinance.
- The Town has a Wellhead Protection Program for two bedrock wells, and instituted a local ordinance in 2000 that requires testing of private well water for new or replacement wells.
- The Town follows state regulations to protect surface water resources.
- The Town does not have shoreland or riparian buffer regulations;
- The Town Land Use Regulations do not utilize Low Impact Development performance standards, or encourage use of environmentally friendly techniques and materials.
- The Town has not adopted recommendations found in the State's Wildlife Action Plan or Natural Services Network.
- The Town has not adopted regulations to protect wildlife or wildlife habitat.

2010 OPEN SPACE REPORT

In 2010, the Rockingham Planning Commission (RPC), working with the Salem Conservation Commission, prepared the Town of Salem Open Space Report as part of Phase II of the I-93 Community Technical Assistance Program (CTAP).

The Open Space Report identified high value resources and their occurrence relative to one another throughout the town. These co-occurrence areas comprise the “green infrastructure,” or those areas where high value resources occur in the greatest concentration. The green infrastructure, when protected from development, should ensure that the services provided by the natural environment to Salem’s residents could be sustained.

Four high-scoring natural resources were selected as criteria for application to land preservation by the Town:

- Wetlands/streams/rivers/lakes/ponds plus the applicable buffers
- Forested areas
- Agricultural soils
- Un-fragmented lands of 25 acres or greater

One hundred sixteen (116) parcels were identified, using the above criteria, that if protected would provide significant benefits to community. Of these, 14 parcels were identified as high priority. The

Report recognizes that, given funding constraints, preservation of these parcels can only be accomplished if the land owners are willing to work with the Town.

Other chapters of the Report discuss open space benefits and support, open space planning, land selection and protection criteria, financial planning, recommendations, and map products.

Recommendations include:

- The Conservation Commission should work with owners of developed parcels and those parcels proposed for development within the recommended green infrastructure to ensure that open space is preserved or managed to the extent possible.
- The Conservation Commission should review the recommendations of this report every two to three years.
- The Town should make recommendations for land acquisition as part of the Capital Improvement Plan and municipal budget process.
- The Town should consider hiring a land acquisition specialist to help implement protection of the parcels identified for priority protection in this report.
- The Town should consider proposing a bond for a warrant article to fund future land acquisition efforts.
- The Town should continue to implement the Open Space Subdivision ordinance to preserve land and could consider mandatory implementation of this ordinance for the parcels identified for priority protection in the report.

RELOCATION OF NH ROUTE 111 AND THE WIDENING OF INTERSTATE 93

Route 111 Relocation: The NHDOT issued the final Environmental Impact Statement in June 1998 for the relocation of N.H. Route 111, beginning east of Shadow Lake Road in Salem, and ending near Searles Road in Windham. Less than one mile of the new road is located in Salem. In Windham, impacts included 6 acres of wetland impacts and 21.3 acres of farmland soil impact. The major environmental improvement for Salem resulting from the relocation was moving Route 111 away from the edge of Shadow Lake. The relocation reduced the amount of road pollution, including road salt, entering Shadow Lake and the Hittyiti Brook.

Interstate 93 (I-93) Widening Project: This major Federal and State transportation project has been ongoing in various stages for numerous years. The majority of the work to widen this major north/south interstate highway through the Town of Salem was completed in 2015. The widening project involved significant impacts to acres of wetlands. Mitigation for the impacts included:

- a. Morse Fields: Purchase of land between Exit 1 Rockingham Boulevard and Cluff Crossing Road. This land, adjacent to the Soule School, was zoned by the Town for Residential – Garden Apartments. The land is also adjacent to a wetland system created by the convergence of Policy and Porcupine Brooks. Originally intended by NHDOT for flood storage creation, the land was ultimately given to the Town for use as ball fields.
- b. Pelham Road: A significant wetland mitigation area was created south of Pelham Road and east of Porcupine Brook. The land was cleaned and excavated to create additional wetlands and flood storage connecting to Porcupine Brook.

- c. Haigh Avenue Mitigation Land. Twenty three homes within this land triangle, surrounded on two sides by the Spicket River and Policy Brook, were severely damaged by the 2006 flood event. Using a FEMA grant, the Town and NHDOT purchased nine homes, removed all structures and asphalt, and returned the land to a natural state as mitigation for the Interstate 93 widening project. Phase 1 of the Policy Brook Restoration was finished in 2014. The affected floodplain area was 4.1 acres. Policy Brook was changed from a straight line to a meandering path creating 9.6 acre-feet of compensatory floodplain storage and 2.3 acres of riparian and floodplain community. Phase 2 of the project will be done at such time as the remaining 14 homes are acquired.
- d. Wild Lupine Plant Rescue Plan: Wild lupines are listed by the NH Natural Heritage Bureau as a state-threatened species found at only 28 known sites in New Hampshire. The plant is noteworthy because it is the sole larval food source for the federally listed Karner Blue Butterfly. A wild lupine population was identified in the I-93 widening construction area. Of the original twenty colonies (clumps), fourteen were successfully moved to conservation easement land within Salem in November 2010. Monitoring in 2013 identified eight surviving colonies. Long-term management for success of the rescued lupines requires:
 - i. Maintenance of the area including installation of perimeter fences to keep grazing from deer and rabbits to a minimum.
 - ii. Removal of invasive species including bittersweet and buckthorn, and other plants such as grape vines and blackberry that are aggressively covering the plots.
 - iii. Monthly mowing is recommended to keep the colonies from being overgrown by shrubs. A mowing management plan could be developed in cooperation with the homeowner's association for this land.
 - iv. The Conservation Commission should assume responsibility for the management of the conservation needs of this parcel.

NHDES SHORELAND WATER QUALITY PROTECTION ACT (SWQPA)

The provisions of the New Hampshire Department of Environmental Services (NHDES) SWQPA apply to all lands within 250 feet of public waters which include great ponds or artificial impoundments of 10 acres or more, and those rivers that are year-round flowing waters of fourth order or higher. Surface waters and rivers in Salem which are subject to SWQPA are shown in Tables IV-6 and IV-7.

Table IV-6: Great Ponds or Artificial Impoundments Subject to SWQPA

Great Ponds or Artificial Impoundments	Acres
Arlington Pond	320.0
Canobie Lake	373.4
Captains Pond	90.3
Millville Lake	54.0
Shadow Lake	35.0
Taylor Reservoir	12.0
Wilson Pond	32.0
World End Pond	95.2

Source: NHDES (SWQPA)

Table IV-7: Rivers Subject to SWQPA

Spicket River, outflow of Big Island Pond in Derry to Arlington Pond
Spicket River, outflow of Arlington Pond to Massachusetts border
Widow Harris Brook, outflow of Millville Lake to Spicket River

Source: NHDES (SWQPA)

The 2001 Master Plan recommends that the Town “amend the Town’s land use regulations to recognize the provisions of RSA 483-B, the NH Comprehensive Shoreland Protection Act, and require applicants for developments subject to the provisions of the act to present evidence of review and approval from the NHDES.” However, incorporating RSA-483-B into Town ordinances would subject the Town to enforcement requirements. Town management concluded that Town employees are not qualified to enforce SWQPA standards so this recommendation is no longer relevant.

RECOMMENDATIONS

- Implement the natural resource and conservation-related recommendations of the Flood Hazard Mitigation Plan.
- Acquire land, easements, or development rights in the floodplain to prevent flood damage and preserve flood storage capacity.
- Review and update the priority open space acquisition list prepared for the Open Space Plan with a focus on environmentally sensitive and visually important areas.
- Review and update inventory of natural resource areas that may be candidates for potential preservation and/or restoration through compensatory mitigation.
- Initiate an acquisition program for the high priority parcels in the Open Space Report using the Conservation Fund, as well as funding available through LCHIP, and other sources augmented as necessary by annual appropriations.
- Re-establish the Spicket River Clean-up Program.
- Make use of the Open Space Preservation Ordinance mandatory on high-priority sites.
- Continue to monitor existing conservation easements.
- Review Salem’s existing conservation/open space plan, master plan, zoning, etc. to determine if any of these documents need updating to incorporate information from the Wildlife Action Plan. E.g. are they missing key documents, such as a natural resources inventory?
- Complete a Natural Resources Inventory to serve as the basis for many subsequent actions such as developing a long range conservation plan to protect key wildlife habitats, addressing land conservation for wildlife, using local regulations to manage wildlife habitats, public outreach and education.
- Develop regulations to protect wildlife habitat.
- Develop an information program and promote public education relative to the Town’s natural resources, environmental concerns, and the benefits of open space.

- Develop an invasive species plant survey and removal plan.
Investigate and consider wetland dredging to restore functions/ value.
- Establish a program for wetland cleanup, especially where trash has accumulated (commercial, school areas, along highways).
- Acquire additional open space, flood plain and farm land.
- Ensure that the Town's land use regulations include effective and contemporary standards and requirements for the preservation of environmental quality and protection of natural resources and open space.
- Develop a management plan for the wild lupine plant restoration area.
- Implement the recommendations in the Town Forest Management Plan.

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V. HISTORIC RESOURCES

A BRIEF HISTORY OF SALEM

First settled in 1652, in the early 1700s, the Town of Haverhill, Massachusetts was divided into two towns, the second being named for Lord John Methuen of England. By the 1730s, Methuen had become so large in area that the residents of its northern section petitioned the General Court of Massachusetts to form their own town, which was called the North Parish. The organization of the Town took place on January 25, 1736 at the home of Daniel Peaslee, near the base of Spicket Hill. This house was used for parish meetings until the meetinghouse was built, and because of the stockade surrounding it, as a place of refuge from Indian attacks. The Indian tribes associated with this area were the Penacooks, Pentuckets and Abnakis. Following raids on nearby Haverhill, Salem residents remained behind protective stockades at night, limiting their interactions with Natives.

In 1741, New Hampshire became a separate province, and the border split the North Parish from Methuen. Because of continuing disputes, it became evident that there should be a town government controlling the territory along the border, so on May 11, 1750, the North Parish was incorporated as the Town of Salem. The name, from the biblical word for "peace" was given to the Town by Reverend Francis Higginson of England, who named it after Salem, Massachusetts, then one of the most important ports on the eastern seacoast. The first selectmen, chosen in 1743, were Daniel Peaslee, Henry Sanders, and Isaac Clough (Cluff). In 1752, during a dispute with the Town of Windham, the southern third of Windham was annexed to Salem. This included most of Canobie Lake. During these years, the forests to the north and west of Salem were thick and unsettled, and home to packs of wild animals that preyed upon livestock and people.

The first schoolhouse was not built until 1800. Before this time, the schoolmaster taught in private homes. As the town grew, each district wanted its own schoolhouse, and by 1824 Salem had nine schools. The first industries in Salem were sawmills and gristmills along the Spicket River. Henry Sander's mill provided boards for the first meetinghouse. By the early 1800s there were also textile mills, woodworking shops and shoe factories. During the Civil War Gordon McKay's factory was able to supply the army with machine-made shoes.

In 1806, the Londonderry Turnpike (now Route 28) was built. The Turnpike allowed the people of Salem to travel to work outside of the town, such as the mills in the Merrimack Valley. The Turnpike extended from Concord to Boston, and became the major means of transportation. Cattle and even turkeys were driven along it toward Boston. Tradesmen and merchants used it for business, and stage routes with tavern accommodations were established. The first of the Salem taverns was the Whitebridge Inn built by Richard Pattee in 1804. Four hundred horses could be cared for in one night. General Lafayette stayed at the tavern in 1805, on his way from Boston to Concord. Part of the inn is still standing. The turnpike remained a dirt road until 1904, when a special Town Meeting gave Edward Searles permission to pave the section from Hampshire Road to the Depot. Charles Tenney and Levi Woodbury paid for the paving from the Depot to Canobie Lake. The Salem-Windham section of I-93 was opened in the early 1960s. It was called Alan B. Shepard, Jr. Highway. The first exit from Massachusetts was Pelham Road, so all the traffic going to Rockingham Park had to drive down Main Street and turn onto Route 28. Residents along the way complained, and the Rockingham Park Boulevard exit was added.

In 1847-48, the railroad was put through from Manchester to Lawrence, running parallel to the turnpike. There were three stations in Salem: Hampshire Road, Salem Depot and Policy Pond. The latter name was changed to Canobie Lake in 1886. In 1901 the Massachusetts Northeastern Street Railway ran trolleys through Salem, connecting with the B & M railroad at Canobie Lake station. In 1903, they built Canobie

Lake Park as an inducement to get people to ride the trolleys. With the advent of the automobile, trolley use declined, and Salem's trolleys stopped service in 1928. Canobie Lake Park is all that survives but it continues to be a favorite family destination for thousands every year.

Another of Salem's favorite destinations has a very deep history as well. "America's Stonehenge" is located on Haverhill Road and was constructed by Native American culture or a European migrant, no one knows definitively. At over 4,000 years old, this historic site is possibly the oldest man-made construction in the United States. This site features a maze of manmade chambers, walls and ceremonial meeting places. Like Stonehenge in England, America's Stonehenge was built by ancient people who had great knowledge of astronomy and stone construction. It has officially been determined that the site is an accurate astronomical calendar used to determine specific solar and lunar events of the year.

Also of historic significance, the site known as Rockingham Park ("the Rock"), was New Hampshire's only thoroughbred racetrack. The "Rock" was built on farmland bought from Isaac Woodbury and Charles Kimball and opened on June 28, 1906, but closed a few days later because betting was illegal in the State of New Hampshire. After that the park was used for air shows, auto racing, and the yearly 'Rockingham Fair.' In 1931 horse racing was tried again, but it was not until 1933 that betting was legalized in New Hampshire. The clubhouse and grandstand burned on the morning of July 29, 1980, and it was not until May 26, 1984 that the 'Rock' opened again. In August 2016, Rockingham Park closed after being sold to a local developer. The site is currently being redeveloped as a mixed-use project with over 2 million square feet of retail stores, restaurants, apartments and townhouses, office space, and a hotel.

TECHNIQUES FOR PROTECTION OF HISTORIC AND CULTURAL RESOURCES

National Register of Historic Places

The National Register of Historic Places is the official list of the nation's historic places worthy of preservation, authorized by the National Historic Preservation Act of 1966.

Structures, sites, and districts of important historical or architectural significance may be nominated to and listed on the National Register. The nomination process starts by an individual or an organization preparing a nomination form and submitting it to the New Hampshire Division of Historical Resources (NHDHR). NHDHR then reviews the nomination and makes its recommendation to the National Park Service, which then decides whether or not to list the property.

Such a listing provides protection to the property relating to federally approved or licensed actions. Any Federal action, like constructing a federally aided highway near such a structure, would require an environmental impact assessment to determine if the listed property could be adversely affected by the proposed Federal action. Listing on the National Register provides no protection against demolition or alteration by a private owner.

The eligibility for properties to be included in the National Register is based on fulfillment of one or more of the following four criteria:

- Criterion A: Association with events that have made a significant contribution to broad patterns of national, state, or local history.
- Criterion B: Association with the lives of persons significant in national, state, or local history.
- Criterion C: Embodiment of distinctive characteristics of a type, period, or method of construction; or representative of the work of a master; or possessing high artistic values; or representative of a significant and distinguishable entity the components of which lack individual distinction (i.e. a

district).

- Criterion D: Has yielded or is likely to yield information important in prehistory or history (i.e. archeological site).

Investment Tax Credits

In certain cases, an owner of income-producing property (not including a private residence of an owner-occupant) listed on the National Register may be eligible to apply for and receive an investment tax credit of 20% of the eligible rehabilitation costs of a certified rehabilitation project. While the process is complex, the tax credit often does provide a significant economic incentive for commercial developers to rehabilitate an historic property that otherwise would not be rehabilitated. The reason that this is important from an historic preservation standpoint is that the work must be done according to federally approved standards.

Historic Districts by Local Governments

A mechanism to provide protection of historic resources is the creation of a locally controlled historic district for areas with a distinctive historic and/or architectural character. Under RSA 674:45, "The preservation of structures and places of historic and architectural value is hereby declared to be a public purpose." The State allows the creation of local historic districts and commissions to regulate these districts. Furthermore, there may be a number of historic districts within a community and they may have a residential, commercial or industrial focus or a combination. Historic districts do not prevent the ordinary maintenance or repair of the buildings nor do the districts prevent new construction within the district. Their purpose includes: "preserving (and reflecting) elements of...cultural, social, economic, political and architectural history, conserving property values, fostering civic beauty, strengthening the local economy and promoting the use of a historic district for the education, pleasure and welfare of the citizens of a municipality."

By having a local historic district, the town is eligible to apply for designation in the Certified Local Governments (CLG) Program which was enacted by the National Historic Preservation Act Amendments of 1980, and in New Hampshire is administered by the State Division of Historical Resources. The certification would provide the Town with a role in the review of National Register nominations within its jurisdiction, as well as access to a pool of grant funds which require a local match of funds. The grants may be used for identification of historical resources in the community, nominations to the National Register, planning and technical assistance in considering the appropriate treatment of identified resources, awareness and education projects, and actual development projects.

Heritage Commissions

Under RSA 674:44a, communities may establish heritage commissions that have similar powers and duties as conservation commissions. Unlike historic district commissions that have regulatory powers within specific areas of a community, the heritage commission advises and assists other local boards regarding the value of historical, cultural and archaeological resources throughout the community. The commission may also accept and expend funds for the protection of heritage resources. This may be accomplished through a non-lapsing heritage fund similar to the conservation fund that may be established for conservation commissions.

Preservation Easements

Another method of providing protection for historic properties is to grant a preservation easement on the exterior of an historic building, which keeps it in perpetuity as it currently appears. The easement is granted by the owner to either a governmental unit or a non-profit corporation in the historic

preservation field. Essentially, it is a giving up of certain rights to change the structure. These easements are an extension of conservation easements given by property owners to maintain their land (all or part) in open space. While conservation easements have been used extensively in New Hampshire, preservation easements are less common and somewhat more complex to administer.

Fee Simple Purchases/Gifts

Either a governmental unit or a non-profit historic preservation organization might use this technique to purchase or receive a gift of a building for that entity to preserve and maintain for the public to view. With limited funds, this method can save only a small portion of the many buildings worthy of preservation.

Scenic Roads

Roads with attractive large trees and/or stone walls along the side may be designated as scenic roads under New Hampshire Statute RSA 235:157. Under the statute, 10 voters or landowners along a road may petition for a warrant article to designate a scenic road. Zion Hill Road is the only designated scenic road in Salem.

