Vision Chapter

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Atkinson Vision Statement

Atkinson enjoys a high quality of life represented by distinct community character, and outstanding natural and recreational resources. This has been achieved through careful planning, stewardship of natural resources, infrastructure investment, dependable municipal services and volunteerism.

Atkinson's vision is to preserve our rural character, and our natural, historical and cultural resources, while providing municipal and commercial services, recreational facilities and housing options which support the needs of the community in a fiscally, socially and environmentally responsible manner.

Atkinson is primarily a residential community that would like to encourage land uses such as agriculture, single-family homes, local businesses, and the conservation and protection of natural resources. The Town seeks to preserve our rural character, our natural, historical and cultural resources, while providing municipal and commercial services, recreational facilities and housing options that support the needs of the community in a fiscally, socially and environmentally sustainable manner.

Atkinson desires to maintain a well planned community with a rural residential and agricultural character, housing options, diversified but limited commercial and economic development, quality education and municipal services, and protected natural and historic resources.

A. Introduction

Presented below are the goals, objectives and policies prepared by the Planning Board to assist the town in implementing an overall vision for the Master Plan. It is important that these goals, objectives and policies be supported by the Planning Board and the Board of Selectmen, so that subsequent planning recommendations can be set forth affording the voters the opportunity to guide the development of the Town of Atkinson. The goals, objectives and policies are part of the

Master Plan and serve as an overall umbrella for the Town's development plan. The following definitions apply to the terms goals, objectives and policies as presented in this chapter.

Goals: A Goal is defined as a fundamental purpose that requires the application of long-term effort and energies of the Town. It is designed to give direction, guidance and coordination to the Town's changes and future development.

Objectives: As part of the attainment of goals, specific objectives are designed to make recommendations that contribute to the fulfillment of the established goals for Atkinson.

Policies: The Planning Board may suggest policies to the Selectmen and the Voters. The legislative body should make decisions that implement policy recommendations. In order to realize goals and objectives, policies must be consistent with the Master Plan.

It should be recognized that the articulation of goals and the establishment of objectives along with the policies necessary to carry out these goals are an ongoing process. Goals and objectives along with the appropriate policies for implementation may be added to, amended and changed as necessary and should be addressed as a basic element in the ongoing Master Planning process.

B. Goals, Objectives And Policies

Goal 1. Retain a high quality of life for Atkinson residents.

This basic and broad goal is one upon which subsequent goals must rest. It is stated here, though broad, for true value and planning purposes. This goal assures the continued focus on the quality of life in Atkinson.

Objective: In order to attain such a vast goal, the Town must accept the responsibility of creating conditions for all citizens that may best meet basic human needs and are commensurate with the common good. To attain this, it is important that both the individual and the community follow through with a plan that has as its aim a balanced program for change and development.

Policy: The Master Plan must provide the framework for the continuation and improvement of policies aimed at providing for the well-being of the citizens of Atkinson and for providing for growth and change without undue hardship in retaining the quality of life established to this date.

Goal 2. Maintain Atkinson's role in the regional development and economic setting.

The Town should not be expected to provide employment opportunities and services, and thereby accepts a continued dependence on outlying communities to provide employment and services. The majority of land in Atkinson is zoned residential with limited commercial and

industrial zoning districts not located or established for retail and service oriented development.

Objective: The Town seeks to maintain a primarily desirable residential development pattern and environment through zoning and land uses standards (e.g. lot size, cluster subdivisions) that preserve open space and minimize demand on municipal services.

Policy: The policy must be one that continues an attractive residential community.

Goal 3. Retain and protect property values and control property taxes.

The Town must recognize the importance of the protection of existing property values within Atkinson, the maintenance of open spaces, fostering of community pride and protection of natural resources.

Objective: The objective is to provide for balanced growth and change while maintaining the existing rural character of the community. The objective must reflect the densities and specific uses permitted within certain areas of the community. The careful identification of land uses and their interrelationship and coordination with soil and subsoil is imperative.

Policy: The adoption of subdivision regulations and zoning ordinances that are designed to be commensurate with the community's capacity to assume growth and change must be kept in mind.

Goal 4. Provide adequate recreational facilities and programs.

Atkinson should continue to expand recreational opportunities for the town. This goal is to provide for the continued opportunity for residents to enjoy physical activities.

Objective: The objective is the establishment of a long range open space and recreational improvement program that provides for strategic locations of publicly accessed land. Any recreational program must recognize the need for balanced year round recreational opportunities.

Policy: The policy necessary for the continued progress towards acquiring open space and developing recreational opportunities in the town is to adopt a long term plan, and to seek all possible sources of funds to make appropriate purchases and improvements. Sources of funding are the Capital Improvement Plan, Land Use Change Tax, and General Fund.

Goal 5. Maintain a safe and efficient network of roads and highways.

The goal should be to provide for a street and highway network that will discourage major through traffic and be one that is primarily designed to serve the residents of the community. In addition, Atkinson must actively cooperate with area towns to assure that regional highways

meet the needs of all communities. Traffic congestion on regional arterials is an increasing source of frustration to the residents. The Town should collaborate with the NH Department of Transportation and Rockingham Planning Commission to address traffic concerns.

Objective: The objective of this goal is the maintenance of a residential community environment. This means that access should be provided, but that fast and high volumes of traffic should be limited to certain areas of town. The creation of road and highway networks should primarily serve the residents of Atkinson.

Supported by the Transportation Chapter of the Master Plan and Capital Improvement Plan, the Highway Department should maintain a comprehensive roads strategy. Since roads represent the most significant part of Atkinson's budget, it is recommended that a professionally prepared maintenance, reconstruction, construction plan be developed and updated periodically.

Policy: The policy is to adopt road and highway standards that retain the scenic roads, encourage the continuing maintenance of the road network, and adopt standards and specifications that are designed to meet the needs for the assigned functions.

Although road maintenance is not strictly under the jurisdiction of the Planning Board, except for its responsibility to prepare a Capital Improvements Plan, the Master plan and Capital Improvements Plan should serve as a catalyst for all involved parties (Board of Selectmen, Planning Board, Road Agent) to agree on a long-term road maintenance/reconstruction/construction strategy.

Goal 6. Ensure adequate sewage disposal and water supplies for developed lands.

The goal is to maintain a sufficiently low development density that will allow for individual sewage disposal facilities and individual water supplies. Such a goal is to be established under the existing water quality laws of the State of New Hampshire and those health regulations in the Town of Atkinson.

Objective: The objective is to avoid the large capital expenditure required to provide public sewer and water services. To assure the avoidance of town water and sewer, an objective is to provide for continued measures that allow such densities and such regulations addressing subsoil conditions that will keep individual water supplies and sewage disposal systems efficient without ground water or surface water pollution.

Policy: The policy to attain such a goal and accomplish the objective is to provide for a detailed project review that will address soil and subsoil conditions. This will also require sufficiently low densities throughout the community so that water pollution will not occur, ensuring safe and sufficient water for the foreseeable future.

Goal 7. Maintain and update the Master Plan, as recommended in RSA 676.

A master plan is not a static document. Information and conditions change, and the citizens of Atkinson need to provide continued input to the planning process. RSA 676 requires that local master plans maintain and update every 5 to 7 years a Vision Chapter and a Land Use Chapter (existing and future conditions). The Atkinson Master Plan also includes the following chapters: Community Profile, Transportation, Community Facilities, Natural Resources (Inventory), Housing, Economic Considerations and Planning Issues.

Objective: The Master Plan and associated capital improvement program will be kept up to date on an ongoing basis.

Policy: The Master Plan and CIP will be reviewed annually by the Planning Board to determine if significant changes have occurred in its underlying assumptions. Any changes of these underlying assumptions will be cause for an update.

The following content from the 2012 Master Plan Vision Session and Community Survey.

C. Summary of Public Input and Comment

2012 Atkinson Community Survey Results

The following tables summarize participant survey responses grouped as High Priority and Low Priority action items based on their ranking. Each of the action items are assigned to one or more of four categories:

1 = Environmental or Natural Resources
2 = Municipal Services or Facilities
3 = Land Use and Zoning (growth and population)
4 = Regulatory

The categories generally describe the type of action stated.

2012 Atkinson Community Survey - Summary of High Priority Action Items

1 = Environmental or Natural Resources, 2 = Municiple Services or Facilities, 3 = Land Use and Zoning(Growth and population), 4 = Regulatory

				Low		Neutral			High	
3	a) Preserve open spaces -- fields, forests, and farms	12	25	**7%**	107	**20%**	159	226	**72%**	532
2 or 3	g) Preserve historical sites/ buildings	30	74	**19%**	150	**28%**	164	114	**52%**	534
2 or 3	j) Control property taxes	2	15	**3%**	42	**8%**	129	339	**88%**	532
3 or 4	k) Maintain Atkinson's rural character	10	7	**3%**	45	**8%**	131	338	**88%**	535
1 and 4	l) Protect lakes, rivers, wetlands	8	14	**4%**	80	**15%**	152	279	**80%**	536
1 and 4	m) Establish streamside buffers to preserve water quality and wildlife habitat	17	33	**9%**	105	**20%**	137	232	**69%**	534
3	n) Minimize pollution	7	15	**4%**	74	**14%**	128	302	**81%**	532
4	o) Strengthen enforcement of environmental regulations	26	47	**14%**	116	**22%**	141	193	**63%**	531
1 or 4	p) Protect groundwater/drinking water supplies	9	14	**4%**	35	**7%**	95	371	**88%**	529
2	u) Increase participation in recycling, composting and yard waste disposal.	33	51	**16%**	165	**31%**	136	143	**52%**	537
3	a. Single Family Homes	33	34	**13%**	146	**28%**	137	174	**59%**	526
3 and 4	b) New zoning incentives to encourage conservation	23	35	**11%**	159	**30%**	179	128	**58%**	526
3 and 4	c) Zoning that encourages wind, solar and water power as energy sources	52	35	**16%**	123	**23%**	176	136	**59%**	530
1 or 4	g) Wetlands setback should stay at 100 feet	34	35	**13%**	135	**26%**	115	166	**54%**	521
1 or 2	b) Acquire properties for additional conservation land	62	56	**22%**	122	**23%**	170	115	**54%**	532
2	d) Support the use of more ecologically friendly treatments for icy roads	14	25	**7%**	161	**30%**	200	126	**61%**	532
2	e) Create and support programs that will allow elderly citizens to remain independently in their homes	17	25	**8%**	61	**11%**	146	278	**80%**	531
2	j) Provide senior transport services	32	27	**11%**	80	**15%**	158	224	**72%**	530
2	b) Handling winter road conditions	29	67	**18%**	60	**11%**	197	170	**69%**	532
2	e) Recycling programs	13	32	**8%**	68	**13%**	205	209	**78%**	531
2	f) Volunteer fire department	15	18	**6%**	44	**8%**	111	326	**82%**	530

2	g) Police department	29	26	**10%**	49	**9%**	107	317	**79%**	535
2	i) Town website	20	32	**10%**	148	**28%**	141	144	**54%**	531
2	j) Recreation facilities	17	30	**9%**	167	**32%**	146	129	**52%**	529

2012 Atkinson Community Survey - Summary of Low Priority Action Items

1 = Environmental or Natural Resources, 2 = Municiple Services or Facilities, 3 = Land Use and Zoning(Growth and population), 4 = Regulatory

				Low		Neutral			High	
3 or 4	e) Encourage residential development	214	168	**73%**	100	**19%**	31	8	**7%**	525
3 or 4	f) Encourage limited commercial development	166	109	**52%**	126	**24%**	81	45	**24%**	530
2	q) Construct public sewer system	182	116	**56%**	95	**18%**	65	56	**23%**	529
2	r) Consider a Town owned and operated water	169	113	**53%**	101	**19%**	60	63	**23%**	530
3	c. Low and Moderate Income Housing	189	117	**58%**	122	**23%**	69	28	**18%**	527
3	d. Apartments	240	140	**72%**	101	**19%**	36	10	**9%**	529
3	f. Retail Stores	192	125	**60%**	118	**22%**	65	28	**18%**	531
3	h. Heavy Manufacturing	362	87	**85%**	49	**9%**	20	12	**6%**	530
3	j. Chain Stores	350	96	**84%**	53	**10%**	20	9	**5%**	528
3	k. Corporate Chain Stores / Shopping Centers	372	84	**86%**	42	**8%**	27	8	**7%**	533
3	n. Cluster residential development	181	114	**56%**	156	**29%**	56	11	**13%**	530
3	a) Allow more commercial zones	265	124	**74%**	74	**14%**	54	9	**12%**	529
3 or 4	d) Zoning that would allow rental apartments in	213	115	**61%**	103	**19%**	72	28	**19%**	534
1 or 4	f) Wetlands setback should be less than 100 feet	237	79	**62%**	88	**17%**	40	32	**14%**	510
1 or 2	c) Allow motorized vehicles on some conservation	239	110	**66%**	101	**19%**	52	20	**14%**	525
2	a) Construct a skateboard park	251	82	**62%**	115	**22%**	67	15	**15%**	533
2	c) Build a public swimming pool	268	68	**64%**	80	**15%**	60	47	**20%**	525
3 or 4	d) Allow cell towers in residential districts	207	93	**56%**	97	**18%**	81	49	**24%**	531
2	e) Build a new community center	178	102	**53%**	126	**24%**	80	35	**22%**	526

2012 Atkinson Community Survey - Summary of No Consensus Action Items

1 = Environmental or Natural Resources, 2 = Municiple Services or Facilities, 3 = Land Use and Zoning(Growth and population), 4 = Regulatory

				Low		Neutral			High	
3	b) Enhance Atkinson Town Center	106	126	**44%**	195	**37%**	60	36	**18%**	524
2	c) Expand recreational opportunities	95	128	**43%**	193	**37%**	72	32	**20%**	522
3	h) Slow town population growth	48	64	**21%**	156	**30%**	118	129	**47%**	521
3	i) Improve the affordability of housing	150	103	**48%**	138	**26%**	63	64	**24%**	529
3	s) Allow housing and continual care facilities for the e	67	89	**29%**	184	**35%**	107	79	**35%**	529
2 or 3	t) Expand natural gas service to homes and businesse	126	70	**37%**	147	**28%**	82	83	**31%**	525
2 or 3	v) Improve cost saving, energy efficiency and conserv	36	57	**18%**	173	**33%**	141	113	**48%**	531
3	b. Townhouse and Condominiums	100	116	**41%**	169	**32%**	107	38	**27%**	531
3	e. Professional Offices	85	77	**31%**	181	**35%**	141	32	**33%**	521
3	g. Light Manufacturing / Technology Business	156	99	**48%**	130	**25%**	112	27	**26%**	529
3	i. Home Businesses	61	43	**20%**	199	**38%**	131	86	**41%**	525
3	l. Restaurants	93	74	**32%**	180	**34%**	133	47	**34%**	528
3	m. Tourism related business	122	76	**38%**	204	**39%**	81	31	**21%**	524
3	e) Zoning changes to reduce 3 acre zones to 2 acres	142	75	**41%**	167	**31%**	79	40	**22%**	531
1 or 4	h) Wetlands setback should be greater than 100 fee	109	61	**33%**	160	**31%**	57	88	**28%**	518
2	a) Acquire properties to become part of an enhance	135	95	**44%**	130	**25%**	120	38	**30%**	527
1 or 2	f) Expand types of uses on recreational trails.	72	56	**24%**	169	**32%**	146	71	**41%**	530
1 or 3	g) Open space in cluster developments should be op	104	78	**34%**	156	**30%**	90	74	**31%**	528
2	b) Construct a dog park	169	79	**46%**	110	**21%**	99	72	**32%**	534
2 or 3	f) Install sidewalks in the Town Center areas	163	92	**48%**	113	**21%**	90	62	**29%**	526
1 or 2	g) Improve trails on public and private land to includ	74	64	**26%**	194	**37%**	124	66	**36%**	530
2	h) Establish a town beach at Island Pond	103	44	**28%**	127	**24%**	122	125	**47%**	529
2	i) Provide alternative transportation and ride-share	67	46	**21%**	203	**38%**	111	68	**34%**	528
2	k) A fund to replace roadside trees as they die	98	61	**30%**	120	**23%**	142	102	**46%**	531
2	a) Response to threat of EEE (mosquito spraying)	44	51	**18%**	166	**32%**	95	76	**33%**	519

2 or 3	c) Protecting your water supply - public	49	51	**19%**	138	**27%**	99	51	**29%**	517
1 or 3	d) Protecting your water supply - private	64	65	**25%**	141	**27%**	106	56	**31%**	523
2	h) Channel 20 – cable access channel	24	45	**13%**	142	**27%**	107	119	**42%**	533
3 or 4	k) Zoning ordinances	17	51	**13%**	191	**36%**	126	60	**35%**	526
2	l) Town's rate of growth	25	64	**17%**	196	**37%**	145	57	**38%**	527
2	m) Plans and preparation for emergencies (e.g. pande	25	39	**12%**	161	**31%**	83	53	**26%**	519

Summary of HIGH Priority Action Items from the 2012 Atkinson Community Survey

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3	a) Allow more commercial zones	265	124	**74%**	74	**14%**	54	9	**12%**	529
3 or 4	d) Zoning that would allow rental apartments in single-family dwellings.	213	115	**61%**	103	**19%**	72	28	**19%**	534
1 or 4	f) Wetlands setback should be less than 100 feet	237	79	**62%**	88	**17%**	40	32	**14%**	510
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2012 Master Plan Vision Session with the Atkinson Planning Board

Following is a summary of open general discussion by participants at the Planning Board Master Plan Vision Session held on Wednesday June 6, 2012.

Quality of Life

- Sense of community
- Involvement in town affairs and community activities
- Volunteerism, people working together, opportunity to serve and be served
- Independent living
- Home values and personal investment
- Friendliness
- Rural atmosphere and environment, low density development, low traffic congestion
- Nearby amenities, advantageous location relative to services
- Excellent safety, security and service provided by police and fire departments
- Accessible town hall, participation in governance
- Excellent town services including programs for elderly and disabled residents
- Quiet atmosphere, privacy
- Limit street lighting
- Clean air, healthy family environment, low pollution
- Open space, trails, recreation and nature areas
- Low tax rate, affordability
- Family friendly neighborhoods
- Access to indoor and outdoor recreation, parks, playgrounds, swimming pools
- Good schools
- Preservation and restoration efforts
- Minimal commercial/industrial presence

Zoning for Home Businesses

- Encourage but with strict limitations on scale and activities
- Avoid external impacts to residents and change to community character
- Concerns over traffic impacts
- Adequate regulation exists through ZBA approval process
- Don’t over-regulate unnecessarily
- Low visibility
- Benefit of income for residents who need it

Dislikes/Needs

- No train layover station
- Less street lighting
- Improve cell phone coverage
- Opportunity for home businesses to expand/move to office space (condominium or rental units)

- Home business – ZBA may consider notification of abutter for renewal of 2-year permit
- Increased traffic on Route 125

Following is a summary of small group discussions focuses on transportation and roads, energy, utilities, recreation and trails, Conservation and open space, and housing.

Transportation/Roads

- ✓ Signs to identify cul-de-sacs as "no exit" roads
- ✓ Consider bike lanes on connector roads
- ✓ Need to for greater street network connectivity (through-roads)
- ✓ Complete a core sample study for all roads
- ✓ Post more speed limit signs
- ✓ Post scenic by-way signs
- ✓ Need to more speed control devices (speed bumps, etc)
- ✓ Evaluate need for alternative forms of transit
- ✓ Evaluate potential for creation of more bike paths/trails
- ✓ Increase access to public transportation in town and in the region

Energy

- ✓ One-stop energy education and information portal for residents
- ✓ Incentives, local tax rebates or property tax exemption
- ✓ Support goal of town certified as an energy efficient or "green" community
- ✓ Adopt/support town-wide goal for energy use reduction (i.e. target and/or benchmark)
- ✓ Publicize more widely ongoing and new efficiency and conservation efforts
- ✓ Record testimonials by residents who have achieved efficiency and conservation goals
- ✓ Develop short "public service announcements" about efficiency and conservation tips
- ✓ Develop energy programming for children and schools to motivate participation by parents
- ✓ Adopt "fee per bag" program to reduce trash removal costs and promote recycling
- ✓ Encourage and/or make space for town composting/yard waste disposal facility
- ✓ Develop recycling program for CFL's

Utilities

- ✓ Cell Towers – amend zoning to enable placement to improve local service
- ✓ Cable Services – improve choices in providers; evaluate wireless solutions for private, business and municipal use
- ✓ Satellite Service– ensure that dish structures are concealed
- ✓ Natural Gas – evaluate potential for expansion of service and funding mechanisms
- ✓ Power Line Infrastructure – upgrades needed to avoid frequent, lengthy service interruptions; evaluate options for substations and underground lines
- ✓ Water Service – potential for expansion of privately owned water supply to residents and/or businesses

Recreation and Trails

- ✓ Need bike trails, improvements to popular areas
- ✓ Complete a needs assessment for 2030
- ✓ Better communication to public about resources and access
- ✓ Coordinate with educators to encourage use by students
- ✓ Evaluate location to create a dog park, rifle/shooting range, skateboard park, indoor swimming pool and indoor skating rink
- ✓ Improve planning, frequency and methods for trail maintenance
- ✓ Work to extend existing trails
- ✓ Acquire better maintenance equipment
- ✓ Improve access and parking to trail system (need land/easements)
- ✓ Establish a trust to fund maintenance activities; seek additional funds/financing options
- ✓ Post requirements and rules for use of trails, parks and other recreation areas
- ✓ Expand opportunities for horseback riding, snowshoeing and cross-country skiing
- ✓ Evaluate need for separate trails for motorized recreation
- ✓ Town Beach – currently used mostly for fishing; with some improvements, space available to create parking and beach recreation area

Conservation and Open Space

- ✓ Publicize availability of conservation lands, access and uses
- ✓ Evaluate availability, cost and potential uses of the Brown property (community garden, museum, active farming)
- ✓ Use of existing Open Space Cluster Development zoning improves scenic roads, provides trail easements and linkages between open space areas; does zoning conserve enough land?
- ✓ Need for bathroom facilities and parking at open space conservation areas
- ✓ Town relies heavily on the land use change tax to support conservation
- ✓ Need to establish a dedicated account to save for future land purchases
- ✓ Village District zone – conserved through restricted use and development requirements
- ✓ Establish committee to execute land purchases, advise capital reserve funds
- ✓ Establish garden/farming/agriculture program with schools
- ✓ Need to integrate conservation in planning and regulation to enhance existing zoning provisions
- ✓ Develop a concept plan for a town-wide trail system
- ✓ Develop a 50-year concept plan to link conservation lands and plan for future conservation/open space
- ✓ Support purpose of conserving land – wetland protection, green space and habitat preservation, recreation, education/study, water quality

Housing

- ✓ Need for housing and care options for 55+ residents that want to remain in the community

- ✓ Improve regulation of in-law apartments to provide housing choices for seniors, students and younger residents
- ✓ Need for affordable housing choices (smaller homes, smaller lots) for all, including affordable "transition" housing for seniors
- ✓ Evaluate zoning options to permit "multi-generational" housing for families and extended families
- ✓ Golf course/recreation zone 5-story buildings out of keeping with rural character
- ✓ Provide examples of "quality traditional development" in the region to guide future planning
- ✓ Limited retail in cluster developments would be beneficial

Other topics that came up in the small group discussions include the following.

- Municipal property acquisition (for municipal facilities and community services)
- Parking at Peter Williams and Wood properties
- Cooperative Farm/Community Gardens at Brown, Hightop Farm and Wood Farm
- Finance options include bonds, trust fund, capital improvement fund
- Need inventory of available and beneficial lands
- Community Center needs improved accommodations and programming for seniors and disabled

Atkinson Community Survey 2012

SurveyMonkey

1. Please indicate how high a priority you place on each of the possible goals/activities for Atkinson.

	Not a Priority	Low Priority	Medium Priority	High Priority	Very High Priority	DK/NA	Rating Average	Response Count
a) Preserve open spaces -- fields, forests, and farms	2.3% (12)	4.7% (25)	20.1% (107)	29.9% (159)	**42.5% (226)**	0.6% (3)	4.06	532
b) Enhance Atkinson Town Center	20.2% (106)	24.0% (126)	**37.2% (195)**	11.5% (60)	6.9% (36)	0.2% (1)	2.61	524
c) Expand recreational opportunities	18.2% (95)	24.5% (128)	**37.0% (193)**	13.8% (72)	6.1% (32)	0.4% (2)	2.65	522
d) Expand existing businesses	27.9% (147)	**29.2% (154)**	26.4% (139)	11.8% (62)	4.0% (21)	0.8% (4)	2.34	527
e) Encourage residential development	**40.8% (214)**	32.0% (168)	19.0% (100)	5.9% (31)	1.5% (8)	0.8% (4)	1.95	525
f) Encourage limited commercial development	**31.3% (166)**	20.6% (109)	23.8% (126)	15.3% (81)	8.5% (45)	0.6% (3)	2.49	530
g) Preserve historical sites/ buildings	5.6% (30)	13.9% (74)	28.1% (150)	**30.7% (164)**	21.3% (114)	0.4% (2)	3.48	534
h) Slow town population growth	9.2% (48)	12.3% (64)	**29.9% (156)**	22.6% (118)	24.8% (129)	1.2% (6)	3.42	521
i) Improve the affordability of housing	**28.4% (150)**	19.5% (103)	26.1% (138)	11.9% (63)	12.1% (64)	2.1% (11)	2.59	529
j) Control property taxes	0.4% (2)	2.8% (15)	7.9% (42)	24.2% (129)	**63.7% (339)**	0.9% (5)	4.50	532
k) Maintain Atkinson's rural character	1.9% (10)	1.3% (7)	8.4% (45)	24.5% (131)	**63.2% (338)**	0.7% (4)	4.47	535

l) Protect lakes, rivers, wetlands	1.5% (8)	2.6% (14)	14.9% (80)	28.4% (152)	**52.1% (279)**	0.6% (3)	4.28	536
m) Establish streamside buffers to preserve water quality and wildlife habitat	3.2% (17)	6.2% (33)	19.7% (105)	25.7% (137)	**43.4% (232)**	1.9% (10)	4.02	534
n) Minimize pollution	1.3% (7)	2.8% (15)	13.9% (74)	24.1% (128)	**56.8% (302)**	1.1% (6)	4.34	532
o) Strengthen enforcement of environmental regulations	4.9% (26)	8.9% (47)	21.8% (116)	26.6% (141)	**36.3% (193)**	1.5% (8)	3.82	531
p) Protect groundwater/drinking water supplies	1.7% (9)	2.6% (14)	6.6% (35)	18.0% (95)	**70.1% (371)**	0.9% (5)	4.54	529
q) Construct public sewer system	**34.4% (182)**	21.9% (116)	18.0% (95)	12.3% (65)	10.6% (56)	2.8% (15)	2.41	529
r) Consider a Town owned and operated water utility	**31.9% (169)**	21.3% (113)	19.1% (101)	11.3% (60)	11.9% (63)	4.5% (24)	2.48	530
s) Allow housing and continual care facilities for the elderly and other populations in need	12.7% (67)	16.8% (89)	**34.8% (184)**	20.2% (107)	14.9% (79)	0.6% (3)	3.08	529
t) Expand natural gas service to homes and businesses	24.0% (126)	13.3% (70)	**28.0% (147)**	15.6% (82)	15.8% (83)	3.2% (17)	2.85	525
u) Increase participation in recycling, composting and yard waste disposal.	6.1% (33)	9.5% (51)	**30.7% (165)**	25.3% (136)	26.6% (143)	1.7% (9)	3.58	537
v) Improve cost saving, energy efficiency and conservation actions by homes and businesses	6.8% (36)	10.7% (57)	**32.6% (173)**	26.6% (141)	21.3% (113)	2.1% (11)	3.46	531
						answered question		**542**
						skipped question		**2**

2. In the next five years, would you like to see the population of Atkinson …

		Response Percent	Response Count
___ Decrease		6.9%	35
___ **Stay the same**		**59.4%**	**300**
___ Grow slightly		33.7%	170
___ Grow faster		0.6%	3
		answered question	**505**
		skipped question	**39**

3. What is your opinion of the following types of development in Atkinson?

	Strongly Oppose	Oppose Somewhat	Neutral	Favor Somewhat	Strongly Favor	DK/NA	Rating Average	Response Count
a. Single Family Homes	6.3% (33)	6.5% (34)	27.8% (146)	26.0% (137)	**33.1% (174)**	0.4% (2)	3.73	526
b. Townhouse and Condominiums	18.8% (100)	21.8% (116)	**31.8% (169)**	20.2% (107)	7.2% (38)	0.2% (1)	2.75	531
c. Low & Moderate Income Housing	**35.9% (189)**	22.2% (117)	23.1% (122)	13.1% (69)	5.3% (28)	0.4% (2)	2.30	527
d. Apartments	**45.4% (240)**	26.5% (140)	19.1% (101)	6.8% (36)	1.9% (10)	0.4% (2)	1.93	529
e. Professional Offices	16.3% (85)	14.8% (77)	**34.7% (181)**	27.1% (141)	6.1% (32)	1.0% (5)	2.92	521
f. Retail Stores	**36.2% (192)**	23.5% (125)	22.2% (118)	12.2% (65)	5.3% (28)	0.6% (3)	2.27	531
g. Light Manufacturing / Technology Business	**29.5% (156)**	18.7% (99)	24.6% (130)	21.2% (112)	5.1% (27)	0.9% (5)	2.53	529
h. Heavy Manufacturing	**68.3% (362)**	16.4% (87)	9.2% (49)	3.8% (20)	2.3% (12)	0.0% (0)	1.55	530
i. Home Businesses	11.6% (61)	8.2% (43)	**37.9% (199)**	25.0% (131)	16.4% (86)	1.0% (5)	3.27	525
j. Chain Stores	**66.3% (350)**	18.2% (96)	10.0% (53)	3.8% (20)	1.7% (9)	0.0% (0)	1.56	528
k. Corporate Chain Stores / Shopping Centers	**69.8% (372)**	15.8% (84)	7.9% (42)	5.1% (27)	1.5% (8)	0.0% (0)	1.53	533
l. Restaurants	17.6% (93)	14.0% (74)	**34.1% (180)**	25.2% (133)	8.9% (47)	0.2% (1)	2.94	528
m. Tourism related business	23.3% (122)	14.5% (76)	**38.9% (204)**	15.5% (81)	5.9% (31)	1.9% (10)	2.66	524
n. Cluster residential development	**34.2% (181)**	21.5% (114)	29.4% (156)	10.6% (56)	2.1% (11)	2.3% (12)	2.23	530
						answered question		**539**

skipped question	**5**

4. Please indicate if you favor or oppose the following zoning changes in Atkinson.

	Strongly Oppose	Oppose Somewhat	Neutral	Favor Somewhat	Strongly Favor	DK/NA	Rating Average	Response Count
a) Allow more commercial zones	**50.1% (265)**	23.4% (124)	14.0% (74)	10.2% (54)	1.7% (9)	0.6% (3)	1.89	529
b) New zoning incentives to encourage conservation	4.4% (23)	6.7% (35)	30.2% (159)	**34.0% (179)**	24.3% (128)	0.4% (2)	3.68	526
c) Zoning that encourages wind, solar and water power as energy sources	9.8% (52)	6.6% (35)	23.2% (123)	**33.2% (176)**	25.7% (136)	1.5% (8)	3.59	530
d) Zoning that would allow rental apartments in single-family dwellings.	**39.9% (213)**	21.5% (115)	19.3% (103)	13.5% (72)	5.2% (28)	0.6% (3)	2.22	534
e) Zoning changes to reduce 3 acre zones to 2 acres in the northwest part of town	26.7% (142)	14.1% (75)	**31.5% (167)**	14.9% (79)	7.5% (40)	5.3% (28)	2.60	531
f) Wetlands setback should be less than 100 feet	**46.5% (237)**	15.5% (79)	17.3% (88)	7.8% (40)	6.3% (32)	6.7% (34)	2.06	510
g) Wetlands setback should stay at 100 feet	6.5% (34)	6.7% (35)	25.9% (135)	22.1% (115)	**31.9% (166)**	6.9% (36)	3.71	521
h) Wetlands setback should be greater than 100 feet	21.0% (109)	11.8% (61)	**30.9% (160)**	11.0% (57)	17.0% (88)	8.3% (43)	2.90	518
						answered question		**537**
						skipped question		**7**

5. Please indicate if you favor or oppose the following service and recreation activities in Atkinson.

	Strongly Oppose	Oppose Somewhat	Neutral	Favor Somewhat	Strongly Favor	DK/NA	Rating Average	Response Count
a) Acquire properties to become part of an enhanced Town Center district with municipal buildings, recreation area and schools	**25.6% (135)**	18.0% (95)	24.7% (130)	22.8% (120)	7.2% (38)	1.7% (9)	2.67	527
b) Acquire properties for additional conservation land	11.7% (62)	10.5% (56)	22.9% (122)	**32.0% (170)**	21.6% (115)	1.3% (7)	3.42	532
c) Allow motorized vehicles on some conservation lands	**45.5% (239)**	21.0% (110)	19.2% (101)	9.9% (52)	3.8% (20)	0.6% (3)	2.05	525
d) Support the use of more ecologically friendly treatments for icy roads	2.6% (14)	4.7% (25)	30.3% (161)	**37.6% (200)**	23.7% (126)	1.1% (6)	3.76	532
e) Create and support programs that will allow elderly citizens to remain independently in their homes	3.2% (17)	4.7% (25)	11.5% (61)	27.5% (146)	**52.4% (278)**	0.8% (4)	4.22	531
f) Expand types of uses on recreational trails.	13.6% (72)	10.6% (56)	**31.9% (169)**	27.5% (146)	13.4% (71)	3.0% (16)	3.17	530
g) Open space in cluster developments should be open to the public	19.7% (104)	14.8% (78)	**29.5% (156)**	17.0% (90)	14.0% (74)	4.9% (26)	2.90	528
						answered question		**537**
						skipped question		**7**

6. Please indicate if you favor or oppose the following additions in Atkinson.

	Strongly Oppose	Oppose Somewhat	Neutral	Favor Somewhat	Strongly Favor	DK/NA	Rating Average	Response Count
a) Construct a skateboard park	**47.1% (251)**	15.4% (82)	21.6% (115)	12.6% (67)	2.8% (15)	0.6% (3)	2.08	533
b) Construct a dog park	**31.6% (169)**	14.8% (79)	20.6% (110)	18.5% (99)	13.5% (72)	0.9% (5)	2.67	534
c) Build a public swimming pool	**51.0% (268)**	13.0% (68)	15.2% (80)	11.4% (60)	9.0% (47)	0.4% (2)	2.14	525
d) Allow cell towers in residential districts	**39.0% (207)**	17.5% (93)	18.3% (97)	15.3% (81)	9.2% (49)	0.8% (4)	2.38	531
e) Build a new community center	**33.8% (178)**	19.4% (102)	24.0% (126)	15.2% (80)	6.7% (35)	1.0% (5)	2.41	526
f) Install sidewalks in the Town Center areas	**31.0% (163)**	17.5% (92)	21.5% (113)	17.1% (90)	11.8% (62)	1.1% (6)	2.61	526
g) Improve trails on public and private land to include handicap access	14.0% (74)	12.1% (64)	**36.6% (194)**	23.4% (124)	12.5% (66)	1.5% (8)	3.08	530
h) Establish a town beach at Island Pond	19.5% (103)	8.3% (44)	**24.0% (127)**	23.1% (122)	23.6% (125)	1.5% (8)	3.23	529
i) Provide alternative transportation and ride-share as options to single-occupancy vehicles	12.7% (67)	8.7% (46)	**38.4% (203)**	21.0% (111)	12.9% (68)	6.3% (33)	3.14	528
j) Provide senior transport services	6.0% (32)	5.1% (27)	15.1% (80)	29.8% (158)	**42.3% (224)**	1.7% (9)	3.99	530
k) A fund to replace roadside trees as they die	18.5% (98)	11.5% (61)	22.6% (120)	**26.7% (142)**	19.2% (102)	1.5% (8)	3.17	531
						answered question		**538**

skipped question	**6**

7. Please rate your satisfaction with the following existing Town services.

	Very Satisfied	Somewhat Satisfied	Neutral	Somewhat Unsatisfied	Very Unsatisfied	DK/NA	Rating Average	Response Count
a) Response to threat of EEE (mosquito spraying)	14.6% (76)	18.3% (95)	**32.0% (166)**	9.8% (51)	8.5% (44)	16.8% (87)	2.75	519
b) Handling winter road conditions	32.0% (170)	**37.0% (197)**	11.3% (60)	12.6% (67)	5.5% (29)	1.7% (9)	2.21	532
c) Protecting your water supply - public	9.9% (51)	19.1% (99)	**26.7% (138)**	9.9% (51)	9.5% (49)	25.0% (129)	2.87	517
d) Protecting your water supply - private	10.7% (56)	20.3% (106)	**27.0% (141)**	12.4% (65)	12.2% (64)	17.4% (91)	2.94	523
e) Recycling programs	**39.4% (209)**	38.6% (205)	12.8% (68)	6.0% (32)	2.4% (13)	0.8% (4)	1.93	531
f) Volunteer fire department	**61.5% (326)**	20.9% (111)	8.3% (44)	3.4% (18)	2.8% (15)	3.0% (16)	1.61	530
g) Police department	**59.3% (317)**	20.0% (107)	9.2% (49)	4.9% (26)	5.4% (29)	1.3% (7)	1.76	535
h) Channel 20 – cable access channel	22.3% (119)	20.1% (107)	**26.6% (142)**	8.4% (45)	4.5% (24)	18.0% (96)	2.42	533
i) Town website	27.1% (144)	26.6% (141)	**27.9% (148)**	6.0% (32)	3.8% (20)	8.7% (46)	2.26	531
j) Recreation facilities	24.4% (129)	27.6% (146)	**31.6% (167)**	5.7% (30)	3.2% (17)	7.6% (40)	2.30	529
k) Zoning ordinances	11.4% (60)	24.0% (126)	**36.3% (191)**	9.7% (51)	3.2% (17)	15.4% (81)	2.64	526
l) Town's rate of growth	10.8% (57)	27.5% (145)	**37.2% (196)**	12.1% (64)	4.7% (25)	7.6% (40)	2.70	527
m) Plans and preparation for								

emergencies (e.g. pandemic, terrorist attack, natural disasters and mosquito control)	10.2% (53)	16.0% (83)	**31.0% (161)**	7.5% (39)	4.8% (25)	30.4% (158)	2.72	519

answered question	**538**
skipped question	**6**

8. What do you like most about living in Atkinson?

	Response Count
	465
answered question	**465**
skipped question	**79**

9. What do you like least about living in Atkinson?

	Response Count
	391
answered question	**391**
skipped question	**153**

10. What 3 ways do you get your information about news and events in Atkinson?" Please choose up to 3 sources of information.

	Response Percent	Response Count
Lawrence Eagle Tribune	**65.1%**	**337**
Town Web Site	42.1%	218
Community Access TV	33.2%	172
Union Leader	9.1%	47
Post Office	12.0%	62
School newsletter	8.1%	42
Village Store	2.5%	13
Transfer Station (dump)	0.6%	3
Library	27.4%	142
Town Hall	17.4%	90
Other location in town	7.3%	38
Friends, relatives, co-workers	47.7%	247
	answered question	**518**
	skipped question	**26**

11. What is the best way for the Town of Atkinson to better inform you about what it is doing? Choose 1 source.

	Response Percent	Response Count
Meetings / workshops	1.5%	7
E-mail (town list-serve)	**29.4%**	**140**
Community Access TV	6.9%	33
Direct mailing	27.9%	133
Town web site	14.0%	67
Newsletter	16.1%	77
Facebook	2.3%	11
Twitter	0.4%	2
Other	1.5%	7
	answered question	**477**
	skipped question	**67**

12. How long have you lived in Atkinson?

	Response Average	Response Total	Response Count
Number of Years?	**21.35**	**11,210**	525
Number of years at your present address?	18.78	9,707	517
		answered question	**530**
		skipped question	**14**

13. Do you own or rent your home?

	Response Percent	Response Count
Own	**97.7%**	**511**
Rent	2.3%	12
	answered question	**523**
	skipped question	**21**

14. I moved to/live in Atkinson because _____. Choose all responses that apply.

	Response Percent	Response Count
Born Here	5.0%	25
Affordable housing	19.6%	98
Visual Appearance	54.9%	275
Tax Structure	24.6%	123
Recreation	3.4%	17
Job/Employment	11.8%	59
Location	**80.0%**	**401**
Quality of Life	76.6%	384
Schools	21.6%	108
	Other	77
	answered question	**501**
	skipped question	**43**

15. Are you:

	Response Percent	Response Count
Employed full-time	**49.5%**	**260**
Employed part-time	9.5%	50
Not employed	2.3%	12
Retired	36.0%	189
Seeking Employment	2.7%	14
Other		5
answered question		**525**
skipped question		**19**

16. How far do you travel to work (one-way)?

	Response Percent	Response Count
Less than 10 miles	20.3%	97
10 to 20 miles	16.5%	79
21 to 30 miles	13.6%	65
Over 30 miles	15.2%	73
None	**34.4%**	**165**
	answered question	**479**
	skipped question	**65**

17. How frequently do you vote in Town elections?

	Response Percent	Response Count
Never Vote	3.6%	19
Occasionally Vote	9.8%	51
Usually Vote	25.7%	134
Always Vote	**60.9%**	**318**
	answered question	**522**
	skipped question	**22**

18. Your Age is:

	Response Percent	Response Count
Under 18	0.0%	0
18-25	0.2%	1
26-40	8.2%	43
41-60	**39.8%**	**209**
61-75	37.7%	198
75+	14.1%	74
	answered question	**525**
	skipped question	**19**

19. Please write in below any additional comments or ideas for the future growth and development of Atkinson.

	Response Count
	180
	answered question	**180**
	skipped question	**364**

COMMUNITY PROFILE

INTRODUCTION

The community profile is a collection of statistical information pertaining to general population, housing, income, and employment characteristics of the town. In the context of the master plan, a statistical profile is useful in two ways. First, it helps to place the town in comparison with other communities in the region. Second, important trends which may affect the future growth and development of the town can be identified and analyzed. As appropriate, this statistical information may be taken into account in making policy decisions.