Scenic Easements

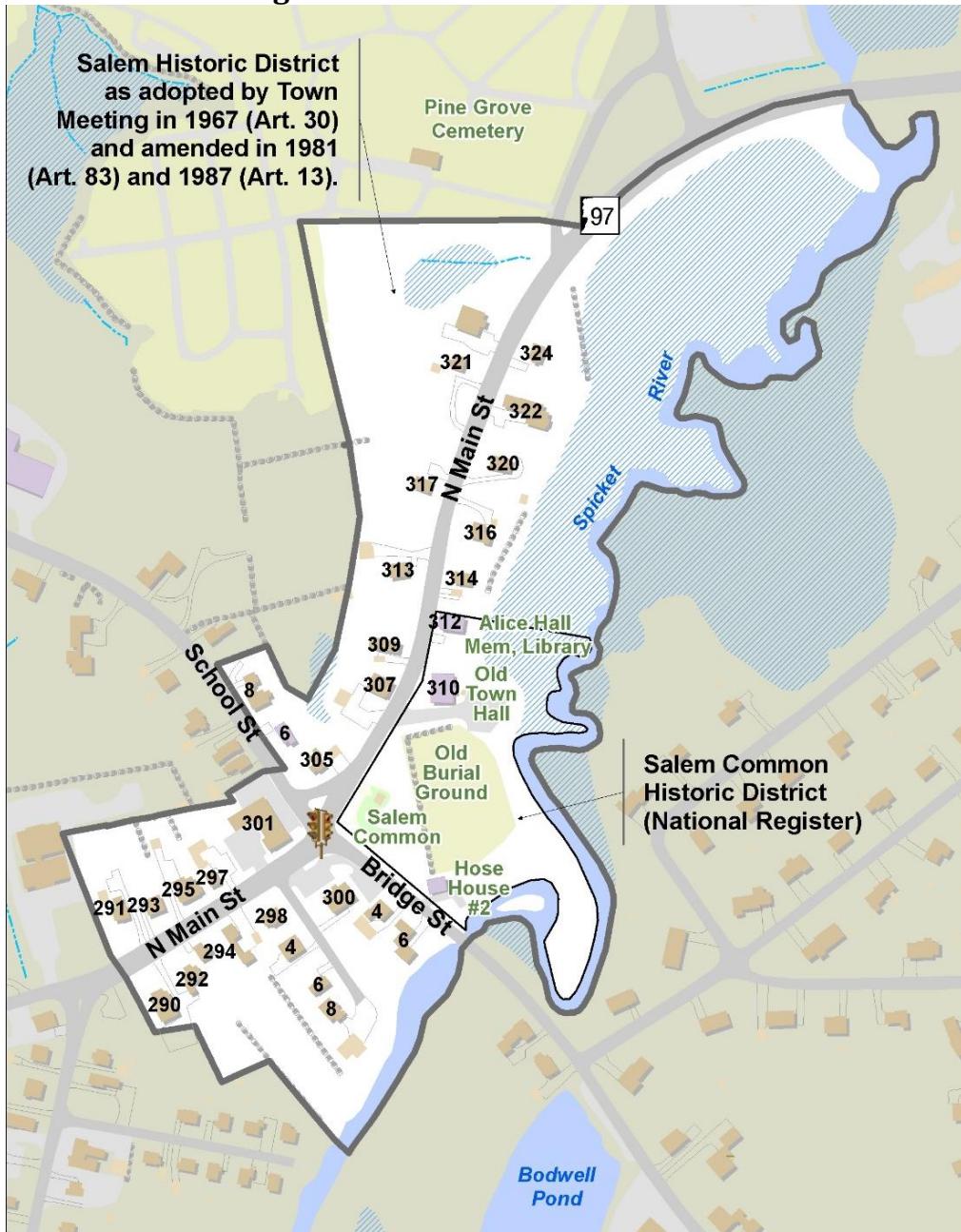
It is possible for a landowner to grant an easement over his/her land in order to protect views, vistas or other features that are worthy of protection. When such easements are granted to a non-profit or governmental organization, if the fair market value of the property is reduced by these restrictions, then the owner may be eligible for a reduction in property taxes.

HISTORIC PRESERVATION EFFORTS

Salem's Historic District

Over the years, Salem has pursued several of the historic preservation techniques described above. In 1967, Salem established its only Historic District at the intersection of Main, School, and Bridge Streets. This District consists of 32 properties surrounding the Old Town Hall, the Old library, Hose House #2, and the Old Burial Ground (See Figure V-1). The District was established in accordance with State law (RSA 674:46), and any property located in the District is subject to eight rules that were adopted by the Historic District Commission (HDC). The HDC is comprised of five members appointed by the Board of Selectmen as well as a representative of the Board of Selectmen. Chapter 54 of Salem's Municipal Code references "Historic District Commission" which provides the history and description of the Commission. Chapter 284 of Salem's Municipal Code references "Historic District" and contains a description of the area designated as the Historic District. The Zoning Ordinance itself contains no direct reference to the Historic District.

Figure V-1: Salem Historic District



State and National Register of Historic Places

Several Salem properties have been successfully nominated to the State and National Register of Historic Places.

- **State:** Each state has a preservation program based on the National Historic Preservation Act of 1966, as amended (16 U.S.C. 470f). The Division of Historical Resources (DHR) is New Hampshire's state historic preservation office. In 2009, Salem's Old Town Hall located at 310 Main Street was submitted to the NHDHR. In 2011, four additional properties were submitted including District Number 5 Schoolhouse located at 6 School Street, the Salem Depot located at 81 Main Street, the Old Town Hall located at 304 Main Street, the Alice B. Hall Memorial Library located at 310 Main Street, and the Hose House #2 located at 312 Main Street.

➤ **National:** The National Register of Historic Places is the official list of the nation's historic places worthy of preservation. As described in an earlier section of this chapter, the eligibility for properties to be included in the National Register is based on fulfillment of one or more of four criteria.

As of April 2011, the National Register lists the "Salem Common Historic District" which includes three contributing buildings, two contributing sites (the burial ground and common), five contributing structures (stone wall and receiving tombs), one non-contributing structure (a gazebo of recent construction), five contributing objects (monuments) and one non-contributing object (monument).

A brief overview of each of the contributing structures or properties is as follows:

❖ **District No. 1 Schoolhouse (Alice Hall Memorial Library), 312 Main Street (1861)**

This building served as the District No. 1 schoolhouse from 1861 to 1895. When it was constructed, District No. 1 was the largest district in the town with 83 scholars enrolled in 1862. A new District No. 1 school was eventually built elsewhere in town in 1895 and this structure was vacated.

In the fall of 1895 the building became home to the town library which had been established in 1893 and was briefly housed in one of the rooms of the town house. Miss Alice Hall began working at the library in 1915 and was head librarian from 1924 until the library moved to the new Kelley Library building at the corner of Main Street and Geremonty Drive in 1966. In 1988, the Town of Salem dedicated the building in memory of Alice Hall. Today, the library has been restored to its old appearance and houses a large collection of historical books.

❖ **Old Town Hall, 310 Main Street (1738 and altered in 1838, 1899 & 1908)**

What is now the Old Salem Town Hall began as a meetinghouse constructed in 1738, prior to the incorporation of the town in 1750. The building was originally located on the Town Common, close to the present-day intersection of Bridge and Main Streets.

The building continued to be the center of Salem's town government until the 1940s when the town offices moved to Salem Depot and later to the current Municipal Office Building on Geremonty Drive. Town Meeting continued to be held here until 1958. The building served as classroom space at several times in the 1950s to help alleviate overcrowding in the schools. The upper hall served as the court room for Salem's Municipal Court from 1961 to 1973. Over the years, various community organizations have all used the building for meeting space. In later years it housed the Community Action Program and the Senior Center.

In the summer of 1981, the Historical Society moved their headquarters from the Kelley Library to the Old Town Hall. The Salem Museum was opened on October 31, 1982. The building serves as a meeting place for the Salem Historical Society and also the Historic District Commission.

❖ **Old Burial Ground (1741+)**

Salem's oldest town cemetery occupies a level piece of land west of the Spicket River. It is bounded on the west and north sides by a rubble stone wall with granite caps and end posts. To the east, the land descends down to the river and on the south side there is rough rubble retaining wall built into the side of the hill. Grave markers are arranged in rows oriented north to south with inscriptions on most headstones facing west.

Like the construction of the Town Hall, the burial ground predates the establishment of the Town in 1750. According to the 1907 Town History, the oldest extant stone in the Center burying ground at that time was dated 1753 and marked the grave of Tristram Currier. A new town cemetery, Pine Grove Cemetery, was established north of the village in the 1850s.

❖ **Stone Wall (c.1773)**

The north and west boundaries of the cemetery are enclosed with a stone wall displaying a dry laid base outlined by granite posts with large granite capstones.

❖ **Receiving Tombs (1843, 1847, 1856, 1861)**

There is a row of four identical receiving tombs on the eastern edge of the cemetery. They consist of earthen mounds with peaked granite entry surrounds and iron double doors. The tomb to the north is the earliest and bears the inscription "Erected 1843/Tristam Haynes, died Aug. 1, 1837, aged 34". The other three in order from north to south are those of Frederick W. Bailey (1847), Saunders (1856) and Messer (1861).

❖ **Salem Common/Veterans Park (1741+)**

The land to the west of the burial ground and east of Main Street (Rt. 97) is the remainder of the common which was set aside in 1741 and was initially used to train militia. In later years it took on a more passive, recreation/park use. The area is now devoted to several war monuments and a large bandstand. The remainder of the level piece of land is grassy with a line of mature trees planted just outside the western stone wall.

In recent years a number of improvements have been made to the Veterans Park by the Salem Department of Public Works. A curving brick walkway flanked by low walls constructed of two courses of granite slabs was installed in 1997 near the corner of Main and Bridge Streets as well as a flagpole and ornamental trees.

❖ **War Monument (1922)**

Facing Main Street, this war monument consists of a rough granite slab with a rounded top measuring approximately 7.5 feet wide and six feet high. A bronze plaque is mounted on the face with an eagle. Below the eagle is a ribbon reading "Victory" and "Peace". Raised lettering on the plaque reads "Salem New Hampshire erects this memorial in honor of veterans who served in the defense of our country". Below on the monument are the names of Salem residents who served in the Revolutionary War, Mexican War, Civil War, Spanish-American War and World War I.

❖ **"Supreme Sacrifice" War Monument (1957)**

Angled to face the Bridge Street/Main Street intersection, this smooth granite monument is basically rectangular in shape and stands approximately ten feet wide and 6.5 feet tall. At the top of the monument is a decorative band featuring thirteen sets of four incised vertical lines with a star inscribed below each set. The inscription reads "Supreme Sacrifice/Dedicated in grateful memory by the Town of Salem, New Hampshire in honor of the men and women who served in the armed forces of our country during World War II and the Korean Conflict/To them we owe our liberty of religious worship and speech and freedom from fear and want. May all future generations of Americans firmly resolve with God's help to protect and preserve this priceless heritage". Etched below are the names of those from Salem who were killed in World War II, the Korean Conflict, Vietnam and Iraq Wars.

At Town Meeting in 1957, the sum of \$8,500 was appropriated for a memorial monument for the Salem men and women who served in the armed forces during World War II and was dedicated on Veterans Day, November 11, 1957.

❖ **War Monument (1957)**

To the north of the 1957 monument is a row of four simple upright granite tablets measuring approximately three feet wide and 3.5 feet high inscribed with the names of all those who served in World War II and the Korean conflict. The names of additional residents serving in other wars and conflicts are inscribed on smaller granite stones which are laid flush on the ground along the outer edge of the wall lining the sidewalk.

❖ **Cannons (Mid-19th Century)**

Located on either side of the World War I monument are two Civil War-era cannons resting on concrete pads. Each long-barreled artillery weapon is mounted on a wooden axle with two large wooden wheels.

The two cannons were restored in 2009 by the Salem Department of Public Works. The Salem Lions Club contributed the funds so that the second cannon could be removed from storage and placed on the common.

❖ **Hose House No. 2 (1906)**

Located on the south side of the Common, adjacent to Bridge Street, Hose House No. 2 is a 2 ½-story structure which rests on a rubble foundation with a full basement exposed to the rear and on the south elevation. This building was one of two hose houses constructed in Salem in the early 20th century in order to receive reduced insurance rates from the Board of Underwriters.

RECOMMENDATIONS

- Compile a written and photographic inventory of the Town's historic resources from all available sources.
- Identify and preserve buildings, structures, sites, and landscapes that represent significant elements of the Town's cultural, social, political, and architectural history.
- Update the current historic district regulations.
- Consider additional historic properties for submission to State and National Register.
- Create a pamphlet showing key historic resources in Salem.
- Consider the public acquisition of easements or the fee title for important historic properties to ensure their protection.
- Seek funding for ongoing maintenance and preservation of historic landmarks including the Old Burial Ground.

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VI. RECREATION

SALEM RECREATION ADVISORY COMMITTEE'S 2007 RECREATION MASTER PLAN

The 2007 Recreation Master Plan was developed by the Salem Recreation Department and Recreation Advisory Committee. The Recreation Department's mission is to "Develop, provide and maintain recreational program facilities and leisure resources for the citizens and visitors of the community. We are responsible for planning, scheduling and implementing a variety of youth and adult programs. We are here to provide the efficient, fair and equitable use of programs and facilities for the enjoyment of all who make up our diverse community."

Resident Survey on Recreation Needs

An extensive survey was conducted in 1995 and discussed in the 1997 Salem Recreation Master Plan. For the 2001 Town of Salem Master Plan Update, a survey was mailed out to the public to seek input on various Town issues, including recreational facilities. Out of the 2,500 surveys distributed, 602 residents responded which represented a 24% response rate.

The results indicated a strong support for the majority of the recreational questions. The largest support was gathered for Town funds to be used to acquire open space areas, increase access to lakes/ponds, and increased funding for sidewalks on major streets. The respondents leaned in favor of increasing funding for a new teen center while additional soccer/ball fields received mixed support. The "additional tennis courts" question collected the least support for expansion. A summary of the entire survey results can be reviewed in the 2001 Town of Salem Master Plan and a copy of the survey is available from the Salem Planning Division.

Impact of Population Trends on Recreational Activities and Facilities

Population growth in Salem has historically been influenced by a pattern of migration from the greater Boston area northward, as increasing numbers of people began to move in search of a more suburban or rural living environment and lower taxes. As shown in Table VI-1, this trend was especially evident during the 1960s when Salem's population increased by 10,932 people.

Table VI-1 Population of Salem (1950-2040)

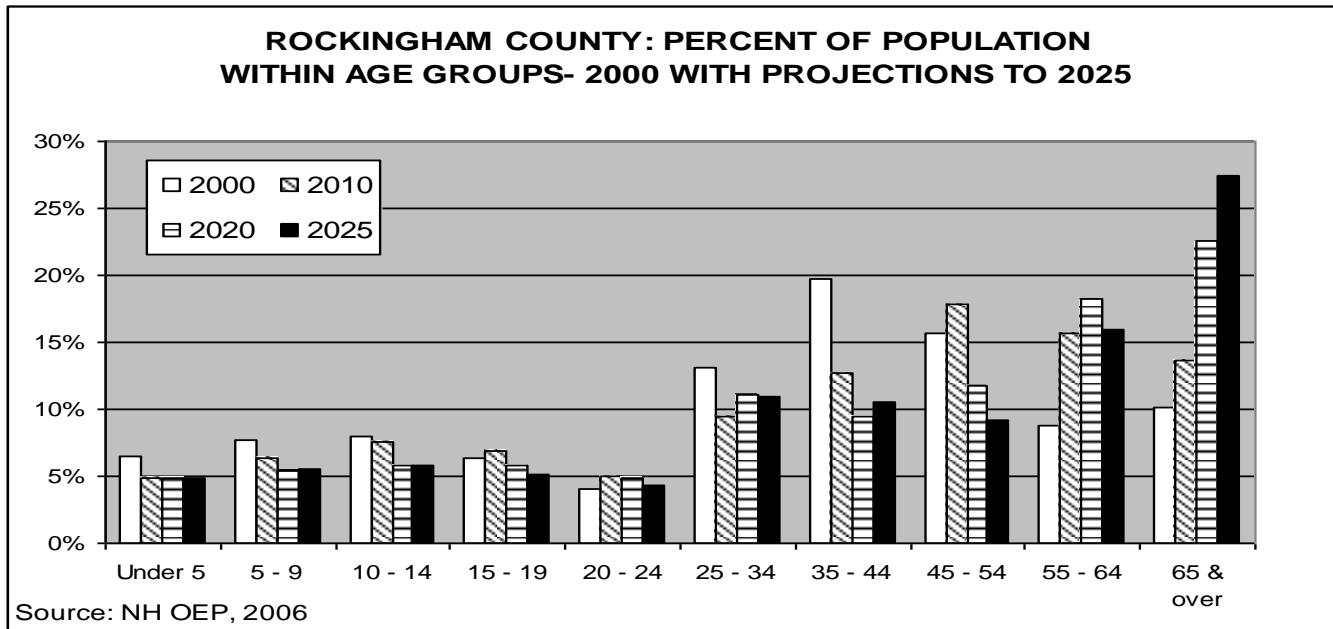
Year	Population
1960	9,210
1970	20,142
1980	24,124
1990	25,746
2000	28,112
2005	29,941
2010	28,776
2015	28,674
2020	28,672*
2025	28,733*
2030	29,375*
2035	29,743*
2040	29,813*

*Source: NH Office of Energy and Planning (*Estimates)*

As indicated in Table VI-1, the population of Salem more than doubled between 1960 and 1970 (increased by 119%), and began to level out beginning in the 1980s. It was during this time that the Salem Recreation Department was established in order to ensure that the current and the new residents were provided with adequate recreation facilities. Population trends and projections since 2005 indicate relatively slight increases in the population compared with past growth rates, and a predicted population of about 29,813 individuals by the year 2040.

The shift in the age distribution of the population may be anticipated by the patterns shown in Figure VI-1, illustrating the projected age distribution for Rockingham County population for 2000-2025.

Figure VI-1 Rockingham County Percent of Population by Age Group (2000-2025)



The primary users for recreational services are children under 18 and adults over 65 years old. The number of Salem residents over 65 increased by seventy-four percent (74%) between 1990 and 2010. Meanwhile, the population under 18 appears to have peaked in the year 2000 and has dropped to its 1990 level in terms of population totals but have become a smaller percentage of the population. While recreation is geared primarily to these age groups, it is essential to provide recreation facilities for adults under 65. As Salem's population gets older, future recreation facilities should likely be geared more towards activities that can help exercise seniors' minds and bodies.

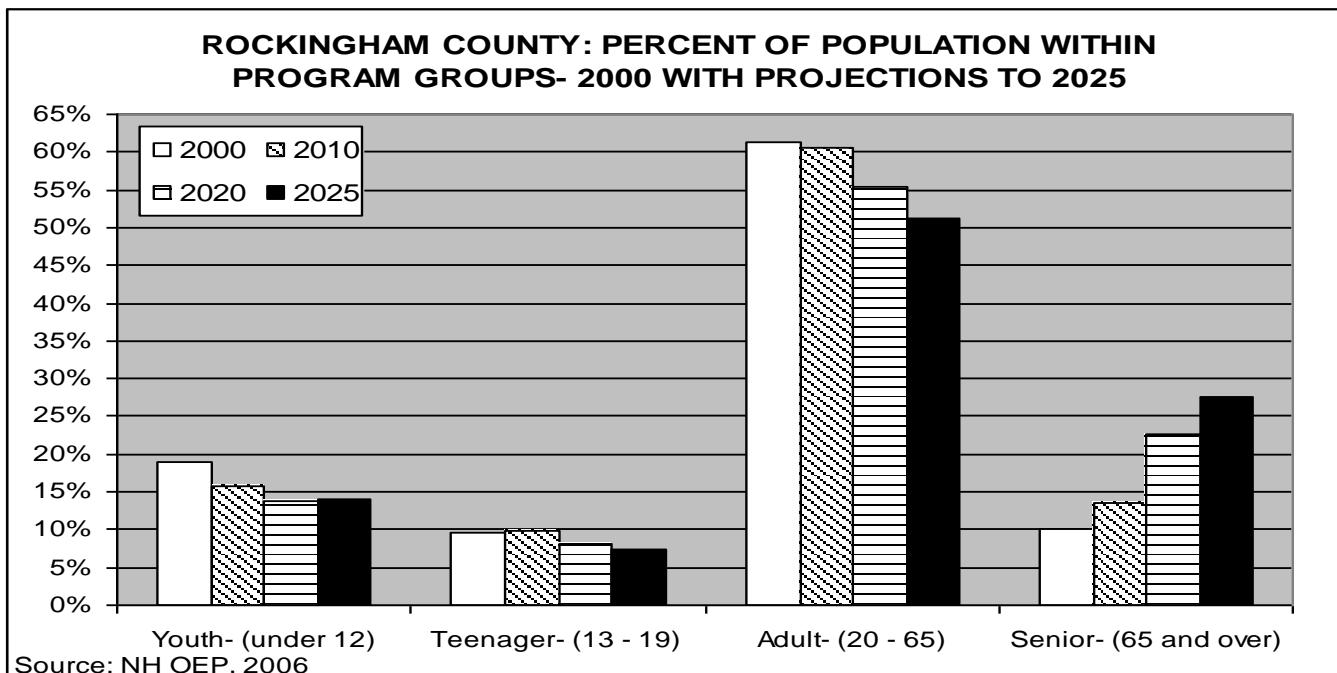
Figure VI-1 clearly demonstrates the need for the Town of Salem to respond to the increased demand for senior recreation programs between now and the year 2025. The future population trends by age group indicate a relatively stable demand for various youth programs, while there will be a significant shift among the adult population which may influence their needs for recreation and fitness programs. If Salem's inventory of housing allows for the in-migration of younger households with children, however, this population segment may continue to increase its demand for organized programs for children.

The general projected trends indicate that the very young and youth population will remain relatively stable as a declining share of the total population, while there will be significant shifts within the adult

population as the 45-54 year olds age into the 55-64 year old groups. The most dramatic increase will be the projected growth of the 65 and over group which is estimated to become 27% of the population of Rockingham County in 2025.

To understand how these trends may affect programming for the Town of Salem, the data was categorized into recreation program by age group (See Figure VI-2). Similar to Figure VI-1, the trends reveal a consistently minor decrease in youth and teenage demographics. Conversely, there are more dramatic changes for adult and senior programs. It is estimated that the adult program population will decrease by approximately 10% from 2000 to 2025 as this group ages into the senior program population which is estimated to increase by 17% during this same time period.

Figure VI-2: Rockingham County Population Projected by Program Age Groups (2000-2025)



Needs Defined by Population-Based Facility Standards

The Recreation Department, as part of the 2007 Recreation Master Plan, completed modifications of the statewide facility standards to meet Salem's specific characteristics and needs. These adjustments are reflected in Table VI-2

The most recent publications by the National Recreation and Park Association (NRPA), and the New Hampshire Office of Energy and Planning (NHOEP), now recommend that communities develop their own local assessments, and not rely on adherence to desired averages that vary with demand from place to place, or which may be prohibitively expensive for some localities. Recent publications have made a specific attempt to lead communities away from the previous population ratios, stating that communities should focus instead on determining their own desired "levels of service" for different recreational facilities.

Due to these factors, it is recommended that any standards included in a local master plan that were based upon NRPA and NHOEP be adjusted based on observations of the local pattern of facility utilization and demand. The New Hampshire Office of Energy Planning hopes to update the 1995 "Guide to Municipal Recreation" over the next several years. (For more information about these standards also see

the NH OEP web site at: <https://www.nh.gov/oep/>).

The methodology used to determine the Salem Adjusted Ratio Standard followed the same steps outlined in the 1997 Salem Recreation Plan. The methodology utilizes the NH State Recreation Standards included in the 1994 SCORP, then multiplies them by the 2005 population to reveal the estimated number of facilities needed for the town (SCORP Population Standard - 2005). This estimated standard was then adjusted by members of the Salem Recreation Department to reflect local demands. The proportion between the 1995 SCORP Population Standard and the 1995 Adjusted Standard were imposed on the 2005 data to obtain the Salem Adjusted Standard for 2005. The exception is the adjusted standard for basketball courts in 2005 which had not been adjusted from the 1994 SCORP standard in the 1997 Recreation Master Plan but was adjusted for this Recreation Master Plan Chapter Update. The Salem Adjusted Ratio Standards were then applied to current population (2005) and forecasted population (2015 to 2025) to compare against 2005 existing facilities.

Finally, the 2005 Salem Adjusted Standard was divided by the 2005 population and expressed as a ratio of units per 1,000 persons. As an example, it could be interpreted then that in 2005, there should be .77 baseball diamonds for every 1000 residents. The Salem Recreation Department felt the 1994 SCORP Standards for football fields adequately represented the local demand and were not adjusted.

Table VI-2 below presents the final adjustments based upon the methodology described above.

Table VI-2: Recreation Needs Defined by Population-Based Standard Projections

Recreation Facility	Adjusted Ratio Standard (Units per 10,000 persons)	2015 Existing Facilities	Current Need (Pop. 28,776)	Surplus or Deficit
Football Fields	1	1	3	-2
Basketball Courts	3.7	8	11	-3
Baseball Diamonds	7.7	15	22	-7
Playgrounds	3.9	8	11	-3
Picnic Tables	28.9	35	83	-58
Soccer Fields	2.3	5	7	-2
Swimming Pools	0.8	0	2	-2
Tennis Courts	3.9	4	11	-7

Source: Salem Recreation Plan, 1994 SCORP and Recreation Department Adjustments

Existing Facilities and Programs

According to Salem's adjusted standard figures for the various recreation facilities displayed in Table VI-2, all facilities are deficient in varying degrees. Of particular note is the need for basketball courts and swimming facilities.

The Recreation Department has noted that the greatest efforts to meet the standards will be to upgrade existing facilities to the standard recreation levels. Upon completion of this work, the Town will be better positioned to handle the smaller incremental growth expected between 2015 and 2025.

Table VI-3, beginning on the next page, provides a comprehensive list of existing facilities and associated programs available to Salem residents as of 2016. Facilities listed on the first page of this table are those owned by the Salem School District.

Figure IV-3, following the table, presents the location of these facilities plus some notable private recreation opportunities that are also available in Salem and open to the public. The map also displays existing sidewalks, representing the pedestrian connectivity between recreational sites.

Table VI-3: Existing Recreational Facilities and Programs (2016)

Facility Name	Location	Area	Water Body Present	Picnic Facilities	Playground Equipment	Diamond Fields	Other	Map/Lot
Barron School	47 Butler St.	17.85 Ac.	No	No	12 Swings, Slide, 5 Basketball Hoops	60 ft. Diamond	Umbrella Climbing Bar, Horizontal Climbing Bar, Shimmy Pole, Balance Beam, 3-way Chin Bar, Trapeze Swing	120/8117
Fisk School	14 Main St.	10.49 Ac.	No	No	12 Swings, 1 Slide, 3 Basketball Hoops	60 ft. Diamond	Playground	89/3942
Haigh School	24 School St.	6.5 Ac.	No	No	12 Swings, 2 Slides, 3 Basketball Hoops	60 ft. Diamond (Soccer)	N/A	75/2191
North Salem School	140 Zion Hill Rd.	14.2 Ac.	No	No	10 Swings, 2 Slides, 1 Basketball Hoop	60 ft. Diamond, Soccer	Umbrella Climbing Bar, Parallel Pull-Up Bar, Shimmy Pole	26/6382
Salem High School	44 Geremonty Dr.	48.22 Ac.	No	No	No	2 Diamonds, 1 Football, 1 Practice Football, 1 Soccer, 1/4 mile Track & Field	Bathroom/Block house	91/7518
Woodbury Middle School	206 Main St.	18.05 Ac.	No	No	No	2 Multipurpose Fields	N/A	90/1441

Source: Salem Recreation Department

Table VI-2: Existing Recreational Facilities and Programs (2016) - *Continued*

Facility Name	Location	Area	Water Body Present	Picnic Facilities	Playground Equipment	Diamond Fields	Other	Map/Lot
Abanaki Park	Corner of Veterans Memorial Pkwy & 35 Geremonty Dr.	10 Ac.	No	No	N/A	N/A	Overgrown Hiking Trails, Bridge Access to Trails	100/7534
Canoe Launch	1 Garabedian Dr.	N/A	Yes	N/A	N/A	N/A	Access to Spicket River	150/9467
DeBenedetto Field	101 Shannon Rd.	2 Ac.	No	2 Picnic Tables	None	60 ft. Diamond (Stonehurst)	Flag Pole, Memorial Plaque	35/6625
Field of Dreams	48 Geremonty Dr.	7.64 Ac.	Yes	3 Picnic Tables	Sand Volleyball, Wooden Structure, Playground Equipment, 4 Swings, 2 Toddler Swings,	No	Stage, Walking Trail, Fitness Trail	100/7527
Hedgehog Park	53 Lowell Rd.	28+ Ac.	9 Ac. Pond	12 Steel Picnic Tables, 1 Steel Bench, 6 Grills	Play Tower with Slide, Sandbox, 3 Basketball Hoops, Newer Playground Equipment	No	Shelter, Storage Room, Restrooms, Swimming Area	115/8832
Lancaster	54 Millville St.	10.1 Ac.	No	No	6 Swings, Slide, 2 Basketball Hoops	60 ft. Diamond	Umbrella Climbing Bar, Small Skating Pond (Seasonal)	82/2929
Michelle Memorial Park	Lawrence Rd.	N/A	No	6 Picnic Tables	Yes	2 - 60 ft., 1 - 90 ft., 1 Multi-Purpose Field	N/A	N/A

Source: Salem Recreation Department

Table VI-2: Existing Recreational Facilities and Programs (2016) - *Continued*

Facility Name	Location	Area	Water Body Present	Picnic Facilities	Playground Equipment	Diamond Fields	Other	Map/Lot
Millville Beach	119 Millville Cir.	2.5 Ac.	Millville Lake	Yes (In the Past)	N/A	No	Facility Closed 1998 (Budget Constraints), Open to Both Salem and Millville Lake Residents, Managed by Millville Lake Protective Association	57/2595
Morse Field	128 Cluff Crossing	14.93 Ac.	No	3 Wooden Picnic Tables	No	60 ft. Diamond, 2 Full Soccer Fields; 1 Partial	Irrigation System on Soccer Field	127/8877
Palmer School	111 East Broadway	0.22 Ac.	No	2 Steel Picnic Tables	Play Equipment	N/A	One Room Historical Schoolhouse owned by the Town. Used Mainly for Educational Programs (Pre-K and Kindergarten)	15/5817
Palmer Field	109 East Broadway	9 Ac.	No	1 Wooden Picnic Table	No	70 ft. Diamond	Paved Parking Lot, Irrigation System	15/6237
Walmart	326 N. Broadway	2.2 Ac.	No	2 wooden picnic tables	No	Multipurpose Field	N/A	54/6754

Source: Salem Recreation Department

Figure VI-3: Public and Private Recreational Opportunities

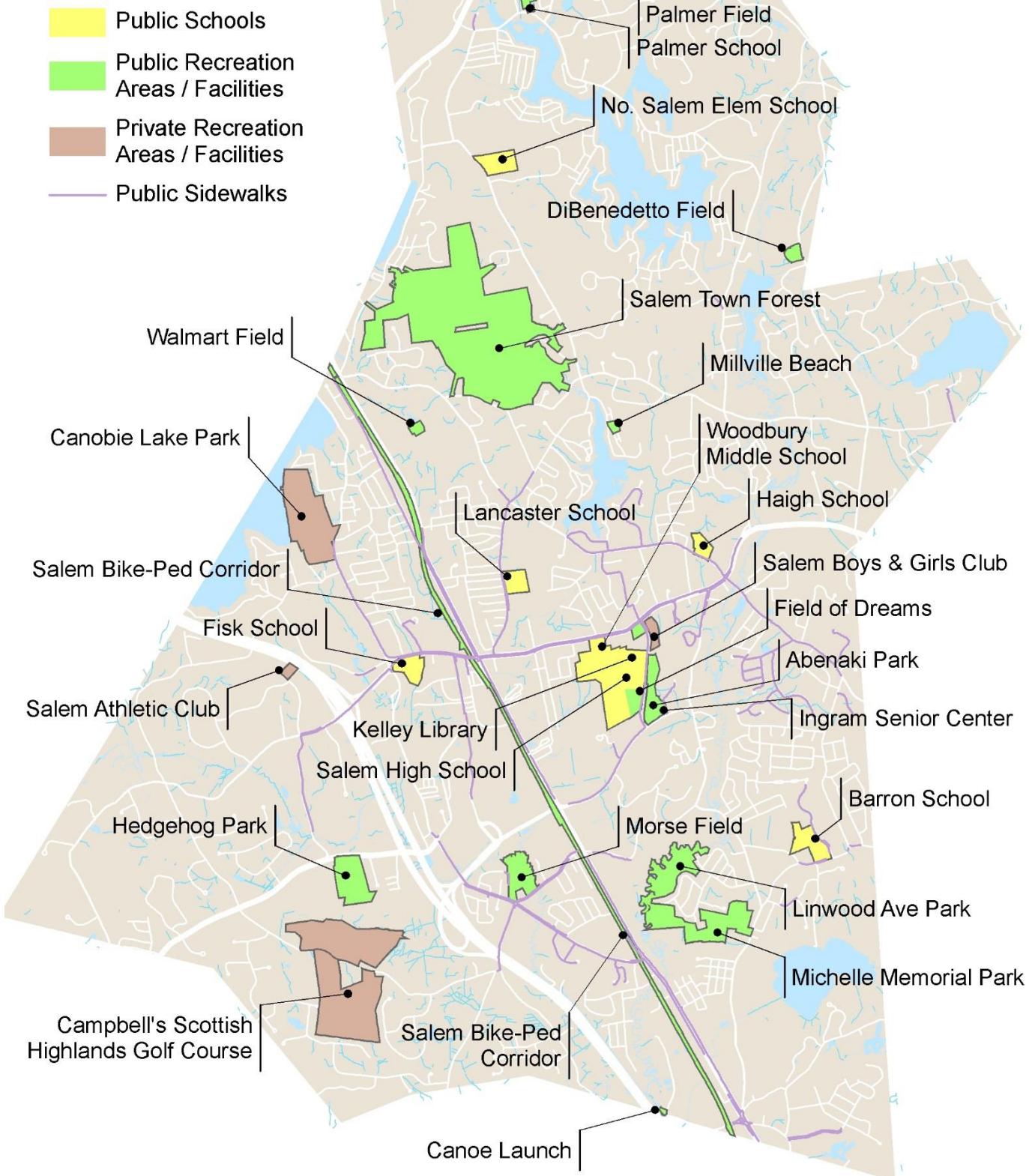


Table VI-3: Popular Recreation Activities for Various Age Groups

AGE GROUP	RECREATION ACTIVITY	
INFANTS		
(6-months to 2 year olds)	Playground Equipment	Any Activity Related to Movement
TODDLERS		
(2 to 4 year olds)	Playground Equipment	Playing Fields
	Craft Activities	Puzzles
	Individual Play	Story Telling
	Building Blocks	Sandbox
ELEMENTARY SCHOOL		
(4 to 8 year olds)	Playground Activities	Organized Sports
	Board Games and Puzzles	Bike Riding
	Arts and Crafts Programs	Sledding
	Music Programs	Curling
	Video Games	Mini-Golf
	Skating/Hockey	Swimming
	Baton Twirling	Bowling
	Dance Programs	Group Play
	Team Sports	Snowboarding/Skiing
PRE-TEEN		
(8 to 12 year olds)	Playground Activities	Sledding
	Team Sports	Gymnastics
	Ballet Dancing	Swimming
	Board Games and Puzzles	Bike Riding
	Arts and Crafts Programs	Archery
	Badminton	Track and Field
	Boy and Girl Scouts	Horseback Riding
	Sailing and Snorkeling	Snow Boarding/Skiing
JUNIOR AND SENIOR HIGH SCHOOL		
(12 to 15 year olds)	Team Sports	Individual Sports
	In-Line Skating	Swimming
	Arts and Crafts Programs	Video Games
	Weight Lifting	Paint Ball
	Skateboarding	Dancing
	Skating and Hockey	BMX Biking
	Volunteer in Sport-Related Activities	Snowboarding
	Downhill and Cross Country Skiing	
HIGH SCHOOL		
(16 to 18 year olds)	Team Sports	Dancing
	In-Line Skating	Swimming
	Arts and Crafts Program	Video Games
	Weight Lifting	Paint Ball
	Skateboarding	Snow Boarding
	Skating and Hockey	BMX Biking
	Sailing	Bowling
	Organized Excursions to Sporting Events	
SENIORS		
(65 years and older)	Aerobics	Gardening
	Yoga	Seminars
	Walking	Bowling
	Tai Chi	Bingo
	Board and Card Games	Line Dancing
	Organized Bus Day Trips	Theater Outings/Dinner Shows

Source: Salem Recreation Department

Pedestrian/Bicyclist Access and Sidewalk Construction Needs

The 2007 Recreation Master Plan includes a list of the existing and recommended access for each existing public recreation facility in Salem, including school sites. (See Table VI-4). Where sidewalk construction is not feasible or is too costly, the Town should consider re-instituting the construction of bike paths as an alternative means of access.

All of Salem's schools are located adjacent to main roadways. Although their location is ideal for vehicular travel, several of the roads that lead to the elementary schools do not have sidewalks nor adequate road widths to safely accommodate pedestrian or bicycle traffic from vehicular traffic. Therefore, opportunities for children to independently travel back and forth to the play areas are limited at these locations. An essential component in providing a safe means of walking to the recreation facilities is to provide protection for pedestrians and bicyclists from traffic through the use of sidewalks or bike paths. In addition to sidewalks and bike paths, there are several wooded roads located throughout Town that provide pedestrian access to recreation facilities. There is a need to preserve these wood roads wherever possible to allow alternative access to facilities.

Table VI-4: Pedestrian/Bicycle Access to Recreation Facilities

Facility	Current Access	Sidewalk Length (Approximate)	Recommended Expansion	Length of Expanded Sidewalk (App.)
Barron School	Portion of Butler St.	½ Mile	Lawrence Rd, Wheeler Ave.	1.75 Miles
Fisk School	Main Street (Rt. 97), North Policy St., Pleasant St.	3/4 Miles, almost 1 Mile and 1 Mile	South Policy St.	1.5 Miles
Haigh School	School St., Main St. (Rt. 97), Bridge St.	1.25 Miles, 1.5 Miles, App. 1 Mile	Portion of Lawrence Rd.	0.5 Mile
Hedgehog Park	No Sidewalks exist		Lowell Road (Rt. 38)	0.5 Mile
Lancaster School	Main St. (Rt. 97), Millville St., South Broadway (Rt. 28)	1.5 Miles, Over 1 Mile, Over 1 Mile	Portion of School St.	.25 Mile
Linwood Park	No Sidewalks Exist		Portion of Lawrence Rd., Tyler St.	1 Mile
Michele Mem. Park	Portion of Butler St.	3/4 of a Mile	Lawrence Road, Tyler Street	2 Miles
N. Salem School	No Sidewalks exist		Zion Hill Road, E. Broadway	2.5 Miles
Palmer School	No Sidewalks exist		E. Broadway, N. Main St., Zion Hill Rd.	3.5 Miles
Salem H.S./Woodbury School	Main St. (Rt. 97), Millville St., South Broadway (Rt. 28)	1.5 Miles, Over 1 Mile and Over 1 Mile	Portion of Geremonty Dr., Lawrence Rd, portion of Veterans Memorial Parkway	1.25 Mile
Soule School	Cluff Crossing Rd., Kelly Rd.	½ - Over 3/4 Mile	South Policy St.	1.5 Miles

Source: Town of Salem Recreation Field Check

Comprehensive Capital Costs

The gross cost to implement the recreation facility improvement and development costs envisioned within the Salem Recreation Master Plan, including the development of adequate facilities for future population growth, have been estimated on a preliminary basis including:

• <i>Repair and replacement at Town/School recreation facilities:</i>	\$74,475
• <i>Acquisition and development of new facilities:</i>	\$3,140,000
• <i>Pedestrian/bicycle access (sidewalk construction program):</i>	\$1,300,000

Recreation Implementation Strategies

The 2007 Recreation Master Plan includes an appendix citing numerous recommendations or "implementation strategies" to ensure that recreation opportunities are available for the residents of Salem - both present and future. The various implementation strategies center on three types of initiatives: community relations, regulatory approaches, and financing techniques.