Recognizing these intended uses, the statistical information presented here takes two principal forms. Most of the tables contain information for Atkinson and other surrounding communities of Danville, Plaistow and Sandown that are geographically and socioeconomically proximate to Atkinson. These four towns are also similar because they form the Timberlane School District. Included also are totals for Rockingham County and the State of New Hampshire. These tables provide an expanded regional context for the data presented. Most of the remaining tables show data for Atkinson covering a period of years, from which important trends can be identified.

An analysis of the statistical information regarding the demographics of Atkinson's populations reveals certain trends that may be found throughout the Master Plan. The findings in this chapter help to quantify and support these trends and provide a backbone to the final recommendations in this document. For instance, certain population characteristics may indicate a specific type of recreational facility used and/or needed. Also, depending on the age and makeup of the population, it may be apparent that certain specific land uses should be encouraged for the benefit of the Town's citizens.

The importance of the source for the information is equaled to the importance of the information itself. The data presented herein this chapter are derived from the U.S. Census, NH Office of Energy and Planning population reports and Town records. There were two types of questionnaires that were used to compile the U.S. Census data. The Short Form was sent to 83% of all households. It contained 14 basic population and housing questions. The Long Form, which was sent to 17% of all housing units, included the 14 questions that appear on the Short Form plus 45 other questions about each member of the household and the housing unit. STF1A data (also referred to as the 100-percent data) were prepared by tabulating responses to the 14 questions that appear on both the Short and Long forms. STF 3A data (also referred to as Sample data) is based on results from the Long Form. Sample data prepared from the long forms were statistically weighted or inflated to produce estimates of what a complete enumeration would have produced. There is usually a small amount of error present between the weighted figure, based on a sample, and the corresponding figure collected on a 100 percent basis. Therefore, certain counts in STF 3A data (e.g., Place of Birth) may have different totals than STF 1A counts (e.g., Total Population). If there are differences, they are

negligible: for instance Atkinson's place of birth totals from STF 3A population is 6,178; and total population number from STF 1A is also 6,178. All 2000 Census data was derived from STF 3A, with the exception of the population and housing data which came from STF 1A.

1. Population Growth

Historically, Atkinson like much of the Seacoast region of New Hampshire was an agricultural community with a sparsely populated area. The Town encompasses an area of 6,912 acres and its population in 1767 was 476 (Table P-1). During much of the 18th and 19th century, population levels remained stable, with minimal growth. Between 1950 and 1960, the population doubled from 492 persons to 1017 and experienced an average annual growth rate of 7.0%. This explosive growth trend continued for an additional 20 years. Since 1980, growth has seen a dramatic drop from the previous 30 years, however, there has continued to be a steady growth rate of approximately 1.4% per year. In 2005, Atkinson's population was estimated to be 6,560 persons. This is equivalent to 607 persons per square mile, or approximately 1.1 acres per persons. Although by urban standards this is not a high population density, it does represent a considerable increase in density when compared with historical populations of Atkinson. Figure P-1 and Figure P-2 visually depict the growth trends represented in Table P-1 and compare it with the population growth of surrounding communities.

Table P-1

POPULATION HISTORY
Atkinson
1767-2005

Area of Town: 6,912 Acres

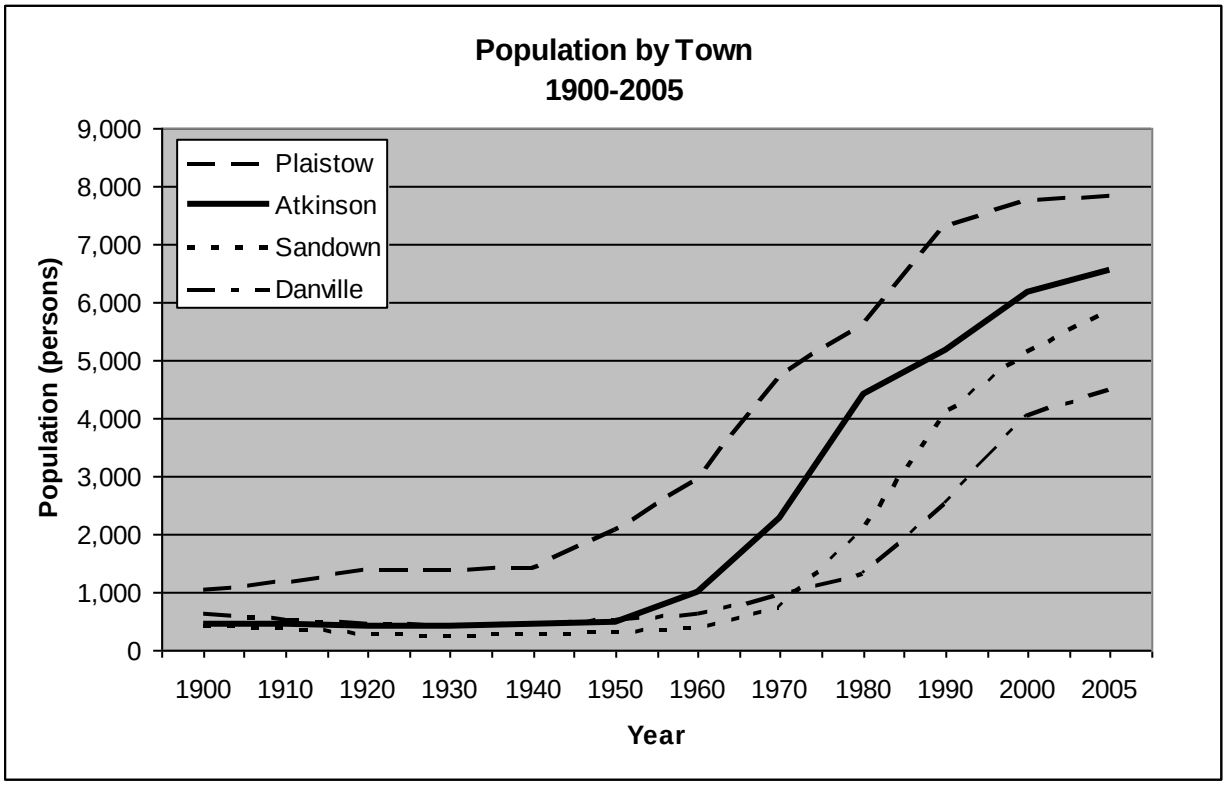
Year	Population	Acres per Person	Average Annual Growth for Report Period
1767	476	14.5	---
1775	575	12	2.3%
1786	500	13.8	-1.3%
1790	479	14.4	-1.1%
1800	474	14.5	-0.1%
1810	556	12.4	1.6%
1820	563	12.3	0.1%
1830	554	12.4	-0.2%
1840	557	12.4	0.1%
1850	600	11.5	0.7%
1860	546	12.6	-0.9%
1870	488	14.1	-1.1%
1880	502	13.8	0.3%

Year	Population	Acres per Person	Average Annual Growth for Report Period
1890	483	14.3	-0.4%
1900	442	15.6	-0.9%
1910	440	15.7	0.0%
1920	413	16.7	-0.6%
1930	407	17	-0.1%
1940	433	15.9	0.6%
1950	492	14	1.3%
1960	1,017	6.8	7.0%
1970	2,291	3	7.8%
1980	4,397	1.5	6.3%
1990	5,188	1.3	1.6%
2000	6,178	1.1	1.7%
2005	6,560	1.1	1.2%

Sources: 1767-1960, 2005, NH Office of Energy and Planning.
1970-2000, US Census Bureau.

Figure P-1

POPULATION BY TOWN
Atkinson and Surrounding Communities
1900-2005



Data:

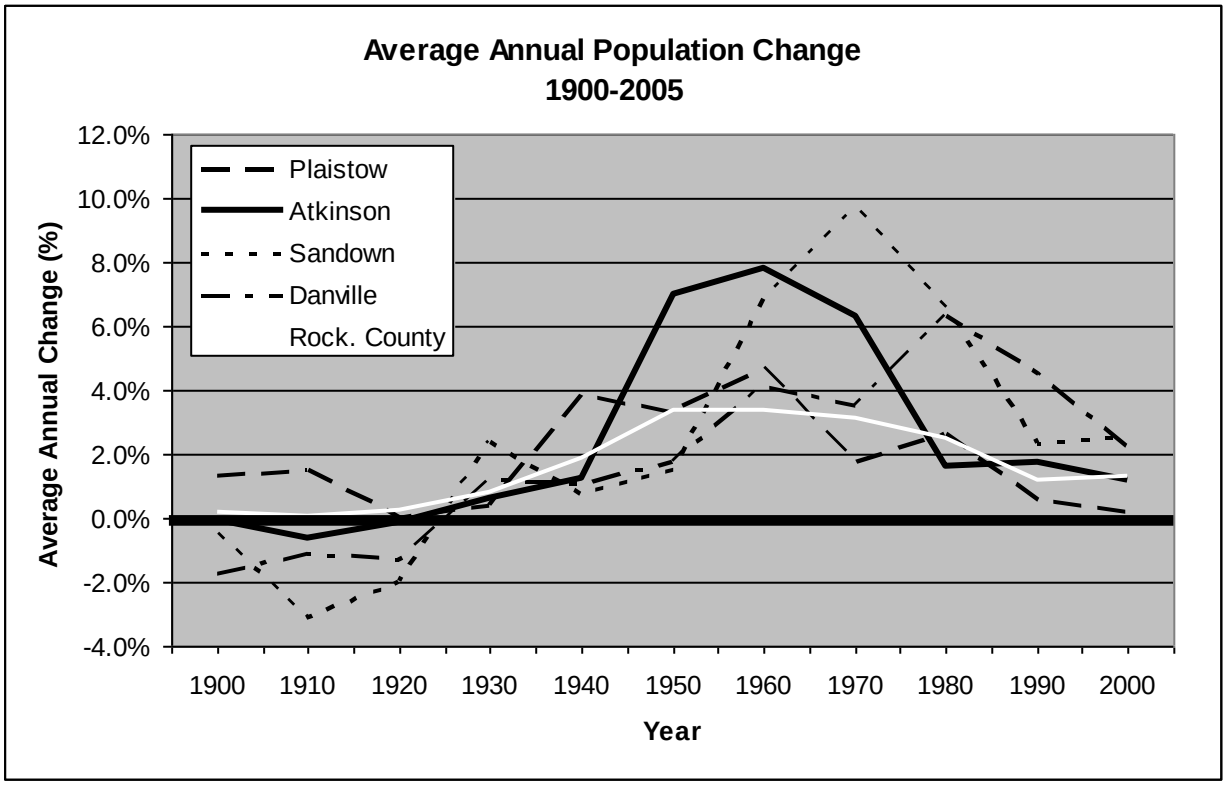
Town	1900	1910	1920	1930	1940	1950
Atkinson	**442**	**440**	**413**	**407**	**433**	**492**
Danville	615	517	463	406	457	508
Plaistow	1,027	1,173	1,368	1,366	1,414	2,082
Sandown	400	380	280	229	292	315

Town	1960	1970	1980	1990	2000	2005
Atkinson	**1,017**	**2,291**	**4,397**	**5,188**	**6,178**	**6,560**
Danville	605	924	1,318	2,534	4,023	4,490
Plaistow	2,915	4,712	5,609	7,316	7,747	7,820
Sandown	366	741	2,057	4,060	5,143	5,850

Sources: 1900-1960, 2005, NH Office of Energy and Planning.
1970-2000, US Census Bureau.

Figure P-2

AVERAGE ANNUAL POPULATION CHANGE
Atkinson and Surrounding Communities
1900-2005



Data:

TOWN/AREA	1890-1900	1900-1910	1910-1920	1920-1930	1930-1940	1940-1950
Atkinson	**n/a**	**0.0%**	**-0.6%**	**-0.1%**	**0.6%**	**1.3%**
Danville	n/a	-1.8%	-1.1%	-1.3%	1.2%	1.1%
Plaistow	n/a	1.3%	1.5%	0.0%	0.3%	3.8%
Sandown	n/a	-0.5%	-3.1%	-2.0%	2.4%	0.8%
Rock. County	**n/a**	**0.2%**	**0.1%**	**0.2%**	**0.8%**	**1.8%**

TOWN/AREA	1950-1960	1960-1970	1970-1980	1980-1990	1990-2000	2000-2005
Atkinson	**7.0%**	**7.8%**	**6.3%**	**1.6%**	**1.7%**	**1.2%**
Danville	1.7%	4.1%	3.5%	6.3%	4.5%	2.2%
Plaistow	3.3%	4.7%	1.7%	2.6%	0.6%	0.2%
Sandown	1.5%	6.8%	9.7%	6.6%	2.3%	2.5%
Rock. County	**3.4%**	**3.4%**	**3.1%**	**2.5%**	**1.2%**	**1.3%**

Sources: 1900-1960, 2005, NH Office of Energy and Planning.
1970-2000, US Census Bureau.

The growth of the population in Atkinson has largely been correlated to the population of the region and the surrounding communities. Table P-2 is a snapshot of the population growth and density for Atkinson and surrounding towns between 1980-2005. Throughout the 80's, Atkinson's average annual growth was dramatically lower than the surrounding communities. However beginning in 1990, Atkinson's population growth remained steady while surrounding communities realized a decline. This statement can be observed when comparing Atkinson's average annual increase in the 1980's being 1.6% and 1.7% in the 90's, while the average annual growth rate for Rockingham county was 2.5% and 1.2% respectively. Also of interest is the growth rate experienced at the state level. The general trend of a moderately increasing population during the 1990's continued into the 21st century. The exceptions being Danville with a decrease from 4.5% annual average growth in the 1990's to 2.2% between 2000-2005. Population density in 2005 showed Atkinson being relatively more concentrated (607.4 person/sq. mi.) versus its neighboring communities.

Table P-2

GROWTH AND DENSITY
Atkinson and Surrounding Communities
1980-2005

	US Census				Average Annual Change			2005	
TOWN/AREA	1980	1990	2000	OEP Est. 2005	1980-1990	1990-2000	2000-2005	Area (Sq. Mi)	Persons/ Sq. Mile
Atkinson	**4,397**	**5,188**	**6,178**	**6,560**	**1.6%**	**1.7%**	**1.2%**	**10.8**	**607.4**
Danville	1,318	2,534	4,023	4,490	6.3%	4.5%	2.2%	11.5	390.4
Plaistow	5,609	7,316	7,747	7,820	2.6%	0.6%	0.2%	9.9	789.9
Sandown	2,057	4,060	5,143	5,850	6.6%	2.3%	2.5%	13.6	430.1
Timber. Sch. Dist.	13,381	19,098	23,091	24,720	3.5%	1.9%	1.4%	45.8	539.7
Rock. County	**190,345**	**245,845**	**277,359**	**296,740**	**2.5%**	**1.2%**	**1.3%**	**699**	**424.5**
N.H.	920,475	1,109,252	1,235,786	1,315,000	1.8%	1.1%	1.2%	8,992	146.2

Sources: 1980, 1990, 2000, US Census Bureau.
2005, NH Office of Energy and Planning.

In 2007, the N.H. Office of Energy and Planning projected Atkinson to grow moderately at 0.8% per year during 2000-2030 (Table P-3). It is estimated that in 2030 Atkinson's population will reach 7,790, or 1,230 more people than in 2005. This rate matches the rate of the region and is slightly lower than the projected growth rates for surrounding towns (Danville 1.0%, Sandown 1.1%, Hampstead 0.8%). The projected growth rates also reveal that Atkinson will continue to have a stable share of the county's population and it is not predicted that the Town will have any additional growth that won't already be experienced within the county.

The impact of the moderate level of growth should not be underestimated. Even though the level of growth isn't expected to mimic the boom in the 50's, 60's and 70's, it is still a very important issue for town planners to consider both in a regional and local context. Issues regarding land use and population are more fully addressed in the Existing Land Use Chapter.

Table P-3

PROJECTED POPULATION AND GROWTH RATES
Atkinson and Surrounding Communities
2000-2030

	Population (#)						Average Annual Growth Rate (%)				
TOWN/AREA	**2000**	**2010**	**2015**	**2020**	**2025**	**2030**	**2000-2010**	**2000-2015**	**2000-2020**	**2000-2025**	**2000-2030**
Atkinson	**6,178**	**6,800**	**7,090**	**7,330**	**7,570**	**7,790**	**1.0%**	**0.9%**	**0.9%**	**0.8%**	**0.8%**
Danville	4,023	4,660	4,870	5,060	5,240	5,420	1.5%	1.3%	1.1%	1.1%	1.0%
Hampstead	8,297	8,980	9,430	9,810	10,190	10,550	0.8%	0.8%	0.8%	0.8%	0.8%
Plaistow	7,747	8,110	8,480	8,770	9,070	9,350	0.5%	0.6%	0.6%	0.6%	0.6%
Salem	28,112	30,940	31,880	32,770	33,680	34,440	1.0%	0.8%	0.8%	0.7%	0.7%
Sandown	5,143	6,070	6,360	6,610	6,860	7,090	1.6%	1.4%	1.2%	1.1%	1.1%
Region	178,997	197,390	205,230	212,070	219,250	225,760	1.0%	0.9%	0.8%	0.8%	0.8%
Rock. County	**277,359**	**308,220**	**320,490**	**331,190**	**341,850**	**351,660**	**1.0%**	**1.0%**	**0.9%**	**0.8%**	**0.8%**
N.H.	1,235,786	1,365,140	1,420,000	1,470,010	1,520,310	1,565,040	1.0%	0.9%	0.9%	0.8%	0.8%

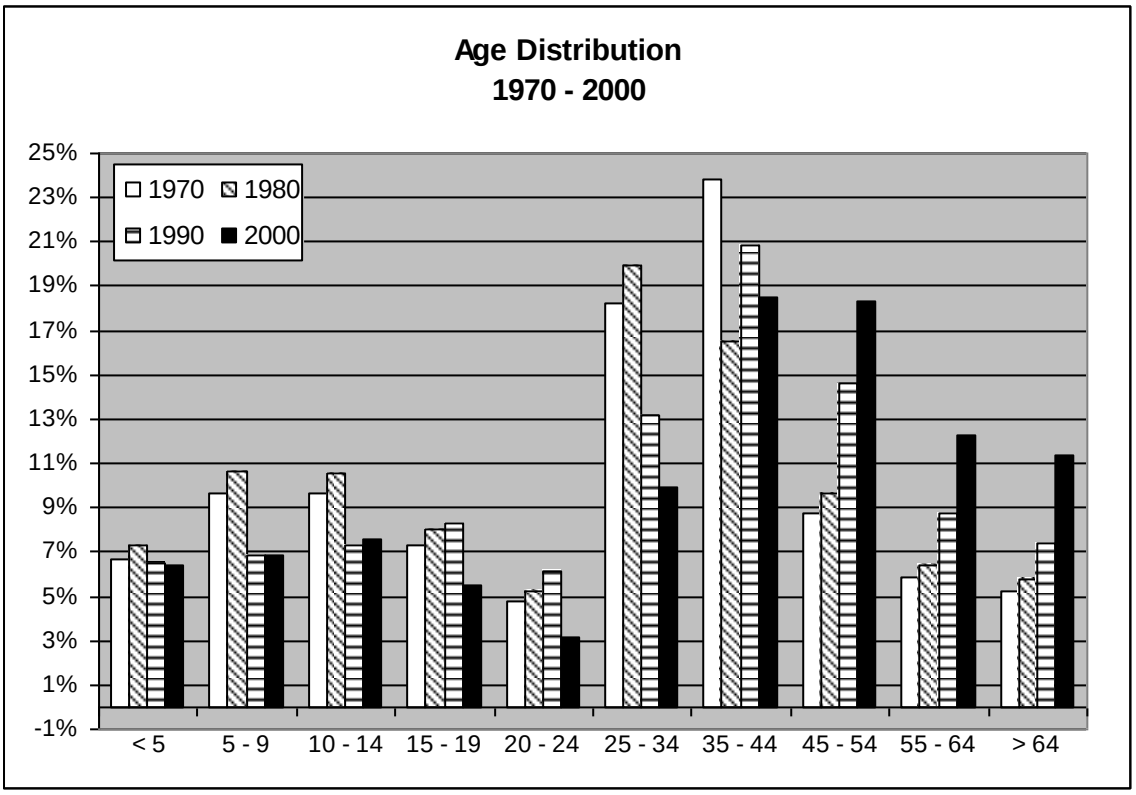
Sources: 2000, US Census Bureau.
2010-2030, NH Office of Energy and Planning.

Age Distribution

In addition to population changes, the age distribution of the residents in Atkinson will have an effect on the community services. Figure P-3 illustrates the age distribution of the population of the Town from 1970-2000. The data demonstrates the combined effects of in-migration and the demographic age shifts of an aging population. The adult and elderly populations have been growing, while the youth population brackets have fewer residents in this class for the year 2000 than in 1970. This trend of an aging population will cause a shift of services. One example is the increase number of 55+ communities that have transpired and the approval of a 288 unit complex at the Atkinson Country Club is a testament of this transition.

Figure P-3

AGE DISTRIBUTION
Atkinson
1970-2000



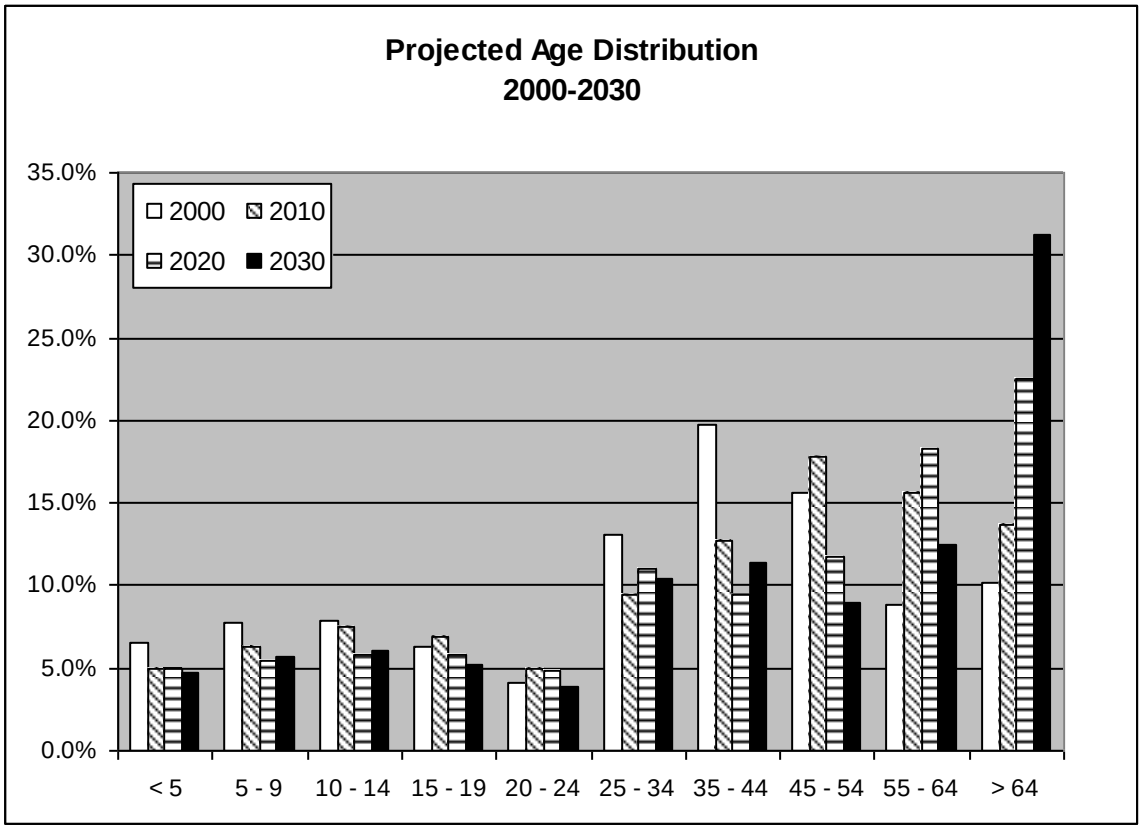
Data:

Age Group	1970		1980		1990		2000	
	(#)	(%)	(#)	(%)	(#)	(%)	(#)	(%)
< 5	320	6.6%	320	7.3%	335	6.5%	397	6.4%
5 - 9	467	9.7%	467	10.6%	357	6.9%	424	6.9%
10 - 14	463	9.6%	463	10.5%	380	7.3%	469	7.6%
15 - 19	350	7.3%	354	8.1%	432	8.3%	339	5.5%
20 - 24	231	4.8%	231	5.3%	320	6.2%	193	3.1%
25 - 34	877	18.2%	877	19.9%	685	13.2%	615	10.0%
35 - 44	1,149	23.9%	726	16.5%	1,083	20.9%	1142	18.5%
45 - 54	423	8.8%	423	9.6%	759	14.6%	1134	18.4%
55 - 64	283	5.9%	283	6.4%	454	8.8%	760	12.3%
> 64	253	5.3%	253	5.8%	383	7.4%	705	11.4%
TOTAL	**4,816**	**100%**	**4,397**	**100%**	**5,188**	**100%**	**6,178**	**100%**

Source: 1970, 1980, 1990, 2000, US Census Bureau.

Figure P-4

PROJECTED AGE DISTRIBUTION
Rockingham County
2000-2030



Data:

Age Group	2000		2010		2020		2030	
	(#)	(%)	(#)	(%)	(#)	(%)	(#)	(%)
< 5	18,100	6.5%	15,203	4.9%	16,282	4.9%	16,655	4.7%
5 - 9	21,398	7.7%	19,534	6.3%	17,932	5.4%	19,895	5.7%
10 - 14	22,001	7.9%	23,306	7.6%	19,364	5.8%	21,150	6.0%
15 - 19	17,610	6.3%	21,382	6.9%	19,296	5.8%	18,140	5.2%
20 - 24	11,403	4.1%	15,331	5.0%	15,994	4.8%	13,685	3.9%
25 - 34	36,314	13.1%	29,033	9.4%	36,628	11.1%	36,431	10.4%
35 - 44	54,673	19.7%	39,211	12.7%	31,267	9.4%	40,187	11.4%
45 - 54	43,345	15.6%	55,044	17.9%	39,095	11.8%	31,651	9.0%
55 - 64	24,428	8.8%	48,179	15.6%	60,562	18.3%	43,971	12.5%
> 64	28,087	10.1%	42,004	13.6%	74,761	22.6%	109,869	31.2%
Total	**277,359**	**100.0%**	**308,227**	**100.0%**	**331,181**	**100.0%**	**351,634**	**100.0%**

Source: 2000-2030, NH Office of Energy and Planning.

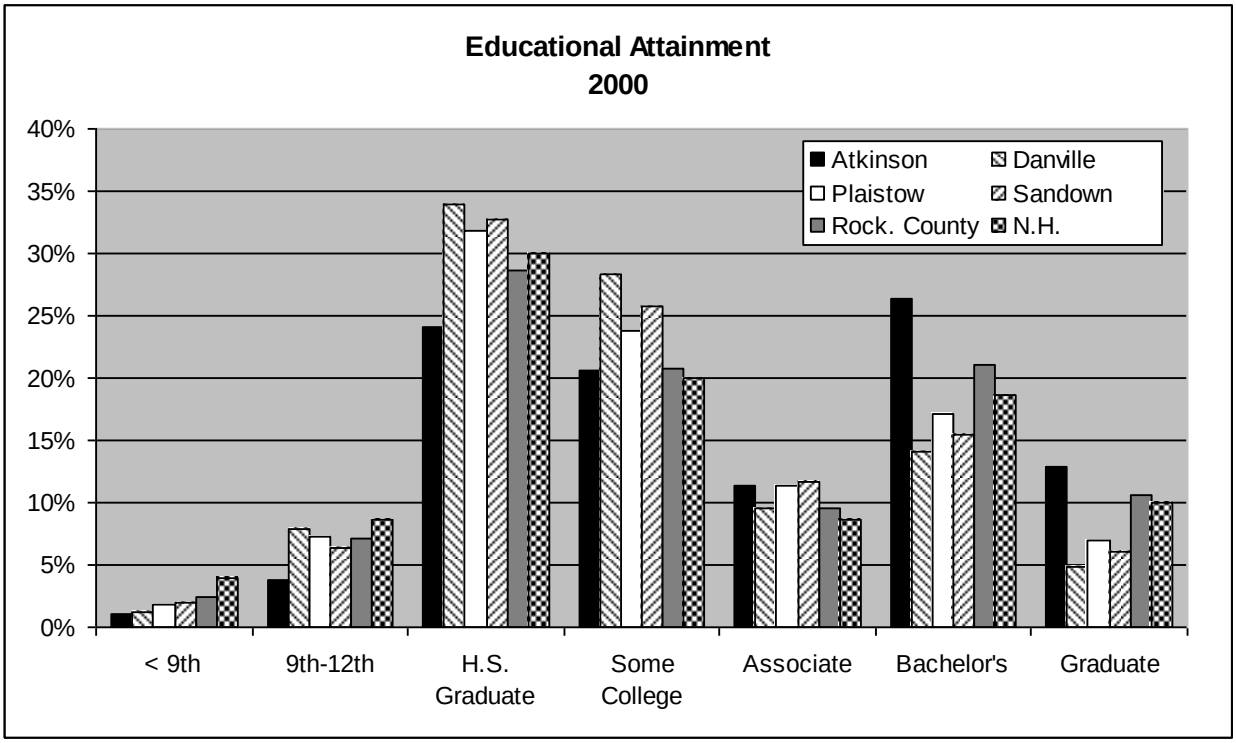
The future shift in the age distribution of the population may be anticipated by the patterns shown in Figure P-4, illustrating the projected age distribution for Rockingham County population for 2000-2030. The general projected trends indicate that the very young and youth population will remain a relatively stable to 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 over 64 populace which is estimated to become 31% of the population of Rockingham County in 2030.

Education

Figure P-5 shows education attainment of residents in Atkinson and surrounding communities. Along the x axis are the categories for the highest level of education achieved and the y axis shows the percentage of the population within each of the towns/areas. The common trend across all of the towns and areas is the low number of individuals who have not graduated from high school versus the large number of individuals who have secondary education. Over 95% of Atkinson residents have graduated from high school or pursued higher education. In comparison this is slightly higher than Rockingham County (90%) and the state of NH (87%). This difference is further identified when the high school graduate category and the categories for higher education are compared between the town of Atkinson and the other municipalities. The number of residents in Atkinson who's highest degree is graduation from high school (24%) is substantially lower than surrounding communities. At first glance this may be concerning, but the discrepancy is revealed in the bachelors and graduate categories where the number of Atkinson residents are significantly higher, 26% and 13% respectively, than other town/areas. This clearly illustrates that Atkinson, as a whole, has achieved higher educational merits compared to other towns in the Timberlane School District.

Figure P-5

EDUCATIONAL ATTAINMENT
Atkinson and Surrounding Communities
2000



Data:

TOWN/AREA	< 9th	9th-12th	H.S. Graduate	Some College	Associate	Bachelors	Graduate	H.S. or higher
Atkinson	1%	4%	24%	21%	11%	26%	13%	95%
Danville	1%	8%	34%	28%	10%	14%	5%	91%
Plaistow	2%	7%	32%	24%	11%	17%	7%	91%
Sandown	2%	6%	33%	26%	12%	15%	6%	92%
Timber. Sch. Dist.	1%	6%	30%	24%	11%	19%	8%	92%
Rock. County	**2%**	**7%**	**29%**	**21%**	**10%**	**21%**	**11%**	**90%**
N.H.	4%	9%	30%	20%	9%	19%	10%	87%

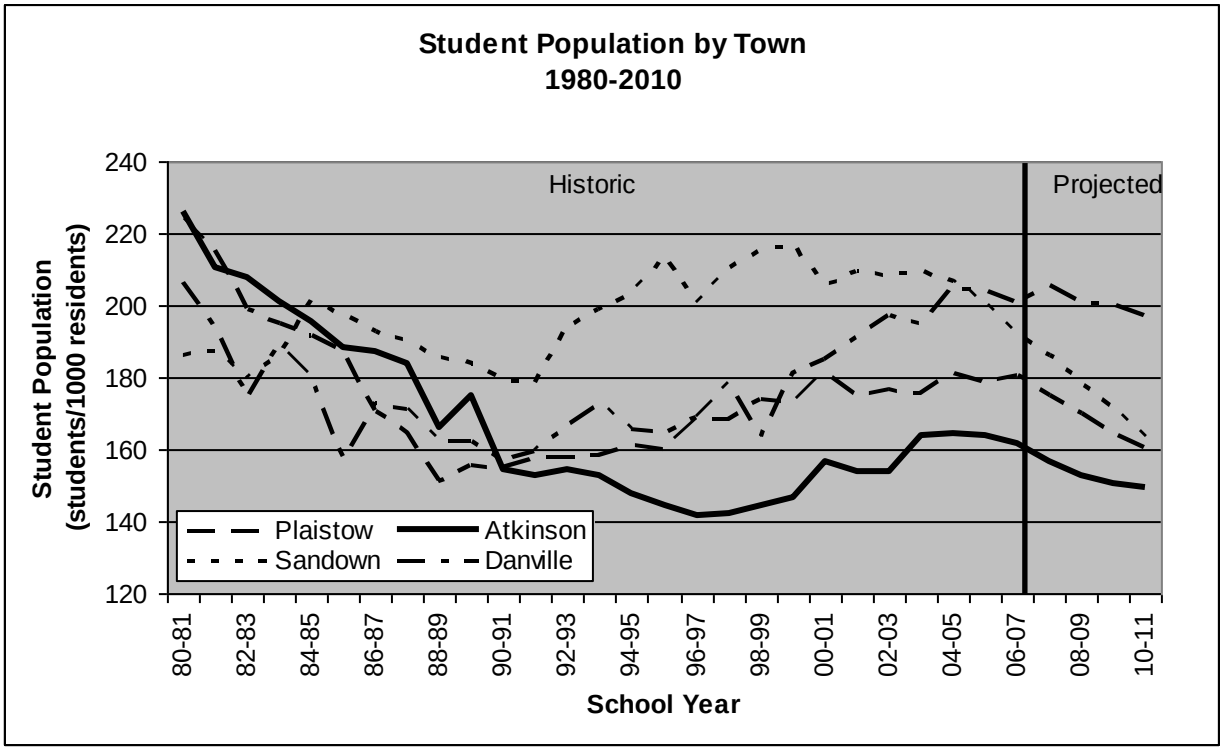
* percents are based off of only the population who is over 25 years old.

Source: 2000, US Census Bureau.

Over the past 20 years, the student population in the region has increased. Since the 1980-81 school year the student population for Atkinson has grown from 994 to 1069 for the 2006-07 school year (Data- Figure P-6). This represents a 7.5% growth over this time. However, if the number of students is compared to the population, there has been a decreasing trend for Atkinson (Figure P-6). For the school year 1980-81, there were 226 students for every 1000 residents, the highest ratio out of the four towns in the Timberlane School District. During the 1980's, Atkinson went from the highest student to resident ratio to the lowest ratio, with 155 students/1000 residents for the 1990-91 school year. Since then, Atkinson has continued to have a very low student to resident ratio. For the most recent school year 2006-07, the student/1000 resident ratio was 162. Projections provided by the Timberlane School District show a continuation of the declining school enrollment ratio for Atkinson and the other three towns in the school district. The trend of an increasing population with a smaller percentage of school aged families provides some concern for future planning within Atkinson.

Figure P-6

STUDENT POPULATION BY TOWN
Atkinson and Surrounding Communities
1980-2010



Data:

School Enrollment

Town/Area	1979-1980	1980-1981	1981-1982	1982-1983	1983-1984	1984-1985	1985-1986	1986-1987	1987-1988	1988-1989	1989-1990	1990-1991	1991-1992	1992-1993	1993-1994	1994-1995	1995-1996
Atkinson	**1,000**	**994**	**976**	**947**	**939**	**941**	**927**	**891**	**886**	**855**	**913**	**802**	**804**	**828**	**835**	**826**	**821**
Danville	288	272	256	249	277	301	304	330	359	355	372	397	419	444	478	474	490
Plaistow	1,334	1,256	1,212	1,131	1,111	1,130	1,151	1,147	1,120	1,102	1,140	1,132	1,148	1,144	1,171	1,209	1,210
Sandown	383	383	402	408	445	497	553	581	628	666	693	728	730	795	840	892	973
Timb. Sch. Dist.	3,005	2,905	2,846	2,735	2,772	2,869	2,935	2,949	2,993	2,978	3,118	3,059	3,101	3,211	3,324	3,401	3,494

Town/Area	1996-1997	1997-1998	1998-1999	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012
Atkinson	**820**	**853**	**876**	**914**	**967**	**983**	**1,008**	**1,077**	**1,087**	**1,077**	**1,069**	**1,043**	**1,026**	**1,017**	**1,015**	**1,017**
Danville	538	605	592	693	745	786	827	846	904	916	908	938	924	925	920	897
Plaistow	1,289	1,315	1,369	1,385	1,404	1,367	1,390	1,390	1,429	1,399	1,421	1,388	1,358	1,326	1,303	1,294
Sandown	932	993	1,032	1,052	1,056	1,093	1,122	1,166	1,177	1,173	1,131	1,105	1,066	1,031	993	972
Timb. Sch. Dist.	3,579	3,766	3,869	4,044	4,172	4,229	4,347	4,479	4,597	4,565	4,529	4,474	4,374	4,299	4,231	4,180

Town Population

Town/Area	1979-1980	1980-1981	1981-1982	1982-1983	1983-1984	1984-1985	1985-1986	1986-1987	1987-1988	1988-1989	1989-1990	1990-1991	1991-1992	1992-1993	1993-1994	1994-1995	1995-1996
Atkinson	**4,181**	**4,397**	**4,637**	**4,563**	**4,664**	**4,810**	**4,923**	**4,762**	**4,815**	**5,144**	**5,217**	**5,188**	**5,269**	**5,358**	**5,460**	**5,595**	**5,685**
Danville	1,282	1,318	1,319	1,430	1,468	1,670	1,933	1,913	2,097	2,188	2,297	2,534	2,629	2,675	2,766	2,865	2,975
Plaistow	5,764	5,609	5,638	5,687	5,693	5,899	6,141	6,730	6,807	7,290	7,341	7,316	7,269	7,260	7,384	7,504	7,573
Sandown	1,995	2,057	2,150	2,277	2,389	2,472	2,801	3,017	3,306	3,584	3,769	4,060	4,097	4,105	4,228	4,403	4,559
Timb. Sch. Dist.	13,222	13,381	13,744	13,957	14,214	14,851	15,798	16,422	17,025	18,206	18,624	19,098	19,264	19,398	19,838	20,367	20,792

Town/Area	1996-1997	1997-1998	1998-1999	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012
Atkinson	**5,794**	**5,997**	**6,071**	**6,228**	**6,178**	**6,387**	**6,542**	**6,578**	**6,603**	**6,562**	**6,608**	**6,656**	**6,704**	**6,752**	**6,800**	**6,858**
Danville	3,188	3,388	3,622	3,824	4,023	4,115	4,192	4,336	4,412	4,492	4,524	4,558	4,592	4,626	4,660	4,702
Plaistow	7,664	7,812	7,873	7,987	7,747	7,812	7,860	7,906	7,884	7,817	7,878	7,936	7,994	8,052	8,110	8,184
Sandown	4,648	4,723	4,785	4,851	5,143	5,220	5,381	5,563	5,694	5,851	5,894	5,938	5,982	6,026	6,070	6,128
Timb. Sch. Dist.	21,294	21,920	22,351	22,890	23,091	23,534	23,975	24,383	24,593	24,722	24,904	25,088	25,272	25,456	25,640	25,872

Enrollment per 1000 Persons

Town/Area	1979-1980	1980-1981	1981-1982	1982-1983	1983-1984	1984-1985	1985-1986	1986-1987	1987-1988	1988-1989	1989-1990	1990-1991	1991-1992	1992-1993	1993-1994	1994-1995	1995-1996
Atkinson	**239**	**226**	**210**	**208**	**201**	**196**	**188**	**187**	**184**	**166**	**175**	**155**	**153**	**155**	**153**	**148**	**144**
Danville	225	206	194	174	189	180	157	173	171	162	162	157	159	166	173	165	165
Plaistow	231	224	215	199	195	192	187	170	165	151	155	155	158	158	159	161	160
Sandown	192	186	187	179	186	201	197	193	190	186	184	179	178	194	199	203	213
Timb. Sch. Dist.	227	217	207	196	195	193	186	180	176	164	167	160	161	166	168	167	168

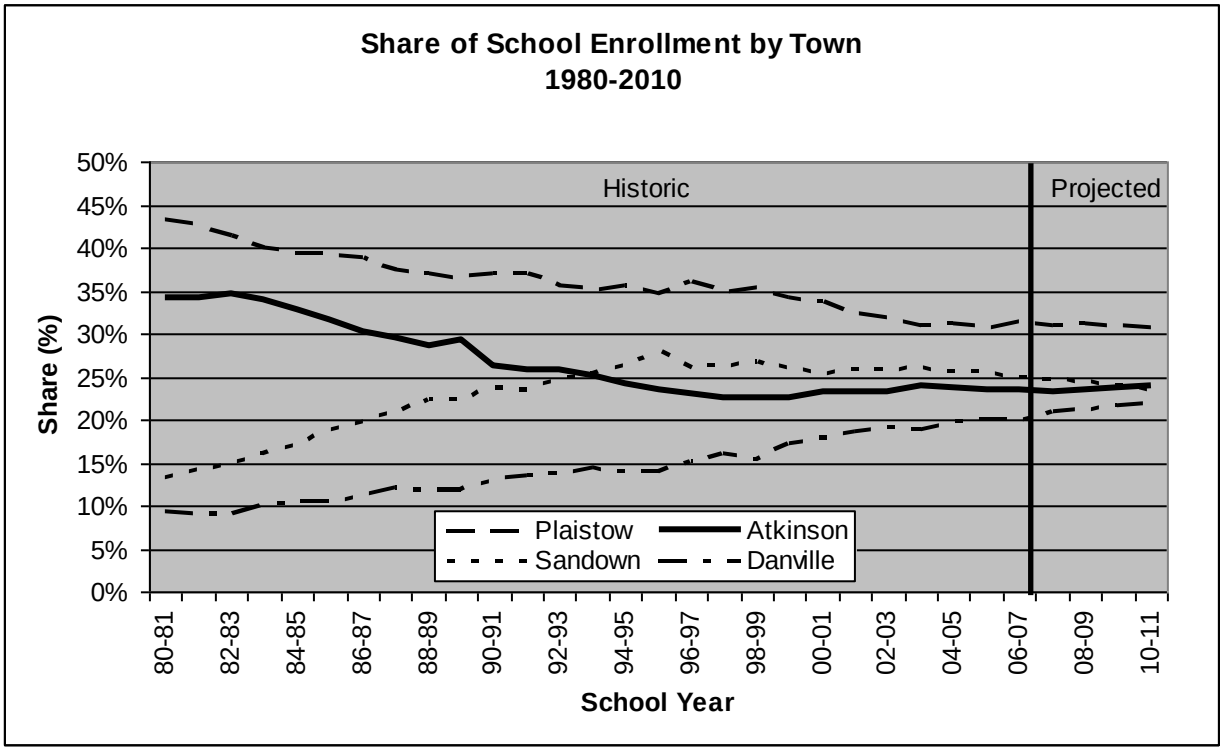
Town/Area	1996-1997	1997-1998	1998-1999	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012
Atkinson	**142**	**142**	**144**	**147**	**157**	**154**	**154**	**164**	**165**	**164**	**162**	**157**	**153**	**151**	**149**	**148**
Danville	169	179	163	181	185	191	197	195	205	204	201	206	201	200	197	191
Plaistow	168	168	174	173	181	175	177	176	181	179	180	175	170	165	161	158
Sandown	201	210	216	217	205	209	209	210	207	200	192	186	178	171	164	159
Timb. Sch. Dist.	168	172	173	177	181	180	181	184	187	185	182	178	173	169	165	162

Sources: 1979-2007, School Administration Unit 55 (SAU 55)- Timberlane Regional School District.
1979-2012, NH Office of Energy and Planning.