Funding Mechanisms for Recreation Projects and Facilities

The 2007 Recreation Master Plan references numerous ways of funding public recreation projects and facilities. Financing for recreation has traditionally come from general revenue funding. Due to fiscal constraints, Salem must look for alternative sources of funding.

The following are categories of various sources of funding which the Recreation Department feels should be considered to help sustain future recreation needs.

- Federal and State Grants and Loans,
- Local Government Financing, and
- Community Fund Raising.

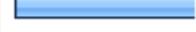
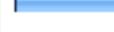
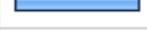
More detailed information on each of the funding sources can be found in the 2007 Recreation Master Plan.

RECREATION NEEDS SURVEY - SEPTEMBER 2011

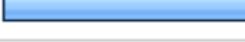
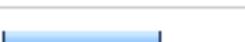
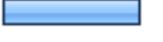
On September 2, 2011, a Recreation Needs Survey of Salem residents was conducted by the Recreation Department. There were a total of 22 questions ranging from age to satisfaction with existing recreational facilities in Salem.

1. Please rate how satisfied you are with the following?						
	Very Satisfied	Somewhat Satisfied	Somewhat Dissatisfied	Not Satisfied at all	N/A	Response Count
Town's Recreation facilities	20.2% (72)	45.4% (162)	20.2% (72)	11.2% (40)	3.1% (11)	357
Quantity of Recreation facilities	19.4% (68)	36.8% (129)	24.5% (86)	16.0% (56)	3.4% (12)	351
Location of Recreation facilities	27.3% (96)	45.5% (160)	16.2% (57)	7.7% (27)	3.4% (12)	352
Quality of Recreation facilities	18.9% (66)	42.1% (147)	24.1% (84)	11.2% (39)	3.7% (13)	349
					answered question	358
					skipped question	15

While the entire survey results all reveal interesting findings, the two questions that reveal the most useful information for purposes of use of existing facilities by residents, reasons for not utilizing facilities, and the desire to see the upgrading, improving, expansion and development of new recreation facilities are as follows:

6. Please check all the reasons that keep you or other members of your household from using the Town's Park and Recreation facilities more often.		Response Percent	Response Count
Facilities are not well maintained		31.0%	89
Lack of knowledge regarding services		41.1%	118
Security is insufficient		10.8%	31
Location of Facilities		16.4%	47
Hours of operation are not convenient		9.1%	26
Town facilities are not close to my home		9.1%	26
Fees are too expensive		6.6%	19
Parks do not contain facilities we need		30.3%	87
Use facilities provided by other agencies/towns		21.3%	61
Poor customer service by staff		2.1%	6
Accessibility issues		4.5%	13
Don't know where the facilities are located		17.1%	49
Lack of quality recreation programs		20.6%	59
We are too busy or not interested		15.3%	44
Lack of recreation facilities		23.0%	66
Inadequate restrooms in parks		32.1%	92
Other (please specify)			59
		answered question	287
		skipped question	86

13. What Additional facilities do you believe would enhance Recreation in Salem?

		Response Percent	Response Count
Additional Baseball/Softball Diamonds		34.9%	116
Additional Soccer Fields		23.8%	79
Additional Activities/Programs		44.0%	146
Additional Football Fields		27.7%	92
Additional Walking Trails		62.0%	206
Additional Tennis Courts		19.6%	65
Basketball Courts		37.3%	124
Bike Paths		63.6%	211
Dog Park		38.0%	126
Horseshoe Pits		6.0%	20
Splash Pad		24.4%	81
Swimming Areas		47.0%	156
Boat Access		21.1%	70
Picnic Areas		42.2%	140
Lights for various facilities		46.4%	154
Frisbee Golf		8.7%	29
Other (please specify)			52
		answered question	332
		skipped question	41

Source: Salem Recreation Department Survey - 2011

Question 1 seems to indicate that residents are “somewhat satisfied” with recreational facilities as the highest category. Question 6 reveals that the biggest reasons residents don’t utilize existing recreation facilities is lack of knowledge regarding the facilities, and because the facilities are not well maintained and/or don’t contain facilities residents would like to see. Inadequacy of restrooms in the parks was also cited as a major reason.

Question 13 reveals the most significant findings of the survey – “What additional facilities do you believe would enhance Recreation in Salem?” Additional walking trails (62%) and additional bike paths (63.6%) are the two most desired additions that residents feel would enhance Recreation in Salem.

Given these findings, and those of other studies and reports the Town has commissioned that support them, it is important that this update includes the most current information on the existing sidewalks, bike paths and walking trails and any proposed recommendations for improvements to this infrastructure.

SIDEWALK MASTER PLAN (2011)

The Town of Salem Sidewalk Master Plan contains a map showing an inventory of existing and recommended sidewalks. This plan was prepared to provide information and recommendation to improve pedestrian movement in the community. Funding decisions on which sidewalks to construct or improve are subject to budget considerations and are not the focus of this effort.

Pedestrian movement is a common means of transportation. Pedestrian travel occurs on sidewalks, paved and unpaved shoulders and road right-of-ways. People walk to and from school, work, to shop, visit friends, for exercise, and for enjoyment. As of December 31, 2011, there were approximately 35 miles of sidewalks and 13 pedestrian crosswalk signal locations in Salem: five on Main Street, five on South and North Broadway (Route 28), two on Cluff Crossing, and one on Mall Road.

The Plan indicates that many Town roads that lack sidewalks are narrow, have poor sight distance, and are heavily traveled by vehicles. The lack of sidewalks on these roads makes them unsafe for walking, therefore people drive rather than walk. Adequate pedestrian facilities are important for both safety and a higher quality of life. The provision of additional sidewalk facilities would add enjoyment for users, increase adjacent property values, and reduce the number of vehicles on the Town’s roads. Adequate sidewalks are at least five feet wide, clear of obstructions (utility poles, traffic signs, mail boxes, hydrants), and free from holes, bumps, and/or disintegrating pavement.

Recommendations

- Prioritize sidewalk development using the following guidelines:
 - a. Along major roadways in highly developed areas with significant traffic volumes;
 - b. Closing gaps in the existing sidewalk system;
 - c. In the vicinity of schools, public buildings, parks, and recreational areas;
 - d. In the vicinity of higher density residential development including senior housing, apartments, and compact neighborhoods;
 - e. In the vicinity of major destinations (for example malls, stores and other commercial areas, industrial parks, medical facilities)
- Develop a pedestrian and bicycle facility on the former B&M rail line that parallels NH 28 through Salem.
- Prepare a priority plan for constructing the recommended sidewalks based on the Town’s Road Stabilization Program.

- Incorporate sidewalk surface rehabilitation in the Town's Road Stabilization Program.
- When feasible, provide additional pedestrian crosswalks and signals at key intersections to allow safe passage across high traffic/arterial roads;
- Encourage private developers to include sidewalks and bicycle facilities in their plans for residential and commercial projects. Emphasis should be given to areas where people are currently walking and safe passage would be enhanced, including roads classified as "Principal Arterial", "Minor Arterial", or "Collector", those within industrial and office park areas, and those within $\frac{1}{2}$ mile of schools, shopping areas, public parking areas, and major recreational facilities;
- Establish a process to update the sidewalk inventory in the Geographic Information System;
- Prepare a policy for sidewalk maintenance that includes brush trimming and surface rehabilitation. Emphasis should be given to maintenance where safe pedestrian passage is compromised if the sidewalk is not maintained;
- Prepare a policy for future road reconstruction that includes paved shoulders for use as bicycle/pedestrian lanes, where possible, including bicycle activators with in-ground signal controls at key intersections or other electronic systems to activate lights. The policy should include requirements for appropriate road striping and signage. As a minimum the policy should apply to all roads contained on the NH Bicycle Route system, within $\frac{1}{2}$ mile of the schools, in the vicinity of public buildings, parks and recreation areas, in the vicinity of higher density residential development (including senior housing, apartments, and neighborhoods), and in the vicinity of major destinations (shopping areas, medical areas, industrial and office parks).

SIDEWALK COMMITTEE (2016)

The Board of Selectmen charged the sidewalk committee to review and assess Salem's current sidewalk inventory and to identify sidewalks in key walking areas (town center district, etc.) which have disconnections or gaps in the sidewalk connections, identify which sidewalks the committee would recommend eliminating when its associated roadway is reconstructed or paved, and identify which new sidewalks (if any) should be constructed

While reviewing the need for a plan for the sidewalks in Salem, the group came to a general consensus similar to the Planning Board's Master Plan for sidewalks.

- If no sidewalk exists, consider adding one along major roadways in highly developed areas with significant traffic volumes.
- Provide access to public buildings, parks, recreational areas, and around the schools.
- Consider on Main Street/Route 97 a sidewalk on both sides of the road from N/S Policy Streets to the cemetery/North Main Street split.
 - Other than Main Street, review necessity of sidewalks on both sides of the street.
- On Route 28 consider a complete sidewalk on the eastern side from Methuen to Windham
- Close gaps in the existing sidewalk system.
- Sidewalks should be added to provide access to major destinations.

- Review the current system in relation to higher density residential development including senior housing, and apartments to ensure they have access to the larger sidewalk network.

Although some would like sidewalks along every road, due to lack of right-of-ways, cost of maintenance, and cost of construction, the committee is focused on the criteria listed above and is recommending the removal of sidewalks from smaller neighborhoods but proposing larger lanes be constructed and marked for bicycles.

ROUTE 28 BIKE-PEDESTRIAN STUDY (2012)

Overview

The continued redevelopment of the Route 28 corridor through Salem presents both challenges and opportunities for improving bicycle and pedestrian access and safety. The Route 28 Bike-Pedestrian Corridor Study outlines the needs and solutions that will provide a roadmap for systematically integrating bicycle and pedestrian infrastructure improvements into the fabric of the corridor. The work contained in this report was based on field observations, public input and guidance from Town officials. It incorporated information on physical and environmental constraints, existing bike and pedestrian infrastructure and relevant design standards.

Study Area

This study focuses on the Route 28 transportation corridor from the Methuen, Massachusetts border to Windham, New Hampshire. The 5.2 mile long Route 28 transportation corridor includes the former Manchester-Lawrence railroad corridor that roughly parallels the west side of the Route 28 right-of-way. The study area also extends laterally beyond the Route 28 corridor in an effort to recognize bike and pedestrian origins, destinations and potential connections that could feed into the Route 28 corridor.

Existing Conditions

There are no designated bike accommodations, such as bike lanes, bike paths or bike routes, within the study corridor area. The paved shoulders along Route 28 are generally narrow or nonexistent, and the sparse sidewalks are not intended for bike use. Bicyclists are allowed to ride on Route 28, but very few are observed doing so. It is presumed that this is primarily due to the narrow or nonexistent shoulders, the high number of commercial drives and turning vehicles, and the high traffic volumes and relative speeds. All of these factors combine to make for an inhospitable environment for cyclists. This is not to say that the corridor lacks demand for bike accommodations, however. The local and regional bike and pedestrian needs are discussed further in the next chapter.

Bike/Pedestrian Users

In 2008 the Salem Bicycle and Pedestrian Corridor Committee conducted a card survey of over 2,500 households that are within $\frac{1}{4}$ mile of the Route 28 corridor. That survey showed that 25% of the respondents said they would use the shared use path daily, while another 59% said they would use it weekly. Interestingly, there was an even split between those that would bike vs. walk on the proposed bike-pedestrian corridor. This even split might be explained by the purpose of their trips. It is easy to envision residents of the immediate neighborhoods walking on the bike-pedestrian corridor to shop at the local stores or to walk for health and enjoyment. In some urban and suburban communities people are calling their multi-use paths their “new Main Streets” since residents find that these trails provide the same opportunities for shopping and social interaction on foot that was once only found on Main Streets.

Local bike trips would likely be for recreation, commuting to local jobs, or riding to the many business and commercial destinations along the corridor. Regional bike trips would likely be for recreation,

especially on weekends, or as alternative transportation for commuting during the week. To some the path will be a destination and to others it will be a means to get to their destinations.

PEDESTRIAN/BICYCLE CORRIDOR DEMAND ANALYSIS STUDY (2009)

In 2009, a Salem Pedestrian/Bicycle Corridor Demand Analysis Study was completed by Hawk Planning Resources, LLC. That study conducted a literature review to determine best practices for estimating bike and pedestrian use on new multi-use path facilities, such as the one that is envisioned for the M&L corridor in Salem. The study took into account the geographic distribution of the town's population in relation to the corridor on a segment by segment basis. It then estimated a range of likely bike and pedestrian use.

The study produced a very wide range of estimated bike and pedestrian utilization. The low end of the range, 96 trips / day seems very low since that only amounts to 8 trips / hour for the busiest 12 hours of the day over the 5.2 mile long path.

Conversely, the high end of the range, 960 trips/day, would amount to 80 trips per hour for the busiest 12 hours of the day. If those 80 trips were broken out into one mile segments it means approximately 15 bike/pedestrian trips would be generated per mile per hour per day. In the dense commercial segments of the corridor this seems plausible, especially where both residential and commercial zones abut the corridor, such as in segments 3 and 4. But segments such as the northern segment would be expected to generate less use, and seasonal inclement weather would further reduce the expected average daily bike and pedestrian use.

The overall recommendation for annual use is a figure of 245,000 bike/pedestrian trips once the Route 28 multi-use path is completed. This figure falls two thirds of the way toward the high end of the range that the Hawk Planning Resources Study produced.

Conclusions

The supportive survey results, the Hawk Corridor Demand Study, and anecdotal evidence and observations show that there is both local and regional demand for a shared use path and sidewalks along the Route 28 corridor. It is therefore reasonable to conclude that a portion of the current unmet bicycle and pedestrian demand is being met by automobile use instead. Therefore, the development of Route 28 bike and pedestrian improvements will enable a perceptible mode shift from motor vehicles to bikes and walking, or multi-mode split as a transit system is implemented.

Specific Recommendations

The report identifies opportunities for corridor-wide bike and pedestrian improvements along with their associated conceptual cost estimates and potential funding sources.

The following is the recommended order of development of the segments, subject to changes in funding, adjacent development opportunities and local sentiment:

➤ Northern Segment – Windham Town Line to Old Rockingham Road

This northern segment was included in a tri-town Transportation Enhancements (TE) grant application that also included rail trail work in Derry and Windham. That grant application resulted in an award of enhancement funds to be divided by the three communities for their projects. It does not cover the full cost of the three projects. This segment should be advanced early because the enhancement funds are available and because it will form a logical southern extension of the trails in Derry and Windham. The expectation is that the Windham trail will be completed to the Salem town line in 2012.

➤ Commercial Zone - Rockingham Park Race Track south to Kelley Street

This segment of the rail corridor touches a large number of residential units along its western side and a large number of business properties on its east side. The multiuse path would initially function as a local connector between these origins and destinations.

The portion of this segment from south of Rockingham Boulevard should be developed early since it passes next to dense residential development as well as a dense commercial zone. The envisioned sidewalk, crosswalk and multi-use path improvements will allow people to walk and ride between all of these destinations. This segment would therefore provide independent utility without being connected into the final sidewalk or multi-use path system. It would provide significant public benefit without being on a regional trail and should therefore be considered for early development.

The proposed grade separated crossing of Rockingham Park Boulevard remains a significant financial challenge that could delay the completion of this entire segment, but the portions to the south have standalone merit that place this segment high on the priority list. The crossing of Rockingham Park Boulevard remains a key component of the eventual completion of the overall Route 28 corridor.

➤ Commercial Zone - Kelley Street to Methuen, MA Town Line

This segment has many of the same characteristics as Segment 3 and could even become a higher priority than segment 3 since the town of Methuen, MA has recently developed their rail trail up to the Salem border.

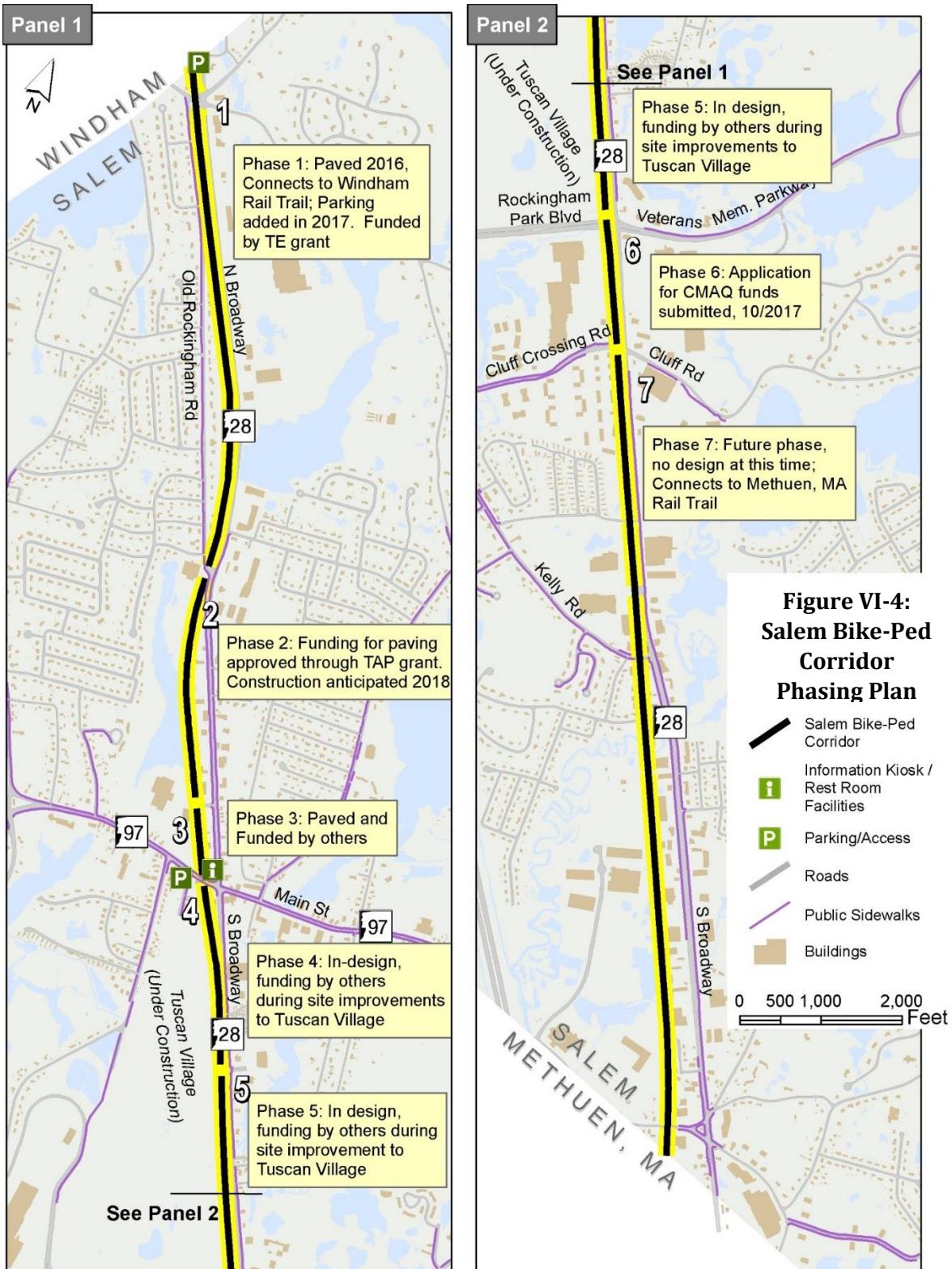
➤ Salem Depot - Old Rockingham Road to Rockingham Park Race Track

This segment could become second in overall importance if the redevelopment plans for the Salem Depot area are formalized near term. It would then be logical to complete this segment as a continuation of segment 1.