Figure P-7 displays the share of school enrollment per town. Historically, it illustrates the two towns of Atkinson and Plaistow have contributed a declining share of students to the Timberlane Regional School District. In the 1980-81 school year, Atkinson represented 34% of student enrollment while Plaistow had 43%. Respectively the school enrollment share declined to 24% and 31% for the 2006-07 school year. Sandown and Danville show an increasing contribution over the same time period. Since 2000, school enrollment shares have stabilized and these trends are projected to remain constant into the future to the 2010-11 school year.

Figure P-7

SHARE OF SCHOOL ENROLLMENT BY TOWN
Atkinson and Surrounding Communities
1980-2010



Data for Figure P-7:

Share of School Enrollment

Town	1979-1980	1980-1981	1981-1982	1982-1983	1983-1984	1984-1985	1985-1986	1986-1987	1987-1988	1988-1989	1989-1990	1990-1991	1991-1992	1992-1993	1993-1994	1994-1995	1995-1996
Atkinson	**n/a**	**34%**	**34%**	**35%**	**34%**	**33%**	**32%**	**30%**	**30%**	**29%**	**29%**	**26%**	**26%**	**26%**	**25%**	**24%**	**23%**
Danville	n/a	9%	9%	9%	10%	10%	10%	11%	12%	12%	12%	13%	14%	14%	14%	14%	14%
Plaistow	n/a	43%	43%	41%	40%	39%	39%	39%	37%	37%	37%	37%	37%	36%	35%	36%	35%
Sandown	n/a	13%	14%	15%	16%	17%	19%	20%	21%	22%	22%	24%	24%	25%	25%	26%	28%

Town	1996-1997	1997-1998	1998-1999	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012
Atkinson	**23%**	**23%**	**23%**	**23%**	**23%**	**23%**	**23%**	**24%**	**24%**	**24%**	**24%**	**23%**	**23%**	**24%**	**24%**	**24%**
Danville	15%	16%	15%	17%	18%	19%	19%	19%	20%	20%	20%	21%	21%	22%	22%	21%
Plaistow	36%	35%	35%	34%	34%	32%	32%	31%	31%	31%	31%	31%	31%	31%	31%	31%
Sandown	26%	26%	27%	26%	25%	26%	26%	26%	26%	26%	25%	25%	24%	24%	23%	23%

Change in Student Enrollment (%)

Town/Area	1979-1980	1980-1981	1981-1982	1982-1983	1983-1984	1984-1985	1985-1986	1986-1987	1987-1988	1988-1989	1989-1990	1990-1991	1991-1992	1992-1993	1993-1994	1994-1995	1995-1996
Atkinson	**n/a**	**-0.6%**	**-1.8%**	**-3.1%**	**-0.9%**	**0.2%**	**-1.5%**	**-4.0%**	**-0.6%**	**-3.6%**	**6.4%**	**-13.8%**	**0.2%**	**2.9%**	**0.8%**	**-1.1%**	**-0.6%**
Danville	n/a	-5.9%	-6.3%	-2.8%	10.1%	8.0%	1.0%	7.9%	8.1%	-1.1%	4.6%	6.3%	5.3%	5.6%	7.1%	-0.8%	3.3%
Plaistow	n/a	-6.2%	-3.6%	-7.2%	-1.8%	1.7%	1.8%	-0.3%	-2.4%	-1.6%	3.3%	-0.7%	1.4%	-0.3%	2.3%	3.1%	0.1%
Sandown	n/a	0.0%	4.7%	1.5%	8.3%	10.5%	10.1%	4.8%	7.5%	5.7%	3.9%	4.8%	0.3%	8.2%	5.4%	5.8%	8.3%
Timb. Sch. Dist.	n/a	-3.4%	-2.1%	-4.1%	1.3%	3.4%	2.2%	0.5%	1.5%	-0.5%	4.5%	-1.9%	1.4%	3.4%	3.4%	2.3%	2.7%

Town/Area	1996-1997	1997-1998	1998-1999	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012
Atkinson	**-0.1%**	**3.9%**	**2.6%**	**4.2%**	**5.5%**	**1.6%**	**2.5%**	**6.4%**	**0.9%**	**-0.9%**	**-0.7%**	**-2.5%**	**-1.7%**	**-0.9%**	**-0.2%**	**0.2%**
Danville	8.9%	11.1%	-2.2%	14.6%	7.0%	5.2%	5.0%	2.2%	6.4%	1.3%	-0.9%	3.2%	-1.5%	0.1%	-0.5%	-2.6%
Plaistow	6.1%	2.0%	3.9%	1.2%	1.4%	-2.7%	1.7%	0.0%	2.7%	-2.1%	1.5%	-2.4%	-2.2%	-2.4%	-1.8%	-0.7%
Sandown	-4.4%	6.1%	3.8%	1.9%	0.4%	3.4%	2.6%	3.8%	0.9%	-0.3%	-3.7%	-2.4%	-3.7%	-3.4%	-3.8%	-2.2%
Timb. Sch. Dist.	2.4%	5.0%	2.7%	4.3%	3.1%	1.3%	2.7%	2.9%	2.6%	-0.7%	-0.8%	-1.2%	-2.3%	-1.7%	-1.6%	-1.2%

Source: 1979-2007, School Administration Unit 55 (SAU 55)- Timberlane Regional School District.

Employment

As of 2004, Atkinson had 127 employers who employed over 950 persons (Table P-4). Comparatively, in 1990, there were 92 employers who employed 933 persons. The growth over this period of time can be expressed as annual average growth with a 2.3% increase in employers and .1% increase in employees. It could be inferred then that there are more employers in Atkinson who are employing less people. The weekly wages earned by those employed in Atkinson was $697.71. This was $264.92 more than in 1990 and represents a 3.4% average annual growth over this time frame. Atkinson wasn't alone in this growth trend. Other surrounding communities and Rockingham County experience the growth of the employment base as well. Atkinson however did fall short in many of the categories in Table P-4. For example, the average annual growth for employers in Atkinson (2.3%) was the third lowest out of all of the communities and the average annual growth in employees (.1%) was the lowest out of the surrounding communities. Regionally the average weekly wage in Atkinson is strong compared to towns in the Timberlane School District and slightly lower than county statistics. Overall, the employment base for Atkinson is strong and is projected to continue growing.

Table P-4

NUMBER OF EMPLOYERS & EMPLOYEES
Atkinson and Surrounding Communities
1990-2004

TOWN/AREA	Total Pop. 2000	1990			2004		
		Employers	Avg. Annl. Employees	Average Weekly Wage	Employers	Avg. Annl. Employees	Average Weekly Wage
Atkinson	**6,178**	**92**	**933**	**$432.79**	**127**	**952**	**$697.71**
Danville	4,023	35	132	$277.72	59	219	$559.86
Plaistow	7,747	276	3,322	$321.02	372	5,039	$611.97
Sandown	5,143	32	138	$284.82	55	244	$607.53
Timber. Sch. Dist.	23,091	435	4,525	$329.09	613	6,454	$619.27
Rock. County	**277,359**	**6,649**	**93,950**	**$428.83**	**9,881**	**133,803**	**$774.11**
N.H.	1,235,550	31,658	497,266	$434.67	43,403	613,327	$753.70

TOWN/AREA	# CHANGE: 1990-2004			Avg. Annl. Growth: 1990-2004			Jobs Per Capita in 2000
	Employers	Avg. Annl. Employees	Average Weekly Wage	Employers	Avg. Annl. Employees	Average Weekly Wage	
Atkinson	**35**	**19**	**$264.92**	**2.3%**	**0.1%**	**3.4%**	**0.12**
Danville	24	87	$282.14	3.7%	3.6%	4.9%	0.04
Plaistow	96	1,717	$290.95	2.1%	2.9%	4.5%	0.63
Sandown	23	106	$322.71	3.8%	4.0%	5.3%	0.04
Timber. Sch. Dist.	178	1,929	$290.18	2.4%	2.5%	4.4%	0.26
Rock. County	**3,232**	**39,853**	**$345.28**	**2.8%**	**2.5%**	**4.1%**	**0.47**
N.H.	11,745	116,061	$319.03	2.2%	1.5%	3.9%	0.49

Source: 2004, NH Economic and Labor Market Information Bureau.

Table P-5 looks at the percent of the population who are unemployed for the respective communities between 2000-2006. Most recently, Atkinson's unemployment rate was 3.8% in 2006. Over this time frame, the recession between 2002-2004 is evident by the increased unemployment rates. Historically Atkinson's unemployment rate has hovered around the average unemployment rate for the Timberlane School District (5.7%) but it lies significantly higher than the unemployment rates of Rockingham County (4.9%) and New Hampshire (4.2%).

Table P-5

UNEMPLOYMENT RATE
Atkinson and Surrounding Communities
2000-2006

TOWN/AREA	Unemployment Rate							
	March 2000	**March 2001**	**March 2002**	**March 2003**	**March 2004**	**March 2005**	**March 2006**	**Avg. 00-06**
Atkinson	**5.6%**	**4.8%**	**7.5%**	**5.6%**	**6.5%**	**5.8%**	**3.8%**	5.7%
Danville	3.6%	3.1%	7.0%	9.0%	6.0%	5.8%	5.1%	5.7%
Plaistow	5.1%	4.4%	8.9%	7.3%	7.2%	5.8%	5.3%	6.3%
Sandown	2.8%	3.4%	8.3%	6.8%	6.8%	5.0%	3.7%	5.3%
Timber. Sch. Dist.	4.3%	3.9%	7.9%	7.2%	6.6%	5.6%	4.5%	5.7%
Rock. County	**n/a**	**n/a**	**n/a**	**5.3%**	**5.4%**	**4.9%**	**4.0%**	**4.9%**
N.H.	n/a	n/a	n/a	4.5%	4.4%	4.0%	3.7%	4.2%

Source: 2007, New Hampshire Economic and Labor Market Information Bureau.

Commute

The effects of suburbanization in the U.S. have not been limited to physical development of the communities. Suburbanization has also affected societal factors such as commute habits (Table P-6). Residents in Atkinson had a mean commute time of 30.7 minutes, which is slightly higher than the county's mean commute time of 28.6 minutes. Due to the proximity to Massachusetts border and financial differences between the two states, many residents opt to live in Atkinson and commute to Massachusetts (53.7%). This is also depicted in Plaistow, another border town. Employers in Rockingham County (37.4%) and Essex County (36.1%) in Massachusetts, employ the two largest concentrations of Atkinson residents. However in Rockingham County, the location where the residents are commuting is fairly spread out with 24.2% of Atkinson residents commuting to "Other" localities within the county. However there is some concentration of commuters in the Salem/Windham area, where 6.7% of the residents work.

Table P-6

COMMUTER DESTIONATIONS
Atkinson and Surrounding Communities
2000

TOWN/AREA	Destination by State				
	Commute Time (minutes)	NH Workplace	MA Workplace	ME Workplace	Other State
Atkinson	**30.7**	**44.5%**	**53.7%**	**0.0%**	**1.8%**
Danville	36.5	60.3%	38.7%	0.0%	0.9%
Plaistow	29.0	42.3%	57.1%	0.2%	0.4%
Sandown	34.4	65.2%	34.2%	0.0%	0.6%
Rock. County	**28.6**	**69.9%**	**28.0%**	**1.2%**	**0.9%**

TOWN/AREA	Destination in Rock. County					
	Exeter/Hampton/ Seabrook	Portsmouth/ Newington	Derry/ Londonderry	Salem/ Windham	Other Rockingham	Rockingham Co. Total
Atkinson	**2.7%**	**2.3%**	**1.5%**	**6.7%**	**24.2%**	**37.4%**
Danville	3.9%	2.0%	2.5%	5.9%	37.9%	52.2%
Plaistow	2.3%	2.6%	0.5%	6.1%	25.8%	37.3%
Sandown	4.4%	2.2%	5.6%	6.5%	32.2%	50.8%
Rock. County	**10.2%**	**9.8%**	**8.0%**	**7.8%**	**17.2%**	**52.9%**

TOWN/AREA	Destination in Other County						
	Strafford Co., NH	Merrimack Co., NH	Hillsborough Co., NH	York Co., ME	Suffolk Co., MA	Middlesex Co., MA	Essex Co., MA
Atkinson	**0.2%**	**1.0%**	**5.7%**	**0.0%**	**2.5%**	**13.6%**	**36.1%**
Danville	1.2%	0.8%	5.3%	0.0%	3.4%	10.9%	23.1%
Plaistow	1.2%	0.0%	3.9%	0.2%	3.1%	16.2%	36.9%
Sandown	0.3%	0.2%	13.2%	0.0%	1.3%	6.5%	24.4%
Rock. County	**2.9%**	**2.5%**	**11.3%**	**0.9%**	**3.0%**	**9.3%**	**14.7%**

Source: 2000, US Census Bureau.

Income, Poverty and Housing

Table P-7 compares the median household income, poverty rates, median house values, and median monthly rental costs. Across all categories, Atkinson is relatively more affluent. The Town has the highest median income and home price. Also supporting this statement is the lower percent of families below the poverty level (2.3%). The median monthly rent is the one category which is quite lower ($600/month) compared to neighboring communities. This is attributed to the lack of diversity in rental units and the relative age of the units, which are mostly located behind the post office and constructed 20-30 years ago. Neighboring towns have a higher rate because they tend to be newer construction and offer more diversity, in layouts and number of bedrooms, compared to Atkinson.

Table P-7

INCOME, POVERTY, AND OTHER INDICATORS
Atkinson and Surrounding Communities
2000 & 2006

TOWN/AREA	2000 Median Household Income	2000 % of Families Below Poverty	2006 Median Home Price	2006 Median Rent ($/month)
Atkinson	**$69,729**	**2.3%**	**$337,000**	**$600***
Danville	$57,287	3.2%	$285,000*	$944*
Plaistow	$61,707	2.1%	$252,350	$983
Sandown	$67,581	3.3%	$298,400	$818**
Timber. Sch. Dist.	$63,508	2.7%	$295,917	$983
Rock. County	**$58,150**	**3.1%**	**$303,000**	**$994**
N.H.	$49,467	4.3%	$250,000	$928

*- Data from 2005 **- Data from 2000

Source: 2000, US Census Bureau.
2005,2006, NH Housing and Finance Authority.

Table P-8 lists the housing units for Atkinson and surrounding communities. The housing boom in the 1980's is quite evident in this table, with all of the communities experiencing large growth rates during this period. In subsequent years, the housing market has waned off but is still progressing forward with strong growth rates between 2%-4% annually. Also, over this time period there is evidence that the housing units are occupying fewer people, suggesting the continuing sprawl of the community. In 1980, Atkinson had 3.08 persons per housing unit. By 2000 this statistic dropped to 2.54, representing a 17% decrease from 1980 levels.

Table P-8

HOUSING UNITS COMPARISON
Atkinson and Surrounding Communities
1980-2005

	Housing Units				Avg. Annual Growth Rate			Average Persons per Unit			
TOWN/AREA	**1980**	**1990**	**2000**	**2005**	**80-90**	**90-00**	**00-05**	**1980**	**1990**	**2000**	**2005**
Atkinson	1,428	1,885	2,431	2,650	2.7%	2.5%	1.7%	3.08	2.75	2.54	2.48
Danville	439	960	1,479	1,662	7.5%	4.2%	2.3%	3.00	2.64	2.72	2.70
Plaistow	1,827	2,691	2,927	2,990	3.8%	0.8%	0.4%	3.07	2.72	2.65	2.62
Sandown	736	1,488	1,777	2,051	6.8%	1.8%	2.8%	2.79	2.73	2.89	2.85
Timber. Sch. Dist.	4,430	7,024	8,614	9,353	4.5%	2.0%	1.6%	3.02	2.72	2.68	2.64
Rock. County	69,375	101,773	113,023	122,322	3.8%	1.0%	1.6%	2.74	2.42	2.45	2.43
N.H.	349,172	503,904	547,024	588,895	3.6%	0.8%	1.5%	2.64	1.68	2.26	2.23

Sources: 1980, 1990, 2000, US Census Bureau.
2005, NH Office of Energy and Planning.

Migration Patterns

Table P-9 analyzes the residence where people live for individuals aged four years old or older in the year 2000 and compares it to their residence in 1995. Out of the 5,767 respondents in Atkinson, 3,612 (63%) live in the same residences compared to 2,095(36%) who lived in a different residence. There were 60 respondents (1%) who fell into the "other" category. This could include residents who lived abroad. Out of the 2,095 who lived in a different residence in 1995, 903 (16%) had previously lived in the same county compared to 1,192 (21%) who lived in a different county. Respondents who lived in a different county are further broken down based on whether the previous residence was in a county within New Hampshire (116 respondents, 2%) or a different state (1,076, 19%). This shows that a significant number of residents who have moved to Atkinson since 1995 have come from outside of the state. This trend is similarly reflected in the other towns in Timberlane School District as well as Rockingham County and New Hampshire. Interestingly, this analysis also reveals the higher percent of residents of Atkinson who have not moved. Some factors which may be attributed to the low emigration percents include: high quality of life, connections to the community and more stable employment.

Table P-9

RESIDENCE FLUCTUATIONS
Atkinson and Surrounding Communities
2000

	Population > 4 years old		Same Residence		Different Residence										Other	
					Total		Same County		Different County							
									Total		NH		Different State			
TOWN/AREA	(#)	(%)	(#)	(%)	(#)	(%)	(#)	(%)	(#)	(%)	(#)	(%)	(#)	(%)	(#)	(%)
Atkinson	**5,767**	**100%**	**3,612**	**63%**	**2,095**	**36%**	**903**	**16%**	**1,192**	**21%**	**116**	**2%**	**1,076**	**19%**	**60**	**1%**
Danville	3,704	100%	1,701	46%	2,003	54%	1,067	29%	936	25%	133	4%	803	22%	0	0%
Plaistow	7,245	100%	4,254	59%	2,991	41%	1,396	19%	1,595	22%	170	2%	1,425	20%	0	0%
Sandown	4,739	100%	3,105	66%	1,634	34%	978	21%	656	14%	107	2%	549	12%	0	0%
Timber. Sch. Dist.	21,455	100%	12,672	59%	8,723	41%	4,344	20%	4,379	20%	526	2%	3,853	18%	60	0%
Rock. County	**259,267**	**100%**	**148,115**	**57%**	**108,652**	**42%**	**51,059**	**20%**	**57,593**	**22%**	**14,333**	**6%**	**43,260**	**17%**	**2,500**	**1%**
N.H.	1,160,340	100%	642,397	55%	501,335	43%	259,110	22%	242,225	21%	79,975	7%	162,250	14%	16,608	1%

Source: 2000, US Census Bureau.

Conclusion

Population in Atkinson is growing and its strain can be felt through increase traffic, longer commute times, increase housing costs and more kids attending school. The town should encourage sustainable development practices to help mitigate these and other concerns. Sustainable development practices include low impact development standards for stormwater management, compact central development in town center, energy efficient development and improve alternative transportation options.

COMMUNITY FACILITIES CHAPTER

Figure 1. Built in 1865 this building formerly housed a school, police station, and Selectmen's quarters, and is currently used for Family Mediation Services.

A. Introduction

One of the primary responsibilities of local governments in New Hampshire is providing community facilities for its residents and businesses. The availability and quality of these facilities are often major factors in determining the quality of life and character of a community. It is extremely important to consider the effect population and economic growth will have on a Town's ability to provide such facilities and essential services for its residents.

A primary focus of a master plan is the use of land now and in the future and its capacity to accommodate growth and development. Use of the land affects community facilities and services just as community facilities and services affect the use of land. It is important then, to look at community facilities and services both in terms of the quality and quantity of services rendered, as well as the impact of those services and facilities on land use. From this perspective, the town can identify facility deficits and barriers and assess future needs.

Table 1 below lists the number of employees for each community facility as of 2009 [Source: 2009 Atkinson Town Report].

Table 1. Community facilities and number of municipal employees as of 2009.

Community Facility	*Number of Employees*
ACT-20 Production Staff	6
Building Inspector	1
Code Enforcement	2
Community Center	1
Deputy Wardens	6
Electrical Inspector	2
Fire Department (Officers-6, Members–29, Clerk-1, Inspectors-3)	38 total
Health Officer	2
Highway Department	4
Police Department (5 full-time, 21 part-time)	26
Plumbing Inspector	1
Town Staff	19
Kimball Library	11

The following sections contain an inventory and description of the community facilities and other town resources.

B. Municipal Buildings

1. Kimball House- Historical Society and Museum

Kimball House was built by Reverend Stephen Peabody, around 1772, when he purchased a twelve-acre parcel of land from Oliver Knight. The colonial style far house has a southern exposure, as so many old houses did, to fully utilize heat from the sun. The original eight room house which still contains the gunstock beams, several Christian doors, and pegged, hand-hewn timbers in the double-thick granite and brick cellar.

Dr. Isaac Hovey came to Atkinson in 1822 and for nearly fifty years practiced medicine in this house. The Walter Maddocks family of Boston bought the house in the early 1900s from the heirs of Dr. Hovey, who modernize it, according to the Victorian style that was popular at the time. They constructed the large bay windows

on two floors, elevated the roof, and added the two great central dormers at the front of the house.

The Kimball House was the original permanent home of the town's public library – as well as the Librarian and her family - from 1907 until the new library was completed.

In 1975, the Town voted approval of the Kimball House to become a Museum. Today, the Atkinson Historical Society (AHS) maintains a museum in the Kimball House and is under the jurisdiction of the Kimball Library Trustees through the New Hampshire Charitable Trust. This historic building has exhibits in several of the rooms on both the first and second floors, and is open to the general public one day each week. The building does not meet ADA requirements currently. The AHS organizes an open house for the Kimball House each December.

2. Historic Kimball Public Library

Kimball Charitable Trust

In 1912, Joseph Kimball donated land and the historic Peabody home to the Town for use as a library and possibly a museum with permission to use a portion of the land as a cemetery. The donation falls under the jurisdiction of the State of New Hampshire Attorney General's Office, Division of Charitable Trusts, with decision making responsibility resting with the Kimball Public Library Trustees.

The Historic Kimball Public Library is actually an addition to the historic Kimball House, built in 1974/5 with Federal Revenue Sharing Funds. During the first several years, the lower level of the new Library was an open room, used by various local organizations, and filled an important function as a gathering and meeting space in town. Various organizations were able to use the area for their meetings. Town Government also took advantage of the space for public hearings on issues that would have drawn attendance exceeding the limits of the Old Town Hall. Elections were conducted in this building, too. As the numbers of library patrons increased, the Library expanded first in to the old Kimball House, where a Children's Library was created. When the needs of the children exceeded this space, the Children's Library was moved to the lower level. With continued growth in population and the explosion in media technology, the Kimball Library experienced issues with respect to modernizing its facility and adding services within the limitations of the building. While the building has exterior handicapped access to both the upper and lower levels, there is no handicapped access between floors within the building, including bathroom facilities located on the lower level.

In 1996, Aaron Cohen Associates, Inc. was hired to do a study of the library. This comprehensive document, on file at the Library, identifies both major and minor library service and facility problems. The standard space needs analysis recommends that a library should provide two square feet of space for every resident of the town. Kimball Library, at 4800 square feet, falls far short of meeting the needs of a town with a population of 5,795. The Library has 1,131 linear feet of shelving for the adult section. Included on those shelves are videos and CDs. The children's area contains 735 linear feet of shelving. There is limited space for additional shelving, and old books must periodically be reviewed and removed, to make room for the new. The parking area, shared by the Library and the Fire Department, presents concerns, particularly considering children who may

be in the parking lot when firefighters are responding to an emergency fire call. The quality of water from the Library well, which is shared with the Fire Station, is poor. Both departments maintain bottled water for drinking purposes.

3. New Kimball Library

Kimball Library was built in 2008 and its design incorporates energy efficient construction. The building is 11,400 square feet housing 11 total employees, 2 full-time and 9 part-time. The building has an average of 150 visitors per day.

The Trustees of the Kimball Library endeavor to oversee the management of the Library for the optimum benefit of the citizens of Atkinson. The trustees will insure that the Mission Statement of the Library is considered in all decisions and will always be mindful that the powers granted by the start allow the adoption of rules, regulations and by-laws to govern the Library. The preparation of an annual budget and the authority to expend all monies raised and appropriated by the Town will ensure that the Library will continue to be a valuable asset to the community.

Circulation in 2009 was 93,880 items, which is an 18 percent increase over 2008. There has been an increase in requests for all types of materials due largely to the increasing cost of new books, music and other media. Public internet and WiFi services are also on the rise. In early 2010, the library began loaning Kindles (electronic book reader devices).

The library provides a variety of programs and services to the community including:

- Meeting rooms
- Displays of artwork by local residents
- Homebound Services program, open to all residents offered in conjunction with the Atkinson Elderly Service
- Halloween Fest, which was visited by 350 people in 2009
- Children's Room activities including story hours, art classes for 4th and 5th graders
- Library Buddies program, pairing teens with children 3 to 8 years old to read and do activities together
- 6 week summer reading program "Summertime….and Reading is easy" for pre-K-Grade 5 with 104 children participating
- 32 children's summer programs and 35 teen programs offered in 2009
- Monthly adult programs offered with help from the Friends of the Library

In 2009, 433 programs were offered with 5,503 people attending these events and provided meeting

space for 38 non-library organizations. The Friends of the Library sponsor various events including museum passes, programming, special book collections, and fundraisers in support of library services.

4. Fire Station

"Historic Fire Station"

In 1947, the original Fire Station was built on Kimball Trust land with permission of Town Meeting, with the approval and compensation of the Charitable Trust. In 1988, Donald Bliss, a consultant for Boyer, Bennett and Shaw, Inc., prepared a Fire Department Study in which he cited the need for a new fire station.

At the April 1944 town meeting in the Atkinson Fire Department was established as an all-volunteer department which is still functioning in the same capacity today. The volunteer membership has grown from the days of the past from 7 original members to 36 State certified members trained in Fire and Emergency medical services. The number of calls for service has also grown from a hand full each year in the early years to more than 500 in 2010.

In 1947 the original station was built on Kimball Trust land at 7 Academy Avenue with permission of town meeting. It was a small two-bay building that served the towns' needs for many years. However, over the years as the Town continued to grow and through the volunteerism of the members, the station received several additions. In 1988, a study was prepared by Boyer, Bennett and Shaw which cited among other things, the need for a new fire station.

New Fire Station

The 1990 Master Plan mentions plans to construct a Safety Complex to house the Police Department, Fire Department and emergency dispatch center. At Town meeting in 1999 citizens voted to fund and build a new fire station. By September of 2000, the new state of the art fire station was complete and the Fire Department had a new home at 1 Academy Avenue, just up the street from the old station. The new station was built to handle the future needs of the community. The new station has meeting rooms, office space, sleeping quarters along with kitchen facilities. The facility was designed and built as a receiving center for Atkinson's citizens in the event of major storms and also acts as the Emergency Management communication center when necessary.

The Department is looking closely at approved development projects to determine what impact they may have on Emergency services and will consider the possibility of a new Fire/EMS Substation to provide adequate protection to anticipated growth areas.

The members of the Department continue to respond to all calls for service and they are now paid on a pay-call based system. We currently have a private contract ambulance service stationed at 1 Academy Avenue, on a twenty-four hour a day, seven days a week schedule. They provide emergency transport service to several area towns along with the Town of Atkinson. This arrangement has worked well and has allowed the department to remain a call department. We currently are accumulating data that tracks call volume and response time of personal and believe that in the near future, there will be a need to hire full time personnel to assure that the community is adequately protected and that we meet the needs and challenges ahead.

Many of the members volunteer their time to provide educational training to the community. Members work with the school children of all ages on fire prevention and safety. They also work with businesses, by training the employees in CPR and first aid along with fire prevention and safety. The members are very proud of these outreach programs that have proven to save lives. Fire prevention has for many years performed annual inspection on all commercial business .These inspections have allowed the Fire Department to become increasingly familiar with building conditions and any changes within businesses and buildings throughout town.

The Town's response equipment has increased throughout the years to our current fleet of 9 vehicles. Included are 3 pumper trucks, 1 tanker truck, 2 ambulances, 1 utility/forestry unit, 1 special service trailer, and 1 command unit. We also have mutual aid agreements with the surrounding communities when additional resources are needed.

For many years the Department relied on fire ponds with a dry hydrant installed in them to supply the water needed for fire protection within the community. We still rely on fire ponds in many areas of town however; we have been developing a pressurized hydrant district through a joint effort between Hampstead Water Company and local officials. We have been able to install 74 pressured hydrants on the privately owned water system, located mostly on the west side of town. The goal would be to work closely with water company officials to provide fire protection coverage to the whole town with a reliable pressurized hydrant system and have the use of the existing fire ponds as a backup.

The Department continue to work with the planning Board and other town boards and officials so that we can create reasonable zoning ordinances and building and fire code regulations that will allow for and service future development while continuing to maintain a relatively low tax impact Fire Department. The Fire Chief also serves as the Emergency Management Director and leads development, implementation and update of the town's Hazard Mitigation Plan.

5. Old and New Cemeteries

Neither the New Cemetery (part of the Kimball Trust, located behind the Kimball Library) nor the Old Cemetery (Main Street) have plots available. Cemetery plots are available in Section III, a one-acre parcel adjacent to the Old Cemetery. Cemetery Trustees have voiced concern about the rapidly dwindling availability of space. The purchase of the 1 Academy Avenue parcel did provide land to connect the Old and New cemeteries, thereby expanding the cemetery to accommodate growing needs.

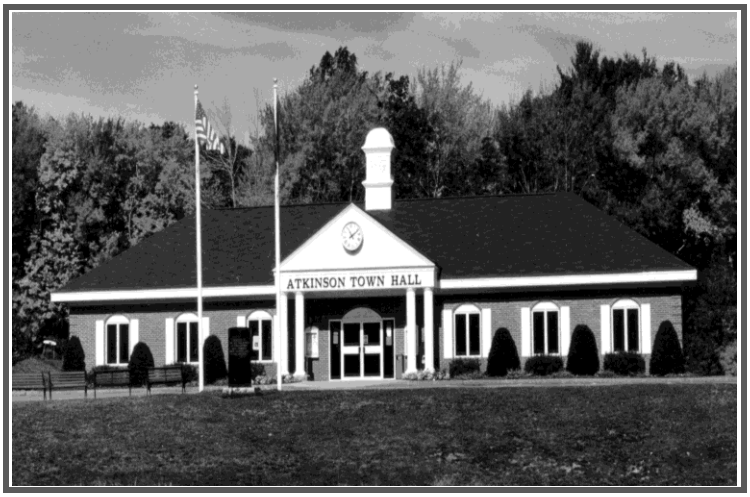
6. 1 Academy Avenue

Voters purchased this 8 acre parcel of land at the corner of Main Street and Academy Avenue, in March 1995 at a cost of $215,000. The initial intent of the warrant article was to purchase only a portion of the land for future expansion of the cemetery. The acquisition of the total parcel offers multiple opportunities. In addition to cemetery expansion, the land now houses a new Town Garage and the new Fire Station. Upon removal of the house, there was an opportunity to realign Academy Avenue which will afford easier access for Fire Department vehicles. This roadway realignment had been a long standing recommendation of the State Department of Transportation, which owns both roads. The realignment of Academy Avenue provided an opportunity to enlarge the Town Common which serves to enhance the character of Atkinson's Town Center. Each of the preceding Master Plans and subsequent updates has reported the lack of identity of Town Center, which was also cited in the recommendation section.

The 1997 Town Meeting voted to authorize the exchange of a quarter of an acre of the land located on Academy Avenue and owned by The Trust for four acres of back land from the 1 Academy Avenue parcel. This exchange will facilitate the use of the 1 Academy Avenue land for town purposes, including the construction of a new garage and new fire station. Once the new fire house is completed and occupied, the old building will become the official property of the Library Trustees, to do with as they choose.

7. Town Hall

Atkinson Town Hall was built in 1985 and dedicated in 1986. It replaced the Atkinson Grange Hall, built in 1913, which was located on the land abutting the former Grange property where the Atkinson Academy is now located. The Grange was ultimately razed, creating more parking for Atkinson Academy. To commemorate the U.S. Bi-centennial in 1976, the Grange donated a pair of stained glass windows which are the focal point of the Town Hall atrium. Town Hall was architecturally designed to be in harmony with the community and is attractively landscaped. The facility was projected to adequately provide public services to a maximum population of 10,000.



The Town Hall houses four full-time employees and houses several part-time elected and appointed officials, including the Tax Collector, Treasurer and their deputies; building, electrical, plumbing and fire inspectors; the Health Officer; and the Code Enforcement Officer.

Since 1988, vacant or seldom used office space has been permanently assigned to new staff employed to meet increased demands for services. A storage room, spacious in 1986, is nearly filled with documents that the town is required by state law to maintain. Many of these documents have been put on microfilm and stored in the Town Clerk's Office. In addition, several of the committees with no offices of their own maintain file cabinets in the storage room, and the postage meter and FAX are located there as a central convenience to all departments. The copy machine was moved to the hallway off the main lobby.

The Selectmen's Office and meeting room can hold approximately 60 people. This room can be partitioned into two meeting rooms in addition to the Selectmen's Office. The middle room, which is small, is seldom used. Since all committees are staffed by volunteers, most committees meet in the evenings. It is not uncommon for several committees to meet on the same evening, occupying the Planning Board, the Selectmen's Office, and the back meeting room. Tax maps and assessing information are kept in the Selectmen's Office to be accessible to the public, and transient professionals, such as the auditors or assessors who use the Selectmen's Office for their work.

A very small room off the Selectmen's Office houses cable television and video equipment. As there is no extra space, television cameras are left in the Selectmen's Office, where they are most frequently used to televise Board of Selectmen and Planning Board meetings. Other, accessory cable television equipment is stored in the closet. The Selectmen's Office is also used for various other town meetings, programs and public hearings.

The pond in front of Town Hall serves multiple purposes. In the winter, the pond is used for ice skating; in the fall, it's a resting place for migratory birds, and, year-round, and serves as a fire pond for the Fire Department.

8. Police Station

Historical Overview

In 1992, the Timberlane School District offered to give the Town ownership of the Rockwell School (which was being used as a storage facility) in exchange for approximately two acres of land between the new Town Hall and Atkinson Academy, plus the sum of $25,000 to be used in combination with school money to pave the parking area. The exchange gave the Timberlane School District additional land to apply to density requirements, if a future addition to the Academy is necessary, and it gave Atkinson a building in which to house the Police Department.

Police Station and Facilities

The 1993 Town meeting approved the sum of $238,720 to remodel the Rockwell School for use by the Police Department. The Police Department occupies this small on Academy Avenue. With very limited space for storage, the building has no area large enough to accommodate a departmental meeting, no private area for interviews, and no containment area for detainees held for transport to the Brentwood facilities.

The building houses the five full-time and twenty one part-time police officers. The renovated building was designed to match, as closely as possible, the original building, built in 1845 as a Unitarian Church. The new station, re-named the Rockwell Building, includes a dispatch station, training room, detention facilities, juvenile office with adjoining conference room, Chief's office, officers office, interview room, viewing room with two-way mirrors, prosecutor's office, armorer's room, equipment room, evidence rooms, squad room, file room, and utility room. With the expanded facilities, the Police have been able to add more sophisticated and modern law-enforcement equipment. The building is handicap accessible. The Chief's major concern since

occupying the new building has been the lack of a facility for the safe transfer of suspects from the cruiser to the station. A second ongoing concern is lack of a local firing range. The officers who are required by State law to qualify each year currently use private land for practice.

Parking at the station is limited. Meetings or functions involving large groups have presented problems in the past (for example, a flu clinic for the elderly held at the new station had to be moved to the Town Hall, where there is adequate parking).

Police Department Services

The Police Department provides a variety of services to the community including the following:

- Annual firearms safety course
- Neighborhood Watch programs
- Neighborhood patrols (3 days per week) to survey remote areas for improved safety
- Developed a 5-year Master Plan, pending approval by the Board of Selectmen, which will enable establishment of a $25,000 capital reserve fund for staffing, services and facility improvements

9. Highway Department and Town Garage

The 1998 Town Meeting approved funding of $190,000 to construct a new Town Garage on the 1 Academy Avenue parcel. Construction on the new Town Garage began in September, 1998, and was completed in November 1998. The Town Garage (a 60 foot by 40 foot building) houses the town's one fully equipped truck, 4 plow hitches, four sander trucks, an office and bathroom facilities. The town leases equipment to perform routine cleaning of catch basins (a requirement of the town's EPA MS4 permit).

Highway Department

The Town Garage houses the Highway Department and Care of Grounds, both directed by Road Agent Edward Stewart. The Highway Department is responsible for construction and maintenance of roads, municipal drainage infrastructure, and responds in the event of natural hazards and storm events which impact road function and public safety. The Department employs three part time staff to assist the Road Agent. Care of Grounds is responsible for maintenance of town grounds, properties and facilities, except the cemetery.