As suggested earlier, external factors may dictate which segments fall into place when, and the Town should be flexible as developments unfold. Furthermore, it may be advantageous to complete portions of one segment if private development opportunities arise and if there are logical termini that would allow that segment to exist independently.

Implementation Status

Since the demand study was completed, the Town has made significant progress implementing the trail over a series of progressive phases. Implementation has come about through a series of grants and off-site improvements that complement the Tuscan Village development. Figure VI-4 presents the phasing plan and construction status as of Fall 2017. The Town is awaiting the outcome of a recently submitted CMAQ application for funding of the one-third mile section of Phase 6.



HEDGEHOG PARK MASTER PLAN (2008)

The Town of Salem acquired Hedgehog Park from the Canobie Fish and Game Club on December 13, 1976. The purchase price for the 28.6 acres of land was \$40,000. The Town's original plans for the land included an outdoor basketball court, tennis courts, horseshoe pits, swimming area, a warming shack with bathrooms, play equipment, picnic tables and benches (site plan Feb. 1980). A site plan from February 1985 also included a volleyball area in the park.

In the late 1970s and early 1980s the Town was able to construct the warming shack with bathrooms, place a fence along the property line abutting the road, install picnic tables and benches, set up a swimming area with a lifeguard stand, and put up playground equipment. Since the original construction of the park, play equipment, picnic tables, and grills have slowly been replaced when funds permitted.

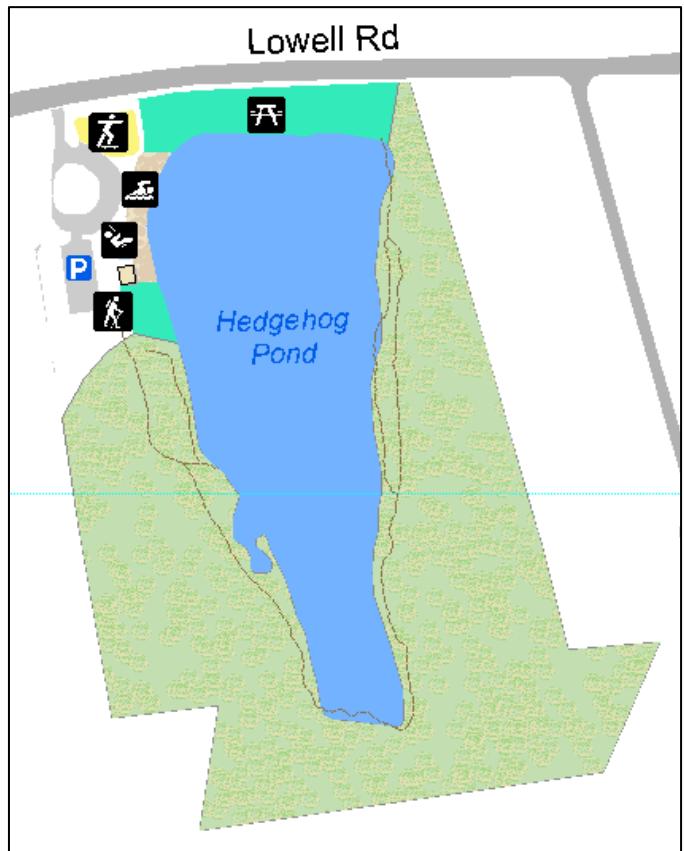
The 2008 Hedgehog Park Master Plan was developed as a result of questions that were raised concerning the condition of the Park and how little it was being utilized. In response, the Salem Recreation Department undertook a study in order to develop a "Master Plan" for the facility with the goal of having the site become a "destination" in the Town of Salem and create an atmosphere of a park. They also sought to utilize this property to provide additional recreation facilities for citizens of all ages.

Following an extensive inventory and assessment of existing facilities, the Hedgehog Park Master Plan concludes that the park is underutilized and due to the space available and potential for the development of additional facilities, this facility could help ease the stress on other existing recreational facilities.

The Plan includes specific recommendations for the following:

- Warming shack
- Play equipment
- Picnic tables & grills
- Walking trail
- Parking
- Trees
- Swimming; and
- Hours of operation

Figure VI- 5: Hedgehog Park (2017)



Additional recommended items described in the Plan include a skateboard park, basketball court, tennis courts, volleyball area, horseshoe pits, reflections area and additional parking. The final section of the Plan provides a list of steps to complete the recommended projects.

NH DIVISION OF PARKS AND RECREATION'S 2013-2018 STATEWIDE COMPREHENSIVE OUTDOOR RECREATION PLAN (SCORP)

Under the terms of the Land and Water Conservation Fund Act (LWCF) of 1965, which established the LWCF State Assistance Program, each state is required to develop a Statewide Comprehensive Outdoor Recreation Plan (SCORP) at least every five years. The SCORP is filed with the National Park Service (NPS), and enables New Hampshire to participate in the LWCF program, guiding the use of LWCF funding.

The following topics, touched on briefly, are discussed in greater detail in the SCORP and this document is available at <https://www.nh.gov/oep/planning/resources/scorp.htm>.

Health and Quality of Life: There is a growing appreciation for the benefits of outdoor recreation, including reduced health care and transportation costs. Access for all children, senior citizens, and people with disabilities is important.

Economic Development and Funding: Recreational opportunities contribute to economic vitality and attract business. Retailers should be enlisted to support the State's outdoor recreation initiatives.

Community Recreation, Children and Youth: Opportunities for the underserved (including urban populations and immigrants) are important, as well as leadership opportunities for young people, and education on how and where to recreate close to home.

Connectivity – Places and People: There is a high value placed on increasing connectivity among recreational sites and trails while addressing the environmental impact and safety concerns that come with multiple users. The report also cites that community connectivity through trails, greenways, and active transportation initiatives is receiving increased attention by communities committed to public health, environmental conservation, and economic development.

Communications and Outreach: Cultivating volunteerism and developing partnerships to combine resources and a centralized source of information were important. Addressing the risk aversion of parents letting children play outdoors, also identified as a "culture of fear" was a priority.

Stewardship: It is important to implement sustainability practices in stewardship plans, including adequate funding and overall financial support for lands, facilities, and programs. The 2013-2018 SCORP provides guidance for how New Hampshire expends federal LWCF monies on a community level and provides direction for addressing statewide recreational issues.

Trends Impacting Outdoor Recreation: An analysis of current and projected trends in New Hampshire's demographic and socio-economic profile and the resultant challenges they pose was presented in the SCORP.

Like the rest of the country, Salem's population has been aging. However, Salem's median age remains younger than most of the state. New Hampshire's population increase is slowing (as is Salem's population) while also becoming more racially diverse. Salem has one of the most racially diverse populations under 18 among New Hampshire communities.

Another increasing trend since 2001 is the percentage of the population who are overweight and obese. Overweight and obesity rates among children and adults continue to receive attention nationally and in New Hampshire, notably for the increased risk of developing chronic diseases such as heart disease, diabetes, stroke, high blood pressure, and cancer. Childhood overweight and obesity rates have tripled since 1980, and adult obesity rates have doubled since 1980. According to a NH Department of Health report from 2011, 65.5% of Rockingham County residents are overweight or obese, making it the county

with the third-highest rate of obese and overweight people among counties in New Hampshire, which suggests there needs to be greater encouragement for Town residents to be physically active.

Supply, Usage Patterns, and Expressed Demand: A summary of available data related to the supply and demand for outdoor recreation in New Hampshire with regional issues is identified in the SCORP. Salem has a small portion of its area designated as conservation land. Rockingham County has 600 recreation sites, but only 3% of county land is maintained as a recreation site. Of these 600 recreation sites, the Rockingham County has more golf courses than any New Hampshire county and the second-highest number of field sports areas, park areas, and natural/passive recreation areas. Rockingham County also has one of the highest levels of density of public access sites to water.

Priorities: The SCORP includes a comprehensive presentation of strategic actions to guide agency leaders, policy makers, and recreation providers in developing programs, policies, and land management strategies. A discussion of the four priority themes and related recommendations included in the SCORP are as follows:

- *Promoting health and livability for all through connection to the outdoors.*
- *Practicing wise stewardship and conservation of natural resources and the built environment.*
- *Contributing to New Hampshire's economic vitality.*
- *Educating multi-user groups, partners and agency leadership.*

Guiding Principles for Implementation: The SCORP provides an evaluation of unmet needs in rural and urban communities, regional coordination initiatives, wetlands, and LWCF requests and awards.

2015 REGIONAL MASTER PLAN - ROCKINGHAM PLANNING COMMISSION

The Open Space and Recreation portion of the Regional Master Plan's Natural Resources Chapter indicates that while some of Salem's public lands, which constitute primarily public open space or conservation areas, do not constitute recreation facilities typically characterized by substantial improvements to the land. A much broader discussion of such conservation lands and open space are described in the Natural Resources Chapter of the Town of Salem Master Plan.

RECOMMENDATIONS

- Use the data collected in the 2011 Recreation Department Survey to update the Town of Salem Recreation Master Plan.
- Establish trail systems and public access points along waterways such as rivers, lakes and ponds.
- Improve the level of maintenance at all recreation properties through the Adopt-A-Park Program sponsored by the Recreation Department.
- Establish a Recreation Capital Reserve account to allocate annual funding for the existing deficit in recreational facilities.
- Utilize Recreation Impact Fee funds to expand recreational facilities associated with growth in the Town of Salem.

- Repair and replace recreational equipment and facilities in existing parks and adjacent to existing Schools on School District property.
- Continue to construct new sidewalks to provide safe and convenient pedestrian and bicycle access to existing and future school and park sites.
- Work with current programs and organizations to preserve existing walking trails and create new trails where possible.
- Require all new subdivisions of 25 lots or more to provide recreational fields or playgrounds.
- Develop a greenway plan for linking the various parks and open spaces in the Town.
- Work with the School Department to expand the recreation potential of school properties.
- Assist the Recreation Advisory Committee and other local organizations to establish and provide annual events and activities.

SOURCES

- *2013-18 Statewide Comprehensive Outdoor Recreation Plan*; New Hampshire Division of Parks and Recreation (2013).
- *Census of Population and Housing - Decennial Census data for 1990, 2000, and 2010*; US Census Bureau.
- *Town of Salem 2007 Recreation Master Plan*; Salem Recreation Advisory Committee.
- *Town of Salem 2008 Hedgehog Park Master Plan*; Salem Recreation Department.
- *Recreation Chapter for the Regional Master Plan*; Rockingham Planning Commission (March 2015).
- *Salem Pedestrian/Bicycle Corridor Demand Analysis Study*; Hawk Planning Resources, LLC. (2009).
- *Route 28 Bike-Pedestrian Corridor, Salem New Hampshire*; Vanasse Hangen Brustlin (VHB), Inc. (July 2012).
- *Town of Salem Sidewalk Master Plan*; (2011)
- *Town of Salem Rail/Trail Master Plan*; (2009)

VIII. PUBLIC UTILITIES

SEWER MASTER PLAN UPDATE – UNDERWOOD ENGINEERS (JUNE 2017)

Overview of Existing System

The Town's wastewater and collection and treatment system was originally built and constructed in the 1960s and has been expanded since that time. In the early 1980s the Town abandoned the wastewater treatment facility and entered into an inter-municipal agreement with the Greater Lawrence Sanitary District (GLSD) for treatment and disposal of the Town's wastewater. Under the inter-municipal agreement the Town pays GLSD for an apportionment of the costs to operate, maintain, and improve (when necessary) the GLSD system and the Town is responsible for operating and maintaining the public collector sewers and pumping stations owned by the Town. The Town's inter-municipal agreement with GLSD was renewed in October 2014 for a period of 30 years and included the following flow limitations that will be accepted from the Town:

- Average Daily Flow = 5 Million Gallons per Day (MGD)
- Maximum Daily Flow = 9 MGD
- Peak Hour Flow = 14.5 MGD

The Town's wastewater collection system consists of approximately 72.5 miles of gravity sewer, 3 miles of force main, and 10 wastewater pumping stations. Wastewater is conveyed to GLSD through 3 flow meters and GLSD assesses Salem a charge for wastewater treatment and disposal based on the flow that the Town sends to GLSD.

Pumping Station Evaluation

UE visited the Town's 10 wastewater pumping stations and reviewed operation and maintenance manuals provided by the Town to assess the condition of the stations and provide recommendations. A 10-year CIP was developed with approximately \$6.0M in recommended pump station improvements. Additional improvements beyond 10 years were also identified.

Wastewater Flows

Recent sewer flows are summarized in Table ES-1 and have been less than the limitations of the GLSD inter-municipal agreement.

Table VIII-1. Recent Sewer Flows

	Recent Sewer Flows (2013-2015) (MGD)	GLSD Flow Limitations (MGD)	GLSD Capacity Percent Utilized
Annual Average Day Flow	2.6 to 3.0	5.0	52% to 60%
Maximum Day Flow	5.1 to 6.7	9.0	57% to 74%
Peak Hour Flow	5.6 to 6.9	14.5	39% to 48%

Infiltration and Inflow (I/I) Evaluation

It was estimated that approximately 60% of average annual flow in the system was I/I and contributed

to hydraulic limitations during max-day and peak flow conditions and that infiltration represented approximately 91% and inflow represented 9% of the annual average I/I in the system.

Sewer Interceptor Modeling

Underwood Engineers used the Town's GIS data to create a steady-state hydraulic model of the Town's sewer interceptors (pipes with diameters 10" and greater) using modeling software. The model showed that approximately 6,700 linear feet of the sewer interceptor exceeded the hydraulic capacity of the sewer under observed 6.7 MGD maximum day flows (March 31, 2014) whereas average day flows did not predict pipe capacity exceedance. The main areas of the hydraulic restrictions were located along Main St., Granite Ave. and South Broadway.

Sewer Planning and Flow Projections

UE evaluated existing information to project estimated future sewer flows associated with 'infill' development (i.e. additional sewer flows from development or re-development within the limits of the existing wastewater collection system) and from 'buildout' (i.e. additional sewer flows from sewer extensions to service areas not currently served by the public sewer).

Table VIII-2. Projected Additional Sewer Buildout Flows with Infill

Area	Estimated Average Daily Flow (MGD)	Estimated Max. Daily Flow (MGD)
Existing System	2.7	6.7
Subtotal Buildout Area Flow Projections	1.0	1.9
Infill Development Estimate	0.2	0.5
TOTAL	3.9	9.1
GLSD Allowance	5.0	9

Future buildout and infill flows used in this evaluation are summarized (Table ES-3). The estimated 9.1 MGD future build-out maximum day flows were slightly above the current 9 MGD GLSD limits. However, the 0.1 MGD difference is within the error of flow estimates and it is believed that flow estimates are generally conservative so the Town should have sufficient GLSD capacity to accommodate the assumed future sewer flows. In addition, there is potential for reducing max day flows through I/I reduction to gain additional capacity to stay below the GLSD allowance.

Hydraulic sewer modeling showed that projected future maximum day sewer flows, including estimated buildout and infill flows, exceeded the capacity of approximately 9,500 linear feet of the modeled sewer interceptors. The majority of the hydraulic restrictions under future projected maximum day flow scenarios were in the same areas around Main St., Granite Ave., and South Broadway where hydraulic restrictions were observed under existing max day flow conditions. This study evaluated alternatives to mitigate these hydraulic 'bottlenecks' in the Town's sewer interceptors.

Alternatives Evaluations

Four alternatives were evaluated to mitigate the hydraulic 'bottlenecks' of the sewer interceptors in the vicinity of Main Street, Granite Avenue, and South Broadway including:

- Alternative #1 – I/I Reduction

- Alternative #2 - West Side Interceptor Flow Shedding
- Alternative #3 - Sewer Interceptor Replacement
- Alternative #4 - South Broadway Flow Shedding and Sewer Interceptor Replacement

The advantages, disadvantages, and costs of each alternative was evaluated. Alternative #4 was the recommended lowest cost alternative to mitigate Main Street, Granite Avenue and South Broadway hydraulic bottlenecks.

Recommended Improvements

Recommended improvements included the following areas of the system:

- Existing hydraulic bottleneck improvements
- Improvements to the existing pumping stations to mitigate identified deficiencies and help budget for pump and entire station replacements
- Additional studies and evaluations related to the Town's sewer system
- Long-term sewer replacement and buildout capital reserve program

Capital Improvements Plan (CIP)

The recommended ten-year Capital Improvement Plan (10-Year CIP) includes specific projects and evaluations recommended to be performed within the next 10 years. Additional reserve contributions needed for the future replacement of the existing infrastructure as they reach the end of their expected useful life is also provided.

WATER SYSTEM MASTER PLAN – CDM (2008)

The 2008 Water System Master Plan presented a full description of the water system, population and water demand projections, assessments of various system components, alternatives for future expansion, organizational and financial management evaluations, and a Capital Improvement Plan.

The Plan is divided into eleven basic sections:

- Section 2, Description of Existing System. Overview of Salem's water distribution system and its major components.
- Section 3, Population and Water Consumption. Discussion of future population and water consumption projections.
- Section 4, Water Quality and Treatment Review. Summarizes the current and pending water treatment regulations, actions taken or planned by the town and potential future impacts to the town.
- Section 5, Analysis of Existing Facilities. Discussion of the evaluation of the distribution system and identification of existing and future deficiencies.

- Section 6, Alternatives for System Expansion. Presentation of alternatives for expansion of the existing distribution system for future supply of the currently unserved portions of Town, primarily located in North and South Salem.
- Section 7, Operation and Maintenance Practices. Provides a review of current O&M practices and provides recommendations for improvement to the existing programs.
- Section 8, Supply Source Issues. Provides general comment on the current status of Salem's existing and future potential supply sources.
- Section 9, Organization Evaluation. Provide comments on the current department management structure and present recommendations for improvement.
- Section 10, Financial Evaluation. Provides an assessment of the financial management of the department.
- Section 11, Recommended Capital Improvements. Presentation of the recommendations and a prioritized program for system capital improvements.

Section 11 of the Master Plan presents an overview of the water system improvements program. Figure 11-1 is a one-page chart showing the recommendations, their timing, and a cross-reference to their discussions in the report. This chart groups the recommendations into five major categories, listed below.

1. Water Conservation/Demand Management

Section 3.5 of the report details a review of Salem's water conservation and demand management program. The most fruitful areas for the Town's future focus are improvements in the annual water audit, leak detection and repair, and a water meter replacement and automatic meter reading (AMR) program. The meter/AMR work is a significant capital program, estimated at \$1.9-2.3 million. It is intended to address the poor condition of many old Salem water meters, reduce unaccounted-for water, achieve equitability in consumer billings, and improve revenues. Regardless of the future direction of the Town's water system, these and other water conservation and demand management efforts will be expected by regulatory agencies and the public.

2. Supply Sources

The Town should continue to pursue the proposed transfer of Arlington Mill Pond water to Canobie Lake. In June 2008, the U.S. Environmental Protection Agency announced changes in a relevant federal permitting program that make this project appear more feasible from a regulatory standpoint. NHDES is preparing to implement changes in its permitting programs that may allow Salem to receive a formal review of a permit application in 2009.

A detailed review of the WTP was beyond the scope of this project. Nevertheless, a brief review identified several water quality issues for the Town's consideration. In addition, the current maximum day production of the WTP and its pumping systems exceeds the firm capacity of those facilities. The Town should prepare a comprehensive review of these issues at the WTP to ensure it will continue to provide sufficient quantities of high-quality water as the Town grows.