The Highway Department is responsible for the following tasks and activities:

- Prepare the annual report to EPA in compliance with MS4 permitting requirements
- Implement specific actions outlined in the MS4 permit under the 6 Minimum Requirements (i.e. infrastructure maintenance, public education, and public involvement)
- Participation in the development of the town's Hazard Mitigation Plan

The Highway Department has initiated the following projects and programs:

- Hydrologic Study of Island Pond Road and Hog Hill Brook Watershed (funded by the I-93 Community Technical Assistance Program)
- 10-year Capital Improvement Plan (2009-2019); several projects in the plan have been implemented through the actions of the Road Agent, approval by the Board of Selectmen and by vote at town meeting

10. Community Center

In 1985 Atkinson purchased the former Trinity House Camp on Main Street, a parcel of greater than 50 acres. The land was originally sold to the New Hampshire Society for the Preservation of Forests (NHSPF), which subdivided the parcel into two lots. One lot including the house and five acres was sold to the Town. The second lot was sold to the Conservation Commission, but remains under the supervision of the NHSPF to guarantee it will remain undeveloped.

The Town was enthusiastic about the acquisition of the facility, which has been renamed the Atkinson Community Center. Since this acquisition, voters have approved several articles to improve the meeting room and the kitchen in compliance with current building code. Its large meeting room was considered ideal for use by many of the civic and non-profit organizations in town which needed a place to meet. The building is now very actively used by those organizations, and is frequently rented for private functions as well.

In 1995, the Town approved major renovations to the attached house (previously used for storage), and placed the building under the supervision of the Recreation Commission. The Community Center is the hub of the town's Senior Program activities, weekly and monthly programs, and luncheons. In 2010 the Senior Program plans to implement monthly educational health promotion workshops. One of the Center's downstairs rooms is available to senior citizens who might wish to play cards, read or watch television. This meeting room has appropriate ramps and bathroom facilities. The second floor rooms however are not handicapped accessible, therefore are not currently in use.

C. Recreational Facilities

1. Parks and Public Recreational Areas

Located in the geographic center of Atkinson, Woodlock Park seemed a very appropriate location for recreational opportunity in 1969, when the Town voted to purchase five acres of woodland on which to create a ball field. Most of the work to create the first ball field was done through volunteer effort, and, in 1972, the first ball field was opened. A key attraction at Woodlock Park seems to be the Tyke Towers, a playground for small children, which is in use throughout the day in warm weather. Parking is a problem at Woodlock Park, where the safety of children is the major concern.

In the 1970s, a Federal Grant gave Atkinson the money to develop new recreational opportunities, including tennis courts and a second ball field. The plans also called for the creation of walking paths throughout the area. In the 1990s, state funding, together with matching town funds and donations from the Timberlane Soccer League and Atkinson Youth Baseball, allowed the addition of yet another ball field, along with bathroom and storage facilities and an outdoor pavilion to accommodate the needs of a growing population.

Today, all athletic fields are in frequent use during the respective seasons, and the Recreation Commission is looking to add another soccer field, allowing use of one while the other spends a year in rehabilitation.

Dyke Auditorium is used during winter months for basketball. Older children participate in programs held at the Middle School and High School facilities in Plaistow. The Town runs a summer recreation program on the Atkinson Academy grounds for six weeks during the summer for elementary school aged children.

2. Public Water Access

A canoe launch to Big Island Pond was built on town land off Stickney Road for use by the general public. After five years without a functional public launch, and over 20 years since the first launch was opened, Atkinson has a canoe and kayak launch again with parking for up to ten cars. There is no public swimming facility in Atkinson.

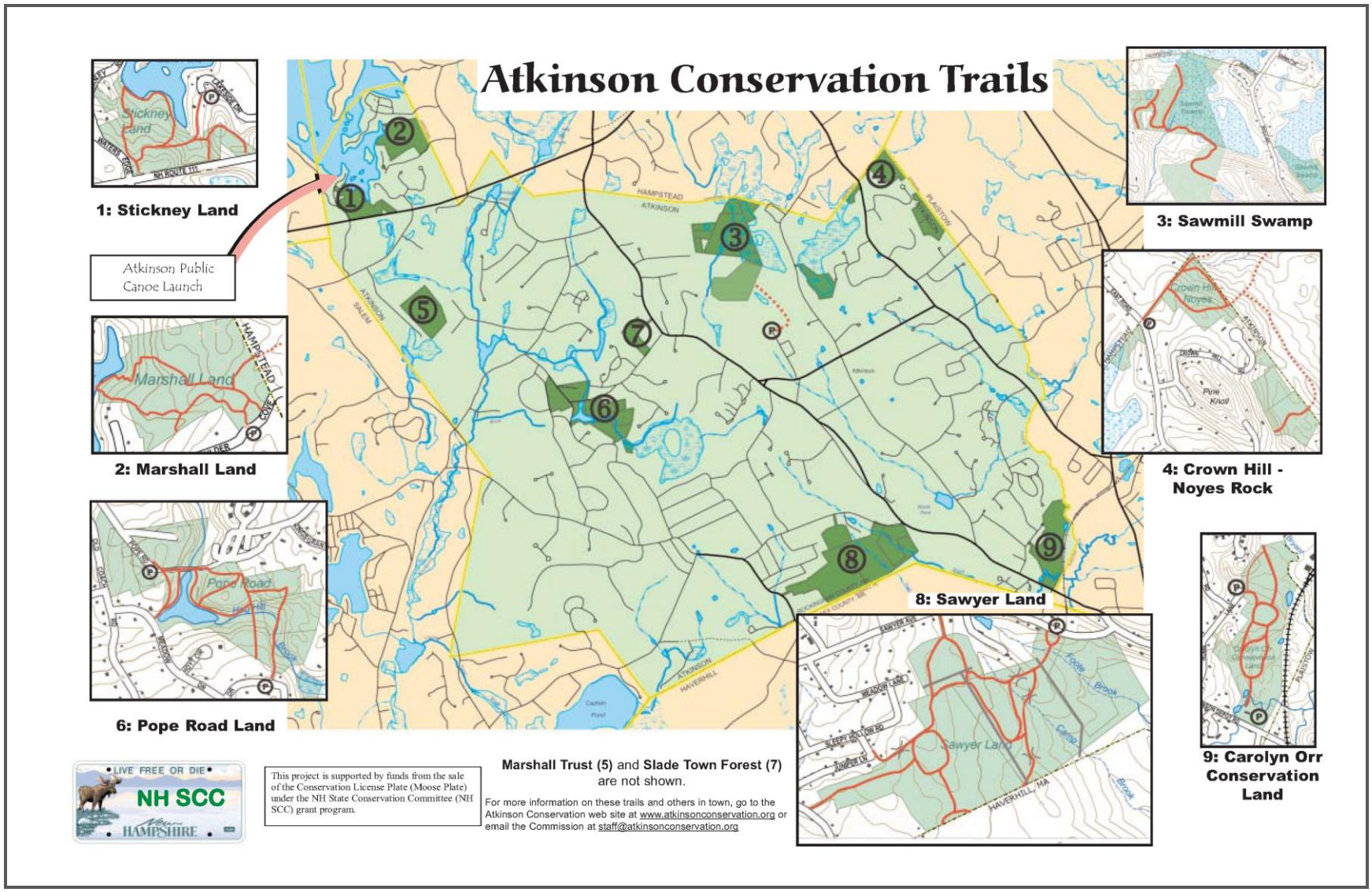
3. Public Trail System

The map on the following page is an excerpt from the Atkinson Conservation Trails brochure, which shows the location, access points and configuration of trails, and provides a general description of conserved lands and the natural features and resources found on them. Public trails are located at the following town owned conservation properties: Stickney Land, Marshall Land, Pope Road Land, Sawmill Swamp, Crown Hill-Noyes Rock, Carolyn Orr Conservation Land, and Sawyer Land. Refer to *Figure 2* on the following page for a map of public trails.

4. Public Water Access

After years without a functional public launch, and over 20 years since the first launch was opened, Atkinson has a restored canoe and kayak launch at Island Pond. The launch is on Stickney Road off Lake Shore Drive and has parking for up to ten cars.

Figure 2. Map of trails on public conservation lands.



D. Solid Waste Disposal Facility and Services

Atkinson has transitioned its solid waste disposal from the colonial family dump (many older properties have one buried in the yard), to a town dump operated prior to 1970 on Meditation Lane, to a transfer station located on Woodlock Park Lane (formerly Pope Road) and now implement curb-side trash and recycling pickup. Curb-side weekly pickup is performed through a contract with a private company. The trash removal contract also provides for disposal of one piece of furniture and one tire weekly. Residents may drop off white goods and electronics free of charge at Windfield Alloys, a private recycling company located in town.

A compost and brush dump area is open from April to the first snow fall to accommodate disposal of yard waste. The facility no longer accepts construction debris. The facility produces wood chips and compost from yard waste materials, both of which are available to the public at no charge. Car parts and anything else which might be hazardous are not accepted.

Recycling began through the efforts of a large group of volunteers who were anxious to see Atkinson join other communities in actively doing their part to protect the environment. Proceeds from the sale of recyclable goods, though relatively insignificant, were returned to the town's general fund. Recycling is not mandatory in Atkinson. A facility attendance receives the recyclable materials dropped off by residents. Recyclables, including glass, plastics and aluminum cans, are accepted at the Recycling Area. The facility also accepts scrap iron, cardboard, and mixed paper. The recycling facility is open Saturdays and Sundays 9:00am to 4:00pm, and Wednesday from noon to 4:00pm. Newspapers, packaged in paper or bundled and tied, are left curb-side and picked up every other week.

The area itself is relatively unprotected, lending to access at any time of day or night which sometimes creates problems. For example, some residents tend to drop off their goods whether the station is manned or not, creating undesirable situations.

E. Educational Facilities

Atkinson, Danville, Plaistow and Sandown are members of the Timberlane Regional School District. Each town maintains its own elementary school, while students in grades 6 through 12 attend the Timberlane Middle School and Senior High School on Greenough Road in Plaistow.

1. Timberlane Regional School

The Town's educational responsibility is met by providing funds to the Timberlane Regional School District by paying for its proportional share based on the number of students enrolled from Atkinson. In 1998, the Town instituted School Impact Fees in accordance with State Statues to help pay for required capital improvements necessitated by growth. Impact fees can be used to pay for improvements to Atkinson Academy or help pay the town's proportional share to the Timberlane Regional School District. Total student enrollment statistics are provided in the table below.

Table 2. 2011 enrollment statistics for Atkinson Academy, Timberlane Regional Middle School and Timberlane Regional High School.

Grade	Atkinson Academy	Grade	Timberlane Regional Middle School	Grade	Timberlane Regional High School
Pre-School	31	06	75	09	76
K	62	07	94	10	83
01	50	08	96	11	82
02	75			12	70
03	88				
04	71				
05	83				
Totals	**429**		**265**		**311**

Total 2010 student enrollment for Atkinson = 1,036 students

2. Atkinson Academy

Atkinson Academy, the second-oldest co-educational school in the country, was founded as a boys' school in 1787 by Reverend Stephen Peabody, General Nathaniel Peabody and Doctor William Cogswell with funds gifted by Colonel Atkinson. The school began admitting girls in 1791 and today is the oldest co-educational school in the nation. The school building burnt to the ground in 1802, and was rebuilt in 1803 at a cost of $2,500. The 1803 building remains a part of the Academy, with only four classrooms.

Atkinson's elementary students, grades K through 5 attend Atkinson Academy. In 2010, enrollment totaled 429 students.

3. Other Schools

Hampstead Academy and Countryside Schoolhouse, both located on Maple Avenue, offer kindergarten to Atkinson's pre-school children. There are other private kindergartens in surrounding communities.

F. State and Federal Facilities

1. State Properties

The State of New Hampshire owns two parcels in Atkinson. One very small parcel is located at the intersection of Hall Farm Road and the new Route 111. The other parcel is located on east Road near Lisheen Drive, and once served as a source of gravel for the state. In 1995, Atkinson unsuccessfully attempted to obtain this parcel for use as a town garage site.

2. Post Office

The U.S. Post Office is located at 9 Main Street. According to Postmaster Edward G. Maciejewski, as of 2011, the Post Office delivers mail to approximately 2,800 customers along 5 home delivery routes, and serves 675 box holders.

G. Town Property and Conservation Lands

Appendix 1 identifies town-owned lands and their uses, conservation land and open space lands.

Dow Common

Dow Common is located at the heart of Atkinson's historic town center. Land for Down Common was donated to the town by William Cleaves Todd (1823-1903) and formerly dedicated at a ceremony held on December 4, 1888. The Common is named after Sergeant George P. Dow (1840-1910), a former Atkinson resident and Civil War veteran who received a Congressional Metal of Honor. The park contains four stone benches, two garden benches, a monument with the names of veterans who served in several wars and conflicts, and a plaque with names of residents that helped with the town's "Beautification Project".

H. Other Public Facilities

1. Hospitals, Medical Facilities and Services

Atkinson is served by Merrimack Valley in Haverhill, MA, the Exeter Hospital in Exeter, NH, Lawrence General Hospital in Lawrence, MA, the Parkland Medical Center in Derry, NH and the Holy Family Hospital in Methuen, MA. Hampstead Hospital, on East Road in Hampstead, offers substance abuse and mental health assistance and services.

Ambulance services are provided contractually through Trinity Ambulance Service which maintains a substation in Atkinson.

2. Family Mediation Services

The former police station on Academy Avenue has been used in past years as Selectmen's quarters and a school when originally built in 1865. After discussion regarding appropriate use of the building for town purposes, the building was designated for use by Family Mediation, one of the service agencies supported by the Town.

Family Mediation & Juvenile Services is dedicated to providing quality resources to youth and families in order to reduce delinquency and out-of-home placements, and to empower them as individuals, family members, and citizens of the community. The service offers the following programs: Parent-Child Mediation, , Substance Abuse Awareness, and a Restitution Program.

The agency is funded in part by: the towns of Atkinson, Danville, Hampstead, Kingston, Newton, and Plaistow, the Rockingham County Incentive Funds, and private donations and grants. The Board of Directors consists of representatives from Atkinson, Danville and Hampstead.

3. Churches

The Atkinson Congregational Church on Main Street, and Pentucket Baptist Church on East Road serve residents of Atkinson. Other denominations attend churches in nearby New Hampshire and Massachusetts communities.

I. Municipal Energy Use

The Atkinson Energy Committee (AEC) was formed in 2007. In 2008, Atkinson was one of 165 municipalities that passed the New Hampshire Climate Change Resolution that calls on the federal government to prioritize climate change policy and enables the formation of a local energy committee for the Town of Atkinson, and to address municipal energy efficiency and conservation, emission reductions, and other energy related issues. In 2010, the town adopted its first Energy Chapter of the Master Plan.

In 2009, the Atkinson Energy Committee helped prepare an energy report with the Rockingham Planning Commission in partnership with and funded by a grant from Clean Air-Cool Planet through the NH Charitable Foundation. This report is a summary of municipal energy use, energy costs, and greenhouse gas emissions for the Town of Atkinson, New Hampshire for the years 2007 and 2008. The report focuses on energy use associated with municipal facilities and operations, with special emphasis on town-owned buildings. The report does not include information about private residential, commercial, or industrial energy use. The report does not include the Kimball Library as construction had just been completed and a full year of energy use data did not exist. Following is information and data excerpted from this report.

Atkinson's municipal buildings evaluated for this report total 30,945 square feet of building area. Municipal building information is summarized in Table 3 below.

Table 3. Summary of municipal buildings and infrastructure included in this inventory.

Building Name	***Year Built***	***Floor Area (sq ft)***	***Energy/Fuel Types***
Community Center	1914 (1950's)	6,800	electric, propane
Fire Station	2000	11,000	electric, propane
Police Station	1800 (1900's)	3,575	electric, No.2 heating oil
Town Highway Dept. Garage		2,970	electric, propane
Town Hall	1800's	6,600	electric, No.2 heating oil, geothermal system
Kimball House	1800's	2,506	electric, No.2 heating oil
Total Floor Area		**30,945**	**--**

Atkinson's vehicle fleet is described below; combined, the police, fire, emergency services and other service vehicles total 17.

Table 4. Inventory of municipal vehicle fleet.

Vehicle Fleet	*Vehicle Type*	*Model Year*
Police Department	2 SUV's, 6 Crown Victoria cruisers	---
Fire Department		
Engines 1 and 2	Central States	1992 and 2004
Engines 3 and 4	Mack	1982 and 1972
Tanker 1	Mack	1985
Rescue 1 and Utility 1	Ford F450	1989 and 1995
Ambulance 1	Ford F450	---
Forestry 1	---	1965

Table 5. Energy use, equivalent carbon emissions, and costs, by energy sector (2007-2008).

Municipal Sector	*Energy Use (MMBtu)**	*Energy Use (%)*	*CO_2 (tons)*	*CO_2 (%)*	*Total Energy Cost*	*Energy Cost %*
2007						
Buildings	2,521	50.1	353,662	41.9	$48,058	39.6
Vehicle Fleet	1,805	43%	283,858	30%	$42,275	28%
Street Lights	708	17%	206,246	22%	$31,124	20%
Total	**5,034**	--	**843,766**	--	**$121,457**	--
2008						
Buildings	1,804	39.4	215,724	28.8	$51,701	39.5
Vehicle Fleet	2,063	43%	325,044	33%	$48,093	33%
Street Lights	711	15%	207,049	21%	$31,245	22%
Total	**4,578**	--	**747,817**	--	**$131,039**	--

* MMBtu = one million British Thermal Units *Note: 2007 and 2008 energy data includes the Kimball House.*

The Fire Station has the highest total annual energy cost and annual energy cost per square foot, followed closely by the Town Hall. The Police Department has the highest energy use intensity rating (kBTU/sq ft), followed closely by the Fire Station and Kimball House. The Town Hall has the highest carbon dioxide emissions, followed closely by the Police Station and Kimball House.

Table 6. 2008 energy use, carbon emissions, and costs by municipal building.

Municipal Buildings	*MM BTU*	*Area (sq ft)*	*EUI* (kBTU/ sq ft)*	*CO2 (lbs)*	*lbs CO2/ sq ft*	*Total Energy Cost*	*Cost/ sq ft*
Community Center	208.6	6,800	30.7	15,895	2.3	$7,607	$1.12
Fire Station	700.6	11,000	63.7	48,259	4.4	$16,980	$1.54
Highway Dept. Garage	154.6	2,970	52.1	5,578	1.9	$3,497	$1.18
Police Station	309.8	3,575	86.7	37,897	10.6	$8,014	$2.24
Town Hall	282.5	6,600	42.8	84,216	12.8	$12,403	$1.99
Kimball House	148.1	2,506	59.1	23,879	9.5	$3,200	$1.28

** EUI = Energy Use Intensity*

2010 Energy Audit of Municipal Buildings

In 2011, the Atkinson Energy Committee contracted with Arbogast Energy Consulting (AEC) to conduct a detailed and comprehensive energy audit of municipal buildings. The goal of this audit is to identify infrastructure improvements to increase energy efficiency of the facility, thereby reducing municipal energy expenditures. This report "***ASHRAE Level II Audit Town Buildings, Town of Atkinson, New Hampshire***" is available to the public at the Board of Selectmen's Office. Key municipal energy use data (2009/2010) from this report is provided on page 21.

The 2010 energy report by AEC captured energy use data for the Kimball Library – which was not included in the 2009 RPC report – because by 2010 several years of data were available to analyze. A summary of energy use data for Kimball Library for 2009/2010 is provided on page 20.

Meter Data and Utility History Summary

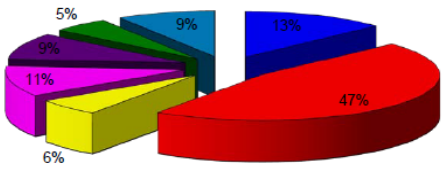
Town of Atkinson, New Hampshire
Kimball Library
Utility Analysis Period:

8/01/2009 to 7/31/2010

	Current Year			Previous Year		
	8/1/2009 to 7/31/2010			8/1/2008 to 7/31/2009		
	Electric		Propane	Electric		Propane
Utility Costs	$13,506		$6,202	$10,945		$15,808
Utility Usage	91,840		3,716	84,840		8,292
$ Cost/Unit (kWh, Therm, Gal)	$0.15		$1.67	$0.13		$1.91
	CDD		HDD	CDD		HDD
	419		6,689	324		7,366
Current Year Vs Previous Year	Electric		Propane			
Change in Cost	23%		-61%			
Change in Usage	8%		-55%			
Change in $ Cost/Unit	14%		-12%			
Change in Degree Day	29%		-9%			

Electric usage increase proportional to CDD and Propane Usage decrease proportional to HDD
CDD - Cooling Degree Day
HDD - Heating Degree Day

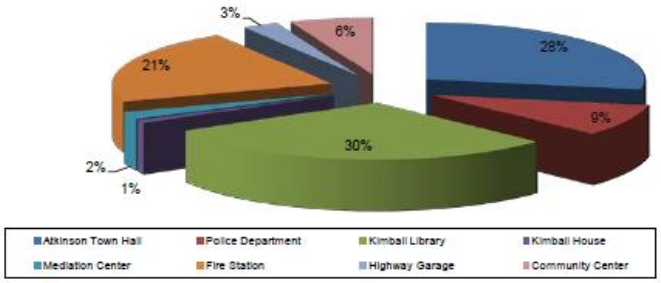
ENERGY USAGE PROFILE



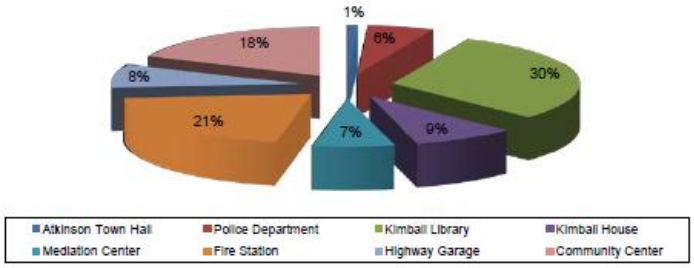
Total Facility Site Consumption	652 (Millions of BTU/hr)
Cooling	13.1%
Heating	46.7%
Pumps	5.9%
Lighting	10.8%
Fans	9.4%
Domestic Hot Water	5.2%
Plug Load (Include Computers)	8.9%
Total	100%

Key energy findings from the report ***ASHRAE Level II Audit Town Buildings, Town of Atkinson, New Hampshire*** [AEC, 2010]

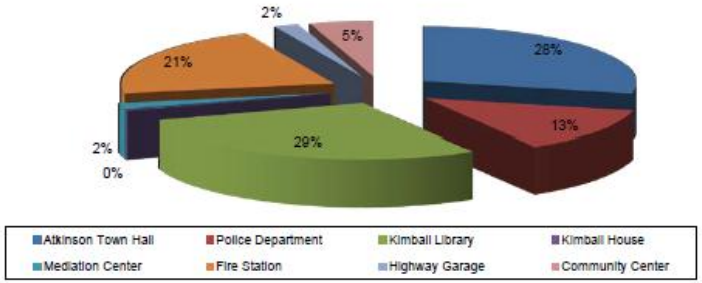
Electric Cost by Building



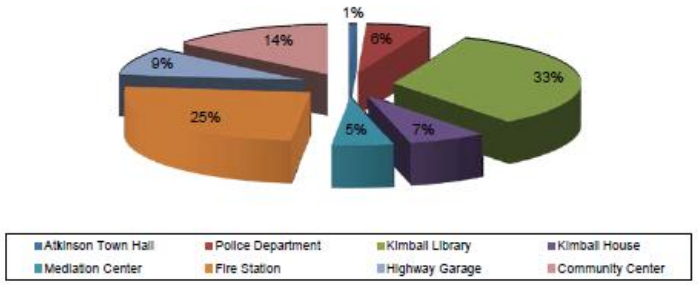
Fuel Cost by Building



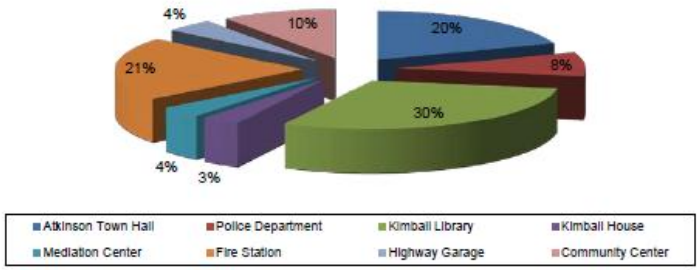
Electric Usage by Building



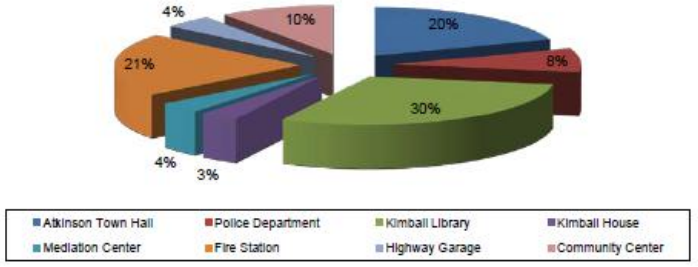
Fuel Usage by Building



Total Utility Cost by Building



Total Utility Cost by Building



J. Recommendations

1. Restructure Highway Department funding, staff and budget to improve efficiency and effectiveness of services to the community.

2. Make the solid waste facility more accessible to the public and encourage the public to use the compost and wood chips produced there.

3. Increase full-time patrol and support positions and capacity of the Police Department.

4. Address deficits in the communications systems coverage for the Police Department and Fire Department. Implement recommendations in the investigative report (2010) produced by the Emergency Radio Communications Committee (appointed by the Board of Selectmen).

5. The Town should maintain Zoning Ordinances that will protect itself from incurring the expense of constructing public sewer or public water facilities.

6. The Board of Selectmen and the Planning Board should work cooperatively to assure that there is a committee for the on-going planning of community facilities (this function is presently served by the Building Needs Committee).

7. The Town should establish a committee to develop the Master Plan for the Town Center. Within the Town Center, provisions should ultimately be adopted to allow for community services and facilities of a specialty retail nature and civic function as well as professional services. The Town should maintain functional and design control over the District to create a community focal point that is aesthetically and visually functional.

APPENDIX 1: Town Property and Conserved Lands

The following information was compiled by the Conservation Commission, reflects acreage of town properties and conserved lands as of January 2012.

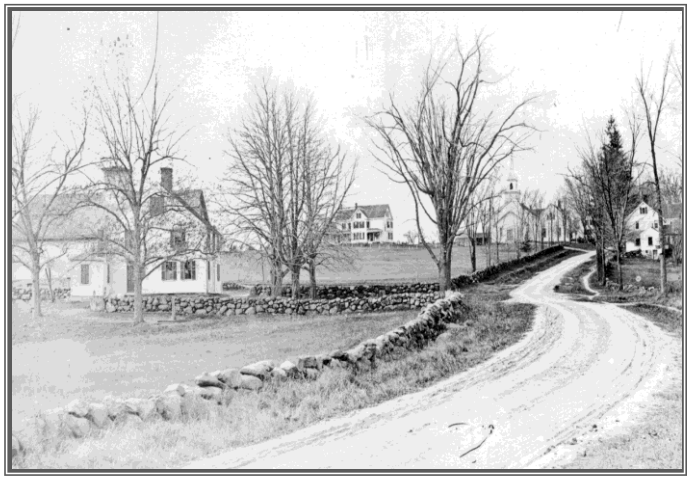
Type	***Acreage***
Conservation Land	179.6
Town Conservation Land	24.6
Conservation-Town Forest	352.2
Set Aside for Open Space Subdivisions	697.07
Recreation	24.4
Town Property/Buildings	44.3
Town Cemetery	3.5
Town Common	0.5
Town Miscellaneous	20.1
Other Lands	11.3
Total	***1,357.57***

EXISTING LAND USE

Section ***Page***

1. Overview and Introduction

Atkinson is a community of approximately 6,751 residents and comprised of 7,296 acres (6,578 of upland, 590 acres of wetlands, and 128 acres of surface water). Atkinson is located in southwestern Rockingham County in southeastern New Hampshire along the Massachusetts border. The town is situated within the I-93 corridor and is not served by public transit.



Atkinson has transformed in recent decades into a commuter community characterized by sprawling residential development as the dominant (developed) land use, comprising 2,571 acres of 35.4 percent of the town area (includes land and water area).

Atkinson still has significant acres of forested lands (approximately 3,227 acres or 44.5 percent of the town area), though these areas have become fragmented by development and reduced in size.

What makes the Town of Atkinson desirable as a place for families to establish their roots is the "rural" setting and the sense of community and involvement found throughout the town. As discussed more fully in the *Future Land Use Chapter*, this rural attraction brings people to the area.

2. Growth and Development Trends

The Existing Land Use Chapter of the Atkinson Master Plan provides information on both the topography of the land and the land uses allowed (zoning areas) and which are currently taking place throughout the town. This information is depicted on three maps:

- Base map shows topographical elevations, waterways, roadways and specific geographic reference points throughout the town;
- Existing Land Use map (2005) illustrates the various uses of the land throughout town such as industrial, commercial, retail, residential housing types, agriculture, conservation land/open space and other uses; and
- Zoning map shows the geographic extent of the 8 existing zoning districts.

Growth Trends

In the late 1980's and early 1990's the development slowed due to the decline in regional economic conditions coupled with stringent local land use controls. From the late 1990's through 2005 with a substantially improved economy, many more developments emerged throughout town, although the Town, through its strengthened regulations is better equipped to review these developments during the permitting process. The establishment of new roads throughout the town creates frontage and allows portions of previously inaccessible land to be developed.

New development and construction in town has not been limited to a specific geographical area. Rather, growth and development has spread throughout the town resulting in a highly fragment landscape. In the 1970's to 2005 Atkinson's development concentrated primarily on, or very close to, the major state and local roadways in town. Now, in the early 2000's, growth and development has sprawled deep and far from our major roadways with the construction of new local roads.

Table 1. Summary of housing statistics for Atkinson

	Total Units 2000	Net Change in Units									Total Units 2009
		2001	2002	2003	2004	2005	2006	2007	2008	2009	
Atkinson	2,431	88	25	24	6	18	6	8	3	3	2,612

Population Growth

From 1990 to 2009 the population of Atkinson has increased by 24.6 percent from 5,188 to an estimated 6,466. The NH Office and Energy Planning projects that population will increase to approximately 7,790 by 2030, a roughly 20 percent increase over this 20 year period.

Table 2. Population statistics and projections for Atkinson from 1990 through 2030.

1990	2000	2010 Census	2009 persons Per square mile	OEP Projection 2030
5,188	6,178	6,751	592	7,790

[Source: NH Office of Energy and Planning, 2009 Population Estimates of NH Cities and Towns and 2010 - 2030 Population Projections for New Hampshire Municipalities]

Corresponding with population growth, housing stock has also increased since 2000 by 181 dwelling units (97 single-family and 84 multi-family), up from 2,431 units in 2000 to 2,612 units in 2009. Refer to Table 2 on page 5 for more detailed housing statistics.

History of Land Use from 1962 to 2005

To provide a sense of history, direction and cohesion to the Master Plan, the Existing Land Use Chapter describes the past trends and current conditions of land use, growth, development in Atkinson. For a historical context Existing Land Use maps for 1962, 1974, 1998 and 2005 are appended to this chapter to show the growth and change that has occurred over the last 50 years. Table 3 below presents numerical information of changes in land use by type from 1962 to 2005. Refer to maps beginning on page 13 which graphically depict land use changes from 1962 to 2005.

Increases in population during this timeframe correspond with land use changes dominated by conversion of forested lands to residential development.

Although commercial and industrial developments are concentrated in limited and well-defined zoning districts, residential development dominates the landscape. The resulting growth patterns in residential zoning districts has fragmented much of the landscape and created a road network that lacks connectivity between developments.

Table 3. Summary of land use/land cover types and change from 1962 to 2005

Land Use/ Land Cover Type	1962		1974		1998		2005	
	Acres	% total area	Acres	% Total	Acres	% total area	Acres	% total area
Residential	574.0	7.9	1,062.8	14.6	2,228.2	30.7	2,571.1	35.4
Industrial/Commercial	5.4	0.1	23.5	0.3	116.5	1.6	86.2	1.2
Mixed Urban	0.0	0.0	7.5	0.1	6.7	0.1	6.9	0.1
Transportation/Roads	75.9	1.0	99.5	1.4	159.5	2.2	215.3	3.0
Rail Transportation	0.9	0.0	0.9	0.0	0.9	0.0	24.6	0.3
Playing Fields	0.0	0.0	2.0	0.0	95.6	1.3	197.8	2.7
Active Agriculture	740.4	10.2	397.2	5.5	207.6	2.9	256.4	3.5
Farmsteads	23.4	0.3	22.1	0.3	12.8	0.2	36.6	0.5
Forested	5,445.0	75.0	5,098.0	70.2	3,996.7	55.1	3,227.4	44.5
Water	125.9	1.7	110.8	1.5	157.8	2.2	179.9	2.5
Wetlands	120.0	1.7	126.2	1.7	48.6	0.7	363.7	5.0
Idle/Open Land	147.4	2.0	307.9	4.2	227.7	3.1	92.3	1.3

Total Area of Atkinson = 7,296 acres comprised of 7,168 acres upland and 128 acres of water. Industrial Commercial includes schools and municipal buildings and facilities. Mixed Urban includes areas where uses are mixed or when no predominant use is identified. Farmsteads include only the main residence and outbuildings that support agricultural activities. Idle/Open Land includes transitional areas between open and forested cover, idle agricultural fields, disturbed land (such as construction sites of active mining), and other undeveloped land.

Note: The land use/land cover data and maps are estimated values of land use types and should be used for planning purposes only. Land use/land cover can vary by category over time due to changes in use and changes in new remote sensing technology and mapping standards.

3. Roadways and Transportation

Today, Atkinson has 58 linear miles of local roadways. Atkinson's major transportation corridor is Route 121, Main Street, which transects the town from the northern to the southern town boundaries. Local roads of significance that connect Atkinson to its neighboring towns include Maple Avenue, East Road, Academy Avenue, Island Pond Road, West Side Drive, Providence Hill Road, Salem Road and North Broadway. Numerous cul-de-sacs have been constructed in recent years to serve residential development. Although Atkinson does not have its own facilities, the town is currently served by public transit or park and ride facilities in Hampstead and Plaistow.

A major concern presented by recent development is that the lack of connection and continuance of roadways through newly developed areas. It is important from a safety and access standpoint that more than one roadway provides access to a particular location. This means that the number of cul-de-sacs should be discouraged unless a roadway serves only a limited number of housing units. Countering this planning issue is the desire of residents to live in small quiet neighborhoods that do not experience extraordinary "pass-thru" traffic. An examination of the Existing Land Use Map illustrates these competing goals - providing short dead-end "neighborhood" streets balanced against a general goal to provide a contiguous network of interconnected roadways for access and safety reasons. *Refer to the Transportation Chapter for additional information on this topic.*

Street Connectivity. The term "street connectivity" refers to a system of streets with multiple routes and connections serving the same origins and destinations. Connectivity relates how an entire area is connected by the transportation system. A well-planned, connected network of collector roadways allows all users to operate more efficiently. A well-designed, highly-connected network helps to:

- Reduce traffic congestion on arterials
- Reduce travel time
- Shorten travel distances and reduced vehicle miles of travel
- Create continuous and more direct routes for pedestrians, bicyclists and transit users
- Improve emergency vehicle access and reduced response times
- Improve utility connections, easier maintenance and more efficient trash and recycling pick up.
- Reduce speeds and severity of accidents.

Over the last several decades, residential and non-residential development patterns have been created that lack internal vehicular and pedestrian connectivity. The lack of connectivity has created a physical environment that lacks mobility options and pedestrian friendly features. Development trends encouraged building residential communities with few street connections and numerous cul-de-sacs. The theory behind cul-de-sacs was that they lessened traffic, since they change the primary function of local streets — rather than offering a way to get anywhere, now they simply provide access to private residences. Residential subdivisions that are dominated by cul-de-sacs provide discontinuous street networks, reduce the number of sidewalks, provide few alternate travel routes and force trips onto a limited number of arterial roads.

Any future resolution of issues relating to expansion of the local road network will depend on the varying circumstances of each proposed development. The balance must be struck between the community's need for efficient transportation, safe access, availability and cost of municipal services, and homeowner's enjoyment and expectations regarding their property. Some of the policies regarding future connections and dead-end roads are discussed more fully in the Future Land Use Chapter.

Bicycle and Pedestrian

Atkinson does not have bike lanes or sidewalks with the exception of two short sections of sidewalk on Route 121 connecting to the bridge to Plaistow and between Kimball Library and Atkinson Academy.

4. Residential Development

The predominant type of housing in Atkinson has been, and continues to be, single family detached residences, primarily on two acre lots, although an increasing number of condominiums have been constructed (see the *Housing Chapter* for more information).

Table 4. Housing unit statistics for Atkinson and Rockingham County

	Total Units 2000	Net Change in Units										Total Units 2010
		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	
Atkinson	2,431	88	25	24	6	18	6	8	3	3	4	2,616
Single-family	1,826	34	11	16	4	10	6	8	3	5	4	1,927
Multi-family	595	54	14	8	2	8	0	0	0	-2	0	679
Manufactured	10	0	0	0	0	0	0	0	0	0	0	10
Rockingham County	113,023	1,576	1,579	2,071	2,019	1,583	944	733	635	432	126,709	124,595

[Source: "Current Estimates and Trends in New Hampshire's Housing Supply: Update 2009", NH Office of Energy and Planning]

As of 2005, residential development comprises 2,571 acres or 35.4 percent of the total area of town. This represents an estimated 142 percent increase from 1974. From 1980 to 1997, Atkinson experienced a 57.6 percent increase in residential development, with the addition of 822 dwelling units during this period from 1,428 to 2,250. From 2000 to 2010, Atkinson experienced a 14.7 percent increase in residential development, with the addition of approximately 181 dwelling units during this period from 2,431 to 2,788 (2000 and 2010 US Census data).

Since 1995 the following cluster subdivisions (refer to the Zoning Ordinance Article VI Rural Cluster Residential Development, Section 600) were approved that incorporated affordable workforce housing using the density incentives under Section 610 Inclusionary Housing Accommodation Incentive System:

- Dearborn Estates – 11, 3-bedroom single family homes with 3 units set aside for low/moderate housing.
- Carriage Chase Estates - 16, 4-bedroom and 5, 3-bedroom homes with 5 units set aside for low/moderate housing.
- Atkinson Woods - 56, 2-bedroom units with 12 units set aside for low/moderate housing.
- Mill Stream Crossing - 19, 4-bedroom single family homes and 5, 2-bedroom multi-family units.
- Birchwood – 10, 2-bedroom units with 2 units set aside for low/moderate housing
- Centerview Hollow – 52, 2-bedroom units with 11 units set aside for low/moderate housing
- Settlers Ridge – 105 approved mixed units (95 constructed) with 26 units set aside for low/moderate age-restricted rental housing

These cluster subdivision developments have helped diversify the housing options available within Atkinson and provided a base of reasonably priced homes for low and moderate income families. This issue is more fully described in the *Housing Chapter* of the Master Plan. Atkinson has progressed from its rural roots as a community of farmers to what could be called a "suburban" community. In the near future it will likely continue to feel the development pressures associated with regional and statewide growth, including the current expansion of Interstate 93.

5. Commercial and Industrial Development

As of 2005, commercial and industrial development comprises 86 acres or 1.2 percent of the total area of town, an increase from 23.5 acres in 1974. This represents a substantial yet relatively minor increase compared with the percent of the total land area of town and the prevalence of other land uses.

Atkinson has almost fully developed it's commercially zoned land, which is limited geographically to small areas in the northwest and southeast portions of town. However, most of the existing commercial businesses in Atkinson fit into the town's rural character and rural setting. Commercial and retail development is important and Atkinson has acknowledged this fact by a change in the Commercial District in 1992 to expand it along Main Street northward as far as Robie Lane. Potential expansion of the existing commercial and industrial zoning districts might be accommodated proximate to Route 111 and in the extreme southeastern portion of town. Additional Industrial and Commercial development has taken place in both these areas of town

6. Changes in the Landscape

Natural Resources

There has been a substantial conversion of undeveloped land and open space in Atkinson – approximately 2,757 acres from 1962 to 2005 - due to the recent growth and development throughout town. The 2005 Existing Land Use map shows the distribution of remaining large unfragmented blocks of predominantly forested lands and wetlands in Atkinson.
Natural resources most impacted by growth and development have been forested unfragmented lands. The pattern of growth to support residential development - by subdivision and the

construction of roads - is apparent when comparing the Existing Land Use maps from 1962, 1974, 1998 and 2005. The resulting fragmentation of landscape can impact many species of plants, animals and birds dependent upon forests and large unfragmented blocks for their survival. *Refer to Atkinson's Natural Resources Inventory (2011) for more detailed information about natural resources.*

Table 5. Summary of changes in natural resources and developed lands from 1962 to 2005

Land Use Type	***Loss or Gain (acres)***			
	1962 - 1974	***1974 - 1998***	***1998 – 2005***	***Total***
Agricultural	-343.2	-189.6	48.8	-484.0
Forests	-347.1	-1,101.3	-769.2	-2,217.6
Ide/Open land	307.9	-80.3	-135.3	-55.1
Natural Resources Change				***-2,756.7***
Residential	488.8	1,165.4	343.0	1,997.2
Industrial/Commercial	18.1	93.0	-30.2	80.9
Transportation/Roads/Rail	23.6	60.0	55.8	139.4
Developed Lands Change				***2,217.4***

Cluster subdivisions (refer to the Zoning Ordinance Article VI Rural Cluster Residential Development, Section 600) have been approved in recent years that incorporated preservation of scenic vistas and pronounced landscapes defined in the Master Plan by using the density incentives defined in Section 600:6(c) and Section 505, and natural resources through open space preservation. These cluster subdivisions have preserved 697 acres as listed below in Table 6:

Table 6. Open Space and Scenic Vistas/Landscapes protected through cluster subdivisions

Name	***Map/Lot***	***Open Space Protected (acres)***
Cogswell Farm	13-1-1	18.33
Bryant Woods	10-7	*170.23
The Commons	17-86	67.84
Wright Farm (Phases I and II)	13-94	43.09
Jesse Page Estates	13-22	26.55
Jamison Ridge (Winslow Dr.)	13-29	36.76
Twin Oaks (Butler Estates)	6-76	14.82
Ashford Drive	17-29-7	11.30
Waterwheel Estates	21-1	40.88
Centerview Hollow	13-96	47.94
Dearborn Ridge	18-74	14.59
Carriage Chase Estates	9-62-22	17.21
Settlers Ridge	12-1	83.26
Millstream Crossing	11-39/11-11/11-54/11-53	14.14
Eldon Way(Birchwood)	7-139	12.84
Fieldstone Village	2-1	28.14
Atkinson Woods	20-49	41.25
Little River	9-33	7.90
Total		***697.07***

* Includes common areas held by homeowners association

Adoption of the Rural Cluster Residential Development ordinance has served to mitigate the potential negative consequences of growth and development by preserving approximately 697 acres of land and natural resources. Although much of this land limits access to those property owners in the cluster subdivisions, the land and resources and their ecosystem services are permanently protected which benefits everyone. The ordinance also serves as a primary mechanism for land protection without cost the tax payers of Atkinson.

Earth Excavations

Excavation and/or the removal of earth is not permitted in Atkinson unless the Zoning Board of Adjustment grants a special exception under Section 430 of the Atkinson Zoning Ordinance and as permitted by NH RSA 155-E.

Island Pond

Island Pond is a 497.9 acre surface water body with a surface elevation of 203.3 feet. Island Pond is a surface water body under the jurisdiction of NH's Comprehensive Shoreland Protection Act (CSPA). Big Island Pond is located in the extreme northwest corner of Atkinson, with a large portion of the lake located in the towns of Hampstead to the north and east and Derry to the west. Property surrounding Island Pond was originally developed in the late 1800's as a seasonal/recreational use area where at that time land use requirements were less stringent than in the central portion of town. Buildings and lots were much smaller than the town's current zoning standards. Septic systems were small and rudimentary (many were initially installed as holding tanks), which was not of great concern because of the seasonal use of the properties, allowing ample time for the recovery of the systems. Many of the septic systems which have been replaced over the past 50 years were found to be oil drums which had corroded, allowing raw septage to leach into the ground and discharge to surface waters.

Town records indicate that the first year-round residents came to Island Pond in 1954, when the road crew was required to plow Hemlock Heights in order to provide emergency access to a family with several children. Between 1954 and the present, many of the cottages have been converted to year-round residences or rental property. Efforts by the Planning Board and the Zoning Board of Adjustment to regulate these conversions (and, more importantly to monitor the septic systems) have not been entirely effective. The housing density surrounding Island Pond in Atkinson is upwards of 10 dwelling units per acre, whereas other areas of Atkinson are subject to one dwelling unit per 2-3 acres under current zoning standards. The NH Department of Environmental Services recommends minimum lot sizing based on soil types to support on-site septic and well, which are typically not much less than one acre per unit under most conditions. The Town's concerns at Island Pond are the potential impact that deteriorating uninspected septic systems may have, not only on the natural resources of the once pristine pond, but also on the quality of individual water supplies and other potential human health impacts.

Conservation and Open Space Lands

Figure 1 below shows the location of conservation and open space lands in Atkinson. As of January 2011, Atkinson has approximately 1,357.6 acres of town forest, conserved and open space (set aside for subdivisions) lands (18.6 percent of the total 7,296 acres of land and water). Conservation land means land upon which a restrictive easement or other legal mechanism has been placed that prevents the land from being developed. This development restriction can be placed on an entire property or a portion of a property. Conservation lands are held either in

private ownership, town ownership, or held by a land trust or other entity. Open space lands are typically set aside as a requirement for open space or cluster type subdivisions (see the Atkinson Zoning Ordinance Article VI. Rural Cluster Residential Development) and can be for private or public access depending upon the terms and conditions of the subdivision approval.

The Town designated the Atkinson Conservation Commission as the entity responsible for managing the Conservation Fund for the purpose of conserving and protecting land. These efforts are supported by contributions from the Land Use Change Tax (LUCT), a tax assessed to property owners when land is removed from Current Use for subdivision or other development purposes. Currently, the town allocates 100 percent of the money collected from the LUCT to the Town's Conservation Fund (excluding interest collected).

Refer to Atkinson's Natural Resources Inventory (2011) for more detailed information about open space and land conservation.

Recreational Land Use and Facilities

While the Planning Board has approved many subdivisions which incorporate private trail systems and open space, the Town has also provided recreational facilities for its residents. Woodlock Park, located off Woodlock Park Lane, is the Town's primary recreational facility providing: 2-tennis courts, 1-(½ court) basketball court, four baseball/softball fields, 2-soccer fields, a pavilion with restrooms, a toddler playground and a small picnic area, 3-4 acre open fields behind the Community Center, 10 acre conservation/recreation area on East Road, and a 4 acre field off Sawyer Avenue (part of the Town Forest). No public beaches exist in Atkinson. Other issues and information regarding public recreational facilities as well as anticipated demand are discussed more fully in the Community Facilities chapter.

Recreational Trails

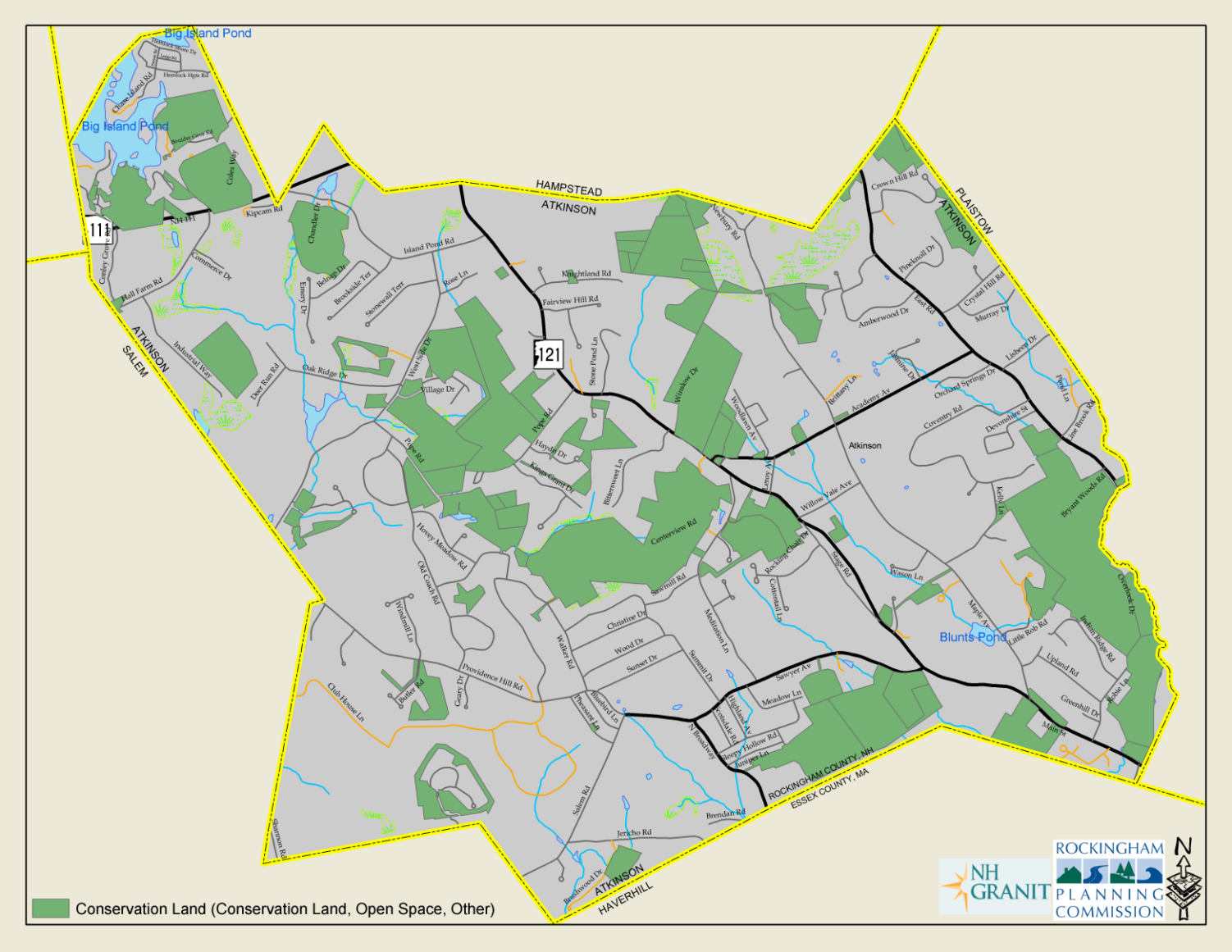
The Atkinson Conservation Commission developed a Conservation Trails brochure (available on the Town's website under the Conservation Commission). The brochure shows the location, access points and configuration of trails, and provides a general description of conserved lands and the natural features and resources found on them.

Public trails are located at the following town owned conservation properties: Stickney Land, Marshall Land, Pope Road Land, Sawmill Swamp, Crown Hill-Noyes Rock, Carolyn Orr Conservation Land, and Sawyer Land.

Canoe and Kayak Launch at Island Pond

After five years without a public launch, and over 20 years since the first launch was opened, Atkinson reconstructed their canoe and kayak launch at Island Pond. The launch is on Stickney Road off Waters Edge and has off-road parking for up to ten cars.

Figure 1. Map of Conserved and Open Space Lands



7. Protecting Visual and Historic Resources

In 1992, the Historic District Commission and the Historic District were abolished by vote in favor of a citizen petition on the Warrant Article at Town Meeting. Since this time, an awareness of the importance of historic and visual resources has emerged as development continues to consume these features from landscapes in the community. Thus, the visual qualities of Atkinson have become an increasingly significant part of the planning and development approval process employed by the town's land use boards and resource based commissions.

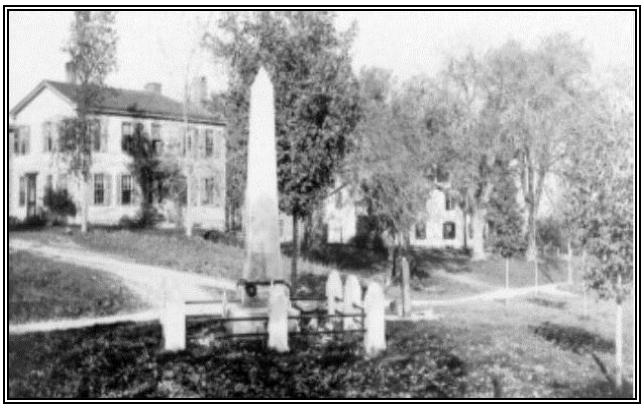
Through responsible planning efforts, the town will use its review process to minimize impacts of development and promote the positive effects of developments by preserving views and retaining qualities of the landscapes that have been identified as locally significant.

Areas of High Visual Quality

This section details areas of Atkinson that contribute to the natural, historic and visual character of Atkinson's landscape as identified in the *Visual and Scenic Resource Chapter*. In 1998, the Zoning ordinance was amended by addition of Section 505 Scenic Vista and Pronounced Landscape Regulation. This Section establishes incentives to protect scenic vistas designated in the Master Plan by allowing increased density for clustered developments which preserve these areas was adopted. These highly scenic areas provide a glimpse of "old" Atkinson, where high quality natural, historic and cultural characteristics remain relatively intact on the landscape. Of these original designations, many of the following ***areas of high visual quality*** remain preserved in whole or in part.

Table 7. Description of areas of high visual quality

Location of Area of High Visual Quality	***Description***
Providence Hill	Some development but viewshed mostly preserved
Jericho Road	North Broadway viewshed
Main Street (Sawyer Avenue section)	New development and forest growth on bordering lands; interior views along trails
Lower Maple Avenue	Area developed with limited views preserved
Lower East Road	New conservation/recreation lands and adjacent to designated prime wetland
Town Center - South	Some development but viewshed mostly preserved
Town Center - North	Viewshed focused around the historic Paige Farm on both sides of road
Island Pond Road - Route 111 plain	Active agriculture remains at intersection of Main Street and Island Pond Road with viewshed mostly preserved
Island Pond Environs	New residence along Chase Island Road, otherwise both views remain of Hemlock Heights



Town Common circa 1900 (left) and today (right).

Main Street circa 1900 (right) and today (left).

The following ***long distance vistas of significance*** as identified in the *Visual and Scenic Resource Chapter* of the Master Plan.

Table 8. Description of long distance vistas of significance

Location of Long Distance Views of Significance	***Description***
Pine Knoll area	Tree canopy mature with limited views to Plaistow
Maple Avenue - Bragg Hill section	Some areas developed with range of views lost due to forest growth with small viewshed remaining at Maple Avenue and Brittany Lane
Hogg Hill	No longer intact due to mature forest and telecommunications facility
Providence Hill (west)	Conserved through land preservation

8. Changes Since the 1980 Master Plan

Although development throughout the region slowed in the 1990's, there were some changes and impacts upon land use through amendments to the zoning ordinance, growth and development

within town, and other changes in the physical and political landscape. While several of the amendments to the Zoning Ordinance have been regarded as 'housekeeping' measures - correcting confusing/vague language or clarifying intent – the amendments listed below were intended to affect local growth and development patterns. The land use regulations adopted between 1980 and 1990 (page II-2 of the 1990 Master Plan) are also presented, in a slightly different format, to provide the reader with an accurate history of changes to regulatory development standards in Atkinson.

1980-90	In fulfillment of an earlier Land Use Plan, a commercial/office/industrial complex was developed in the northwest corner of Town, near Route 111.
1980-90	Departure from a single-family residential community to a community that utilizes a density based approach that has created multi-family, condominium, and duplex-oriented developments.
1980-90	Plans to establish a "Town Center" area were initiated. The construction of a new Town Hall, and the planning for the relocation of the Highway Garage were undertaken.
1980-90	Approximately 1,000 acres were rezoned from Rural Residential-3 to Town Residential-2 in the area near Providence Hill Road, west of Geary Lane and Old Coach Road. When this change was carried out, there appeared to be little land use planning to support it.
1980-90	Courts mandated, and expanded by Town Meeting, the granting of right to expand existing commercial- industrial development in the Town's northwest corner.
1980-90	Several minor zoning changes were adopted by Town Meeting, which were promulgated to carry out the intent of the original Master Plan to encourage development in the areas near community services and readily available transportation networks. This resulted (as of 1990) in the majority of development (0.70 percent) occurring in the TR-2 District with the remainder in the RR-2 and to a lesser degree in the RR-3 districts (i.e. Oak Ridge Development).
1992	The Historic District Commission and the Historic District were abolished by vote in favor of a citizen petition on the Warrant Article at Town Meeting.
1994	The 300 foot wetland setback was eliminated from Section 410 Wetland Zoning, based upon the recommendation of the Conservation Commission and in support of State of NH guidelines.
1995	Strengthened in-law apartment special exception criteria, including the expiration of the exception upon vacancy of the unit, requiring re-application for new occupancy.
1997	Amendments to the Low-Moderate Housing Accommodation Incentive System, adopted in 1992, were adopted to ensure that the low-moderate income housing conforms to Federal guidelines.
1997	Section 630 Planned Residential and Recreational Development was deleted from the Ordinance. Originally adopted in 1990, this Section conflicted with Section 620, both of which related to the Sports Complex/Residential Sub-District. Amendments were also adopted to Section 620 which, among other things, will encourage that a portion of the residential units in this District are reserved for those who are aged 55 and older.

1998 Addition of Section 505 Scenic Vista and Pronounced Landscape Regulation which established incentives to protect scenic vistas designated in the Master Plan by allowing increased density for clustered developments which preserve these areas was adopted.

1998 Adoption of Article XVI: Public School Impact Fees with amendment to Section 1600:5(d) in 2007.

1998 An amendment to the Zoning Ordinance was adopted which clarified the intent of existing language in Section 410 Wetlands Zoning to ensure that no buildings could be built within 100' of a wetland. Prior to the adoption of this amendment, it was unclear whether a garage could be built within the wetland setback.

1998 Provisions of NH RSA §79-A: 25, II were adopted, authorizing the town to contribute 100 percent of the Land Use Change Tax revenues to a conservation fund for future protection and purchase of conservation and public lands. Revisions to Section 410:8(b) Buffer Zones.

1999 Revision to term 'structure' in Zoning Ordinance Section 300 Definitions; revisions to Section 440 General Farming and Keeping of Animals; and revisions to Section 480:1 Storage of Vehicles.

2000 Adoption of Zoning Ordinance Article VIII Wireless Communication Facilities and corresponding additions to Section 300 Definitions, as well as the terms 'frontage' and several terms relating to lot lines and frontage, and yards.

2003 Addition of 'prime wetlands' to Section 300 Definitions.

2006 Additional of Section 400:8 Eminent Domain and Section 620 Golf and Sports Complex/Residential Sub-District (SCR Subdistrict).

2007 Revisions to Section 450:2(c) and (g) Home Occupations and revisions to Section 460:2(h) Accessory Living Unit.

2008 Adoption of Zoning Ordinance Section 420 Floodplain Management Ordinance and corresponding revisions/additions to Section 300 Definitions, as well as the terms 'development', 'recreational vehicle', and 'start of construction'. Designation of three prime wetlands under Section 410.10.

2009 Amendments to Zoning Ordinance: adoption of three prime wetlands under Section 410.10, amendments to Section 700:1(d) and 700:4 Non-Conforming Uses, and adoption of Section 610 Inclusionary Housing Accommodation Incentive System.

9. Conclusion

The existing land use type and development pattern in Atkinson is very clear - single family dwellings far outweigh any other use and will likely continue in the future. Atkinson has not experienced substantial growth of multi-family, mobile homes and manufactured homes which has largely been a result of the market systems. Condominium development, however, has increased recently, and is proving to be beneficial to the Town. Predominantly, the condominiums being developed are expensive, and owned by people with few or no children.

Although expansion of existing uses and new commercial development is invited and anticipated by most towns, development in Atkinson may be difficult due to the large amount of land devoted to residential development.

10. Recommendations

1. The Planning Board encourages cataloging updating of resource and other reference maps including but not limited to conservation lands, wetlands, trails, historic sites, water resources, etc.).

2. To protect the Town and the taxpayers, it is suggested that a tri-town committee (Atkinson, Derry and Hampstead) be established to assess the area surrounding the Island Pond, analyze the associated problems, and develop regulatory solutions to ensure future protection of this important resource.

3. The Planning Board, in conjunction with the Conservation Commission, should research ways to strengthen Atkinson's ordinances and regulations so that appropriate care is taken to preserve natural and environmental resources.

4. The Planning Board should encourage long-term planning for the location of recreational facilities.

5. The Planning Board should encourage a long-term plan for further development of the Town trail system. All developments that potentially contain land usable as part of the town-wide trail system should be encouraged to provide adequate open space easements to allow for the interconnection of the trail system, thereby giving the residents access to the system while protecting areas for parks, recreation, and open spaces of adequate proportions.

6. The Planning Board should continue to closely monitor and evaluate the development of new Town roads in order to insure the harmonious development of the community, and avoid scattered and premature development.

7. The Planning Board will encourage continued use of the Rural Cluster Residential Development ordinance to maximize preservation of valuable land and resources as open space.

FUTURE LAND USE CHAPTER

Introduction

The Future Land Use Chapter reflects changes in landscape and development throughout town since it was last adopted in 1998. In updating the chapter, the Planning Board incorporated the majority opinions and values represented in the 2013 Master Plan Community Survey. The survey was mailed to every residence in town, posted on the town's website and provided in paper form at town hall, the library, community center and post office. The Chapter's section headings address the priority issues for the future of Atkinson as identified in the Survey and by the Planning Board.

A. Maintain Rural Character

1. Preserve Open Space

   Open space consists of wildlife habitat, natural resources, scenic views, and forests. Open space preservation is supported in several ways by the town:

   - Direct purchase of land and conservation easements
   - Use of general funds as available and consideration of bonds to leverage federal, state and private funds
   - Dedication of 100 percent of the Land Use Change Tax (LUCT) collected toward land conservation
   - enabled by the zoning ordinance through rural cluster residential development zoning

   The rural cluster subdivision ordinance provides incentives to create compact development patterns and preserve open space through the provision of density bonuses, reduction in

dimensional requirements, and reduced lot size. The two density bonus options are described below.

Roadside Buffers

Incentives to retain forested and naturally vegetated roadside buffers are a density bonus option provided in the rural cluster residential development zoning ordinance. Buffers help to retain rural character by sheltering development from view along state and local roadways, creating an aesthetic of rural country charm and scenic beauty.

Open Space Developments

The Rural Cluster Residential Development ordinance (Zoning Ordinance Article VI, Section 600), which includes a density bonus incentive for preservation of scenic vistas and pronounced landscapes (as designated in the Existing Land Use Chapter of the Master Plan), requires that fifty percent (50%) of the parent parcel be designated as permanent open space. To date, this ordinance has placed 697 acres in open space protection.

Zoning Ordinance Article VI, Section 610 Inclusionary Housing Accommodation Incentive System ordinance requires that forty percent (40%) of the parent parcel be designated as permanent open space.

2. Preserve and Maintain the Town Forests

The Atkinson Town Forest consists of numerous properties varying in size totaling approximately 514 acres. The Town Forest properties are a registered tree farm. The Town routinely consults with professional foresters to maintain the health and viability of Town Forest properties through implementation of forest best management practices. Since 1985, the Conservation Commission has worked with a consulting forester to update the management plans for several properties in the Town Forest to keep them productive and aesthetically maintained.

3. Preservation of Agricultural Land

The Town has an option to support agriculture through the creation of an ad-hoc Agricultural Committee. The Committee may serve as a technical advisor for the community about issues relating to agricultural, protection of land and local food production/economy.

4. Development Pattern of Single-family Homes

The development pattern of Atkinson is largely dominated by single-family homes. This pattern reflects the low-density residential zoning that covers the majority of land in town.

Recommendations

FLU1 Encourage public access to open space in rural cluster developments.

FLU2 Add lands dedicated in the future to public access to the Town's trail map.

B. Environmental Protection

1. Land Conservation [Refer to Section A.1 for detailed discussion]

   Atkinson actively acquires and conserves open space, wildlife habitat, natural resources, scenic views, forests and agricultural lands.

2. Stormwater Pollution

   The EPA administers the National Pollutant Discharge Eliminations System (NPDES) program. As part of this program's Phase 2 requirements, municipalities are required to comply with standards of the MS4 permit (Municipal Separate Stormwater Sewer System permit,current version, 2013 draft). The MS4 permit regulates the discharge of stormwater and runoff to surface waters. The MS4 permit provides a variety of flexible options to treat stormwater runoff including implementation of land use regulations, zoning, municipal practices and public outreach and education programs.

   Atkinson is a community subject to the MS4 permit. The Town Administrator is coordinating with town staff to form a committee to evaluate the town's existing status and what new information and actions will be necessary to comply with requirements of the new MS4 permit.

3. Water Quality

   Protection of drinking water supplies, both groundwater and surface waters, is of high importance to the town and its residents. In 2012, areas of groundwater contamination were identified that affect a number of residential drinking water wells where chemicals have been detected above federal standards and acceptable levels for "an emerging contaminant".

Recommendations

FLU3 Consider providing information about comprehensive water testing at the subdivision review and approval phase and to new property owners and to alert prospective developers, builders and buyers of potential water quality issues.

4. Buffers and Setbacks

Development in close proximity to sensitive wetlands and surface waters can cause declined health of these systems if runoff and other pollutants are not sufficiently managed. Buffers and setbacks to streams and wetlands can help reduce or eliminate these impacts.

Buffer – the land area that lies between development and wetlands or surface waters that is maintained in a natural condition, replanted with vegetation, or allowed to regenerate naturally. Buffers naturally filter runoff and rainwater by removing sediments and pollutants through uptake by plants and soil.

Setback – a prescribed distance from wetlands or surface waters where buildings and other structures are permitted. Uses that support the development are often allowed within the setback area such as for parking areas, roads and stormwater management. Setbacks areas are typically not required to preserve existing vegetation.

Atkinson's wetland ordinance requires a 100 foot setback from wetlands and intermittent streams for buildings containing septic systems or that generate human or animal waste. While setbacks offer some level of protection, buffers or a combination of buffers and setbacks are more effective at preventing impacts to sensitive resources such as wetlands and surface waters.

Buffers for Water Quality and Habitat Protection

Buffers are often described as "the line of defense" to protect water quality, plant and animal habitat and ecosystem services. Riparian buffers are transition areas between water and land. Buffers link terrestrial upland ecosystems to stream, river, lake, pond and wetland ecosystems. They can be composed of any combination of native plants, woody vegetation or trees.

Ecosystem services are benefits to humans from a multitude of natural resources and processes that comprise ecosystems. Such services include flood protection, drinking water, recreation, insects essential for crop pollination, food, wood and aesthetic and cultural qualities.

Buffers serve several important functions:

- Protect and improve water quality
  - Filter pesticides and fertilizers from lawns and agricultural activities
  - Slow stormwater runoff and filter pollutants
  - Regulate water temperature
- Protect and improve wildlife habitat and biodiversity
- Preserve floodplain functions and wetlands
- Protect against erosion/sedimentation and preserve stream functions
- Provide recreational, cultural and aesthetic value

Buffers protect these sensitive resources from human disturbances nearby and act as natural, cost-effective filters by absorbing excess runoff and removing pollutants. Buffers are considered a stormwater management best practice that provide comparable functions and with less maintenance than engineered stormwater management systems.

Buffers to Wetlands, Streams, Rivers, Lakes and Ponds

Many wetlands are connected to stream and river systems, and lakes and ponds (i.e. drain directly to them). In these cases, buffers to wetlands provide a vital function to protect these water resources. Other wetlands exist as isolated pockets where water collects permanently or is present seasonally. The areas surrounding wetlands and isolated wetlands provide important flood storage for snow melt and rain during storm events. When buffers are altered or used for development or engineered stormwater management, the water that once collected in these areas under natural conditions is simply transferred to other low-lying areas.

The purpose of adopting buffers for stream and river systems, and lakes and ponds is to protect water quality, plant and animal habitat and ecosystem services from potential negative impacts or disturbance resulting from land development and human activities.

Buffer Performance Considerations

Buffer width should be selected based on desired function and performance to protect water quality, plant and animal habitat and ecosystem services, or other identified goals. The table below describes the benefits provided by buffers and the physical/environmental conditions that reduce their performance.

Factors that Enhance Performance	Factors that Reduce Performance
Slopes less than 5%	Slopes greater than 5%
Contributing flow lengths <150 feet.	Overland flow paths over 300 feet
Water table close to surface	Ground water far below surface
Check dams/level spreaders	Contact times less than 5 minutes
Permeable but not sandy soils	Compacted soils
Growing season	Non-growing season
Long length of buffer or swale	Buffers less than 10 feet
Organic matter, humus, or mulch layer	Snowmelt conditions, ice cover
Small runoff events	Runoff events >2 year event.
Entry runoff velocity less than 1.5 feet/sec	Entry runoff velocity more than 5 feet/sec
Swales that are routinely mowed	Sediment buildup at top of swale
Poorly drained soils, deep roots	Trees with shallow root systems
Dense grass cover, 6 inches tall	Tall grass, sparse vegetative cover

Buffers versus Setbacks

Setbacks are restrictions on the placement of structures (in some cases buildings, others may include permanent structures such as roads, parking lots and driveways) with respect to their distance from the edge of wetlands, streams, rivers, and lakes and ponds. Other types of land development and land disturbance activities are often permitted within the setback such as stormwater management infrastructure, accessory structures and clearing. Buffers typically require that no land or vegetation disturbance take place within the designated buffer (a specified distance from wetlands, streams, rivers, and lakes and ponds). Thus buffers offer significantly greater protection of these resources that setbacks do not. For example, even a modest buffer of 25-50 feet can provide greater protective benefits than a 100 foot setback.

Maintenance Considerations

An effective buffer management plan should include establishment, management, and distinctions of allowable and prohibited (low-impact) uses in the buffer zones. Buffer boundaries should be well defined and visible before, during, and after construction. Without clear signs or markers defining the buffer, boundaries become invisible to municipal staff, contractors, and residents. Buffers designed as a best management practice to capture stormwater runoff will require more maintenance if the part of the buffer zone contains a bioretention or other engineered stormwater management/treatment area.

Recommendations

The following recommendations were drafted by the Atkinson Conservation Commission.

FLU4 Implement a public education campaign about the benefits of buffers for both humans and natural systems, including best practices for landscaping and lawn maintenance and management of agricultural activities.

FLU5 Consider an alternative to the existing 100-foot building setback. For example, implement an option to the current setback in the form of a 50 foot no disturbance buffer established through preservation of an existing naturally vegetated area or by replanting with non-invasive native species, and with proper maintenance to preserve the health of buffer vegetation.

FLU6 Consider revising Zoning Ordinance Article IV, Section 410 Wetlands to require for new development a 50 foot no disturbance buffer from wetlands and surface waters.

FLU7 Provide buffer maintenance information to homeowners including best practices for removal of invasive species.

5. Environmentally Safe Road Maintenance

The Town's Road Agent and staff have implemented ecologically friendly materials in their road maintenance practices through the use of alternative treatment during winter months. The materials used in place of salt or chloride are derived from biomass and byproducts of biomass processing.

6. Alternative Energy Sources

In 2009, the Atkinson Energy Committee prepared a draft Energy Chapter for the Master Plan, the first ever chapter to address energy needs of the town and the community. In 2010, the Planning Board adopted this new Chapter.

The Energy Chapter outlines many activities and actions that the municipality, business owners and residents can take to increase efficiency and conservation, save money and improve energy security. The Energy Committee also prepared an energy use and building inventory for all town facilities, documenting the type, amount and cost of energy consumption over a several year period. Tracking energy use allows the town to evaluate efficiency and identify cost-savings measures and improvements. Refer to the Energy Chapter for more information about the long-term goals and objectives of the Energy Committee.

In 2013, voters approved new provisions in Zoning Ordinance Article VI Rural Cluster Residential Development that provide opportunity for a density bonus for developments that meet specific energy efficiency and energy conservation standards.

7. Exemption for Renewable/Alternative Energy Installations

RSA 72:61-72 permits municipalities to offer a property tax exemption on solar, wind and wood heating energy systems. These systems include solar hot water, solar photovoltaic, wind turbine or central wood heating systems (not stovetop or woodstoves). Atkinson adopted this exemption for renewable and alternative energy installations in 2011.

Recommendations

FLU8 Identify ways to improve municipal cost savings through energy efficiency and conservation.

C. Preservation of Historical Sites and Buildings

1. Robert Frost/Old Stage Coach Scenic Byway Designation

The Robert Frost/Old Stage Coach Scenic Byway plan began several years ago after the town of Atkinson received an official state designation for its Main Street (Route 121) as a New Hampshire Scenic and Cultural Byway. Atkinson's efforts recognized the more historical areas within the corridor including its importance as part of the historic stagecoach route between Boston and Manchester. The Atkinson Byway group met with Rockingham Planning Commission and community representatives from Chester, Hampstead, Auburn and

Derry; all towns supported an effort to extend the Atkinson designation to make the byway plan a true regional route.

In May 2014, the Robert Frost/Old Stage Coach Scenic Byway was officially designated by the state legislature. In Atkinson the scenic byway extends from Robie Lane north to the town border with Hampstead. The route will highlight the numerous historic sites, scenic views, outdoor recreational opportunities, and other attractions that the region has to offer - raising awareness among local residents and promoting visitation for economic development.

The Robert Frost/Old Stage Coach Scenic Byway Council was formed, comprised of representatives from Derry, Atkinson, Auburn, Chester, Hampstead and the Southern New Hampshire and Rockingham Planning Commissions. The Council designated a 44-mile scenic byway route that travels through all five towns and highlights the history and culture of the original stagecoach route between Boston and Concord. All towns have representation on the Council by two voting members and two alternate members. The Council continues to seek public input to be used to help guide the Council with development of the Byway Corridor Management Plan.

National Scenic Byway Program

The vision of the Federal Highway Administration's National Scenic Byways Program is "To create a distinctive collection of American roads, their stories and treasured places."
The goal of the program is to provide resources to the byway community in creating a unique travel experience and enhanced local quality of life through efforts to preserve, protect, interpret, and promote the intrinsic qualities of designated byways.

The National Scenic Byways (NSB) Program was established under the Intermodal Surface Transportation Efficiency Act of 1991, and reauthorized in 1998 under the Transportation Equity Act for the 21st Century. Under the program, the U.S. Secretary of Transportation recognizes certain roads as National Scenic Byways or All-American Roads based on their archaeological, cultural, historic, natural, recreational, and scenic qualities. There are 150 such designated Byways in 46 states.

This voluntary grassroots program capitalizes upon the strength of the leaders for individual Byways. It recognizes and supports outstanding roads. It provides resources to help manage the intrinsic qualities within the broader Byway corridor to be treasured and shared. Perhaps one of the underlying principles for the program has been articulated best by the Byway leader who said, "the program is about recognition, not regulation."

2. Preserve Viewsheds and Scenic Views. Refer to Section A.1. Open Space Development.

3. Agricultural Land and Farms

Maintaining the agricultural lands and farms is one way to preserve the town's rural character and historical and cultural resources such as barns and outbuildings and sites of important local events. Agricultural lands and farms often provide aesthetic resources such as scenic vistas, wildlife habitat, meadows and forests. Refer to Sections A.1-A.3 for additional comments and recommendations.

The Planning Board and Conservation Commission will continue their support of land preservation efforts using designated town funds and funds from other sources. Refer to Section A.3 Preservation of Agricultural Lands for additional comments and recommendations.

4. Barn Tax Credit

RSA 79-D Discretionary Preservation Easements creates a mechanism to encourage the preservation of historic New Hampshire barns and other agricultural buildings by authorizing municipalities to grant property tax relief to barn owners who (a) can demonstrate the public benefit of preserving their barns or other historic farm buildings, and (b) agree to maintain their structures throughout a minimum 10-year preservation easement.

This preservation program is strictly voluntary on the part of the property owner and combines statewide eligibility criteria and guidelines (see below) with decision-making and implementation at the local level. It is closely modeled after New Hampshire's open space discretionary easement program (RSA 79-C), which authorizes local governments to grant property tax relief to encourage the preservation of open land. On or before April 15 of any new tax year, the owner of an historic barn or other farm building may seek relief by applying to the Board of Selectman to grant a discretionary preservation easement and by agreeing to maintain the structure in keeping with its historic integrity and character during the term of the easement.

RSA 79-D:3 outlines the standards for *Qualifying Structures* under this program.

I. Any owner of an historic agricultural structure who wishes to maintain the structure in a use consistent with the purposes of this chapter may apply to the governing body of the municipality in which the property is located to convey a discretionary preservation easement to the municipality.

II. A discretionary preservation easement shall be considered to provide a demonstrated public benefit if it provides at least one of the following public benefits:

(a) There is scenic enjoyment of the structure by the general public from a public way or from public waters.

(b) The structure is historically important on a local, regional, state, or national level, either independently or within an historic district.

(c) The structure's physical or aesthetic features contribute to the historic or cultural integrity of a property listed on or determined eligible for listing on the National

Register of Historic Places, state register of historic places, or locally designated historic district.

III. In determining whether an historic agricultural structure demonstrates the necessary public benefit to qualify for a discretionary preservation easement, the governing body shall have reference to guidelines adopted by the advisory committee established under RSA 227-C:29.

For additional information about the program, refer to the NH Division of Historical Resources website at http://www.nh.gov/nhdhr/programs/barn_property_tax.html

Recommendations

FLU9 Install a bike path along the Byway would enhance recreational opportunities in the town and potentially support tourism revenue in the community.

FLU10 Provide information to property owners about the NH Barn Tax Credit program.

D. Municipal Expenditures and Property Taxes

Results from the 2013 Master Plan Community Survey revealed that residents are very concerned about future municipal expenditures and their impact on the tax rate. The highest ranked issues focused on the following:

1. Consider the long term costs of road maintenance as the town acquires new roads in both commercial and residential developments.

2. Identify municipal needs and if remaining undeveloped lands would be useful for these purposes. The Capital Reserve Fund is a line-item in the Capital Improvement Plan to implement expansion and/or improvement of municipal services, facilities and infrastructure.

3. Continue reliance on private water and sewer to service development.

4. Maintain a volunteer Fire Department due to the low population increase projected at future buildout.

Recommendations

FLU11 Review road standards to evaluate feasibility of applying narrower road (pavement) widths and specifications for stormwater management infrastructure.

FLU12 Provide public information about the Town's expenses, financial responsibility and liability when citizens petition by warrant article for acceptance of private roads as public roads.

FLU13 Acknowledge the cost of accepting private roads with respect to safety issues and investment to upgrade these roads to meet minimum town design specifications.

FLU14 Use the Capital Improvement Plan to plan for replacement and expansion of municipal infrastructure.

E. Enhance Town Center for the purpose of connecting municipal facilities and expanding opportunities for commercial uses and services.

The Planning Board has long recognized the underutilization of current zoning in the Town Center. Historically the Town Center included retail stores, recreation and a hotel and functioned more as a gathering place which is quite different from the land uses that exist there today. The Planning Board acknowledges that current the current zoning and regulations offer no architectural guidelines or standards for development in the Town Center. The following recommendations attempt to address these observations and encourage a variety of uses permitted by current zoning.

Recommendations

1. The Town might benefit from more sidewalks, multi-use paths and bike lanes in the Town Center but would need to identify sources of funding to construct and maintain them.

2. Encourage the purchase of land for municipal uses and services and replacement buildings and facilities as needed.

3. Consider allowing mixed uses and flexible site design requirements in Town Center. Recommend preparing a definition for mixed uses.

4. Review table of permitted uses and other development standards for Town Center in the Zoning Ordinance Sections 510, 520 and 530. Note: In 2014, the Planning Board prepared a warrant article to permit retail uses in the Town Center; the warrant article was passed by voters.

5. Enhance the historic qualities of the Town Center.

6. Consider ways to incorporate traffic calming strategies on Main Street and Academy Avenue.

7. Consider adding architectural guidelines and standards for Town Center in the zoning ordinance and Site Plan Review Regulations.

F. Considerations for Future Growth and Development

The Town has limited acreage and quality of remaining developable lands (based on soil type and physical constraints). Refer to the map excerpted from the CTAP Buildout Analysis that shows the location and extent of the remaining developable lands. An more detailed analysis of highest potential use of undeveloped lands could yield valuable information.

1. Workforce Housing

   Atkinson can utilize the2013/2014 update to the Regional Housing Needs Assessment prepared by the Rockingham Planning Commission to help evaluate whether the town has sufficient supply of affordable dwelling units for rent or ownership, consistent with RSA 674:58-61 Workforce Housing.

2. The Planning Board recognizes that Town could benefit from having expanded housing choices and affordability. Several ways to accomplish this are to:
   a. Improve affordability of housing by encouraging alternatives to single-family homes such as townhouses and condominiums
   b. Increase diversity of affordable housing including rental apartments, accessory living units and “small homes” (footprints less than 1,400 square feet).

3. The Planning Board acknowledges that improvements in code enforcement policies and implementation are needed to ensure commercial development complies with approved plans and all other town requirements.

4. Accessory Buildings and Uses in Commercial Zones

   The Planning Board periodically reviews the zoning ordinance sections pertaining to permitted uses in the commercial zones, and their definitions, to be less restrictive with respect to accessory buildings and accessory uses. Refer to the Zoning Ordinance Section 250:1, Section 300, Section 510 and Section 530.

5. The Energy Committee and Master Plan Energy Chapter identify ways to improve cost saving through implementation of municipal energy efficiency and energy conservation strategies.

In 2013, the Planning Board prepared a warrant article which voters approved to add new provisions in Zoning Ordinance Article VI Rural Cluster Residential Development that provide opportunity for a density bonus for developments that meet specific energy efficiency and energy conservation standards. The Planning Board supports exploration of ways to further encourage energy efficient development.

Recommendations

FLU15 Consider zoning incentives that provide for construction of smaller homes in a variety of types and styles. (Note: the Zoning Ordinance allows dwelling units with a minimum 800 square foot ground floor footprint and with each additional story with a minimum area of 600 square feet.)

FLU16 Evaluate ways to expand affordable housing choices in the community.

FLU17 Evaluate the existing standards in Zoning Ordinance Section 460 Accessory Uses: Extended Family Accessory Living Unit to determine whether these standards might be enhanced to expand housing choices and affordability.

FLU18 Improve financial support for implementation of code enforcement procedures.

FLU19 Document the Fire Department's life/safety annual inspection requirements and procedures for businesses to better inform the duties and function of the Planning Office and Code Enforcement Officer. For example, a checklist of these requirements and procedures cold be incorporated as part of the Town's Building Code.