Section 8 of the report also includes information on other potential supply sources, such as groundwater supplies and the purchase of water from Methuen.

3. Storage Tanks

The most significant issue with the Town's three water storage tanks is the poor condition of the Howard Street Standpipe. This was documented in a 2007 tank inspection report and is discussed in Section 5.7. A rehabilitation program for this tank is warranted in the immediate future. The estimated cost is \$600,000 in 2009 dollars.

4. Existing Water Distribution System

Salem's water distribution system performance with respect to fire flow capacity is especially good – one of the best CDM has seen in New England. Nevertheless, there are a number of issues that need to be addressed, such as the following:

- There are a few areas where fire flow and/or hydrant improvements are needed.
- Old, unlined cast iron mains are present in some areas, sometimes as parallel mains to newer pipes in good condition. Unlined cast iron mains are causing water quality complaints in some cases; these cases, and other cases where such mains cause hydraulic constrictions or develop structural problems, will grow with time.
- Construction of loops to eliminate dead-end mains would improve the system in several areas.

Table 11-2 lists a number of streets with mains that need to be addressed for the foregoing and other reasons.

As part of this effort, CDM reviewed the Town's current Capital Improvements Plan (CIP). A number of the needed water distribution system improvements are located in streets with roadway projects listed in the CIP, which will allow coordination of these efforts and reduced overall cost. These are listed in Table 11-1 and shown on Figure 11-1.

5. Future Water Distribution System Expansion

Salem's CIP calls out one expansion project, the Canobie Area Sewer/Water Construction program. Extensive additional areas in northern and southwest Salem are not currently served by the water system. Using the Town's hydraulic computer model, CDM developed two alternative means of extended water service throughout these two areas. One approach involves local water booster stations to achieve proper service pressures in high-elevation areas. The second approach instead creates one large high-service zone in North Salem with its own new storage tank, eliminating the need for many of the local booster stations. Both approaches are discussed and mapped in Section 6.

FIVE-YEAR UPDATE OF THE WATER SYSTEM MASTER PLAN – CDM SMITH (2013)

The Water System Master Plan Update is intended to be a supplement to the 2008 Master Plan. The two Master Plan reports function as companion volumes. CDM Smith has updated various items in the 2008 Master Plan, and each new item is included as an appendix in this Update Report.

These appendices are described below:

- Appendix A – Water System Map. We have updated Figure 2-1, the water distribution system map.
- Appendix B – Section 3, Population and Water Quality and Treatment.
- Appendix C – Section 4, Assessment of Water Quality and Treatment. This appendix is a supplement to, not a replacement of, the 2008 version of Section 4. It presents information provided by Wright-Pierce regarding their work performed in recent years at the Water Treatment Plant, and their anticipated directions of upcoming work.
- Appendix D – Section 5, Analysis of Existing Distribution System. This appendix consists of updates to several subsections of Section 5.
- Appendix E - Section 8, Supply Source Issues. This appendix updates several issues related to supply sources, especially the former groundwater supply sources.
- Appendix F – Section 11, Capital Improvement Planning.
- Appendix G – Other Documents. This appendix includes various documents, or excerpts of documents, that are referenced in this report.

WATER SUPPLY ALTERNATIVES STUDY—WESTON AND SAMPSON (2017)

In August 2017, Weston and Sampson prepared a Water Supply Alternatives Study and Report for the Town of Salem. The purpose of the report was to provide an overview of the current water supply and recommendations for supplementing the long-term ability of the Town to serve its water customers. The report was funded by the New Hampshire Department of Environmental Services (DES) MTBE Remediation Bureau. The Town's goal was to determine if a water supply source is available that could yield approximately 700 gallons per minute (1.0 MGD, or approximately 368 million gallons per year) to replace the capacity of the Turner Campbell Well. The study incorporated review of approximately twenty prior reports, studies, and supporting documents to develop a historical timeline of the Town's water supply.

The report examined potential water supply options both within and outside of the town's borders. The following tasks were performed regarding the ability to develop a new water supply within the Town of Salem or augment the existing supply sources:

Groundwater Investigation

- Development of a surficial aquifer map
- Conducted a favorable gravel well analysis
- Conducted a favorable bedrock well analysis
- Ranked potential sites based on a set pre-determined criteria and weighted ranking system
- Conducted a very low frequency (VLF) field study on three potential bedrock well sites

WTP Infrastructure Improvements

- Installation of pretreatment at the water treatment plant (WTP)
- The potential to blend raw water supplies prior to entering the WTP headworks

- Installation of an additional filter/clarifier unit at the WTP

Source Water Augmentation

- The potential to perform a surface water transfer between Arlington Pond and Canobie Lake
- The feasibility of developing a groundwater withdrawal well adjacent to Arlington Pond.
- The potential to construct infiltration basins adjacent to Canobie Lake to augment the natural recharge of the lake
- Modifying the existing APPA agreement to allow more flexibility to use Arlington Pond as a water supply source
- Maximizing summer withdrawals from Arlington Pond
- The ability to capture and retain seasonal outflow from Big Island Pond within Arlington Pond
- Water conservation methods that could be taken by the Town

The report also examined the potential for the Town to obtain water from adjacent communities via interconnections. These options would allow the Town to obtain additional water supply during drought emergencies or periods of high water demand.

Interconnection Options

- The potential to develop a non-emergency connection with Methuen, and the feasibility of creating a service area within the town that could be served by the Methuen water system
- The ability for the town to receive water from either Pennichuck Water Works (PWW) or Manchester Water Works (MWW) as part of a southern New Hampshire regional water system.

Conclusions & Recommendations

- Blending of the WTP source waters would reduce the burden on Canobie Lake during periods of high demand and allow the plant to more effectively treat Arlington Pond when the raw water turbidity is high. It is recommended that pilot testing be conducted to determine proper blending ratios and chemical addition concentrations if this option is pursued further.
- The southern New Hampshire regional water system presents the town with the ability to be supplied water by adjacent communities. We recommend that the town continue to be involved in discussions with other interested parties (PWW, MWW, Hampstead Area Water Company, towns of Windham, Hudson, Litchfield, and Derry).
- Addition of a fourth filter/clarifier unit would increase the plant's ability to treat increased volumes of water. Modifications to the WTP process layout would be required to allow a discharge of treated water to Canobie Lake. However, existing surface water regulations prevent the treatment of Arlington Pond water for direct discharge into Canobie Lake. A legal review of the regulations would be required prior to pursuing this option.
- The City of Methuen has expressed interest in supplying water to Salem on a non-emergency basis. A benefit to this option is that the town already maintains interconnection infrastructure with Methuen at three different locations. Further discussions with Methuen would be required

to determine the terms and conditions of an inter-municipal agreement. Additional modeling of the interconnection is being performed by CDM Smith, Inc. as of May 2017. It is recommended that the Town continue discussions with Methuen at this time.

- Coordination with Big Island Pond regarding the pond's seasonal release could provide the Town with additional water that can be used for supply purposes without the need to implement new infrastructure. This option represents a change in operating conditions and not a new source of water for the Town.
- A surface water transfer between Arlington Pond and Canobie Lake is not allowed under existing surface water regulations. We recommend that the Town initiate a legal review of the regulations with DES if this option is further explored.
- The APPA has initially expressed a willingness to re-negotiate the existing agreement with the Town regarding water withdrawal from Arlington Pond. No further action is recommended at this time, but may become necessary if the surface water transfer, seasonal capture of outflow from Big Island Pond, or raw water blending options are further pursued.
- Variable Low Frequency (VLF) testing located one fracture within the Town Forest that could accommodate the development of a bedrock well. It is recommended that a test well be drilled at this location (see Section 6)
- The town does not contain any undeveloped sites that would be feasible for the drilling of a gravel water supply well in excess of 75 gpm. No further action is recommended for the exploration of gravel wells at this time.
- Hydrogeologic screening adjacent to Arlington Pond indicates an adjacent gravel water supply well could be supported. However, the cost to acquire sufficient land to own and control the required wellhead protection area reduces the feasibility of this option.
- Hydrogeologic screening adjacent to Canobie Lake shows bedrock and glacial till materials that are not conducive for supporting infiltration basins to aid in aquifer recharge.

A water supply alternatives matrix was constructed to examine the economic, environmental, and legal impacts of each major alternative examined within the report. The matrix also incorporated the estimated benefit to the water system based on the long-term viability and expected volume of water available from each alternative. The ranking of the major alternatives was as follows:

1. Raw water source blending (Arlington Pond & Canobie Lake)
2. Southern New Hampshire Regional water system interconnection
3. Methuen, Massachusetts water system interconnection
4. WTP filter addition and treated water discharge to Canobie Lake
5. Improved capture of seasonal outflow from Big Island Pond
6. Direct surface water transfer between Arlington Pond and Canobie Lake
7. Development of a bedrock well
8. Development of gravel wells

9. Groundwater withdrawal adjacent to Arlington Pond

10. Canobie Lake aquifer recharge

MASTER DRAINAGE STUDY UPDATE – CDM (2006)

The purpose of this report is to supplement and update the Town's "Master Drainage Study", dated November 1988, with a summary of a recent planning process used to determine and prioritize stormwater management options. This approach is based on community input and involvement and provides the Town with a means for guiding future expenditure of funds on stormwater projects. The report also details specific steps recently taken by the Town related to drainage system maintenance (updating the Town's GIS – Section 3) and regulatory compliance (Phase II Stormwater Management Program – Section 4).

To begin developing the Stormwater Management Philosophy to be used in prioritization of stormwater management categories, the Town formed a twelve member committee. The committee consisted of resident volunteers and Town appointed members.

The first task of the committee was to establish a list of planning objectives. These objectives were:

- Reduce adverse stormwater impacts to structures, land and people;
- Reduce adverse stormwater impacts to environmental quality and public health;
- Provide for water quality protection;
- Provide cost effective solutions; and
- Comply with regulatory requirements.

CDM worked with the committee to develop stormwater management criteria that would be used to rank six stormwater project categories. The six categories developed were Flood Management, Drainage System Improvements, Stormwater Quality Improvements, Phase II Stormwater Regulatory Compliance, Conservation of Natural Resource and Development of a Stormwater Utility.

The analysis clearly showed that the projects listed under *Flood Management* were viewed by the Stormwater Committee as most likely to strongly and directly achieve the stated objectives. The *Flood Management* category ranked as the highest priority in nearly all of the scenarios run for this analysis. During a discussion of the results at the third workshop, the committee concurred that *Flood Management* was the highest priority. Four other categories, *Drainage System Improvements*, *Stormwater Quality Improvement*, *Phase II Stormwater Regulations Compliance* and *Conservation of Natural Resources* were found to be of approximately equal value.

Conclusions from the Master Drainage Study Update include:

The Town could use its GIS database to aid in the implementation of philosophy and prioritization of projects. Additionally, there are state and federal grants that are available to assist the Town in implementing stormwater related projects, see Section 5. The Town should seek these funding opportunities, as well as allocate local funding, to implement stormwater projects, including BMPs to ensure compliance with the Phase II stormwater regulations. Projects that cross multiple stormwater project categories should be considered to maximize utilization of available funding.

RECOMMENDATIONS

- Complete recommended improvements listed in the 2017 Sewer Master Plan Update.
- Continue to pursue alternative water sources to enhance the resilience of the Town's water supply as detailed in the 2017 Water Supply Alternatives Study.
- Continue to improve stormwater infrastructure, especially related to flood management.

SOURCES

- *Master Drainage Study Update*, CDM, 2006
- *Five-Year Update of the Water System Master Plan*; CDM Smith, 2013
- *Water System Master Plan*; CDM, 2008
- *Sewer Master Plan Update*; Underwood Engineers, 2015/16

X. TRANSPORTATION

Since 2001, the Town of Salem has continued to assess and address what is needed to create a transportation system for the Town that emphasizes safety, reduced congestion, and accessibility for several modes of travel. Several improvements have been made to roads and highways. New studies have also been completed to direct further improvements that will occur in the future such as plans for bike-pedestrian trails and improved signalization at key intersections. While Salem's transportation needs continue to be primarily served by the automobile and highway network, there has also been greater interest in the availability of transportation networks accessible to bicyclists and pedestrians since completion of the 2001 Master Plan.

COMMUTING PATTERNS

Salem residents continue to rely on easy access to the labor market outside the state. Nearly an equal number of workers residing in Salem commute to places in New Hampshire and out of state. Tables X-1 and 2 display the most recent data available on commuting patterns in and out of Salem. They rely on two different data sets that have 2011 as their sole year of analysis or median year over a 5-year data collection period. Table X-1 estimates the number of working persons age 16 or older living in Salem in 2011 and whether they work within the same county or state as where they reside. Just over half commute out of state to work (more than likely to Massachusetts.) A greater percentage of Salem's workers are employed in New Hampshire compared to 1990 when about 43% of Salem's employed residents worked in the same state as their residence.

Table X-1: Estimate of Residents by Place of Work - (2009-2013)

Place of Work	Live in Salem	% By Workplace
Rockingham County	7,790	41.2%
New Hampshire Outside of Rockingham County	1,326	8.5%
Working Outside of New Hampshire	6,464	50.3%
Total Citizens in Salem Working	15,688	100%

Source: 2009-2013 Five Year American Community Survey

Table X-2: Method of Transportation to Work for Salem Residents

Method of Transportation	2009-13 ACS		2000	
Total workers	15,688		14,850	
Car, truck, or van - drove alone:	13,738	87.6%	13,180	88.8%
Car, truck, or van - carpooled:	1,120	7.1%	1,028	6.9%
Public transportation (excluding taxicab):	154	1.0%	13	0.1%
Walked:	71	0.5%	146	1.0%
Taxicab, motorcycle, bicycle, or other means:	56	0.4%	141	0.9%
Worked at home:	549	3.5%	342	2.3%

Source: 2009-2013 Five Year American Community Survey

Since 2000, the percentage of workers who travel alone by an automobile has slightly decreased. While public transportation is used more than in 2000, most of this change comes from the increase in Salem's workers working from home. As displayed in Table X-3, 12.2% of Salem's working population are employed in the Town of Salem.

Table X-3 displays the residences of people working in Salem in 2011. Most of the workers come from other communities in New Hampshire with over 1,000 people commuting each from Derry, Manchester, and Nashua. About 12% of people employed in Salem also reside in the Town. Massachusetts communities like Methuen, Haverhill, Lawrence, and Lowell have over 300 residents commute to Salem. A much smaller percentage of people working in Salem live in the town compared to 1990 when about 30% of people employed here also resided in Salem.

Table X-3: Estimate of Persons Working in Salem by Place of Residence (2011)

Place of Residence	% By Residence	Work in Salem
Salem town	12.2%	2,497
Derry town	6.2%	1,261
Manchester city	6.0%	1,226
Nashua city	5.9%	1,200
Methuen city	4.0%	811
Londonderry town	3.2%	649
Haverhill city	2.9%	595
Lawrence city	2.9%	592
Windham town	2.8%	569
Hudson town	2.1%	432
Pelham town	1.9%	391
Merrimack town	1.9%	383
Lowell city	1.7%	353
Concord city	1.3%	267
Hampstead town	1.2%	257
Atkinson town	1.1%	240
Dracut town	1.0%	224
Bedford town	1.0%	203
Portsmouth city	1.0%	201
Rochester city	1.0%	195
All other	38.7%	7,900
Total		20,446

Source: On the Map 2011 Selection Area Analysis, U.S. Census Bureau, Center for Economic Studies

HIGHWAYS

Some of the primary roadways in and around Salem have been upgraded or will soon face redevelopment in the next ten years. Since the completion of the last Master Plan, new projects have been completed on Interstate 93 and NH 111.

Construction was completed in the summer of 2015 to widen each side of Interstate 93 through Salem to four lanes and make other important adjustments. Work is still ongoing on widening the rest of I-93 north of Salem to Manchester. A park-and-ride lot at Exit 2 in Salem was added in 2008 which has allowed direct bus service from Salem to downtown Boston and Concord. Each day, 115,000 vehicles pass through Salem on Interstate 93. However, the Rockingham Planning Commission (RPC) notes that the widening of I-93 has done little to reduce congestion. A Bi-State Transit Investment Study has begun to look at future transit needs for I-93.

Several of the other state highways passing through the town will soon be improved as well, particularly on NH 28. The Depot intersection of NH 28 (North Broadway) and NH 97 (Main Street) is scheduled to be reconstructed in 2019. New traffic signals, left-turn lanes, and approaches will be added to make traffic flow more safely. NH 28 is one of the most heavily traveled non-interstate roads in New Hampshire with an estimated 24,000 vehicles daily.

Since 2001, Salem has developed an Intelligent Transportation System (ITS) centered on NH 28 to help manage traffic. The ITS allows traffic signals to communicate with each other to allow or halt traffic flow based on the number of vehicles passing through various intersections. Most of the vehicle crashes occurring in Salem are based in the central area of the ITS. ITS will increase traffic throughput, reduce delays, assist emergency and incident management by pre-empting signals, and quickly identify conflicts or maintenance problems at each signalized intersection.

PUBLIC TRANSPORTATION

In 2006, the Greater Derry-Salem Cooperative Alliance for Regional Transportation (CART) was established. CART provides demand response services and fixed route service (Salem Shopper Shuttle) several days a week along Salem's shopping corridor. CART provides services during weekdays from 8 a.m. to 5 p.m. and taxi vouchers for residents over 62 during weekday evenings and Saturdays. Since 2008, Boston Express has also provided daily commuter bus service from Salem to Boston and Concord. Additionally, vanpool services for Salem workers are currently provided by MassRides, funded by the Commonwealth of Massachusetts, which has matched many local commuters together for daily vanpools from Salem to Greater Boston.

NON-MOTORIZED TRAVEL

Over the past ten years, interest in non-motorized transportation options has increased in Salem with the addition of public transit and a growing population of seniors who do not drive. Greater emphasis will be placed on developing a long-term sidewalk plan to create a network of non-motorized paths in Salem, making the town more pedestrian-friendly.

Pedestrian travel occurs on sidewalks, paved and unpaved shoulders and road rights-of-way. However, Salem has a smaller network of sidewalks compared to Rockingham County communities of similar size like Derry and Exeter because a greater portion of its development occurred in the last 70 years when automobiles became the dominant form of transportation. As of 2011, there were approximately 35 miles of sidewalks and 13 pedestrian crosswalk signal locations in Salem: 5 on Main Street, 5 on South and North Broadway (NH Route 28), 2 on Cluff Crossing Road, and one on Mall Road. More sidewalks have been added since then. Effective sidewalk systems connect destinations such as residential areas, schools, recreation areas, shopping areas, park-and-ride lots, and places of employment. Traffic controls that

allow safe passage across heavily traveled roads are important and encourage pedestrian rather than motorized travel.

Many Town roads that lack sidewalks are narrow, have poor sight distance, and are heavily traveled by vehicles. The lack of sidewalks on these roads makes them unsafe for walking. Adequate pedestrian facilities are important for both safety and a higher quality of life. The provision of additional and intentional sidewalk facilities would add enjoyment for users, increase adjacent property values, and reduce the number of vehicles on the Town's roads. Adequate sidewalks are at least five feet wide, clear of obstructions (utility poles, traffic signs, mail boxes, hydrants), and free from holes, bumps, and/or disintegrating pavement.