FLU20 Future collaboration between the Planning Board and Atkinson Energy Committee may help identify incentives, benefits and strategies to meet objectives for energy efficient development and energy conservation.

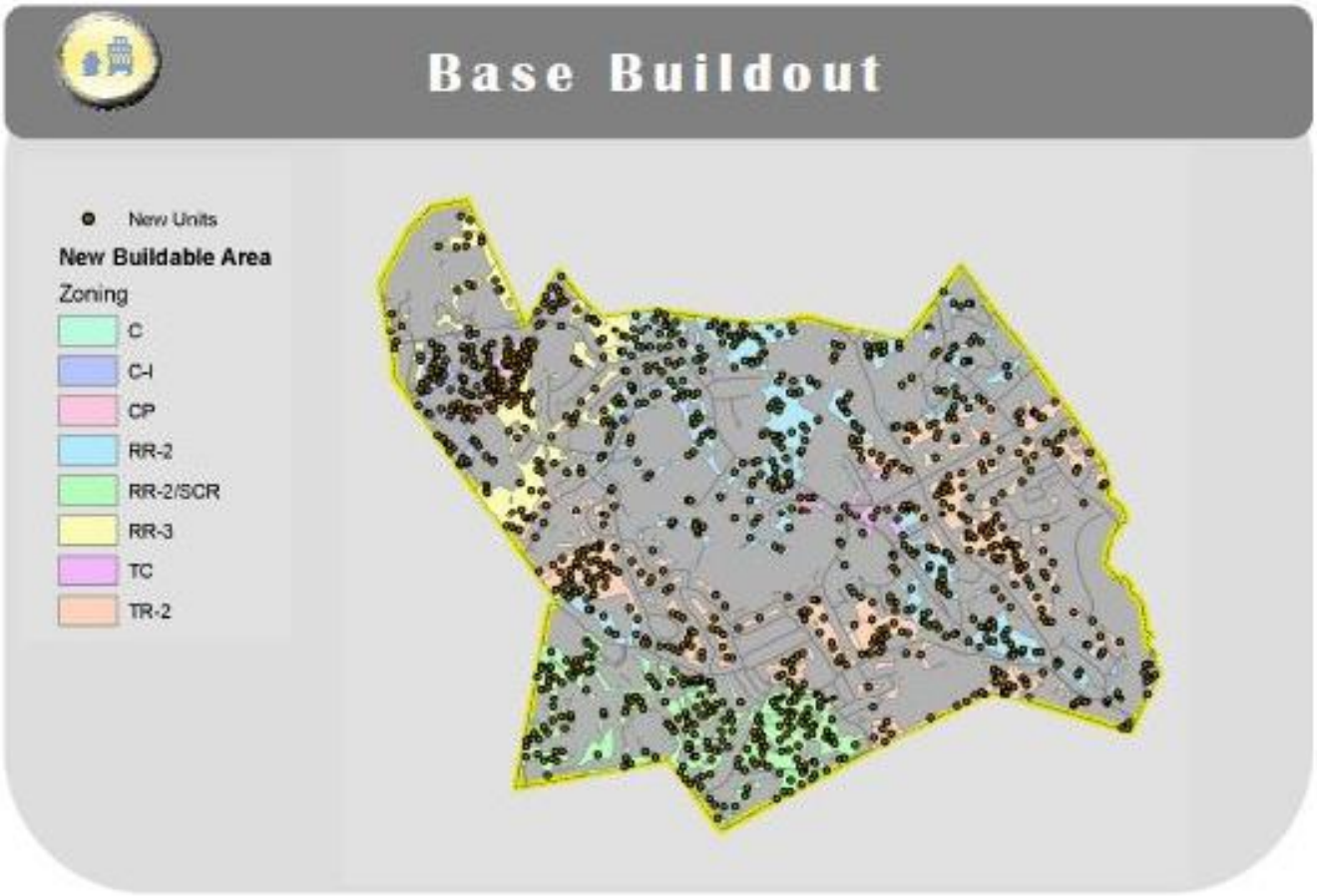
FLU21 Evaluate potential best uses for remaining town owned lands which may include lease parcels for income, sale of parcels to reduce the tax rate, expansion of municipal facilities, and conservation to conservation lands.

FLU22 Evaluate development standards with respect to the lack of diversity in architecture and styles of the existing housing stock.

FLU23 Encourage redevelopment and new development in commercial/industrial zoning districts.

APPENDIX:

Map excerpted from the CTAP Buildout Analysis that shows the location and extent of the remaining developable lands



TRANSPORTATION

Introduction

Understanding Atkinson's transportation system requires an awareness of its residents and its road infrastructure. Atkinson is predominantly a residential community in which its residents commute out of town for employment. Route 93 to the west in Salem/Windham and Route 495 in Haverhill, MA are the two most relied upon highway systems for Atkinson residents. Access to these highways are primarily via Routes 111 and 121, respectively. Increasing congestion on these highways can be attributed not only to the commuting patterns of Atkinson's residents, but also to the travel patterns of motorists from outside Atkinson. Route 111, in particular, has experienced an increased level of congestion caused by its use as an east/west corridor.

The reliance of Atkinson's residents on the automobile for full-length (home to work) commuting is easily understood. Mass transit service adequate for commuting purposes is not available in Atkinson. While the NHDOT provides three park and ride lots (which were constructed to facilitate carpooling) within a short distance of Atkinson in Windham, Londonderry and Plaistow, there is minimal use of these lots by Atkinson residents. Increased usage of the existing park and ride lots would have little or no effect on the transportation system in Atkinson, as residents would still be reliant on their automobiles to get to these lots.

From a regional perspective, Atkinson suffers the pitfalls of being a community with no direct interstate access, no formal local park and ride lots, and no mass transit system.

Atkinson's geographic location within a rapidly growing region, coupled with generous accessibility to streets and highways have been the most significant element in shaping today's community patterns. They have not only been responsible for the rapid growth, but they also have been responsible for the location and size of developments that have taken place in the community. Inasmuch as they are a prime determination in development patterns in a community, they must be considered as part of the Master Planning effort.

Notwithstanding the transportation function our roads serve, they also establish the setting from which we view the Town. The views from the roads in Town, views of scenic vistas, pronounced landscapes as well as the places people work and live form the visual impressions of the community.
The predominant southerly development pressures in Atkinson are a direct result of the highway accessibility to the south and nearby employment centers in Massachusetts. Salem Road, Broadway and Route 121 which link the southern portion of the community to Haverhill contribute to the development patterns of Atkinson.

While the primary function of our transportation system is to facilitate the movement of people, goods and services into, out-of and throughout town, it is also the framework upon which Atkinson is built. The existing roads not only provide direct access to private properties, but also

provide opportunities for connection to new roads.
Admittedly, Atkinson's dominant traffic patterns reveal a strong north/south orientation which is heavily reliant on Main Street, Maple Avenue, East Road, Providence Hill and North Broadway.

Street and Highway Classifications

In Atkinson, there is merit to evaluating the local functions of highways including all Class V highways. In addition to Routes 111 and 121, the town has within its jurisdictional responsibilities major collector highways consisting of the following:

- Maple Avenue and East Road are the primary north/south connectors.

- Westside Drive, Academy Avenue, Sawyer Avenue and Providence Hill Road are the primary east/west connectors.

Although never intended or designed for such use, other roads are evolving into collector roads, including Bryant Woods, Indian Ridge, Robie Lane, Sawmill Road, and Line Brook Road.

In addition to the major collectors, there are primary service roads which consist of Meditation Lane, Salem Road and Island Pond Road. The remainder of the road network can be identified as service roads catering mostly to abutting properties.

Town Responsibilities

The Town of Atkinson is responsible for approximately 78% of the total road mileage within its bounds. While the initial construction of new roads within the community is the primary responsibility of developers, it is the community's responsibility to make major improvements on the town road network and maintain the same. As the adjacent table indicates, the Town of Atkinson has approximately 154 persons per linear mile of town road responsibility. Comparatively, Salem has 179 persons per linear mile. However, consideration must be given to the fact that 26,475 people live in Salem compared to Atkinson's 5,595 residents.

The purpose of providing the above statistics is not meant to criticize or suggest regulatory changes are needed in Atkinson, but rather to quantify density/road maintenance relationships within other communities in the region. Assuredly, if the Planning Board makes the determination that the zoning ordinance or subdivision regulations are having the effect of creating excessive road construction, corrective amendments could be made thereto.

In exercising the responsibility for road maintenance, the Town of Atkinson has provided the minimum level of maintenance necessary to sustain the heavy traffic pattern on local streets. In areas where roads were recently improved, the standards are quite high, while older roads, such as Maple Avenue, West Side Drive, portions of Main Street, Providence Hill Road and Sawyer

Avenue, are roads of long standing in the community. Some of these roads go through land too

wet for road construction, resulting in maintenance difficulty. Yet, in most instances, Atkinson has maintained an adequate and sound street and highway network which, with some minor improvements, will continue to serve the community well.

The local responsibility of streets and highways must be viewed in light of not only present but future demands, and there are instances where highway improvements will be recommended and should be receiving consideration as part of the continued operating budget for improvements and capital reconstruction to assure safer highways, particularly on collector streets.

COMPARATIVE ROAD MILEAGE AND POPULATION: ATKINSON AND AREA TOWNS

Town	Class I	Class II	Class IV	Class V	Class VI	Total	Town Roads*	1990 Population	Persons per Road Mile
Atkinson	0	9.43	0	36.262	.510	46.202	36.262	5,595	154
Danville	0	6.711	0	20.504	5.336	32.551	20.504	2,534	124
Hampstead	0	15.344	0	46.758	2.033	64.135	46.758	7,128	152
Plaistow	2,045	14.702	0	30.490	.372	30.490	59.42	7,504	126
Salem	9.372	7.530	96.299	51.492	2.013	166.666	147.791	26,475	179
Sandown	0	6.811	0	36.853	5.828	49.492	36.853	4,060	110

State Classification of Highways:

Class I: Highways on the primary State highway system, excluding all portions of such highways within the compact sections of towns and cites of 7,500 inhabitants and over. The State assumes full control and pays cost of construction, reconstruction and maintenance of its sections; the portions in compact areas controlled by the towns and cities under Class IV highways.

Class II: Highways on the secondary State highway system, excluding all portions of such highways within the compact sections of towns and cites of 7,500 inhabitants and over. All sections improved to the satisfaction of the Commissioner are maintained and reconstructed by the State. All unimproved sections, where no state and local funds have been expended, must be maintained by the town or city in which they are located until improved to the satisfaction of the Commissioner.

Class III: Recreational roads which consist of all roads leading to, and within, State Reservation designated by the Legislature. The State Highway Department maintains full control of reconstruction and maintenance of such roads.

Class IV: Town and city streets which consist of all highways within the compact sections of towns and cities of 7,500 inhabitants and over. Extensions of Class I and II highways through these areas are included in this classification.

Class V: Rural highways which consist of all other traveled highways which the town or city has the duty to regularly maintain.

Class VI: Unmaintained highways including all other public ways, including highways discontinued as open highways, highways closed subject to gates and bars, and highways not publicly maintained in suitable condition for travel for five years or more.

* Town Road total does not include Class VI Highways

Sources: New Hampshire Department of Transportation
1994 NH Office of State Planning

Traffic Counts

The following counts of traffic in Atkinson, conducted by the New Hampshire Department of Public Works and Highways, were for annual average daily traffic (AADT) and do not reflect peak hour or peak days in Atkinson's traffic pattern.

The count in Atkinson on Route 121 at the Plaistow town line has increased from 6,200 in 1977 to 10,000 in 1995.

Traffic counts at the Hampstead town line on Route 121 reveal growth considerably higher than at the Plaistow town line. In 1978, 2,800 cars were counted, while in 1995, the number rose to 7,100 vehicles, translating into an annual rate of increase of 5.6%.

In comparison, on East Road the traffic has increased from 2,200 vehicles per day in 1978 at the Plaistow town line to 4,600 in 1994, an annual increase of 4.7%.

Atkinson’s growth and traffic volumes indicate that the traffic in Atkinson is not all locally generated and is, at least partially the result of increased through traffic within the community.

Traffic Projections

Projecting future traffic trends relies on population and employment projections, assumes that traffic patterns remain consistent and that vehicle mile trips will continue increasing at historical rates. It should be obvious that projecting future traffic is anything but an exact science. Factors influencing peoples travel patterns include a plethora of factors including, but not limited to; congestion levels, automobile alternatives, fuel prices, and employment options and locations.

Notwithstanding these factors, reasonable projections can be made for the Town of Atkinson, provided that the basis of the projections is clearly understood. For the purpose of this Master Plan, population and employment opportunities will be the foundation of the projections.

POPULATION HISTORY AND PROJECTIONS

TOWN	1970	1980	1990	1995	2000	2005	2010	2015	AVERAGE ANNUAL GROWTH RATE 1990-
ATKINSON	2,291	4,397	5,188	5,272	5,788	6,318	6,806	7,304	1.38%
Danville	924	1,318	2,534	2,663	3,007	3,369	3,712	4,070	1.91%
Hampstead	2,401	3,785	6,732	7,044	7,830	8,646	9,407	10,191	1.67%
Plaistow	4,212	5,609	7,316	7,497	8,060	8,628	9,141	9,656	1.12%
Salem	20,142	24,142	25,746	25,918	27,410	28,887	30,205	31,510	0.81%
Sandown	741	2,057	4,060	4,272	4,940	5,661	6,356	7,095	2.26%

The population history and projections contained in the table above project an annual growth rate of 1.34% between 1990 and 2015 for Atkinson and the five surrounding towns listed. This growth rate translates into an additional 19,380 residents by the year 2015. The fastest growth rates of the communities in the region include Hampstead and Windham; the largest population increases are projected to occur in Salem, Windham and Hampstead, respectively.

AREA EMPLOYMENT PROJECTIONS

Town	1980	1990	Average annual growth rate 1980-90
ATKINSON	238	458	6.8%
Danville	58	115	7.1%
Hampstead	512	1,148	8.4%
Plaistow	2,090	3,218	4.4%
Salem	8,150	14,755	6.1%
Sandown	32	104	12.5%

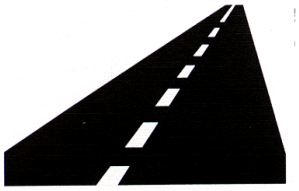
The table above presents data from the New Hampshire Department of Employment Security on employment for Atkinson and surrounding towns for the period 1980 to 1990. According to these estimates, employment opportunities in these towns increased by approximately 40% over the last decade. The majority of the employment growth was concentrated in the urbanized towns of Salem, Plaistow and Windham, and most noticeably in Salem.

The interrelationship between population growth, employment patterns and growth ultimately affect transportation patterns and vehicle miles driven. Nationwide, vehicle trips and vehicle miles traveled have increased at rates far greater than either population or housing growth. The relatively low cost of vehicles and fuel coupled with highly accessible road networks have fostered this trend. A review of the population and employment projections provided herein clearly indicates that continued growth is inevitable. Perhaps the most telling conclusion that can be drawn from these projections is that relatively rapid growth is occurring in the communities surrounding Atkinson. While this is not surprising, it does reinforce assumptions made elsewhere in this Master Plan.

Street Construction Program

While the Road Agent has prepared a ten-year road reconstruction plan, the Town recognizes the necessity to increase its road reconstruction planning effort. Future planning efforts should be considerate of the present and future travel patterns of Atkinson's residents and non-residents alike. Road maintenance and reconstruction projects undertaken by the Town should likewise be considerate of present and projected levels of traffic, in order that roads are reconstructed or maintained to an appropriate standard.

By improving these situations, the town, through its road agent and the Board of Selectmen, may apply for state participation in any of these improvements. This is suggested because of the availability of state funds on a matching basis, thereby stretching local dollars and creating a safer and better road network in the town.



Along with these improvements, it is suggested that the town seek redesignation of Providence Hill Road and Sawyer Avenue in order to make them part of the state's secondary highway system and/or eligible for Federal Aid. This is urged because of the regional traffic resulting from Route 121 traffic traveling to the Island Pond Road section in the Town of Salem.

Land Use and Transportation

One of the most compelling components in land use planning of late is the study and understanding of the relationship between land use planning and transportation planning. In the recent past these two disciplines have become less and less connected despite the great impact each has upon the other. With the passage of the federal transportation authorization legislation of 1991 the Intermodal Surface Transportation Efficiency Act (ISTEA), and the Clean Air Act Amendments (CAAA) of 1990 the land use/transportation planning link has become a practical means for curbing the adverse affects of urban sprawl and over-reliance upon single-occupant automobiles that have become trademarks of American society.

Recent interest in the impacts of these two planning disciplines upon one another has resulted in a number of policies that can be adopted by municipalities to attempt to improve air quality and reduce unnecessary trips by automobiles within a community. A number of these policies are included here for the potential use by the Town of Atkinson in addressing these concerns.

A. The Town should explore the feasibility of the construction of sidewalks in the areas near schools which are not serviced by buses, as well as other areas which may be appropriate.

B. Adopt town level regulations for subdivision and site plan review that encourage pedestrian and bicycle traffic. If amenities for this kind of transportation are provided in town, individuals are given alternatives to automobile trips.

C. Encourage development design that incorporates amenities for public transportation in the development regulations that would serve to make public transit service an alternative to the automobile.

D. The Town should take a pro-active approach in securing federal funding for transportation improvements. Federal funds are available to communities for projects ranging from intersection improvements to bicycle and pedestrian amenities.

E. The Town should review its municipal procedures to ensure that adequate attention is given to the siting of driveways for residential and commercial activities to insure the future integrity of heavily traveled transportation corridors.

Recommendations:

1. The Planning Board, in cooperation with the Board of Selectmen, Road Agent and Highway Safety Committee should develop a comprehensive ten-year road reconstruction plan and update the CIP to incorporate the forecasted expenditures.

2. The Planning Board, in cooperation with the Board of Selectmen, should take a more pro-active role in resolving regional traffic problems such as the traffic congestion problem along Route 125 in Haverhill, MA.

3. The Planning Board in cooperation with the Board of Selectmen, Road Agent and Highway Safety Committee should consider the construction of sidewalks in the areas near schools which are not serviced by buses, as well as other areas which are may be appropriate, and update the CIP to incorporate these forecasted expenditures.

4. Considering the different uses of various roads, street construction specifications reflecting these usages should be considered.

5. Road construction standards should be amended based upon American Association of State Highway and Transportation Officials (AASHTO) recommendations.

6. Road construction standards should be considerate of long-term maintenance operations and costs.

7. The Planning Board should strive to require adherence to the Town's road construction standards.

8. Consider providing (locally or regionally funded) adequate transportation opportunities for Atkinson's senior citizens.

9. Provide a municipal parking lot which can be used for bus riders and carpoolers at the Community Center.

10. Provide bus stops at the Community Center and elsewhere, if appropriate.

11. The Planning Board should study the long-term effect that cul-de-sac developments are having on Atkinson's traffic patterns.

12. The Road Standards should be amended to encourage road layouts which facilitate several points of access while not encouraging through traffic.

HOUSING

INTRODUCTION

Housing is a defining component of a community's character and quality of life. For example, housing density can affect the interactions between neighbors and diversifying the housing units can allow for a mix of people from different societal backgrounds. Community planning is very cognizant of the importance to plan for housing and its relevance in a master plan. Through planning, communities can determine appropriate zones for residential use and how residential areas connect with surrounding land uses.

The primary purposes of the Housing Chapter are to review the housing stock, identify trends in housing development and recommend actions town can take to assist the housing needs of the residents. The focal point for these three directions is the diversity of housing stock available in Atkinson. Having a diverse housing stock means that a municipality has a variety of price points to allow all segments of a population to live within their community. Specifically, affordable housing offers services workers such as teachers, police and firefighters who earn lower wages to live within the community they serve. Secondly, affordable housing provides young families a place to raise their children. Both of these are integral aspects relative to the vesting of residents into their community and creating a community that is welcoming, engaging and caring. It is in Atkinson's best interest both from a legal perspective and at a functioning capacity of the community that they analyze the diversity of housing and determine what actions, if they are needed, should be taken.

The Housing Chapter will tackle this issue from two perspectives. The Housing Demographics section will focus on population, housing stocks and its projected growth over the short-term future. The second section, Housing Economics, will be more geared towards the financial aspects of the housing market in Atkinson and comparing Atkinson's affordability to surrounding communities.

BACKGROUND

The last Master Plan was updated in 1998, when the country and the region were experiencing a robust economy and New England's job market was booming. Specifically, job creation in Boston has had a residual effect on the southern regions of New Hampshire. As these jobs have increased, so have the housing prices in Boston. As people have moved away from Boston in search of more affordable housing, their high paying positions have been one factor which has caused the increase of the housing prices in southern New Hampshire. These increases in housing prices combined with the influx of people have raised some questions about how communities can properly plan for the additional housing demands.

For the purposes of this Master Plan, the term affordable housing will be used. The terms workforce housing and low/moderate income housing are also often used in discussion relating to affordable aspects of housing. The intentions of these terms are synonymous in that they are concerned with providing housing options to lower income households that are equitable to the income they earn.

Municipalities have been given a legal obligation by the New Hampshire General Court and the New Hampshire court system to address the housing needs and take measures to provide a diverse mix of housing. RSA 672:1 III-e declares that all citizens benefit from a balanced supply of housing including affordable housing. Case law has helped to define the state statues, with one of the first cases being *Soares v. Atkinson* in 1987. In this case the court suggested that towns are responsible not only for accepting a fair share of population growth and housing, but also for providing opportunities for a variety of housing types to be built. Following the *Soares v. Atkinson* case, *Britton v. Town of Chester* in 1991 had similar results. The court ruled that the Town of Chester had created exclusionary zoning by allowing multifamily housing only in a Planned Residential Development (PRD). PRD's were only allowable in 1.73% of the town's land area and the town created the ordinance without consideration of the "general welfare of the community" where community was defined to include surrounding municipalities. The ruling was in favor of the developer and permitted them a builder's remedy to construct the project. Most recently was the case of *Great Bridge Properties, LLC v. Town of Ossipee ZBA* in 2005. At the time, Ossippee's zoning ordinance allowed for multifamily units to be constructed only in existing structures, limited to four units per structure and only one principal structure per parcel. The developer sought to build a new project on a 9-acre parcel, 3.5 acres to be developed, with 6 four unit structures. The master ruling was in favor of the developer. The decision was largely based on testimony from the ZBA chairperson who stated the intention of the ordinance was to exclude affordable housing from town. Subsequently the master found that the zoning was exclusionary and gave the planning board orders to review the site plan with 45 days or two meeting cycle, whichever came first.

After the *Soares v. Atkinson* case, Atkinson adopted a Low-Moderate Income ordinance to allow for more affordable housing to be built in town. Since it was passed, there have been three amendments which have updated the ordinance. In 1992 the ordinance was amended to require that at least 20% of the development had to be deemed affordable. By 1997 the ordinance was amended to ensure the units met federal guidelines. Then in 2001 it was amended to limit affordable housing density bonus to multifamily units only. The final amendment was in 2003 where it added the Assurance of Benefits provision requiring the units be deeded as a Low-Moderate unit for at least five years and the units complied with NHHFA before a certificate of occupancy was issued. Using the Great Bridges v. Town of Ossippee case as a guide, a cursory analysis was done to estimate the approximate number of parcels and acres which permit

affordable housing based on the requirements of the Low-Moderate Income Ordinance. The restrictions for the analysis included undeveloped parcel sizes greater than 10 acres and whose property was not placed under any conservation easement. The results showed that approximately 30 parcels in town fit these requirements. The total acreage was just more than 900 acres and equates to approximately 13% of the total area of Atkinson.

Atkinson has taken two additional steps to provide for affordable housing. First, accessory dwellings, which are sometimes referred to as in-law apartments, have become a permitted use in town. However, there is a restriction that these units can only be built for extended family members housing needs. Second, the Town also permits manufactured housing in all of the five residential zones in town, provided that it is built within a rural cluster residential development. Manufactured Housing Parks are also permitted but they are restricted to RR-3 and TR-2 districts.

HOUSING DEMOGRAPHICS

The community profile chapter of the Atkinson Master Plan addresses the effect an increasing population will have on Atkinson and surrounding communities. Table H-1 is a condensed version of the population changes for the area. Atkinson's population has grown at a moderate rate over the last three decades, with an average annual population increase of 1.6% from 1980-1990, 1.7% from 1990-2000 and 1.2% from 2000-2005. These values fall below the average growth rate of 3.5%, 1.9% and 1.4% for the Timberlane School District during the respective time periods. The rate of growth for Atkinson is more closely aligned with the regional growth rates for Rockingham County.

Table H-1

POPULATION HISTORY
Atkinson & Surrounding Communities
1980-2005

	US Census				Average Annual Change		
TOWN/AREA	1980	1990	2000	OEP Est. 2005	1980-1990	1990-2000	2000-2005
Atkinson	**4,397**	**5,188**	**6,178**	**6,560**	**1.6%**	**1.7%**	**1.2%**
Danville	1,318	2,534	4,023	4,490	6.3%	4.5%	2.2%
Plaistow	5,609	7,316	7,747	7,820	2.6%	0.6%	0.2%
Sandown	2,057	4,060	5,143	5,850	6.6%	2.3%	2.5%
Timber. Sch. Dist.	13,381	19,098	23,091	24,720	3.5%	1.9%	1.4%
Rock. County	**190,345**	**245,845**	**277,359**	**296,740**	**2.5%**	**1.2%**	**1.3%**
NH State	920,475	1,109,252	1,235,786	1,315,000	1.8%	1.1%	1.2%

Sources: 1980-2000 - US Census Bureau.
2005 - NH Office of Energy and Planning.

The population growth trend is closely correlated to the increase in Atkinson's housing units. Since 1980, the housing units have grown substantially from 1,428 to 2,650 units in 2005, representing a 53% increase (Table H-2). The annual growth rate in housing units for Atkinson was 2.7% from 1980-1990, 2.5% from 1990-2000 and 1.7% from 2000-2005. This declining trend in housing units is also expressed within the Timberlane School District and at a regional level. When compared with projected population estimates in the Community Profile chapter, the most recent trends of approximately 1%-2% annual growth can be expected for the near future.

Table H-2

HOUSING UNITS
Atkinson & Surrounding Communities
1980-2005

	US Census				Average Annual Change		
TOWN/AREA	1980	1990	2000	NHHFA Est. 2005	1980-1990	1990-2000	2000-2005
Atkinson	**1,428**	**1,885**	**2,431**	**2,650**	**2.7%**	**2.5%**	**1.7%**
Danville	439	960	1,479	1,662	7.5%	4.2%	2.3%
Plaistow	1,827	2,691	2,927	2,990	3.8%	0.8%	0.4%
Sandown	736	1,488	1,777	2,051	6.8%	1.8%	2.8%
Timber. Sch. Dist.	4,430	7,024	8,614	9,353	4.5%	2.0%	1.6%
Rock. County	**69,375**	**101,773**	**113,023**	**122,322**	**3.8%**	**1.0%**	**1.6%**
NH State	349,172	503,904	547,024	588,895	3.6%	0.8%	1.5%

Sources: 1980-2000 - US Census Bureau.
2005 - NH Housing and Finance Authority.

In reviewing the housing growth, Atkinson must be evaluated based on its ability to accommodate the projected demand that will be placed on the community. Using the NH Housing Finance Authority (NHHFA) 2005 estimates and OEP population estimates from Table H-1, the number of persons per unit is estimated to be 2.48. By the year 2010, the NH Office of Energy and Planning projects Atkinson's population to reach 6,800. If the 2005 person per unit ratio of 2.48 remains constant, the projected demand on housing units will increase by 91 units which equates to a 3% increase to 2,741 units.

With the charge from the RSA and subsequent rulings from the NH Supreme Court, Atkinson has worked to provide a range of housing types allowed through their zoning ordinances. Table H-3 details the change in housing types between 1990 and 2005 for Atkinson relative to the Timberlane School District towns, Rockingham County and the State of NH. The change in Atkinson between 1990 and 2005 suggests that the multi-family/condo are becoming an

increasing share of the housing stock, 14.9% to 27.1% respectively. Subsequently, the shares of single-family units have decreased from 84.4% in 1990 to 72.5% in 2005. The trend of an increasing share of multi-family/condo units is unique to Atkinson. The other three towns of the Timberlane school district, Rockingham County and the state of NH all showed a decline in the share of multi-family/condo units and an increase in single family homes.

Table H-3

HOUSING BY TYPE
Atkinson & Surrounding Communities
1990 & 2005

	1990						
	Single Family (detached)		Multi-family & Condominiums		Manufactured		
Town/Area	#	%	#	%	#	%	Total
Atkinson	**1,591**	**84.4%**	**281**	**14.9%**	**13**	**0.7%**	**1,885**
Danville	592	61.7%	76	7.9%	292	30.4%	960
Plaistow	1,529	56.8%	1,080	40.1%	82	3.0%	2,691
Sandown	1,215	81.7%	174	11.7%	99	6.7%	1,488
Timber. Sch. Dist.	3,712	67.1%	1,437	26.0%	387	7.0%	5,536
Rock. County	**61,147**	**60.1%**	**31,688**	**31.1%**	**8,938**	**8.8%**	**101,773**
NH State	297,777	59.1%	164,184	32.6%	41,943	8.3%	503,904

Source: 1990, NH Housing Finance Authority.

	2005- (estimate)						
	Single Family (detached)		Multi-family & Condominiums		Manufactured		
Town/Area	#	%	#	%	#	%	Total
Atkinson	**1,921**	**72.5%**	**717**	**27.1%**	**12**	**0.5%**	**2,650**
Danville	1,212	72.9%	83	5.0%	367	22.1%	1,662
Plaistow	1,846	61.7%	1,127	37.7%	17	0.6%	2,990
Sandown	1,746	85.1%	192	9.4%	113	5.5%	2,051
Timber. Sch. Dist.	6,725	71.9%	2,119	22.6%	509	5.4%	9,353
Rock. County	**79,143**	**64.7%**	**35,098**	**28.7%**	**8,091**	**6.6%**	**122,332**
NH State	371,969	63.2%	177,921	30.2%	39,005	6.6%	588,895

Source: 2005, NH Housing Finance Authority.

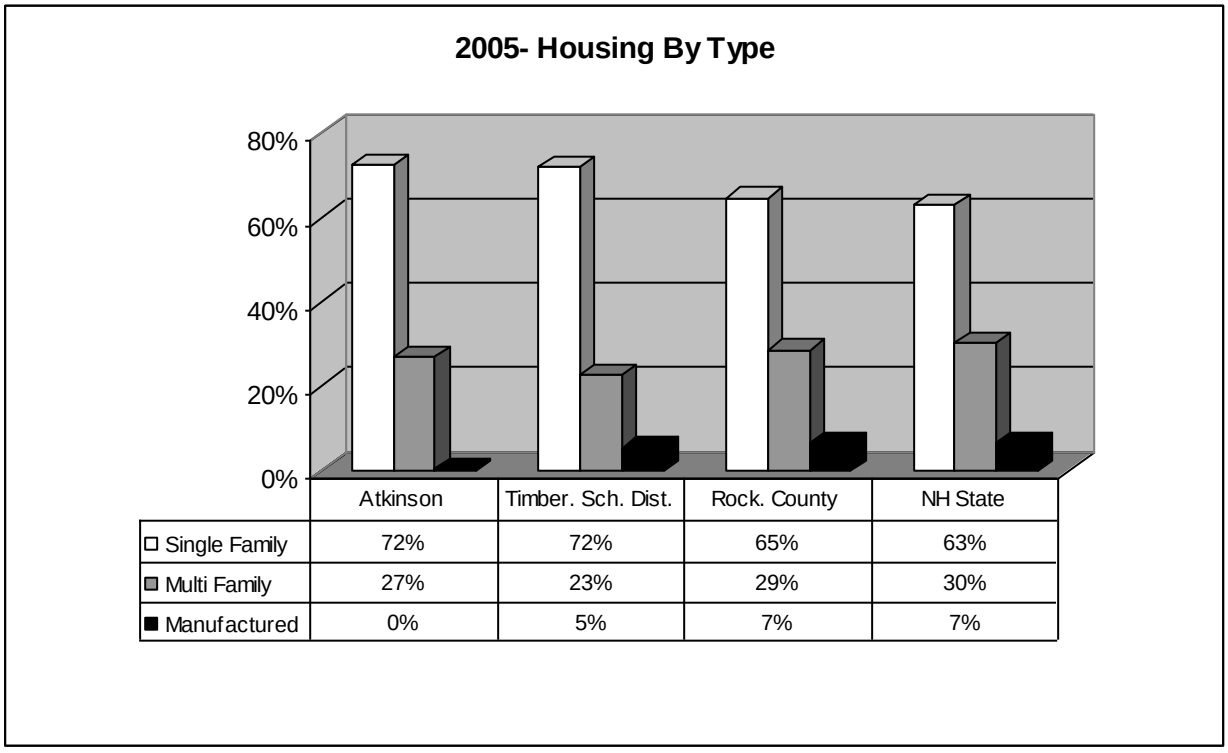
Using the data in Table H-3, it is possible to compare the growth rate of housing units for the town and regions. Single family units in Atkinson grew from 1,591 to 1,921 representing a 17% growth. This growth was substantially lower than the mutli-family/condo growth which saw a 61% increase. Additionally, it is believed that there are a number of single-family homes that have been converted to multi-family units without appropriate permits or approvals. Although

these units are sometimes found during property valuations, not all are accounted for in this statistical analysis. The Timberlane School District's growth in single family and multi-family units was 45% and 32% respectively while Rockingham County realized a 22% growth in single family units and 10% growth in multi-family/condo units. These numbers support the trend shown in housing shares which show Atkinson having an increasing development of multi-family/condo units compared to other towns and regions.

Figure H-1 illustrates the housing type data from Table H-3 between Atkinson, Timberlane School District, Rockingham County and the state of NH for 2005. Atkinson mix of housing types is similar to the mix of the comparative regions. All of them have strong concentrations of single-family units which are double the share of multi-family/condo units. Manufactured homes are shown to be a lower share in Atkinson (.5%) versus the Timberlane School District (5.4%) and Rockingham County (6.6%).

FIGURE H-1

HOUSING TYPE
Atkinson & Surrounding Community
2005



	Atkinson	Timber. Sch. Dist.	Rock. County	NH State
Single Family	72%	72%	65%	63%
Multi Family	27%	23%	29%	30%
Manufactured	0%	5%	7%	7%

Source: 2005, NH Housing Finance Authority.

The increase in multi-family/condo units which in 2005 accounted for 27.1% of Atkinson's housing is equivalent to the housing stock of multi-family/condo units in Rockingham County (28.7%) and falls just short of the 30.2% for the state of New Hampshire.

There is also a correlation between housing type, occupancy status and housing tenure, which categorizes housing units by ownership and rental status. In 2000, Atkinson's total number of occupied housing units was 2,317, leaving approximately 5% of housing units vacant (Table H-4). Ideally vacancy levels should hover around 3% which places Atkinson slightly above desired levels. However, these levels are considered acceptable due to the higher seasonal housing compared to surrounding communities. The nonseasonal vacancy percent (1.6%) is relatively low and this category includes house that are for sale or available rental units. The lower nonseasonal vacancy percent attests to the constraints the housing industry has experienced in Atkinson and the state of New Hampshire.

Owner-occupied units represent 84.7% of all housing units and renter-occupied units stood at 10.6%. These levels are analogous to levels in Timberlane School District but fall short of the county and state levels. The connection to housing type is that multi-family/condo units tend to have a higher percentage of occupants who rent, and rental units are traditionally more affordable.

TABLE H-4

HOUSING UNITS BY TENURE
Atkinson & Surrounding Communities
2000

	Total	Occupancy					Tenure			
			Vacant Housing Units				Owner-occupied		Renter-occupied	
			Non Seasonal		Seasonal					
Town/Area	All Housing # units	All Occupied # units	#	%	#	%	#	%	#	%
Atkinson	**2,431**	**2,317**	**39**	**1.6%**	**75**	**3.1%**	**2,060**	**84.7%**	**257**	**10.6%**
Danville	1,479	1,428	34	2.3%	17	1.1%	1,302	88.0%	126	8.5%
Plaistow	2,927	2,871	30	1.0%	26	0.9%	2,264	77.3%	607	20.7%
Sandown	1,777	1,694	39	2.2%	44	2.5%	1,521	85.6%	173	9.7%
Timber. Sch. Dist.	6,837	6,616	103	1.5%	118	1.7%	5,626	82.3%	990	14.5%
Rock. County	**113,023**	**104,529**	**2,435**	**2.2%**	**6,059**	**5.4%**	**78,999**	**69.9%**	**25,530**	**22.6%**
NH State	547,024	474,606	15,167	2.8%	57,251	10.5%	330,783	60.5%	143,823	26.3%

Source: 2000, U.S. Census Bureau.

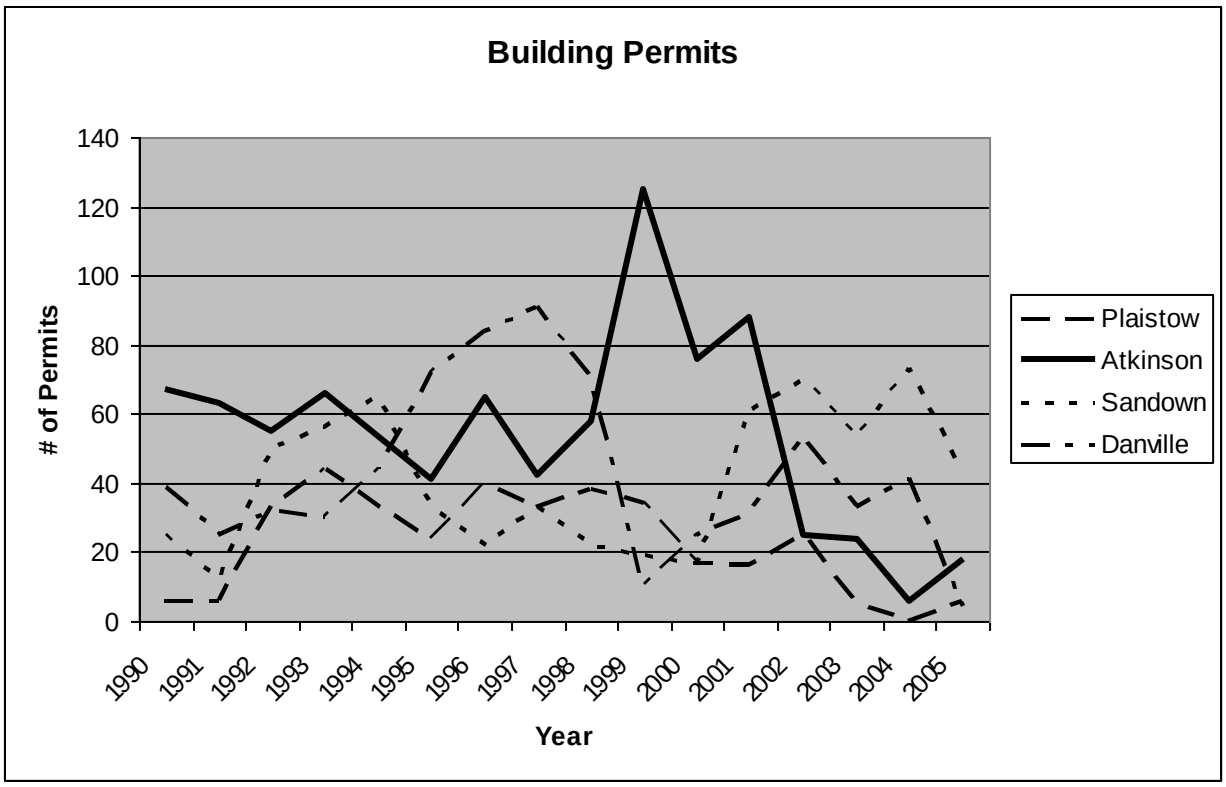
HOUSING ECONOMICS

The cost of housing has seen a significant increase in the Seacoast region of New Hampshire over the past decade. As discussed in the background of the housing chapter, this has been partially affected by Boston's housing market but also by the quality of life in the region, favorable mortgage rates and supply levels.

One variable which fluctuates with housing market prices is building permits. Figure H-2 lists the number of building permits granted between 1990 and 2005. Until 1998, Atkinson experienced consistent growth, with only slightly higher number of building permits compared to surrounding towns. An interesting pattern occurred between 1999-2002. During this timeframe Atkinson saw a record number of permits while permits in surrounding towns saw a decline. There were four large developments which caused this spike in building permits. They included Settler's Ridge (99 units), Centerview Hollow (63 units), Cogswell Farm (55 units) and Mill Stream (24 units). After 2002, the number of building permits declined and a relatively low number of building permits have been granted since the spike which was experience earlier in the decade.

FIGURE H-2

BUILDING PERMITS
Atkinson & Surrounding Communities
1990-2005



Source: 2005, New Hampshire Housing Finance Authority.

Data for Figure H-2

TOWN/AREA	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Atkinson	**67**	**63**	**55**	**66**	**53**	**41**	**65**	**42**	**58**	**125**	**76**	**88**	**25**	**24**	**6**	**18**
Danville	39	25	32	30	44	72	84	91	70	10	25	31	53	33	41	4
Plaistow	6	6	33	44	33	24	40	33	38	34	17	16	25	5	0	6
Sandown	25	12	50	56	65	33	22	33	22	19	17	61	70	53	73	43
Timber. Sch. Dist.	137	106	170	196	195	170	211	199	188	188	135	196	173	115	120	71
Rock. County	**1048**	**982**	**1234**	**1495**	**1347**	**1239**	**1286**	**1646**	**1873**	**2061**	**2064**	**1576**	**1579**	**2071**	**2019**	**1583**
NH State	4745	3717	4334	4647	4731	4472	5200	5992	6653	7286	7551	7079	8907	9270	9064	2445

As identified earlier, the Seacoast region of New Hampshire has experienced several significant changes in recent decades; one of those being the escalating costs of housing. The Rockingham Planning Commission has worked throughout the 1990's to understand these impacts by coordinating regional housing need assessments. The purpose of the assessment was to quantify the size and distribution of the need for affordable housing in the region. By quantifying the stock of affordable housing, towns can assess whether they are meeting their required "fair share" of affordable housing. However, the assessment clearly states that this information is meant to be used only as a general indicator of the distribution of housing needs in the region, not as a prescription of units needed in a particular town.

The U.S. Census and New Hampshire Housing and Finance Authority are valuable sources to analyze current patterns in affordable housing. Table H-5 lists the median home price and median rents for Atkinson and surrounding communities between 1990-2006. Atkinson had a 48.3% increase in median home price for this time period with a median house price of $337,000 in 2006. Likewise, the median rental costs in Atkinson escalated 28.7% to $600 in 2005. Comparatively, Atkinson's rental housing is lower than surrounding communities. This is due in large part to the available rental inventory being mostly apartments versus duplex, townhomes and multifamily homes in the surrounding areas.

TABLE H-5

MEDIAN HOUSING VALUE AND RENTAL COSTS
Atkinson & Surrounding Communities
1990-2006

Town/Area	1990 Median Home Price	2006 Median Home Price	% change 90-06	1990 Median Rent ($/month)	2006 Median Rent ($/month)	% change 90-06
Atkinson	**$174,100**	**$337,000**	48.3%	**$428**	**$600***	28.7%
Danville	$147,800	$285,000*	48.1%	$553	$944*	41.4%
Plaistow	$149,900	$252,350	40.6%	$714	$983	27.4%
Sandown	$142,400	$298,400	52.3%	$789	$818**	3.5%
Timber. Sch. Dist.	$158,250	$295,917	46.5%	$609	$983	38.1%
Rock. County	**$149,800**	**$303,000**	50.6%	**$614**	**$994**	38.2%
NH State	$129,300	$250,000	48.3%	$549	$928	40.8%

*- Data from 2005

**- Data from 2000

Source: 1990, 2000, U.S. Census Bureau.
2005, 2006, New Hampshire Housing and Finance Authority.

Table H-6 takes the median housing and rental costs a step further and analyzes the year 2000 prices to county medians. With a median house price of $197,900, Atkinson was 20% higher than Rockingham counties median housing price ($164,900). The median mortgage payment for Atkinson was $1,465 and was the highest of the represented towns.

TABLE H-6

COUNTY COMPARISON OF MEDIAN HOUSING AND RENTAL COSTS
Atkinson & Surrounding Communities
2000

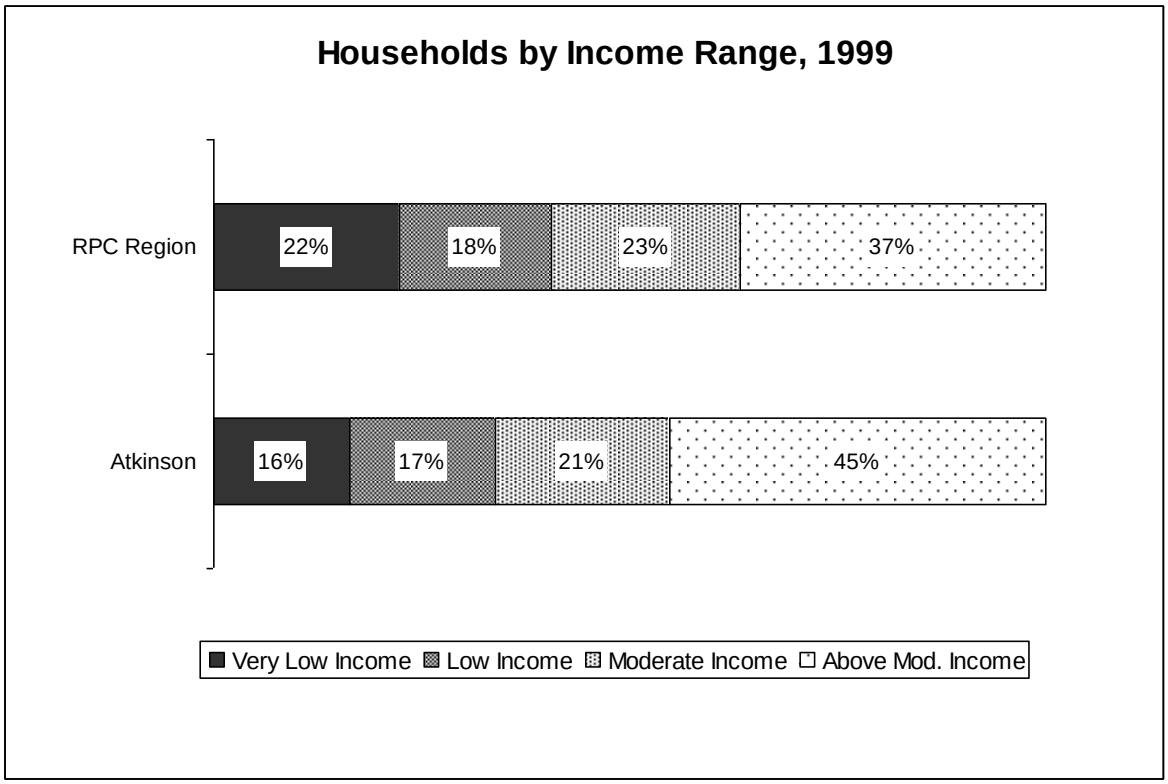
	2000 Census						Real Estate Sales Data: Jan02-Sep03	
Town/Area	Median Price	% of County Median	Median Rent ($/month)	% of County Median	Median Mortgage ($/month)		Avg. Res. Sale Price	# Sales Reported
Atkinson	**$197,900**	**120.0%**	**$509**	**71.0%**	**$1,465**		**$297,524**	**206**
Danville	$160,900	97.6%	$613	85.5%	$1,340		$224,534	152
Plaistow	$158,100	95.9%	$793	110.6%	$1,338		$227,845	246
Sandown	$144,100	87.4%	$818	114.1%	$1,384		$229,286	248
Timber. Sch. Dist.	$171,000	103.7%	$664	92.5%	$1,402		$244,797	852
Rock. County	**$164,900**	**100.0%**	**$717**	**100.0%**	**$1,390**		**$285,684**	**7,833**
NH State	$133,300	80.8%	$646	90.1%	$1,226		N/A	N/A

Source: 2000, U.S. Census Bureau.
2003, Real Data Corp.

Household income in Figure H-3 shows that Atkinson is slightly more affluent than the Rockingham Planning Commission region. The largest discrepancy between the two areas is in the number of above moderate income residents. Atkinson has 45% of its residents within this class while the RPC region had 37%. The second largest discrepancy was in the very low income where only 16% of the population in Atkinson fell into this classification compared to 22% in the RPC region.

FIGURE H-3

HOUSEHOLDS BY INCOME RANGE
Atkinson & Rockingham County
1999



Source: 2000, U.S. Census Bureau.

On the following page, Table H-7 depicts the affordability of owning a home in Atkinson and surrounding communities for the years 2000 and 2006. For each community, the median affordable home price (MAHP) was calculated by taking 30% of the median household income and applying it into a standard mortgage product (30 years, 6% interest). House insurance, mortgage insurance and property taxes for the given year were also factored into the housing costs. This is an estimate that could adjust depending on an individual's down payment, interest percentage on the mortgage and other factors. The MAHP is then compared with the number of home sales in the community, showing how many of these home sales fell above and below the MAHP. The table can be interpreted to read that Atkinson in 2000 had 4.6% of its home sales (5 homes) sell at a price below the MAHP of $201,972. Conversely, 95.4% of the home sales (103 homes) sold at a price greater than the MAHP.

In 2000, the housing market was in a boom. The Timberlane School District saw 385 homes sell during this time period and 46.5% (179 homes) sold below the MAHP for the district. Atkinson

had 108 home sales and as mentioned above, had 4.6% (5 homes) sell below its MAHP, falling substantially lower than the surrounding communities in the number of home sales that are deemed affordable. By 2006, the housing market had shifted dramatically. There were far fewer homes selling on the market. This is exhibited by only 226 homes being sold in the Timberlane School District for this time period, a 41% drop in number of homes sold in 2000. Secondly, the number of homes sold below the MAHP for the communities fell dramatically. As an example, Sandown saw 74.4% (61 homes) sell below its MAHP in 2000 but in 2006, this number fell to 13.4% (9 homes). Atkinson was the one community which remained level to its 2000 sales selling below its MAHP with 7.5% (7 homes). This was in large part due to the already high costs for housing in Atkinson.

TABLE H-7

HOUSING OWNERSHIP AFFORDABILITY
Atkinson & Surrounding Towns
2000 & 2006

	2000						
			Homes Sales				
	Median Household Income	MAHP (Median Affordable Home Price)	Total	Less than MAHP		Greater than MAHP	
Town/Area			#	#	%	#	%
Atkinson	$69,729	$201,972	108	5	4.6%	103	95.4%
Danville	$57,287	$164,313	49	18	36.7%	31	63.3%
Plaistow	$61,707	$177,691	146	87	59.6%	59	40.4%
Sandown	$67,581	$195,470	82	61	74.4%	21	25.6%
Timber. Sch. Dist.	$64,076	$184,862	385	179	46.5%	206	53.5%
Rock. County	$58,150	$166,926	4,901	1,871	38.2%	3,030	61.8%
NH State	$49,467	$140,644	18,837	9,234	49.0%	9,603	51.0%

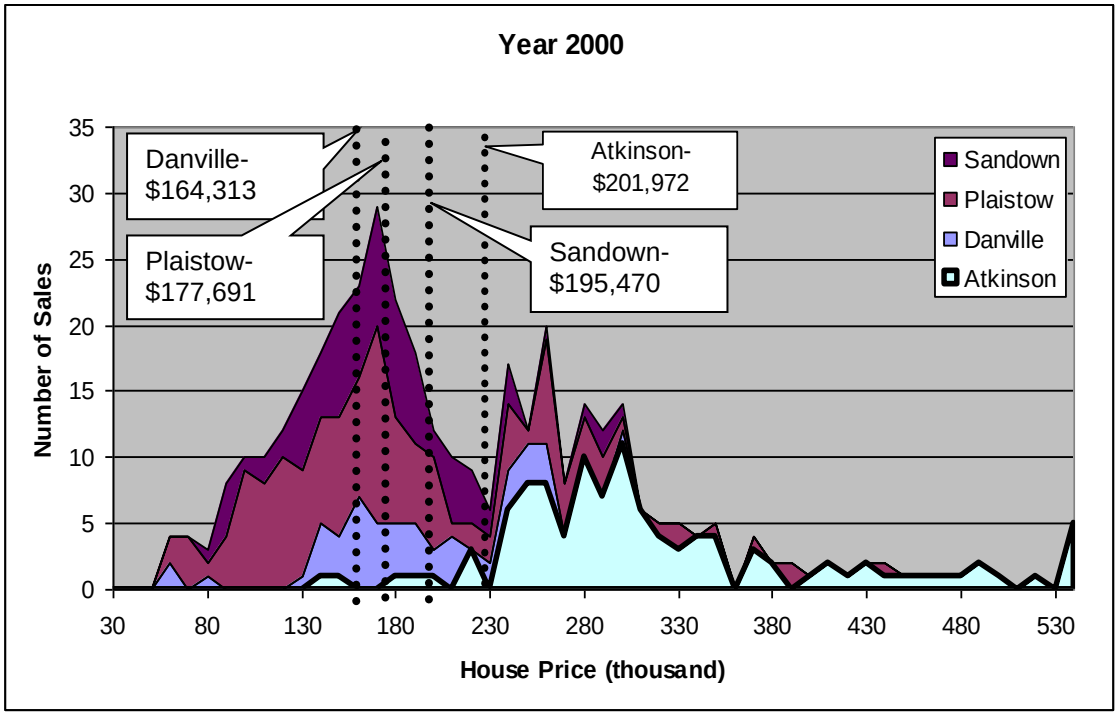
	2006						
			Homes Sales				
	Median Household Income	MAHV (Median Affordable Home Price)	Total	Less than MAHP		Greater than MAHP	
Town/Area			#	#	%	#	%
Atkinson	$76,702	$236,360	67	5	7.5%	62	92.5%
Danville	$63,015	$181,653	30	1	3.3%	29	96.7%
Plaistow	$67,877	$196,369	62	9	14.5%	53	85.5%
Sandown	$74,339	$215,926	67	9	13.4%	58	86.6%
Timber. Sch. Dist.	$70,483	$175,982	226	7	3.1%	219	96.9%
Rock. County	$63,965	$184,526	3,115	314	10.1%	2,801	89.9%
NH State	$54,414	$155,617	14,390	1,771	12.3%	12,619	87.7%

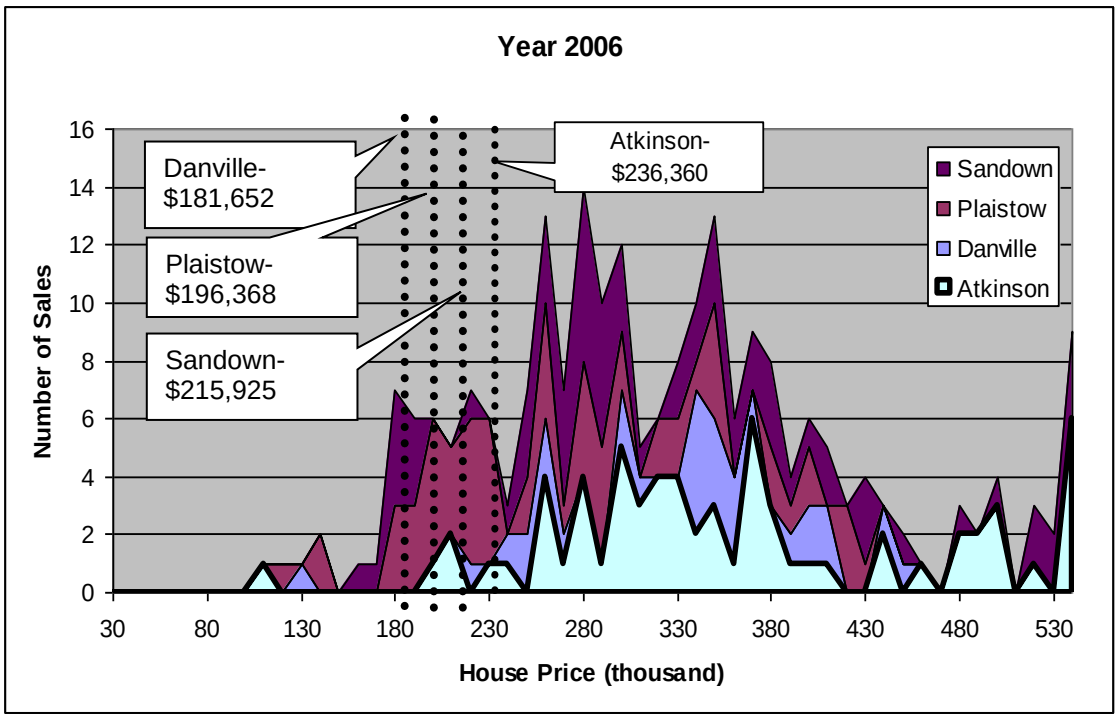
Source: 2007 New Hampshire Housing Finance Authority.

Figure H-4 on the next page visually shows the data for the communities of Timberlane School District shown in Table H-7 above. The graph is an area graph and the communities are aggregated to show the home sales for the Timberlane School District. It could be said then that in 2000, there were 29 homes sold in the school district for $170,000, with 9 homes sales in Sandown, 15 in Plaistow, 5 in Danville and 0 in Atkinson. The additional benefit of the graph is to compare the ability of residents to access affordable housing not only in their own community but also in the communities in the school district. The graph reveals that in 2000, 73.6% of the home sales in Danville, Plaistow and Sandown were sold at a price below the MAHP for Atkinson while only 4.6% of the homes in Atkinson were below the Atkinson MAHP. As mentioned earlier, in 2006 there was a large increase in home prices of the surrounding communities of Danville, Plaistow and Sandown. With the MAHP in Atkinson being $236,360, 24.5% of the home sales in Danville, Plaistow and Sandown fell below this level, representing a large reduction in the number of affordable homes in the district. It's difficult to quantify why there was such a steep shift in the market price of surrounding communities. Some explanation may lie in the appreciation in the housing market, the shifting demographics of the buyers (ie. less low income buyers), deflated costs of housing in surrounding communities in 2000 and possibly the reduction in building permits for new construction projects.

Figure H-4

HOUSING OWNERSHIP AFFORDABILITY
Atkinson & Surrounding Towns
2000 & 2006



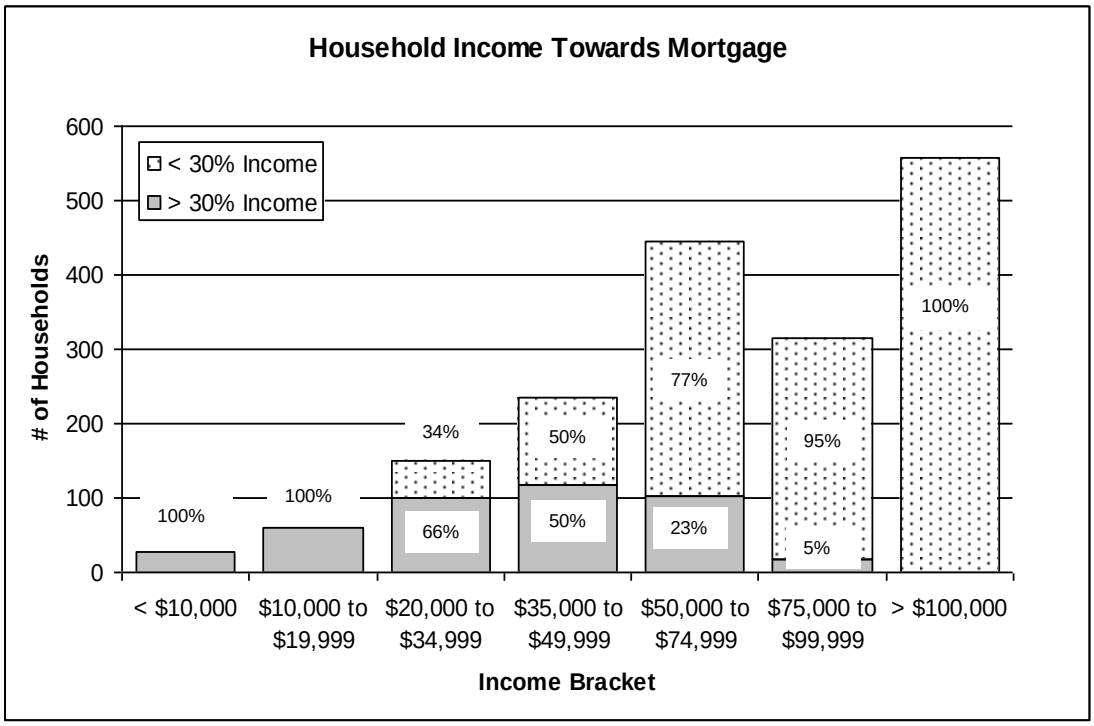


Source: 2007 New Hampshire Housing Finance Authority.

In the explanation for the previous figure, it was mentioned that 30% of a household's income was determined to be the equitable amount which should go towards housing costs. The New Hampshire Housing Finance Authority categorizes this information into income brackets to show the percent of property owners who pay less than 30% and more than 30% of their income towards housing costs (figure H-5). The figure reveals that 76% of households from all income brackets pay less than 30% of their income towards housing costs. This percent is considerably high but it is difficult to apply to the larger picture of affordable housing. The statistic is simply showing that a high proportion of residents earn enough money to keep their housing costs at or below the 30% of their income level. It does not show that housing is affordable in Atkinson. As expected, there is a positive correlation between income bracket and number of households who own their property. Also revealed is the relationship between income and the percent of income which goes towards mortgage payment. The lower income levels pay a greater percentage of their income towards their mortgage payment versus the higher income brackets that pay a lower percentage of their income.

FIGURE H-5

HOUSEHOLD INCOME TOWARDS HOUSING COSTS- OWNERSHIP
Atkinson
2005



Data

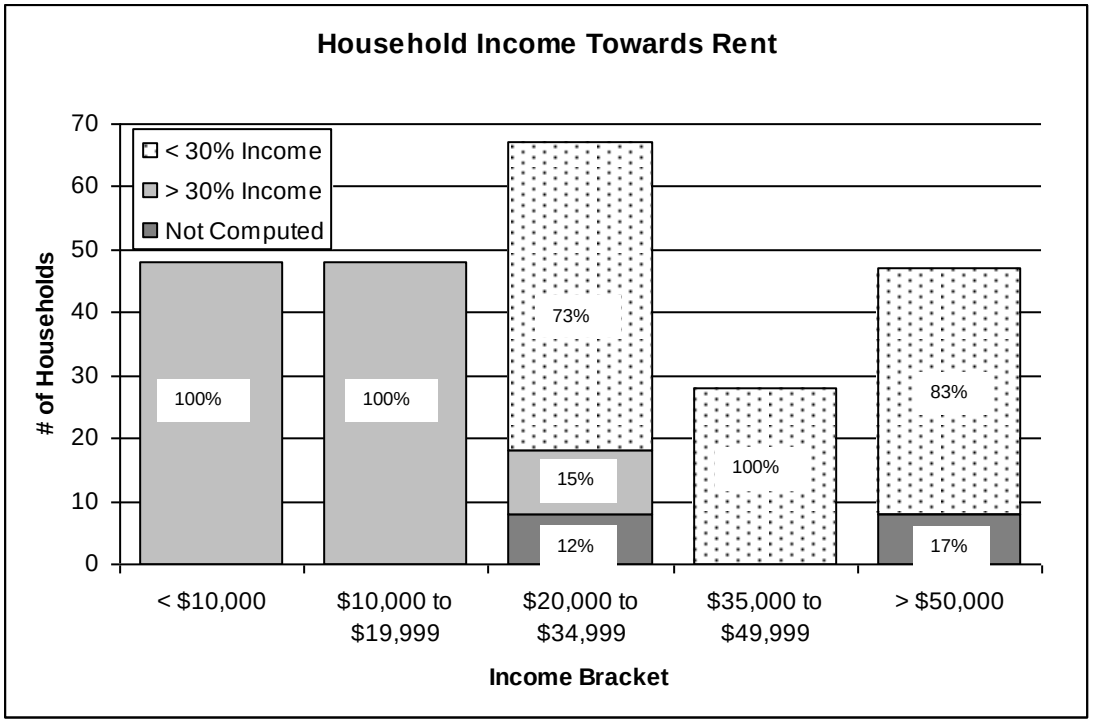
Category	< $10K	$10,000 to $19,999	$20,000 to $34,999	$35,000 to $49,999	$50,000 to $74,999	$75,000 to $99,999	> $100K	Totals
< 30% Income	0	0	52	117	342	298	558	1,367
> 30% Income	28	60	99	118	102	17	0	424
Not Computed	0	0	0	0	0	0	0	0
All Owner Households	28	60	151	235	444	315	558	1,791

Source: 2005 New Hampshire Housing Finance Authority.

Figure H-6 is similar to Figure H-5 but this time it compares the percent of household income which goes towards rental costs. In addition to the mutually exclusive greater than 30% and less than 30%, there is a third category titled "not computed". These households opted not to provide their information to NHHFA. The patterns in figure H-6 are similar to figure H-5; Households who are in a higher income bracket, pay less of their income towards rental costs. Figure H-6 does differ though. Instead of a positive correlation between housing income and the number of households renting, there is a negative correlation. In other words, it could be stated that as income increases, there are less households who rent. This is logical and the opposing findings between rental costs and mortgage costs support each other's results. A final note of interest is the scale on the y axis in both figures. Similar to the data from Table H-4 which found that a majority of households own property (84.7%) versus those who rent (10.6%), there are hundreds more households in figure H-5 compared to figure H-6.

FIGURE H-6

HOUSEHOLD INCOME TOWARD HOUSING COSTS- RENTAL
Atkinson
2005



Data

Category	< $10K	$10,000 to $19,999	$20,000 to $34,999	$35,000 to $49,999	> $50K	Totals
< 30% Income	0	0	49	28	39	116
> 30% Income	48	48	10	0	0	106
Not Computed	0	0	8	0	8	16
All Renter Households	48	48	67	28	47	238

Source: 2005 New Hampshire Housing Finance Authority.

The previous figures compared the percent of household income towards housing costs in Atkinson but case law has pointed out the importance to look at how a specific town compares to neighboring communities. Table H-8 takes the percent of income which goes towards housing costs and evaluates Atkinson with surrounding communities in the Timberlane School District.

TABLE H-8

HOUSEHOLD INCOME TOWARD HOUSING COSTS
Atkinson & Surrounding Communities
2005

Rental

	<30% HH Income		>30% HH income		Not Computed		
Town/Area	#	%	#	%	#	%	Total
Atkinson	**116**	**48.7%**	**106**	**44.5%**	**16**	**6.7%**	**238**
Danville	88	69.8%	30	23.8%	8	6.3%	126
Plaistow	359	59.1%	232	38.2%	16	2.6%	607
Sandown	73	43.7%	64	38.3%	30	18.0%	167
Timber. Sch. Dist.	636	55.9%	432	38.0%	70	6.2%	1,138
Rock. County	**10,524**	**62.2%**	**5,351**	**31.6%**	**1,036**	**6.1%**	**16,911**
NH State	86,913	61.5%	46,636	33.0%	7,678	5.4%	141,227

Mortgage

	<30% HH Income		>30% HH income		Not Computed		
Town/Area	#	%	#	%	#	%	Total
Atkinson	**1,367**	**76.3%**	**424**	**23.7%**	**0**	**0.0%**	**1,791**
Danville	617	70.0%	265	30.0%	0	0.0%	882
Plaistow	1,333	71.8%	505	27.2%	19	1.0%	1,857
Sandown	943	73.6%	324	25.3%	15	1.2%	1,282
Timber. Sch. Dist.	4,260	73.3%	1,518	26.1%	34	0.6%	5,812
Rock. County	**30,985**	**74.9%**	**10,216**	**24.7%**	**171**	**0.4%**	**41,372**
NH State	192,691	77.3%	55,504	22.3%	1,150	0.5%	249,345

Source: 2005 New Hampshire Housing Finance Authority.

On the positive side, the data suggest that the percent of resident's income going towards monthly mortgage is relatively low to surrounding communities. The table shows that 23.7% of residents in Atkinson pay greater than 30% of their household income towards mortgage payment. This is the second lowest percent out of the towns/areas included in study area. So even though the market price of houses in Atkinson is higher than Rockingham County, residents are receiving higher wages to pay for their housing. It is also possible that residents are increasing their down payments when purchasing their houses, thus reducing the monthly mortgage payments. One area of concern is noted in the percent of residents in Atkinson whose rental housing costs are greater than 30% of their household income. Atkinson has 44.5% of households who are renting and pay more than 30% of their income towards housing costs. This percent leads all surrounding communities, Rockingham County and New Hampshire.

CONCLUSION

In summary, there is a regional concern for affordable housing across Southern New Hampshire communities. State statutes and case law have required municipalities to encourage and provide means for a diverse stock of housing options. The purpose of this Housing Chapter is to review the housing stock in town and determine the how available affordable housing is to its residents.

The data highlights some achievements Atkinson has made. There has been considerably more multifamily housing development in town. Such development meets the needs of the growing populace of the area while also helping to protect the natural resources which are valued by the residents. Also, Table H-8 shows that 76% of Atkinson households who own their home are paying less than 30% of their income towards housing costs. This is a higher percent than surrounding communities. Finally, the increase of rental costs in Atkinson between 1990-2006 was 9.5% lower than the increase of rental costs for the county, as shown in Figure H-5.

There are an equal number of concerns also presented in this chapter. Among the biggest concerns is the relative affordability of Atkinson compared to surrounding communities. This is shown in several data sources. Figure H-4 is one of the most useful figures. It shows that Atkinson residents who earn the median income have access to a very small portion of the real estate transactions in town. Additionally in Table H-5, the median price to own a home in Atkinson was $337,000 in 2006 which was 11% higher than the county median. Table H-5 also shows that housing prices in Atkinson increased 48.3% between 1990-2006, the second highest town in the Timberlane School District. These statistics suggest the market has progressed at a rate which is preventing many of the median earning households from living in Atkinson.

It was presented in the background section that Atkinson has taken measures to address affordable housing development including allowing accessory dwellings for extended family and the low-moderate income housing ordinance. However, there is room for improvement. Among the first steps the town should consider is updating the Low-Moderate Income Housing Ordinance that was first developed in the early 90's. Since then there has been a lot of development in policy shaping the purpose of these ordinances, which is to encourage affordable housing in town. It would be important for Atkinson to consider working with New Hampshire Housing and Finance Authority to develop a more comprehensive affordable housing ordinance that will meet the goals of the town and meet the requirements imposed on them. List below are the additional recommendations for the Town to consider implementing.

RECOMMENDATIONS

- **Elderly Housing:** Elderly housing should be encouraged in town to help meet the increasing demands caused by the aging population.

- **Update Low-Moderate Income Housing Ordinance:** Utilize assistance from state workforce housing organizations to update the low-moderate income housing ordinance to provide incentives for developers to build affordable housing.

- **Update Accessory Dwelling Units:** Consider revising the accessory dwelling unit ordinance to allow them to serve as affordable housing for non-family members.

- **Town Center Study:** Conduct a town center study to analyze the creation of a village district to offer mixed uses including housing and retail use occurring on the same lot.

- **Census 2010 update:** When the US Census is updated in 2010, the housing master plan should be updated accordingly to reflect the changes.

- **Affordable Housing Education:** Affordable housing is an issue facing the region and Atkinson. The town should encourage educational programs focused on affordable housing, its affect on communities and steps communities can take to encourage affordable housing.

Town of Atkinson
New Hampshire

NATURAL RESOURCES INVENTORY

Prepared for the Atkinson Conservation Commission
by the Rockingham Planning Commission
as part of the
I-93 Community Technical Assistance Program

Adopted December 2011

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Julie LaBranche (Senior Planner)
Robert Pruyne (GIS Analyst/IT)
Tom Falk (Transportation Analyst/GIS Coordinator)

Cover Photo of Stewart Farm Pond provided courtesy of Paul Wainwright

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1.0 Introduction

1.1 Overview

The Town of Atkinson Natural Resources Inventory provides detailed descriptions, statistics and maps of significant natural resources in the community. This inventory is intended to be used for the following purposes:

- Provide information for natural resource based policy development and management plans
- Guide open space preservation plans, land acquisition, and voluntary stewardship initiatives, and citizen participation
- Guide development of zoning and development regulations that serve to protect, preserve and enhance natural resources
- Guide use of public funds and other financial resources aimed at land and natural resource preservation
- Inform residents, business owners, neighboring communities and organizations involved in land and resource protection, management and regulation of the town's goals relating to natural resources

This inventory and the maps contained herein may be particularly useful to the planning board and conservation commission in evaluating site plan review and subdivision applications, developing zoning ordinances and regulations, and updating the town's master plan.

1.2 Natural Resources of Atkinson

Forests are the dominant land cover in Atkinson, covering approximately 57 percent of the total area of town with nearly 41 percent retained as large unfragmented blocks. Preservation of large unfragmented blocks offers the many benefits:

- *Preserves rural character*
- *Attracts investment by residents and businesses seeking high quality of life*
- *Revitalizes town and village centers by promoting compact development using the principles of Smart Growth*
- *Supports resource based tourism economy*
- *Helps prevent flooding and flood related damage*
- *Protects farms and agricultural lands*
- *Promotes sustainable development patterns*
- *Protects environmental resources (water, aquifers, air, forests)*
- *Provides recreational and educational opportunities*
- *Preserves wildlife habitat and corridors*

State and local agricultural soils are particularly prevalent. The town also contains significant acreage identified in the NH Wildlife Action Plan as High Quality Habitat.

Atkinson has close to 20 percent of its total land and water under some level of protection or conservation. This statistic is a common land preservation goal among many communities,

though some strive to exceed 20 percent conserved lands in order to protect sensitive resources, particularly water supply watersheds and aquifers and agricultural lands.

Table 1. Summary of natural resources and acreage in Atkinson

Resource	***Acres***	***% town***
Agricultural Soils	3,502.8	48.0%
Rivers and Streams	20.5 linear miles	--
Lakes and Ponds	109	1.5
Floodplain- Flood Hazard Areas	297	4.1
Freshwater Wetlands	589.6	8.1
Designated Prime Wetlands	255	3.5
Stratified Drift Aquifer	473	6.5
Forested Lands	4,137	56.7
NH Wildlife Action Plan - High Quality Habitat and Supporting Landscapes	4,382.4	60.1
Conservation Lands	1,439	19.7
Unfragmented Blocks	3,017	41.4
Land	7,168	98.6
Water	128	1.7

2.0 Natural Conditions and Landscape

2.1 Physiography

The U.S. Forest Service has classified various sections of the country based on ecological and environmental characteristics – the Ecoregional Subsections classification and the Watershed Group classification. The Ecoregional Subsections classification was based on land formations, geology, topography, regional climate, and dominant natural vegetation (see graphic below). The boundaries were refined based on how natural communities were more common in different groups of non-living factors. The U.S. Forest Service has divided New Hampshire into the following three principal biophysical or ecological regions and subsections:

Principal Regions ***Southern New England Coastal Plain - Hills Section (southeastern NH)***
Vermont-New Hampshire Upland Section (southwestern NH)
White Mountain Section (northern NH)

Subsections of the Southern New England Coastal Plain and Hills Section
Gulf of Maine Coastal Lowland (immediate coastal region)
Gulf of Maine Coastal Plain (southern portion)
Sebago-Ossipee Hills and Plain (northern portion)

Atkinson is part of the Southern New England Coastal Plain and Hills section and the Gulf of Maine Coastal Plain subsection.

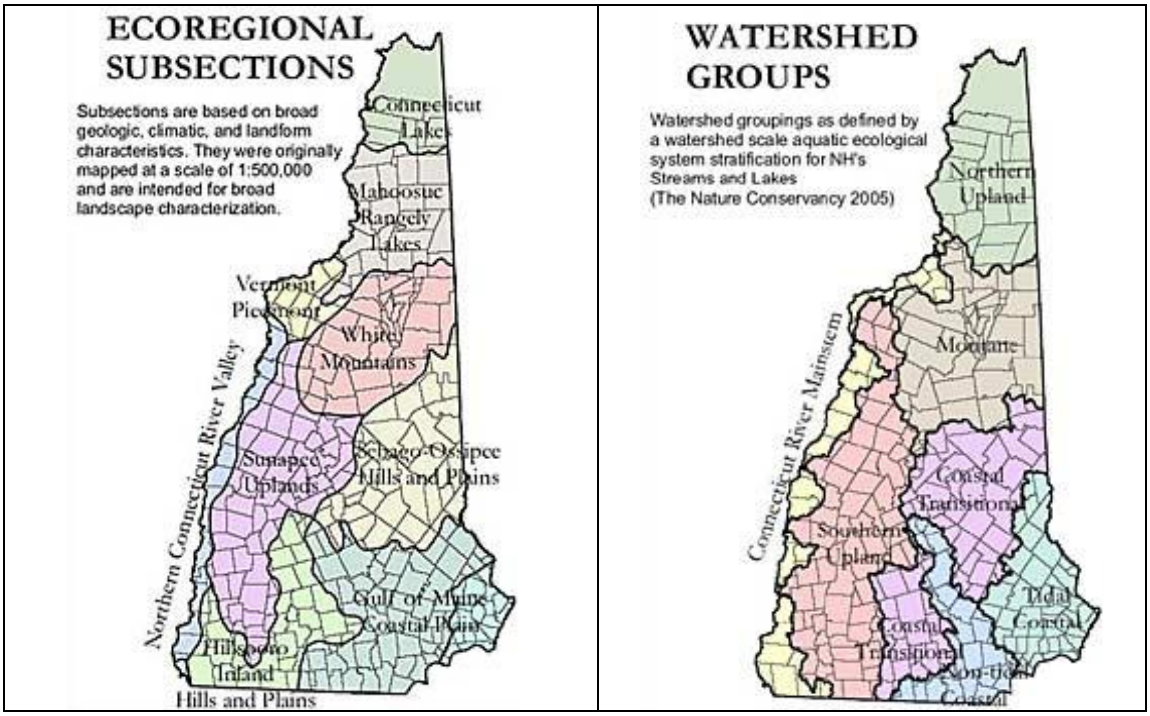


Figure 1. Ecoregional subsections and watershed group classifications of New Hampshire

Topography

The topography of Atkinson is variable throughout the town, with a scattering of hills separated by streams, brooks and large wetland complexes. Elevations range from a high of 426 feet to 295 feet above sea level.

Table 2. Major topographic features and elevations

Topographic Feature	*Elevation (feet)*
Hog Hill	426.5
Providence Hill	337.9
Pine Knoll	377.3
Bragg Hill	308.4
Poor's Hill	295.3

Steep Slopes

In general terms, the U.S. Department of Agriculture, Soil Conservation Service recommendations special management practices for certain activities on steep slopes based on specific properties of the overlying soil including erodibility, grain size and composition, aspect, slope and elevation.

For the purposes zoning and regulation, most communities define steep slopes in the range of 15 and 20 percent. The goals of limiting and/or regulating land base activities on steep slopes are to:

- Manage stormwater effectively
- Prevent erosion and sedimentation
- Control flooding of uplands and within drainage systems
- Minimize land disturbance
- Protect water quality and ecologically sensitive habitat

Development on steep slopes simply requires greater land disturbance to construct roads and buildings, and more infrastructure to manage runoff and prevent erosion.

2.2 New England Climate

New England weather and climate are among the most varied in the world, including extremes of both hot and cold temperatures, droughts, heavy rainfall, hurricanes, tornadoes, blizzards, and other severe weather. These great variations in New England weather are influenced by many factors relating to the physical geographical setting, including the region's latitude and coastal orientation.

There are four important components that dominate New England climate. First, the area is located about halfway between the equator and the North Pole, receiving both warm-moist air from the south and cold-dry air from the north, often in rapid succession. Second, the region is dominated by a cold water current along its east coast (Maine, New Hampshire, and eastern Massachusetts) and a warm water current along the south shore (Connecticut, Rhode Island, and southern Massachusetts). The sea breeze circulation, particularly along New England's east coast, tends to regulate frequencies and intensities of thunderstorms in the coastal zone, while

bringing relief of peak summer temperatures. In winter, coastal waters remain warm relative to land areas, influencing snow-rain boundaries, which are difficult for forecasters to predict. Third, since New England falls primarily in the zone of the westerly's, the area is dominated by drier continental airflow from various areas across North America, rather than having a prevailing flow from off of the Atlantic Ocean. Fourth, New England has mountainous topography which also influences weather patterns. Mountains can enhance precipitation on the windward side, and create drier conditions on the downwind slopes, known as the "rain shadow" effect.

As a result of New England's position relative to the polar front, its continental climate type, its coastal orientation, and the mountainous topography, the region's weather is notoriously variable seasonally.[1]

2.3 New Hampshire Geology

The geology of the Seacoast region consists of fractured metamorphic bedrock that is overlain by glacial materials deposited during the last glaciation, which ended between 12,000 and 5,000 years ago. Glacial stratified-drift aquifers (consisting of layers of sand, gravel, clay, and silt) cover about 18 percent of the Southern New Hampshire region and 6.5 percent of Atkinson. These deposits are generally more productive source of water than the local bedrock aquifer.

2.4 Soil Types and Conditions

General Soil Types

Atkinson's soils fall into five major soil groups which are characterized generally as well-drained loamy soils and soils derived from glacial and glacial outwash material. The dominant soil type is the Paxton-Woodbridge-Hollis group comprising 4,082.1 acres covering the central and eastern portions of town.