2016 Sidewalk Committee

Sidewalks, although beneficial in multiple ways, are costly to construct, maintain, and resurface. To address these concerns the Board of Selectmen formed a sidewalk committee on June 13, 2016. The committee came to a general consensus on a plan for sidewalk development as Salem which includes:

- If no sidewalk exists, consider adding one along major roadways in highly developed areas with significant traffic volumes.
- Provide access to public buildings, parks, recreational areas, and around the schools.
- Consider on Main Street/Route 97 a sidewalk on both sides of the road from N/S Policy Streets to the cemetery/North Main Street split.
 - Other than Main Street, review necessity of sidewalks on both sides of the street.
- On Route 28 consider a complete sidewalk on the eastern side from Methuen to Windham
- Close gaps in the existing sidewalk system.
- Sidewalks should be added to provide access to major destinations.
- Review the current system in relation to higher density residential development including senior housing, and apartments to ensure they have access to the larger sidewalk network.

The sidewalk committee has also proposed a list of new sidewalks to build, as well as a list of sidewalks to remove based on appropriate measures of usage and connectivity. In order to ensure a pedestrian-friendly environment, sidewalks being removed or modified will be replaced with methods such as bike lanes.

Salem Bike-Ped Corridor

One new proposal to provide greater transportation options for pedestrians and bicyclists is using the former B & M rail line for a pedestrian-bike path that parallels NH Route 28, the road with the most vehicle traffic in Salem. The proposed path would be part of the Southern New Hampshire Rail Trail, spanning from Salem to Concord. Only six of the thirteen signalized intersections on the highway's 5.2-mile stretch in Salem have crosswalks. More pedestrian crossings will likely be added in the near future. Without bicycle lanes, there are few daily bicyclists traveling on NH 28 despite its importance to accessing destinations throughout town.

NH Route 28 is a central residential and commercial hub in Salem with an estimated 4,800 households within $\frac{1}{4}$ mile of the corridor. A 2008 survey by the Salem Bicycle and Pedestrian Corridor Community of households living with $\frac{1}{4}$ mile of the corridor found that 25% would use the bike-pedestrian path daily and another 59% would use it weekly. A 2009 study by planning consultant Roger Hawk suggested that 35,000 to 350,000 trips would be made along the trail annually. A 2012 study by VHB suggested that 245,000 trips would be made annually due to the centrality of NH 28 to the entire region.

The proposed multi-use, non-motorized vehicle path would generally be 10 to 12 feet wide and separated from NH 28 by commercial development. Access to the path from NH 28 could be provided through areas that are currently open parking spaces that allow a paved connection. Part of the plan to create a multi-use path would be to also install more sidewalks on NH 28 to make walking near the path easier. The VHB study estimated that the path could be installed in four segments that would each cost between \$500,000 and \$750,000. Private funding from benefactors and preservation societies could help traditional transportation funding methods.

In recent years, the Town has made significant progress implementing the trail over a series of progressive phases. Implementation has come about through a number of grants and off-site improvements that complement the Tuscan Village development. Figure IV-4 presents the phasing plan and construction status as of Fall 2017. Phase I, from Range Road to Old Rockingham Road, was paved and completed in 2016, and construction for Phase II to Willow Street will occur in 2018. The Town is in the process of securing funding for future phases to the south.

2040 LONG RANGE TRANSPORTATION PLAN-ROCKINGHAM PLANNING COMMISSION (2012)

The 2040 Plan serves as the long-range transportation planning document for the Rockingham Planning Commission (RPC), which is the designated Metropolitan Planning Organization (MPO) for the area and includes 27 communities in Southeastern New Hampshire. The Plan contains the region's adopted policies, goals and objectives, and specific project proposals to improve the transportation system through the year 2040. The Plan reflects the goals and objectives of member communities in their own master plans and policies, of the New Hampshire Department of Transportation (NHDOT) in its Long Range Transportation Business Plan, as well as those established by the RPC via the Regional Master Plan and the MPO process.

REGIONAL MASTER PLAN - ROCKINGHAM PLANNING COMMISSION – OCTOBER 2014

The transportation chapter of the Regional Master Plan describes the transportation network of the Rockingham Planning Commission (RPC) region and the current issues and challenges faced in aligning limited financial resources with growing transportation network needs. It includes the following goals:

- Develop a regional multi-modal transportation system that offers safe, secure and efficient access to employment, housing, commerce, services, entertainment, and recreation.
- Provide adequate, appropriate and equitable transportation choices for all users.
- Make adequate and predictable funding available to meet current and future needs for transportation system maintenance, operation and modernization across all modes.
- Prioritize maintenance, preservation, and modernization needs of the existing multi-modal transportation system ahead of adding new highway capacity.

- Ensure the region's transportation system is resilient to climate change, natural, and other hazards, is energy efficient, and minimizes adverse impacts to natural and cultural resources.

The regional household telephone survey conducted by the UNH Survey Center asked a series of questions about transportation system investments. A majority of respondents expressed support for greater investment in three aspects of the transportation system: maintaining roads, highways and bridges (70%), availability of bike paths and shoulder bicycle routes (58%), and availability of senior and special needs transportation (54%). A majority of respondents were willing to pay more for system preservation (52%), with 45% willing to pay more for bicycle routes and 42% willing to pay more for better senior transportation. Interestingly, these alternative mode investments were viewed as higher priorities than congestion mitigation or general traffic safety improvements.

Several key issues and challenges are discussed, including changing demographics, imbalance of available funding and infrastructure needs, coordination of community transportation services, freight movement, regional land use patterns and transportation choice, environment and climate, complete streets, and distracted driving.

Transportation-related recommendations in the Regional Master Plan include:

- Utilize Access Management and Intelligent Transportation Systems (ITS) to promote the effective use of highway capacity and strategies to maximize effectiveness with minimal roadway widening.
- Encourage investment in freight infrastructure improvements to promote goods movement and economic development.
- Increase the funding available for operation, maintenance and modernization of transportation infrastructure.
- Employ a context-sensitive, Complete Streets design approach to transportation system planning, operation and maintenance.
- Employ an integrated approach to increase the share of trips made in the region by bicycling, walking, transit and ridesharing.
- Undertake efforts to reduce the vulnerability of the transportation system to natural hazards, storm surge, and the potential impacts of sea level rise and other climate change related concerns.
- Undertake the transportation system improvements prioritized by the RPC region utilizing the MPO Long Range Transportation Plan and Transportation Improvement Program (TIP) as well as the State Ten Year Plan processes.

2015-2018 TRANSPORTATION IMPROVEMENT PROGRAM - ROCKINGHAM PLANNING COMMISSION (2014)

The Transportation Improvement Program (TIP) is a staged multi-year program of regional transportation improvement projects scheduled for implementation in the Metropolitan Planning Organization (MPO) area over the next four succeeding Federal fiscal years (FY 2015, 2016, 2017, and 2018). It is prepared by the MPO in accordance with joint federal metropolitan planning regulations. The projects identified are prioritized by year and have been selected for funding, as jointly agreed upon by the MPO and the NHDOT.

The TIP must include all transportation projects within the MPO area proposed for federal funding under Title 23 or the Federal Transit Act, as well as any regionally significant projects that will require a federal action. Federally funded transportation projects that do not appear on the TIP may not continue towards implementation. Projects listed on the TIP must be consistent with the MPO's Transportation Plan, and the TIP itself must be found to conform to the state's SIP (the State Implementation Plan for air quality attainment). Under conformity rules, "consistent with" the transportation plan is interpreted to mean that TIP projects must be specifically recommended in the Plan.

The TIP is prepared by staff of the Rockingham Planning Commission and is reviewed and endorsed by the Technical Advisory Committee (TAC). Final TIP endorsement is received from the Planning Commission acting as the MPO Policy Committee, which is the designated MPO for the Portsmouth urbanized area and a portion of the Greater Boston urbanized area in New Hampshire.

Salem projects included in the TIP are:

- I-93 – Chloride Reduction Efforts, Corridor Service Patrol, Corridor Smart Work Zone, Exit 2 Interchange Reconstruction, Final Design and ROW for Salem-Manchester, Commuter Bus Service
- Manchester and Lawrence Rail Corridor – Multi-Use Trail Improvements
- Reconstruct Intersection of Rt. 28 and Rt. 97

N.H. RT. 28 CORRIDOR ITS PROJECT: BASELINE CONDITIONS & INITIAL FINDINGS REPORT (2005)

In anticipation of the construction of the Interstate 93 (I-93) Expansion Project, future growth projections for the N.H. Route 28 corridor, and as part of an overall transportation management strategy, the Town of Salem developed a town-wide Intelligent Transportation System (ITS). ITS involves the integration of technology to monitor and manage traffic systems, provide traveler information, and coordinate response to extreme peak traffic, severe weather conditions, and incidents to help the Town manage its transportation infrastructure. The report was prepared by the IBI Group in 2005.

This report presents background analysis and data for the project: establishing the project study area, compiling an inventory of the existing traffic conditions within that study area, and defining traffic modeling methodology to identify needs for ITS implementation.

The analysis results indicated that 12 of the signalized intersections operate at or over capacity in one or both of the peak hour periods. These intersections can be grouped into four categories:

1. **Major N.H. Route 28 Intersections** – Each of these locations in this category are intersections of Route 28 with major east-west roadways and process traffic in excess of 2,500 vehicles per hour (vph). Heavy traffic on Route 28 limits the amount of green time that can be allocated to process the substantial east-west traffic volumes at these intersections. Intersections in this category include Route 28 and Cluff Crossing Rd., Route 28 and Rockingham Park Blvd. and Veterans Memorial Pkwy., Route 28 and Route 97, Route 28 and Route 111/Lake St.
2. **N.H. Route 97 Commuter Traffic** – The analysis indicates that the intersections in the Pelham Road Exit 2 area experience operational problems during the PM peak hour. This can be attributed to the PM commuter traffic pattern generated by the nearby Salem Industrial Park and Salem Professional

Park. Intersections in this category include Route 97 & North Policy St., Route 97 and I-93 Northbound Ramps, Route 97 and Keewaydin Drive and Route 97 and Stiles Rd.

3. Mall at Rockingham Park-Related Traffic – A number of locations operate at or over capacity during the Saturday peak hour, which overlaps the retail shopping peak of the Mall at Rockingham Park. Intersections adversely affected include Route 38 and South Policy Road and Mall Rd. and Rockingham Park Boulevard Ramp.
4. Geometric Constrained Intersections – The current geometric design of three locations, Route 28 and Hampshire Road, N.H. Route 97 and School Street/Bridge Street and South Policy Street and Cluff Crossing Road, cannot accommodate the type and magnitude of traffic using the intersections. Capacity is limited at the Route 28 and Hampshire Road intersection due to heavy Route 28 traffic, difficult coordination issues with Lawrence Road and Staples Drive intersections and right-of-way restrictions. The Route 97 and School Street/Bridge Street intersection is a simple 4-way intersection with single lane approaches that is strained by over 1,600 vph on the Route 97 approaches. The South Policy Street and Cluff Crossing Road intersection provides some turning lanes but is challenged by a large number of conflicting turning movements.

The unsignalized capacity analysis reveals that the overall operation of the majority of the unsignalized intersections in the study area is very poor. Typical of unsignalized intersections with large amounts of major street traffic and many minor street movements experience large delays due to the lack of acceptable gaps in traffic along Route 97, Lawrence Road, Geremonty Drive or Route 111.

Recommended ITS and Intersection Improvement Strategies

The IBI/PB team developed a recommended improvement program with three implementation phases to address the majority of intersection deficiencies within the study area. The following critical locations with geometric/signal improvements planned for after 2009 were included with recommendations of coordination and/or accelerated schedule:

- N.H. Route 97 (Pelham Road) Corridor (2007)
- N.H. Route 28 and Route 97 (2011)
- N.H. Route 28 and Route 111 (2012)
- N.H. Route 97 and School Street (2013)
- N.H. Route 97 and Lawrence Road (2013)

The recommended improvements can be loosely grouped into three areas: traffic signal system installations, intersection geometry improvements and intelligent transportation system improvements.

New Traffic Signal Installation Recommendations

Based on capacity and traffic signal warrant analyses, the following intersections are recommended for traffic signal installation:

- Veterans Memorial Parkway and Lawrence Road
- N.H. Route 97 and Millville Street
- Veterans Memorial Parkway and Geremonty Drive

- N.H. Route 97 and Lawrence Road

Geometric Improvements

These improvements are generally widening of approaches to accommodate additional auxiliary turn lanes, with the exception of Route 97, between School Street and Lawrence Road, which is recommended to be widened to two lanes in each direction.

Recommended Intersection Geometric Improvement Locations

- N.H. Route 97 and School Street/Bridge Street
- N.H. Route 97 and Lawrence Road
- N.H. Route 97 and Geremonty Drive
- N.H. Route 38 and Mall Road
- N.H. Route 38 and South Policy Road
- N.H. Route 28 and Lawrence Road and Hampshire Road

TRAFFIC IMPACT FEE SYSTEM BY VHB, INC. (2009)

In August 2009, the Salem Planning Board adopted a new Traffic Impact Fee System developed by VHB, Inc. The system provides a means to equitably share the cost of constructing roadway improvements. The Town is responsible for addressing existing roadway deficiencies while future users are responsible for their proportionate share of costs to accommodate future growth. A table lists the fees for new and expanded residential, office, retail, industrial, and other uses. A map showing three traffic impact fee zones is provided so that fees can be expended in the general location where the development occurs.

RECOMMENDATIONS

General Recommendations

- Update the town-wide transportation study completed in the late 1980s and expand it to cover additional areas of commercial and industrial development.
 - i. Where possible, consolidate a needs analysis of the Town secondary road system.
- Consolidate existing curb-cuts and channel access points to signalized intersections using interior service roads.
- Continue the existing policy of negotiating off-site improvements for development within the Town, and, where feasible, utilize these improvements as local match for State-funded projects.
- Provide annual local funding to facilitate road capacity improvements.
- Develop and adopt a conceptual road layout map showing desired connections between existing streets and general location of any new roads and rights of way that may be required. This map should be used as a guide for the evaluation of street layouts proposed for new development.
- Acquire the easements for critical rights-of-way that will be necessary to complete or accomplish the connections.

- Discourage the creation of dead-end streets and require the reservation of one or more right-of-way parcels at appropriate connection points in all street designs for new subdivisions
- Implement traffic calming measures, where appropriate, to reduce the volume and speed of motor vehicles on residential streets.

Recommendations for Pedestrian Travel

A 2011 update to the Transportation Chapter of the Salem Master Plan proposed these recommendations to provide a greater network of routes for pedestrian travel that also correspond to the recommendations of the 2016 Sidewalk Committee:

- Prioritize sidewalk development using the following guidelines:
 - i. Along major roadways in highly developed areas with significant traffic volumes;
 - ii. Closing gaps in the existing sidewalk system;
 - iii. In the vicinity of schools, public buildings, parks, and recreational areas;
 - iv. In the vicinity of higher density residential development including senior housing, apartments, and compact neighborhoods;
 - v. In the vicinity of major destinations (for example malls, stores and other commercial areas, industrial parks, medical facilities)
- Continue efforts to develop a pedestrian and bicycle facility on the former B&M rail line that parallels NH Route 28 through Salem.
- Prepare a priority plan for constructing the recommended sidewalks based on the Town's Road Stabilization Program and the recommendations of the 2016 Sidewalk Committee.
- Incorporate sidewalk surface rehabilitation in the Town's Road Stabilization Program.
- Identify, and when feasible, provide additional pedestrian crosswalks and signals at key intersections to allow safe passage across high traffic/arterial roads;
- Encourage private developers to include sidewalks and bicycle facilities in their plans for residential and commercial projects. Emphasis should be given to areas where people are currently walking and safe passage would be enhanced, including roads classified as "Principal Arterial", "Minor Arterial", or "Collector", those within industrial and office park areas, and those within $\frac{1}{2}$ mile of schools, shopping areas, public parking areas, and major recreational facilities;
- Establish a process to update the sidewalk inventory in the Geographic Information System;
- Prepare a policy for sidewalk maintenance that includes brush trimming and surface rehabilitation. Emphasis should be given to maintenance where safe pedestrian passage is compromised if the sidewalk is not maintained;
- Consider prepare a policy for future road reconstruction that includes paved shoulders for use as bicycle/pedestrian lanes, where possible, including bicycle activators with in-ground signal controls at key intersections or other electronic systems to activate lights. The policy should include requirements for appropriate road striping and signage. As a minimum the policy should apply to all roads contained on the NH Bicycle Route system, within $\frac{1}{2}$ mile of the schools, in the vicinity of public buildings, parks and recreation areas, in the vicinity of higher density residential development

(including senior housing, apartments, and neighborhoods), and in the vicinity of major destinations (shopping areas, medical areas, industrial and office parks).

- Prepare a strategy to make more sidewalks ADA compliant.

Highway Specific Recommendations

- Encourage the timely construction of State/Federal transportation projects in Salem and the region.
- Work toward early implementation of the improvement of the intersection of Main Street and Route 28 ("the Depot") as a high priority.
- Implement the recommendations in the Intelligent Transportation Systems (ITS) reports to improve the movement of vehicles on the existing transportation system including:
 - i. Continue to require private traffic studies and road improvements as part of site plan approvals for new development.
 - ii. Implement access management techniques to reduce curb cuts and decrease the potential for traffic accidents related to driveways and turning movements.

Transit Recommendations

- Consider future local bus service linking the Boston Express I-93 service and related park-and-ride lot with employment and commercial areas of town.
- Consider working with the Merrimack Valley Regional Transit Authority to expand fixed route transit service into Salem to connect Massachusetts residents to jobs in Salem and Salem residents to jobs in the Merrimack Valley and beyond.
- Work with Greater Derry/Greater Salem Regional Transit Authority to improve the coordination of Demand Response transit in Salem and to expand its coverage and efficiency.
- Publicize the availability of the transit service that is currently in operation to the citizens of Salem, through mechanisms such as tax bill mailing, the Annual Town Report, and other community announcement media.

SOURCES

- *2009-2013 5-Year American Community Survey*; US Census Bureau.
- *Census of Population and Housing* (Decennial Census data for 2000); US Census Bureau.
- *Corridor Study: Route 28 Bike-Pedestrian Corridor: Salem, New Hampshire*, Vanasse Hangen Brustlin (VHB), Inc.; July 2012.
- *"Memorandum: Salem ITS Signals"*; Vanasse Hangen Brustlin (VHB), Inc., July 2009.
- *Route 28 Corridor ITS Project: Baseline Conditions & Initial Findings Report*; IBE Group, April 2005.
- *Transportation Chapter: 2015 Regional Master Plan* (Public Comment Draft); Rockingham Planning Commission.

XII. SUSTAINABILITY

INTRODUCTION

Sustainability

Sustainable development was defined by the Brundtland Commission in 1987 as, “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” While this is the definition most commonly used today, sustainability has been widely defined and often includes the triple bottom line concept. This approach attempts to balance the needs of people, profits, and planet, for both current and future generations. Sustainability involves broadening one’s field of thought and taking a systems approach. This also means extending one’s thinking temporally to include the longer term impacts that could potentially be obscured by short term gains.

Resilience

Resilience is a related term with goals often intersecting with those of sustainability. In this context, resilience refers to a community or a system within a community’s ability to maintain its functional integrity despite disturbances. A key feature of resiliency is adaptive management, meaning that plans can be modified to adapt to ever-changing conditions. In the face of global climate change, it is more important than ever that we are building resilience in our community. In practical terms, resilience can mean being better prepared for natural disasters, having a diversified energy grid, maintaining a high level of social capital among community members, or preserving a contingency strategy for the unexpected. These types of resilience help to ensure the long-term success of the community.

Sustainability and resilience are important concepts to consider in a Master Plan, because it is a planning exercise that highlights future municipal goals. We must make sure that our development does not interfere with the vision set forth in this plan. If we seek to pursue a vibrant, livable community that will withstand the test of time, we must consider whether our actions are sustainable. We must be able to accommodate changing times so we can be well-poised to face the challenges of the future.

HOUSING AND BUILDINGS

The physical buildings constructed in new development should incorporate green building standards to maximize their value to the community. The use of sustainably harvested or reused/reclaimed materials should be encouraged when possible. The design of buildings should incorporate maximum natural lighting and passive solar considerations. Energy star requirements should also be included in Town building codes. This may also include the redevelopment of brownfields or former industrial buildings left vacant. Although unrelated to construction, affordable housing is also an important sustainability factor related to buildings. Salem’s Workforce Housing provision helps ensure that affordable housing is available for low-to-moderate income families and creates a more livable community, however this remains a challenge

TRANSPORTATION

As a state, New Hampshire is heavily motor vehicle-dependent for our transportation needs. Statewide consumption of motor gasoline is 12,600 Mbarrels each year (U.S. DOE, 2015), and transportation accounts for 44% of energy expenditures in New Hampshire (Office of Energy and Planning, 2013). Reducing automobile dependence should be a major sustainability goal for Salem

as it will reduce the carbon footprint, air pollution, and traffic congestion while improving equity of movement for all residents. The Salem Bike-Ped Corridor is a perfect example of transportation sustainability efforts being pursued by Salem and the community. In addition, improving the safety and connectivity of bicycle and pedestrian infrastructure also enhances quality-of-life in the community.

Principles of pedestrian-oriented development and transit-oriented development should be implemented where possible in Salem's planning. These principles guide development surrounding transit centers and pedestrian access. In Salem, this might mean centering future development around the Bike-Ped Corridor and increasing connections to the corridor. Multi-modal connections, such as bicycle and pedestrian access to the Exit 2 Park and Ride facility would also be great contributions to Salem's transportation infrastructure.

ENERGY

Everything we do requires energy, and the majority of the energy we use today is sourced from fossil fuels. Carbon dioxide emissions from the combustion of these fossil fuels is altering our atmosphere and causing climate disruptions and fossil fuel resources are being depleted. It is clear that our world will not be powered by fossil fuels forever, and we have the technology available to us today to begin the transition to renewable energy.

The first step in moving toward a more sustainable energy future is increasing energy literacy among community members. Efforts should be made to educate the public about their energy use and how they can make simple changes in their own homes. Partnerships should be pursued with programs such as Button Up New Hampshire to host home weatherization and efficiency workshops. Another avenue for promoting energy literacy is through the school system. Either through special programs or incorporated into the regular curriculum, students should be learning about where energy comes from and how they can reduce their own energy use.

Beyond residential energy efficiency, the Town should strive to increase energy efficiency across all its functions. At the time of facility upgrades, energy efficiency improvements should be made whenever possible. A great example is the retrofitting of all the light fixtures in Town Hall to high efficiency LEDs. The Town should pursue LED upgrades to streetlights, as well. Weatherization and efficiency upgrades require a one-time upfront cost, but the benefits are felt for years to come in both cost and energy savings.

A diverse energy portfolio which includes localized, renewable sources will help better prepare Salem for whatever the future might hold. Localized, renewable energy can help reduce energy costs in the long run and keep energy dollars in the local economy, while at the same time creating a more resilient system and reducing our impact on the environment through the use of fossil fuel resources. The Town should actively pursue the integration of renewable, large- and small-scale energy sources, such as wind, solar, and geothermal, into the community's energy mix. The Town should pursue federal and state funding for renewable energy projects as well as working with local groups to create renewable energy incentives for residential and commercial landowners. For example, the State of New Hampshire's legislature enacted the Greenhouse Gas Emissions Reduction Fund (GHGERG), designed to support energy efficiency and renewable energy projects across the state.

CARBON DIOXIDE EMISSIONS

In order to better shape future goals, the Town should dedicate resources to conducting a comprehensive greenhouse gas inventory. The results of this inventory will provide a baseline level of emissions and allow the Town to set reasonable targets for the reduction of both community and municipal emissions. Efforts can then be directed toward reducing specific emissions categories, and results can be tracked over time. Reducing greenhouse gas emissions is a shared responsibility, and the Town of Salem should step up and demonstrate that the Town is doing its part to protect the community's resources.

WATER

Water is an undeniably essential resource. Climate disruptions will bring greater uncertainty of precipitation patterns, leading to periods of more extreme drought and also periods of more intense rainfall. Meanwhile, new development will increase the demand on the Town's water supply. For these reasons, the protection of Salem's water resources is more important than ever.

A comprehensive water plan should be developed for the Town. The simplest way to protect the water supply is to use less water. A number of methods can be used to achieve this goal in residential settings including: installing low-flow fixtures, utilizing drought-tolerant plants for landscaping, watering only at night, harvesting rainwater, and altering other water-use habits. Water-intensive industrial uses should be minimized or mitigated to the extent possible.

Recommendation 1 in the Rockingham Planning Commission's 2015 Regional Master Plan states that we should strive to, "decrease the amount of stormwater runoff by limiting impervious surfaces allowed with new development, requiring onsite treatment of stormwater runoff, and retrofitting existing development." Additionally, promoting the use of rain gardens and vegetated buffers can help protect surface waters from harmful runoff. The Town Planning Department and Board should take water use into consideration throughout the permitting process and possibly offer incentives for low-impact development.

Salem has experienced both flooding and drought, and is likely to continue facing both extremes. Salem's 2012 Hazard Mitigation Plan listed flooding as the greatest hazard based on a combination of probability and severity. Actions identified in the Hazard Mitigation Plan should be pursued to help minimize the human, property, and business impacts of flooding and other natural hazards. Mitigation and preparedness actions help make a community more resilient and protects our community resources.

FOOD

The daily choices we make in regards to food and diet have a strong influence on our health as individuals, the health of our communities, and the health of the environment. Local and community-based food systems provide quality food, strengthen the local economy, and build resilience. Salem should continue its commitment to preserving remaining active farmland. In addition, the Salem Farmers Market is a huge asset to the community and should be promoted as such. Efforts should be undertaken to ensure that the Farmers Market continues to be a source of fresh and local food for the community. For low-income families, SNAP and EBT cards are accepted forms of payments. The Town's wellness program provides CSA shares from Brookford Farm to Town employees. The program is intended to encourage employees to try new vegetables that they might not have tried before and to add more fresh vegetables to their diets while supporting a local NH farm. The Town

should also work to eliminate any unnecessary barriers to home gardens and consider an expansion of the already successful community garden program.

OPEN SPACE AND FOREST

Open space is critical to a healthy community. Continuous stretches of open space are important for wildlife habitat in an age when habitat is increasingly fragmented into small pieces not large enough to sustain a population. Intact ecosystems can provide ecosystem services such as water filtration, floodwater storage, nutrient cycling, and also serve as carbon sinks. Open spaces improve quality of life and allows for healthy recreational uses. Open space must not be dismissed as 'wasted space'. Remaining open space should be protected through efforts such as Salem's Open Space Preservation section already in place within the Zoning Regulations. The Salem Conservation Commission has demonstrated a strong commitment to protecting the Town Forest and to acquiring additional land to expand the forest. Once land is developed, it is very rarely returned to open space, making it critical to protect our remaining natural areas.

SMART GROWTH

Salem's land use plan already contains several goals relating to sustainability and smart growth, although they are not labeled as such. Smart growth, according to the United States Environmental Protection Agency (EPA), is planned economic and community development that protects our overall health and environment. These efforts would not only make Salem more attractive, but also pave the way for a stronger economic and socially diverse community. For example, the Master Plan includes language supporting higher density housing areas and a goal to "promote the redevelopment of obsolete, abandoned, and underutilized commercial properties." The Town should continue such efforts to reduce sprawl and preserve open space. The provision of a density bonus incentivizes more sustainable development patterns. The Depot Village Overlay District is another example of sustainable land use planning. One of the stated purposes of the overlay district is to, "encourage development in the Depot of a mixed-use environment that is less automobile dependent and more pedestrian friendly." The Town should continue to more aggressively pursue goals such as these to help shape a more sustainable community.

WASTE

The Salem Transfer Station has a mandatory recycling and yard waste policy under Town Code which separates these materials from other waste. The Transfer Station offers single-stream recycling making it easier for everyone to participate. Recycling drastically reduces landfill waste and saves the Town \$57 per ton. Expanding the yard waste composting program to also accept food waste could help divert another large segment of landfill waste. In addition, the Town could recoup some of the costs of implementing such a program by selling the finished compost. Community education and incentive programs could help build interest and support. Backyard composting can be encouraged in some of Salem's more rural areas, but a municipal service will be necessary for people living in more densely populated districts. New Hampshire may eventually follow the lead of neighboring states and require that all food waste is diverted from landfills and into compost. In that case, it would be beneficial for Salem to be ahead of the curve and have more time to carefully implement such a program.

ADVISORY GROUP

The Town of Salem should develop a “Sustainable Salem” advisory group made up of community members and representatives from the Planning Board and Conservation Commission. The purpose of this group would be to serve in an advisory role to Town decision-makers regarding issues of sustainability. The group would also work to educate the community through outreach activities and events. Sustainable Salem would work hand-in-hand with already established groups such as the Friends of Salem Bike-Ped Corridor, Conservation Commission, the Salem Farmers Market, the Greater Salem Chamber of Commerce Green Committee, and others. This group would provide an opportunity for residents to participate in the Town, share their ideas, and be the driving force for sustainability efforts.

CONCLUSION

The implementation of sustainability initiatives can help ensure that Salem remains a thriving community well into the future. Sustainability requires public support and community participation in order to be successful. The process is as much about developing a culture of sustainability as it is about achieving any one particular benchmark or goal. Sustainability is not only about protecting the environment; it also means creating livable communities where people can lead successful lives. It would be prudent for the Town to continue developing a sustainability plan as resources allow. These goals should be a priority for Salem as the Town continues in the direction of a bright future. Sustainability is not a set destination, but rather an incremental process. Each step in a sustainable direction is a positive step for Salem.

SOURCES

- *Report of the World Commission on Environment and Development: Our common future; Brundtland Commission, 1987.*
- *Energy in NH; Office of Energy and Planning, 2013.*
- *This Is Smart Growth; US Environmental Protection Agency, 2006.*
- *State of New Hampshire energy sector risk profile; U.S. Department of Energy, 2015.*

XIII. IMPLEMENTATION

2001 MASTER PLAN RECOMMENDATIONS

The 2001 Master Plan recommended numerous revisions to Salem's land use regulations. The status of these revisions is noted below.

Recommendations for Revisions to the Zoning Ordinance

- The current Zoning Ordinance is difficult to use, lacks clarity, and needs to be reorganized; to include tabular formats for permitted uses and dimensional standards. **Completed**
- The Senior Housing Overlay District does not need to be an overlay district; housing for older persons could be allowed as a conditional use in specified districts, but should not be permitted in certain Commercial/Industrial districts or in the Rural District; revise or eliminate the floor/area ratio (FAR) so as to reduce allowable density; add a minimum requirement for affordable units. **FAR eliminated and affordable requirement added**
- Compliance has been achieved with 674:32 by allowing Manufactured Housing in a manner similar to single family homes; the Manufactured Housing District could be eliminated; the expansion of existing parks could be allowed at current standards. **Not Completed**
- While mixed use is good in some locations and works well within a specific range of uses, the range of uses in the Commercial/Industrial Districts should be reduced in order to improve property values and increase the tax base return. **Not Completed**
- Update and expand the off-street parking standards. **Completed for some uses**
- Open Space Preservation Ordinance - revise per suggestions from R. Arendt; require some open space to be viewable from road and useable for passive or active recreation; allow duplexes or townhouses under certain conditions. **Partially completed**
- In the Sign Ordinance, reduce maximum size of freestanding signs and size and number of wall signs; prohibit projecting and roof signs; require all signs on Main Street to comply with Business-Office II requirements; restrict amount of window signage; review electronic sign time limit; develop design guidelines for sign locations, materials, and lighting; review legality of ways to make old signs conform to new requirements; consider the use of master signage plans for each property. **Mostly completed**
- Affordable Housing Ordinance - add incentives; revise density bonus, affordability requirements, and plan submittal procedure. **Completed**
- Wetland Ordinance - require a 20-foot natural buffer around all wetlands as defined in ordinance; require mitigation for certain impacts to wetlands. **Completed**
- Town Center District - revise district boundaries to exclude residential areas and setback from Lawrence Road and Main Street; revise or eliminate FAR (reduce allowed density); add height limit. **Completed except for height limit**
- Eliminate the Highway Commercial District; include all such areas in the Commercial-Industrial C District. **Completed**
- Main Street is currently divided among eight districts; include all of Main Street in the Business

Office District. **Not Completed**

- Commercial A District - allow mixed uses and taller buildings (4-5 stories); add incentives for redevelopment; require traffic mitigation; require greater front yard setbacks to allow for future road improvements; create a Redevelopment Overlay District. **Completed**
- Commercial-Industrial B - separate retail, industrial, and office areas into sub-districts. **Not Completed**
- Create a new district for Rockingham Park with mixed uses (residential, office, entertainment, hotels), taller buildings, greater buffers/screening, restrictions on large retail projects, and limits on new driveways on South Broadway. **Completed except for limit on retail projects**
- Road Impact Fee Ordinance - update current road impact fee methodology and expand road impact fees to all areas of Town (need input from S. Pernaw). **Completed**
- Include incentives for redevelopment of older commercial properties. **Not Completed**
- Establish a Recreation Impact Fee Ordinance; require on-site recreation for larger projects, or require the payment of fee into Recreation Trust Fund in lieu of providing on-site recreation areas. **Completed except for on-site requirement**
- Revise the lot coverage requirement to exclude open water and a specified percentage of wetlands. **Not Completed**
- Revise or delete the special exception clause in the Commercial - Industrial Districts. **Completed**
- Include restrictions on non-residential lighting. **Completed**
- Revise the noise regulations to limit exemptions therefrom. **Not Completed**
- Limit the use of reduced lot frontage to cul-de-sacs. **Not Completed**
- Revise or delete the Major Home Occupation Ordinance to address the potential for recurring truck traffic. **Completed**
- Change the zoning map designation for some developed areas from Rural to Residential. **Partially Completed**

Recommendations for Revisions to the Site Plan Regulations

- Include a requirement for a number of trees and shrubs and maximum spacing allowed; **Not Completed**
- Expand the requirements for plantings along street; **Not Completed**
- Require irrigation systems; **Not Completed**
- Add building design and landscaping standards for other commercial-industrial projects; **Completed**
- Add standards/guidelines for sign placement and styles; **Completed**
- Refer to construction standards in subdivision regulations; **Completed**
- Enhance enforcement provisions (require certified as-built plans, up-front performance bonds,

outside inspections); **Completed**

- Strengthen traffic mitigation requirements; **Completed**
- Address outside storage/displays; **Not Completed**

Recommendations for Revisions to the Subdivision Regulations

- Revise/add requirements for sidewalks, curbing, recreation areas for large subdivisions; **Completed except for recreation areas**
- Add enforcement provisions (certified as-built plans, up-front performance bonds, outside inspections); **Completed**
- See comments from R. Arendt on cul-sac-length, pavement width, curved streets, side slopes, stormwater management, sidewalks, street trees, shared driveways, double frontage lots, etc.; **Partially Completed**
- Revise requirements for which waivers are frequently requested; **Partially Completed**

OTHER IMPLEMENTATION ACTIONS SINCE 2001

Listed below are the land use regulations that have been adopted and other techniques that have been used to implement recommendations in the 2001 Master Plan:

Aesthetics

Prohibit Use of Electronic Signs-2002, 2005

Reduce Number and Size of Allowable Signs-2002

Retail Lighting and Sign Standards-2006

Design Guidelines-2010

Screen Rooftop Mechanical Units-2011

Affordable Housing

Affordable Housing Requirement for Senior Housing Projects-2004; amended 2007

Workforce Housing Ordinance-2010

Revise Accessory Apartment Ordinance-2017

Economic Development

Expand Permitted Uses in Commercial Districts-2004

Allow Taller Office Buildings (45')-2004

Large-Scale Redevelopment Ordinance-2009

Revise Temporary Commercial Sign Regulation-2009

Exempt Minor Site Plans from Site Plan Review-2012

Add Health Care Facilities as Permitted Uses-2014

Adopt Business Innovation Overlay District-2016

Allow Charitable Gaming-2017

Environmental Protection

Conservation Land Acquisitions- 114 Lawrence Rd.-2008, Hawkins Farm-2008

New Prime Wetlands (Oak Ridge Ave., Budron Ave., Golden Oaks Dr., Brookdale Rd.)-2002

Adoption of State Prime Wetland Criteria-2002

Floodplain Management Regulation Amendments-2002

Incentive Provision in Open Space Preservation Ordinance-2003
New Prime Wetlands (Zion Hill Rd., Atkinson Rd./Old Farm Rd., Veterans Parkway/Park Ave.)-2004
Remove Cap on Land Use Change Tax Dedication to Conservation Fund-2004
New Prime Wetlands (Arcadia Lane, Woodmeadow Dr., Haigh Ave., Geremonty Dr.)-2005
New Prime Wetlands (Olde Wood Rd., Rt. 111/Ermer Rd., Beaver Brook Lane)-2006
Post-development Runoff Equal to Pre-Development Rate-2007
Prohibit New Buildings in Floodplain-2007
Increase Compensatory Storage for Floodplain Fill to 2:1 ratio-2007
New Prime Wetlands (Scotland/Lake/Millville, So. Policy/Pleasant)-2007
Amend Floodplain Development Ordinance-2009
50' Shoreland Setback-2010
Snow Storage/Disposal and Winter Salt/Sand Storage Regulations – 2012
Inclusion of Vernal Pools in Wetland Definition – 2013
Conditional Use Permit for Wetland Impacts/Setbacks/Buffers - 2013

Growth Management

Senior Housing Ordinance Revisions-2002, 2003, 2004, 2017
Combined School/Road/Recreation/Public Safety Impact Fee Ordinance-2005
Eliminate Special Exceptions in Commercial Districts-2005
Restrict Size of Office Buildings on Main St.-2006
Rezone Lots on Main St. from Town Center to Business-Office District-2006
Phasing Requirement for Multi-Family Housing-2008
Revise Impact Fee Schedule-2015, 2016

Transportation

Private Road Improvements- K-Mart-2002, Kensington-2004, BSS Properties-2005, STG Realty-2005,
Lowe's-2009, CVS/Advance Auto Parts-2010, Braemoor Woods-2014, LCB Senior Living-2016
Connecting Driveways/Parking Lots-
Private Sidewalk Extensions –Lawrence Rd. (Village at Town Center)-2005, Butler St.-2010,
Hampshire Rd. (CVS/Advance Auto Parts)-2011
Sidewalk Master Plan-2012
Adopt Route 28 Corridor Bike-Ped Plan-2012

Other

Wal-Mart Recreation Field-2001
Require As-Built Site Plans-2004
Require Outside Construction Inspections-2004
Prohibit Major Home Occupations-2005
Mobile Wireless Facilities Ordinance-2005
Increase Parking Requirement for Restaurants-2006
Building Envelope Regulation-2006
Maintenance Bond Requirement for Streets-2006
Revise Parking Requirement for Medical Offices-2008
Parking Proximity Requirement-2008
Conditional Use Permits for Parking Requirements-2008
Conditional Use Permits for Sign Requirements-2009
Revise Permitted Uses (farming, kennels) in Rural District-2009
Wind Energy Ordinance-2010
Zoning Ordinance Reorganization-2010

State Register of Historic Places-2010 (Old Town Hall) and 2011 (School House #5, Depot Train Station)

National Register of Historic Places-2011 (Old Town Hall and Salem Common Historic District)

Allow Non-Commercial Keeping of Chickens-2016