Table 3. General soil types and acreage

Soil Type	***Description***	***Acres***
Canton-Chatfield-Hollis	Well drained and somewhat excessively drained, very deep to shallow, mineral and loamy soils that are gently sloping to steep; form mountains, hills and ridges that have many basins and narrow drainageways	2,283.2
Hinckley-Windsor-Canton	Very deep excessively drained soils derived from glacial outwash; form eskers, kames, terraces, deltas and outwash plains	640.7
Canton-Montauk-Paxton	Well drained, loamy soils that are gently sloping to steep; form broad hills, and found in wide areas between hills, and in many narrow	44.9

[1] New Hampshire State Climate Office, University of New Hampshire Airmap website at http://airmap.unh.edu/background/ClimatePrimer.html

	drainageways	
Paxton-Woodbridge-Hollis	Well drained and somewhat excessively drained soils that formed in (compact) glacial till; form hills and ridges	4,082.1
Canton-Scituate-Montauk	Very deep, moderately well drained soils formed in compact glacial till	71.3

Soil Conditions

Soil is a significant yet often overlooked natural resource. It forms the landscape upon which land use happens. Because soil is the foundation for all land uses, the condition of the soil is an important factor in all land use decisions. Current and accurate soil information provides the Planning Board with a tool with which to make informed decisions regarding land use and natural resource protection.

The Rockingham County Soil Survey was completed in 1994 by the U.S. Department of Agriculture Soil Conservation Service in cooperation with the New Hampshire Agricultural Experiment Station. Developed according to the National Cooperative Soil Survey standards by soils scientists, the soil survey identifies distinct properties and characteristics of different soil types, from which certain predictions are made about the suitability of a soil for different uses. The soil survey also includes a soils map showing the distribution of soil types.

Soil Drainage Class
One important characteristic of a soil is its drainage class. The soil drainage class relates to the ability of water to pass through the soil (soil permeability). Drainage class can indicate the presence or absence of wetlands and poorly drained soils, the ability of soil to infiltrate stormwater runoff, and the capacity of soil to filter pollutants. This information is invaluable to the Planning Board in evaluating development proposals and planning for growth in areas where soil conditions are appropriate for development.

Soil Development Potential

The Rockingham County Conservation District (RCCD) with the Soil Conservation Service developed *Soil Potentials for Development, Rockingham County* (May 1987), a system for rating soil based on its development potential. This approach classifies soils on the basis of the relative quality of a soil for development when compared with other soils in the County. Soil potential ratings take into consideration the capability or difficulty of developing dwellings, septic systems, roads and streets, and other development on a given soil type. Ratings include five categories – very high, high, medium, low and very low potential. The RCCD promotes the retention of important farmland soils and the protection of wetlands.

Atkinson's soils with the highest development potential are located predominantly in southern and eastern areas of town. Soil potential ratings and corresponding soil acreage is summarized in Table 4 below. *Refer to Map 2-General Soils, and Soil Potential and Suitability for Development.*

Table 4. Summary of soil potential ratings

Soils Potential Rating	Acres	% total area
Very High	659.2	9.1
High	2,158.2	29.7
Medium	2,050.1	28.2
Low	865.0	11.9
Very Low	1,349.2	18.4
No Rating	171.5	2.4
Total	***7,253.2***	---

The soil development potential by category in Atkinson is described below:

659.2 acres are classified as having a *very high development potential*, meaning soil performance is at or above local standards. These soils are typically located in wide valleys between hills and in the lower portions of narrow drainages.

2,158.2 acres are classified as having *high development potential*, meaning soil performance is at or above local standards. The cost associated with overcoming development limitations are low due to favorable soils conditions. These soils are typically located in the upper portions of wide valleys between hills and narrow drainages.

2,050.1 acres are classified as having a *medium development potential*, meaning that soil limitations add significantly to the cost of development. These soils are typically located in on or surrounding areas of highest elevation and in the lower portions of narrow drainages.

865.0 acres are classified as having a *low development potential*, meaning that soil limitations are costly to overcome. These soils are typically comprised of poorly drained soils adjacent to wetlands.

1,349.2 acres are classified as having a *very low development potential*, meaning that wet soils or severe slopes cause development to be economically unfeasible. These soils typically comprise very poorly drained soils and wetlands.

The remaining 171.5 acres (2.4 percent) of Atkinson's land area is considered to be non-classified due to alterations of natural soil conditions. This land includes gravel pits, urban development, roads and the municipal landfill.

The soil potential rating system can provide important information for determining the location and density of development whether it is served by municipal water and sewer services or not. Because Atkinson does not have municipal water and sewer systems, the value of the soil potential rating system is of particular importance for the siting of development and redevelopment in environmentally sensitive areas. As areas with highest development potential are developed, there will be a greater focus on developing the less desirable lands, including those areas without municipal water and sewer services.

With growth and increases in impervious surfaces and stormwater volume, the ability of soil to infiltrate runoff will become an important consideration in protecting public and environmental interests including: maintaining capacity of the municipal drainage infrastructure, recharging

groundwater and protecting the quality of surface waters. In order to protect these interests, the town may consider revisions to land use ordinances and regulations to address development on lands with limited potential and those areas not served by municipal water and sewer services.

2.5 Agricultural Activities and Farmland Soils

Agricultural Activities

Once considered to be a farming community, agriculture declined in Atkinson as economics and land values compromised the viability of the small farm throughout the southern New Hampshire region. Farmers have sold their land for development or stopped farming and allowed their fields to grow wild again. Since 1962, Atkinson has lost approximately 484 acres of active agricultural lands. However, since 1998, there has been a minor increase in the acreage of active agricultural lands and small farmsteads, as well as small scale hobby "farming" which produces a variety of products including maple syrup, hay, fruits, vegetables, flowers, and honey.

The U.S. Department of Agriculture defines a farm for data collection purposes as "any operation that sells at least one thousand dollars of agricultural commodities or that would have sold that amount of produce under normal circumstances."

Table 5. Summary of farmland types and changes in acreage from 1962 to 2005

	Statistics Reported in Acres			
Land Use	**1962**	**1974**	**1998**	**2005**
Active Agriculture	740.4	397.2	207.6	256.4
Farmsteads	23.4	22.1	12.8	36.6
Other Open Space/cultivated	147.4	307.9	227.7	92.3

Local Agricultural Activity and Farms

Atkinson has a number of active farms and other agricultural activities that take place on a smaller scale. Following is a listing of farms and other forms of active agriculture in the community and the products produced:

Farm/Property Owner	Products
Child	horses
Cogswell Farm	hay, open space lands
Debeche	hay, honey
Derby Talk Farm	horse riding lessons and training
Destiny Farm	vegetables, bedding plants
Fairbanks	honey
Hi-Wood Acres	cattle
Lewis Farm	cattle, hay, forage crops
Marow	race horses
Shannon Trails	horse boarding and training
Winchell	flowers, vegetables
Stewart property	tree farm
Witley property	tree farm

Page Farm

Page Farm is the oldest commercial agricultural operation in Atkinson. As documented in *Atkinson Then and Now* (1999, Atkinson Historical Society), the Page homestead has remained in the family for 250 years, currently owned by the Brown family. Through the 1800's and early 1900's farming activities consisted of several hundred apple trees, thirty milk cows, and production and sale of fire wood and lumber.

Farmland Soils

In NH, agricultural soils are identified in three categories: Prime Farmland Soils, Farmland Soils of Statewide Importance, and Farmland Soils of Local Importance. Atkinson has 2,109 acres of Prime Farmland soils, 1,023 acres of Farmland Soils of Statewide Importance, and 370 acres of Farmland Soils of Local Importance. Farmland soils in Atkinson comprise 48.3 percent of the total land area of the town and 2.8 percent of the total acres of farmland soils in Rockingham County. The farmland soil types are summarized in the table below and a list of farmland soil map units are on Map 3-Agricultural Soils in Appendix D.

Table 6. Farmland soil types in Atkinson and Rockingham County

Farmland Soil Type	Acres in Atkinson	% total land area of Atkinson	Acres in Rockingham County
Prime Farmland Soils	2,109.3	29.4	36,347
Farmland Soils of Statewide Importance	1,023.1	14.3	38,767
Farmland Soils of Local Importance	370.4	5.2	51,658
Total	***3,503***	***48.9***	***126,772***

Total Land Area of Atkinson = 7,168 acres

Prime farmland soils and Farm Soils of Statewide Importance are predominantly concentrated in southern and central areas of town. Prime farmland soils comprise large tracts of land in the southern and central areas, with smaller areas of Farm Soils of Statewide Importance contiguous with and providing connections between them. Small tracts of Farmland of Local Importance are scattered throughout town. *Refer to Map 3-Agricultural Soils in Appendix D.*

Prime Farmland Soils

Prime Farmland is land which has the best combination of physical and chemical characteristics for the production of crops. It has the soil quality, growing season, and moisture supply needed to produce sustained high yields of crops when treated and managed, including water management, according to current farming methods. Prime Farmland must have been used for the production of irrigated crops at some time during the two update cycles prior to the mapping date. It does not include publicly owned lands for which there is an adopted policy preventing agricultural use. Prime Farmland must meet all the following criteria: water, soil temperature range, acid-alkali balance, water table, soil sodium content, flooding, erodibility, permeability, rock fragment content, and rooting depth.[2]

[2] USDA-Soil Conservation Service, Land Inventory and Monitoring (LIM) System

Farmland Soils of Statewide Importance

Farmland of Statewide Importance is land other than Prime Farmland which has a good combination of physical and chemical characteristics for the production of crops. It must have been used for the production of irrigated crops at some time during the two update cycles prior to the mapping date. It does not include publicly owned lands for which there is an adopted policy preventing agricultural use. Farmland of Statewide Importance must meet all the following criteria: water, soil temperature range, acid-alkali balance, water table, soil sodium content, flooding, erodibility, and rock fragment content.[3]

Farmland Soils of Local Importance

Farmland of Local Importance is either currently producing crops, has the capability of production, or is used for the production of confined livestock. Farmland of Local Importance is land other than Prime Farmland or Farmland of Statewide Importance. This land may be important to the local economy due to its productivity or value. It does not include publicly owned lands for which there is an adopted policy preventing agricultural use.[4]

2.6 Recommendations

NCL1 Amend existing zoning ordinances (such as Article VI: Rural Cluster Residential Development ordinance) and land development regulations to encourage and provide incentives to preserve important farmland soils and existing agricultural activities.[5]

NCL2 Encourage and promote continued use and productivity of farmland soils by supporting farmers to maintain viable agricultural operations and activities that support agriculture. This may include organizing an Agricultural Committee or Commission, developing an agricultural based newsletter and calendar of annual events, or holding other agriculturally oriented civic and public events.

NCL3 Conduct an audit of zoning ordinances and land development regulations to evaluate whether barriers to agricultural activities exist (i.e. using the 'Farm Friendly Checklist').

NCL4 Draft performance standards for development on steep slopes (>15 percent) that address water quality, erosion, land stability and land disturbance.

[3] USDA-Soil Conservation Service, Land Inventory and Monitoring (LIM) System
[4] USDA-Soil Conservation Service, Land Inventory and Monitoring (LIM) System
[5] Refer to the NH Department of Environmental Services '*Innovative Land Use Planning Techniques Handbook: Chapter 1.4 Conservation Subdivision*' at http://des.nh.gov/organization/divisions/water/wmb/repp/innovative_land_use.htm

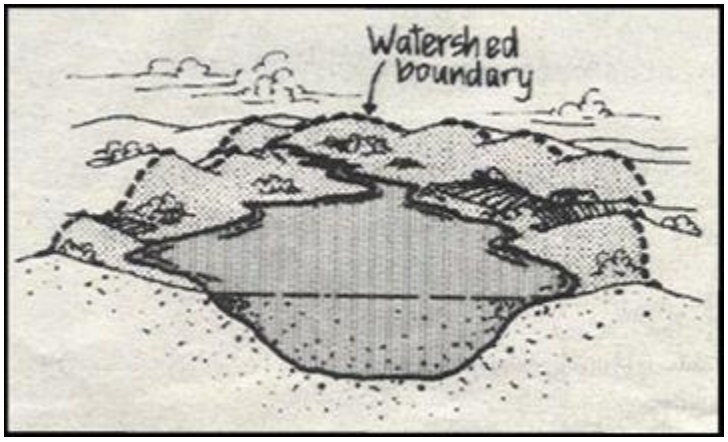
3.0 Surface Water Resources

3.1 Watersheds

What is a Watershed?

A watershed is the area of land that drains to a particular surface water body. "Watershed" is synonymous with other terms you may have heard such as "drainage basin" and "catchment area." All precipitation that falls within a watershed, but is not used by existing vegetation, will ultimately seek the lowest points. These low points are bodies of water such as rivers, lakes, and finally the ocean. The network formed by streams, rivers, lakes and ponds forms the surface drainage system of the watershed. Topography defines the boundary of a watershed. The boundary of a watershed is defined by the highest elevations surrounding the land area containing the drainage system.

Figure 2. Geography of a watershed



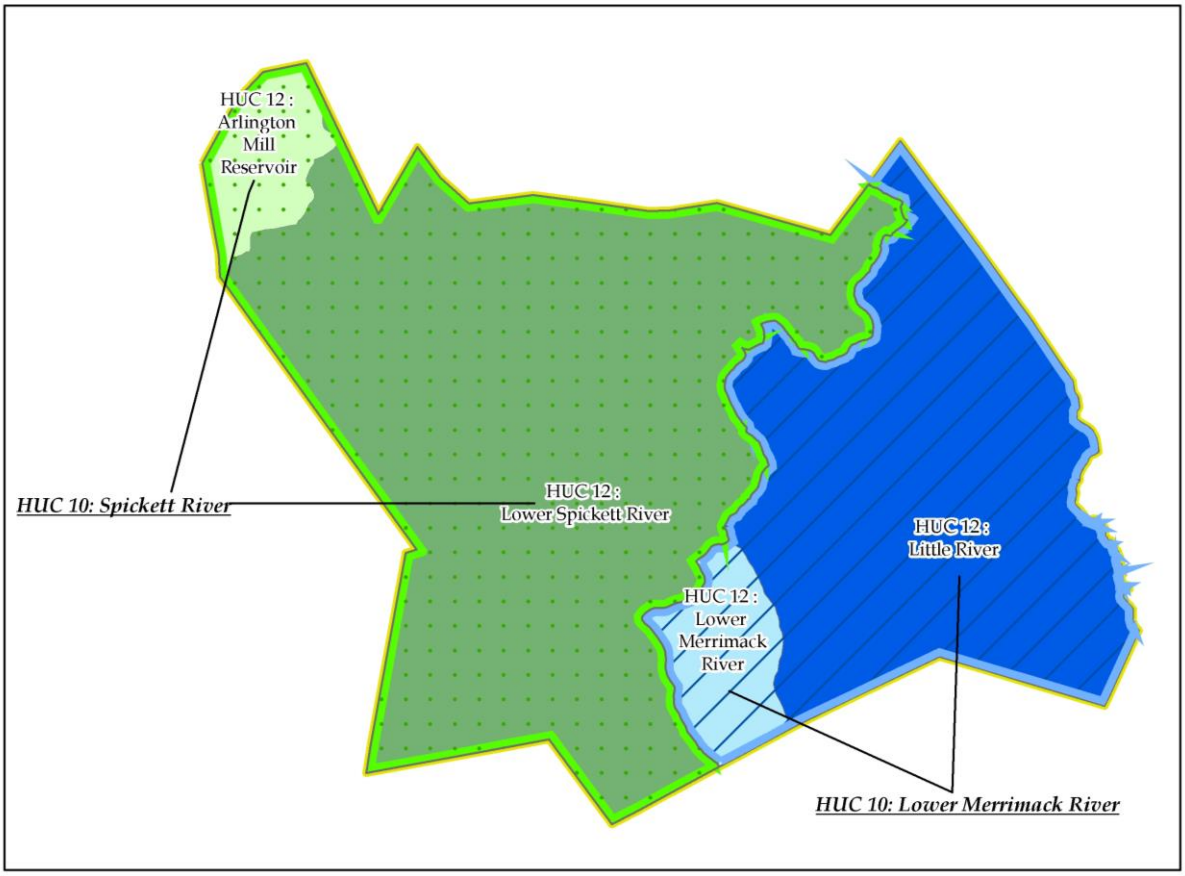
[Source: Lamprey River Advisory Committee website]

Salem is located entirely within the larger Merrimack River watershed (HUC 8). Within this watershed, Salem has 2 sub-watersheds – the Lower Merrimack River and Spickett River watersheds (HUC 10), and 4 yet smaller sub-watersheds – the Litte River, Lower Merrimack River, Lower Spickett River and Arlington Mill watersheds (HUC 12).

The location and acreage of Atkinson's major watersheds are shown in Figure 3 on the following page.

Hydrologic Unit Code (HUC) is a term used by the United States Geologic Survey to systemically divide and sub-divide drainage basins into successively smaller hydrologic units which are classified into four levels: regions, sub-regions, accounting units, and cataloging units. The hydrologic units are arranged within each other, from the smallest (cataloging units) to the largest (regions). Each hydrologic unit is identified by a unique hydrologic unit code (HUC) consisting of two to eight digits based on the four levels of classification in the hydrologic unit system.

Figure 3. Major and minor watersheds in Atkinson



HUC 8 Watershed	Acres	HUC 10 Watershed	Acres	HUC 12 Watershed	Acres
Merrimack River	7,258.5	Spickett River	4,487.6	Lower Spickett	4,194.1
				Arlington Mill	293.5
		Lower Merrimack River	2,770.9	Little River	2,426,6
				Lower Merrimack	344.3

3.2 Surface Waters

Surficial Hydrology

Surface water systems are any type of standing or flowing body of water above the ground, including streams, rivers, ponds, lakes and freshwater and tidal wetlands. Surface water systems are dynamic, subject to seasonal climatic variability that produces a range of hydrologic conditions. Because surface waters collect runoff from adjacent land areas, they are highly susceptible to pollution from both point and nonpoint sources.

The hydrology of surface water systems can be highly disrupted as a result of development on the landscape and throughout a watershed. Impervious surfaces, diversion of runoff through stormwater management systems, and reduced infiltration all contribute to the alteration of the natural hydrologic regime that sustains surface water systems. These changes to the surficial

hydrology affect the volume and rate at which water moves through the system and, in the extreme case, removes water from the system through interbasin transfer (the diversion of water from one watershed to another).

Rivers and Tributaries

Atkinson has only seven named tributaries (brooks) within its boundaries, ranging in stream order classification from first order to third order. All of these tributaries discharge beyond the town boundaries to adjacent towns and/or states.

Table 7. List of named perennial streams

Order	***Name***	***Geographic Description***	***Drainage Area Description***
2nd	Bryant Brook	Headwaters in central/eastern areas with several unnamed tributaries; two small impoundments in headwaters; flows through Blunt's Pond in lower portion; drains east to Plaistow	Headwaters in heavily residential area; crosses several local roads; some forested unfragmented areas
1st	Camp Brook	Headwaters in extreme southern area; drains to Haverhill, MA	Forested unfragmented
1st to 2nd	Creek Brook	Headwaters in extreme southern area; joins unnamed tributary at town/state border; drains south to Haverhill, MA	Mostly forested unfragmented; headwaters in residential area
2nd	Foote Brook	Headwaters in southern area; small impoundment at mid-point; drains south to Haverhill, MA	Mostly forested unfragmented
3rd	Hog Hill Brook	Headwaters in the northwest corner; drains south to Salem	Headwaters in residential area; mostly forested unfragmented; crosses several local roads
1st	Line Brook	Headwaters in the northeast corner; drains to Plaistow	Mostly forested unfragmented; crosses several local roads
1st	Providence Hill Brook	Tributary of Hog Hill Brook; drains west to Salem	Mostly forested unfragmented

Table 8. Summary of miles of rivers, streams and brooks by stream order

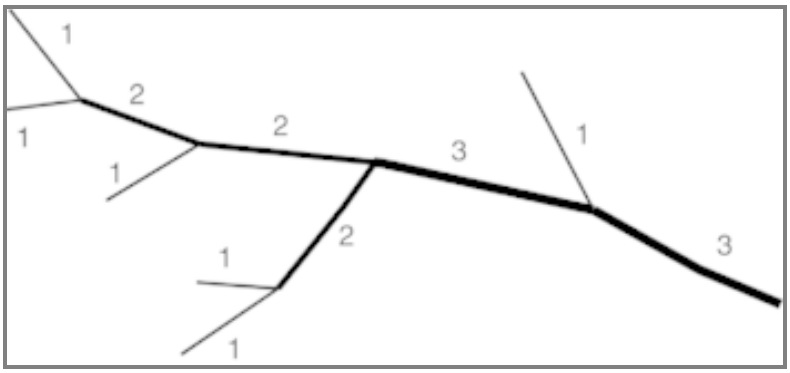
Stream Order	**Description**	**Linear Miles**	**% total miles**
First Order	Connect smaller wetland complexes and form headwater drainages from nearby hills	12.9	62.6
Second Order	Typically connect large wetland complexes located in wide valleys between hills	4.5	21.8
Third Order		3.2	15.5
Total		***20.6***	**--**

Of the named brooks, nearly 63 percent or 12.9 miles are first order streams, and the remaining 37 percent or 8 miles are second and third order streams. The headwaters of the majority of these brooks originate from central areas of town east and west of Route 121 and East Road.

First Order Streams

First order or headwater streams are located in the uppermost parts of a watershed, where overland flow and runoff first become concentrated in an organized and defined channel. Knowledge of influence of headwater streams on the water quality and flow conditions of downstream waters is essential to water resource management. Studies have demonstrated the intrinsic connections of headwater areas to landscape processes and downstream water quality through their influence on the supply, transport, and fate of water and the chemical makeup of water in watersheds. Other studies demonstrate the profound influence that headwater areas have on shaping downstream water quantity and water quality [6]. These results have relevance to water-resource management and regulatory decisions with respect to protecting headwater streams from degradation and the potentially negative impacts of development within sensitive riparian areas and within the watershed.

Figure 4. Strahler Stream Order System



[Source: U.S. Corps of Engineer diagram showing the Strahler stream order system]

NH Comprehensive Shoreland Protection Act

The NH DES Shoreland Program implements RSA 483-B, the Comprehensive Shoreland Protection Act (CSPA). The CSPA establishes minimum standards for activities within the Protected Shoreland – land within 250 feet of the state's larger water bodies - that are designed to protect the water quality and to fulfill the state's role as trustee of those waters. Effective July 1, 2008, the state legislature amended the CSPA to revise existing and include additional standards to protect water quality. These standards include new requirements for clearing trees and other vegetation within the Woodland and Waterfront Buffer, limitations on impervious surface coverage, restrictions on the use of fertilizer and pesticides, and setbacks for primary

[6] Alexander, Richard B., Boyer, Elizabeth W., Smith, Richard A., Schwarz, Gregory E., Moore, Richard, B. *The Role of Headwater Streams In Downstream Water Quality*, Journal of the American Water Resources Association (2007, Vol.43, N.1,pp.41-59)

structures. For more information, refer to the NHDES Shoreland Program website at http://des.nh.gov/organization/divisions/water/wetlands/cspa/index.htm.

Lakes and Ponds

Atkinson has 109 acres of lakes and ponds. The only surface water bodies regulated in Atkinson under the Comprehensive Shoreland Protection Act is the portion of Big Island Pond located in the town. *Refer to Map 5-Comprehensive Shoreland Protection Act in Appendix D.* Big Island Pond is located in the extreme northwest corner of Atkinson, with a large portion of the lake located in the towns of Hampstead to the north and east and Derry to the west. Big Island Pond is 497.9 acres with a surface elevation of 203.3 feet.

Riparian Areas

Riparian zones or areas have been defined in several ways, but they are essentially the narrow strips of land that border creeks, rivers or other bodies of water. "Riparian" also refers to the unique ecosystems that surround the banks of river and streams. The individuals in a riparian community have specific adaptations for living in repeatedly flooded environments. Riparian ecosystems occupy the transitional area between the terrestrial (dry) and aquatic (wet) ecosystems. Typical examples would include floodplains, streambanks, lakeshores, and wetlands. Riparian areas may exist within any land use area, such as cropland, hayland, pastureland, rangeland, and forestland.

Because of their proximity to water, plant species and topography of riparian zones differ considerably from those of adjacent uplands. Although riparian areas may occupy only a small percentage of the area of a watershed, they represent an extremely important component of the overall landscape. A healthy, functioning riparian area and associated uplands dramatically increase benefits such as fish and wildlife habitat, erosion control, forage, late season streamflow, and water quality.

Riparian areas provide the following landscape and environmental functions:

1. *Sediment Removal/Retention – from stormwater runoff and flood waters*
2. *Bank Stablilization – by maintaining root systems of trees and other vegetation*
3. *Water Storage and Release – in floodplains, valleys and riverine wetlands*
4. *Aquifer Recharge – through infiltration of stormwater runoff, snow melt and precipitation*
5. *Water temperature moderation – by shading surface waters and wetlands*
6. *Wildlife habitat – water, food, shelter, nesting and breeding areas*

Riparian forests provide critical wildlife habitat for migratory songbirds, waterfowl, Chinook salmon, steelhead, and a host of other species. Riparian corridors are highly favorable for wildlife. They are the areas with the most water and the densest plant cover, providing predator protection, shade, breeding and nesting areas, and food sources. Intact rivers and riparian areas attract more than wildlife. People hike, boat, fish, hunt, and explore these areas, bringing tourism dollars into the local economy.

3.3 Water Quality

Very little data exists at the state and local level to document the quality of surface waters in Atkinson. Water quality is routinely tested in Island Pond as part of the NH Department of Environmental Services Volunteer Lake Monitoring program (VLAP). However, none of Atkinson's streams and tributaries are monitored for water quality. Given the density of development in the region, particularly development occurring in neighboring communities bordering Massachusetts, and the presence of a water supply watershed in Atkinson and the surrounding region, obtaining water quality data could have multiple benefits.

Impervious Surface Coverage and Water Quality

Studies conducted in the northeast have documented that by converting as little as ten percent of a watershed to impervious surfaces, stream water quality, stream channel structures, and species habitat begins to deteriorate. Above 25 percent impervious surface, water quality can be seriously degraded (see Section E below for information about impervious surface and water quality).

Pavement cannot absorb water and thus water flows in sheets more quickly to streams, rivers, and lakes than it would over forested, wetland, or grassed landscapes which slow down water flows, act as filters and serve as water recharge areas for groundwater (Forest Service, 2005; CEP, 2003; Biodiversity Project, 2005).

EPA General Permit for MS4 Communities

National Pollutant Discharge Elimination System (NPDES) Storm Water Permit Program
http://www.epa.gov/region1/npdes/stormwater/

The Phase II Final Rule covers all small municipal separate storm sewer systems (MS4s) located within an "urbanized area" (UA). UAs constitute the largest and most dense areas of settlement. Refer to Figure 5 at right for a map of regulated MS4 communities in NH with small municipal separate storm sewer systems that are regulated under the EPA Phase II General Permit.

Communities may consider evaluating their development regulations to address impervious surface coverage by requiring site design standards and stormwater management requirements to mitigate any future potential impacts to water quality.

NPDES Phase II Small MS4 General Permit – Annual Report

The Small MS4 General Permit Annual Report must address and report on progress toward the following required activities:
- Part II – Self Assessment of progress made during the year
- Part II – Summary of Minimum Control Measures:
    1) Public education and outreach;
    2) Public involvement and participation;
    3) Illicit discharge detection and elimination;
    4) Construction site stormwater runoff control;
    5) Post-Construction stormwater management for new development and redevelopment;
    6) Pollution prevention and good housekeeping in municipal operations; and

7) BMPs for meeting total maximum daily load (TMDL) waste load allocations (if required)
- Part IV – Summary of Information Collected and Analyzed
- Part V – Program Outputs and Accomplishments

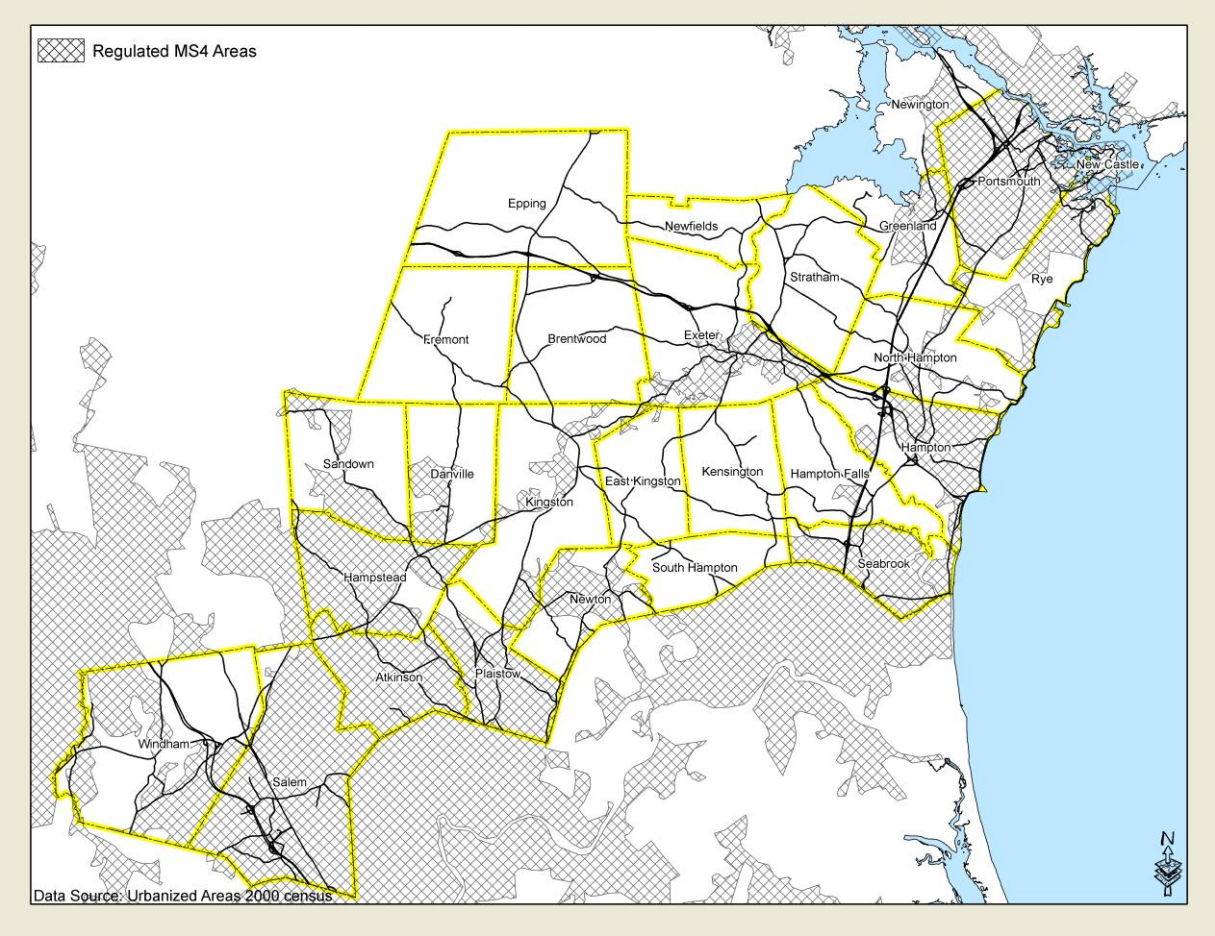


Figure 5. Regulated MS4 communities in New Hampshire

Urbanized Areas (UAs)

UA calculations delineate boundaries around these dense areas of settlement and, in doing so, identify the areas of concentrated development. UA designations are used for several purposes in both the public and private sectors. For example, the Federal Government has used UAs to calculate allocations for transportation funding, and some planning agencies and development firms use UA boundaries to help ascertain current, and predict future, growth areas.

The Bureau of the Census determines UAs by applying a detailed set of published UA criteria (see 55 *Federal Register* 42592, October 22, 1990) to the latest decennial census data. The Bureau of the Census' general definition of a UA, based on population and population density, is provided below.

*An **urbanized area** is a land area comprising one or more places - central place(s) - and the adjacent densely settled surrounding area - urban fringe - that together have a residential population of at least 50,000 and an overall population density of at least 1,000 people per square mile.*

The basic unit for delineating the UA boundary is the census block. Census blocks are based on visible physical boundaries, such as the city block, when possible, or on invisible political boundaries, when not.

3.4 Floodplains and Flood Hazard Areas

Floodplains and Flood Hazard Areas

As reported in Table 9 below, Atkinson has 297 acres of land within the 100-year floodplain with an additional 2.33 acres within the 500-year floodplain (Zone X500).

In Atkinson, the primary flood hazard areas are within the 100 year floodplain of major drainage systems, as identified on the 1986 Flood Insurance Rate Map (FIRM).
Although few homes and businesses are located in these flood prone areas, flooding still affects many roadways throughout the town during large storm events. Development in flood prone areas is problematic as it:

- risks damage to life and property;
- reduces flood storage capacity of the floodplain, thus intensifying flood conditions elsewhere; and
- contributes to water quality problems.

These problems can be controlled or alleviated through the adoption of floodplain regulations as part of the National Flood Insurance Program. Atkinson has adopted such standards in its zoning ordinance in Section 420 Floodplain Management Ordinance. The ordinance requires any development to meet strict federal building codes specific to construction in flood hazard areas. These regulations discourage unsound development in special flood hazard areas (zones A and AE) by protecting the functions of the 100-year floodplain.

Table 9. Flood hazard zones identified on the FEMA Flood Insurance Rate Maps (FIRMs)

Description of Flood Hazard Zone	Flood Hazard Zone
Areas with a 1% annual chance of flooding and a 26% chance of flooding over the life of a 30-year mortgage. Because detailed analyses are not performed for such areas; no depths or base flood elevations are shown within these zones.	Zone A
Areas with a 1% annual chance of flooding and a 26% chance of flooding over the life of a 30-year mortgage. In most instances, base flood elevations derived from detailed analyses are shown at selected intervals within these zones.	Zone AE
River or stream flood hazard areas, and areas with a 1% or greater chance of shallow flooding each year, usually in the form of sheet flow, with an average depth ranging from 1 to 3 feet. These areas have a 26% chance of flooding over the life of a 30-year mortgage. Average flood depths derived from detailed analyses are shown within these zones.	Zone AO
Coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. These areas have a 26% chance of flooding over the life of a 30-year mortgage. Base flood elevations derived from detailed	Zone VE

analyses are shown at selected intervals within these zones.	
Total Acres	
Areas outside the 1-percent annual chance floodplain, areas of 1% annual chance sheet flow flooding where average depths are less than 1 foot, areas of 1% annual chance stream flooding where the contributing drainage area is less than 1 square mile, or areas protected from the 1% annual chance flood by levees. No Base Flood Elevations or depths are shown within this zone. Insurance purchase is not required in this zone.	Zone X
Areas within the 500-year Floodplain, or areas within the 2-percent chance of flooding each year. Insurance purchase is not required in this zone.	Zone X500

3.5 Recommendations

SWR1 Consider developing recommendations to incorporate into the zoning ordinance requirements for a minimum water quality buffer to perennial streams and brooks.[7] [Note: First order streams represent nearly 63 percent of the total linear stream miles in town. For this reason, protection of first order streams is key to preserving high quality watersheds.]

SWR2 Organize a volunteer group to participate in the NH Department of Environmental Services, Volunteer River Assessment Program (VRAP) to gather surface water quality data. (See Appendix C for additional information about VRAP.)

SWR3 Conduct a professional planning audit of zoning ordinances and land development regulations to evaluate the effectiveness of existing water quality protection measures in place and, if necessary, develop recommendations to improve them.

SWR4 Amend existing zoning ordinances (such as Article VI: Rural Cluster Residential Development and Article IV: General Provisions, Section 402 Floodplain Management Ordinance) and land development regulations to encourage and provide incentives to preserve riparian areas and provide water quality treatment of stormwater runoff.[8]

SWR5 Conduct a professional planning audit of zoning ordinances and land development regulations to identify where new requirements and standards may be incorporated to mitigate existing conditions and prevent flooding in the future. [Note: The town may also consider developing an inventory of sites that currently have flooding problems.]

[7] Refer to the Piscataqua Region Estuaries Partnership (PREP) website for information and technical guidance about buffers at http://www.prep.unh.edu/resources/buffers.htm

[8] Refer to the Department of Environmental Services '*The NH Stormwater Manual Volumes 1-3*' (2008, as amended) at http://des.nh.gov/organization/divisions/water/stormwater/manual.htm and The Center for Watershed Protection stormwater information resources at http://www.cwp.org/

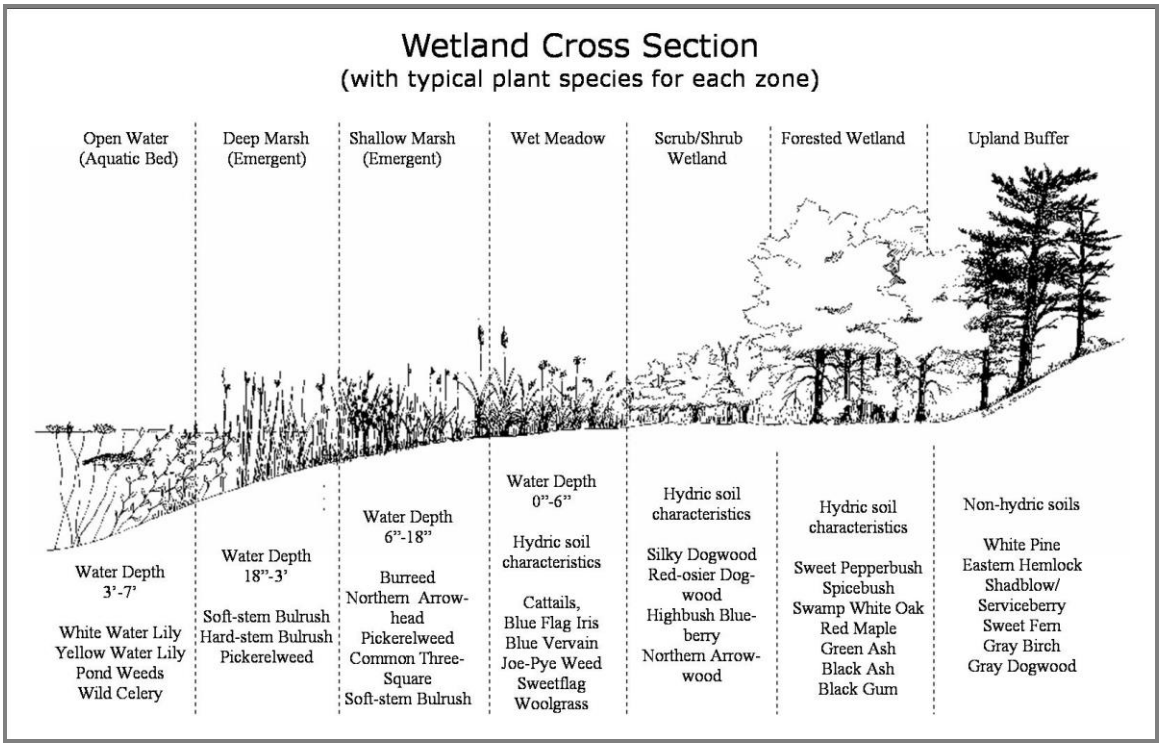
4.0 Wetlands

4.1 Functions and Values of Wetlands

RSA 482-A:2 defines a wetland as an area that is inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal conditions does support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

The different types of wetlands and plant communities are indicative of specific physical and environmental conditions including topography, hydrologic regime and soil materials.

Figure 6. Diagram of wetland types based on landscape position and hydrology



[Source: New England Wetland Plants, Inc. website]

Functions and Values

Wetlands are valuable resources and worthy of protection from degradation or inappropriate uses. Wetlands provide critical ecological and socially valuable functions including:

- Flood water and stormwater storage areas;
- Removal and storage of silt and other sediments;
- Removal and uptake of nutrients and pollutants from surface waters; and
- Habitat and reproductive areas for plants, fish and wildlife.

As reported in Table 15 below, wetlands occupy roughly 590 acres or 8 percent of the total area of Atkinson. Most wetlands are situated at the headwaters of the major drainage systems and as

small isolated wetlands throughout town. *Refer to Map4-Surface Water Resources in Appendix D.*

4.2 Freshwater Wetlands

In Atkinson, forested wetlands are by far the most prevalent type of wetland. Floodplain forested wetlands are typically found growing on alluvial soils associated with riverine systems. Hardwood swamps are typically found growing on poorly-drained mineral or peat/muck soils, often associated with ancient lake basins. Scrub-shrub wetlands are a type of wetland community in transition. Scrub-shrub wetlands are a highly dynamic type of emergent wetland, which if left undisturbed, will gradually be replaced through the process of succession by forested wetlands or forests.

Table 10. Summary of wetlands by type and acreage

Wetland Type	***Description***	***Acres***
Emergent	Dominated by erect, rooted herbaceous hydrophytes; includes marsh, fen, swale and wet meadow	90.3
Forested	Dominated by trees greater than twenty feet in height (red maple, ash, spruce)	227.3
Lacustrine	Open water wetlands situated in topographic depressions with less than 30% vegetative cover and greater than 20 acres in size (lakes and large ponds)	63.1
Palustrine	All non-tidal wetlands dominated by trees, shrubs, and persistent emergent vegetation; includes areas adjacent to freshwater rivers and their tributaries	39.4
Scrub-Shrub	Dominated by shrubs and tree saplings less than twenty feet in height (buttonbush, alders and red maple saplings); includes swamp and bog	169.5
Total		***589.6***

[Source: Classification of Wetlands and Deepwater Habitats of the United States, 1979, by *Cowardin, Lewis et al.]*

4.3 Prime Wetlands

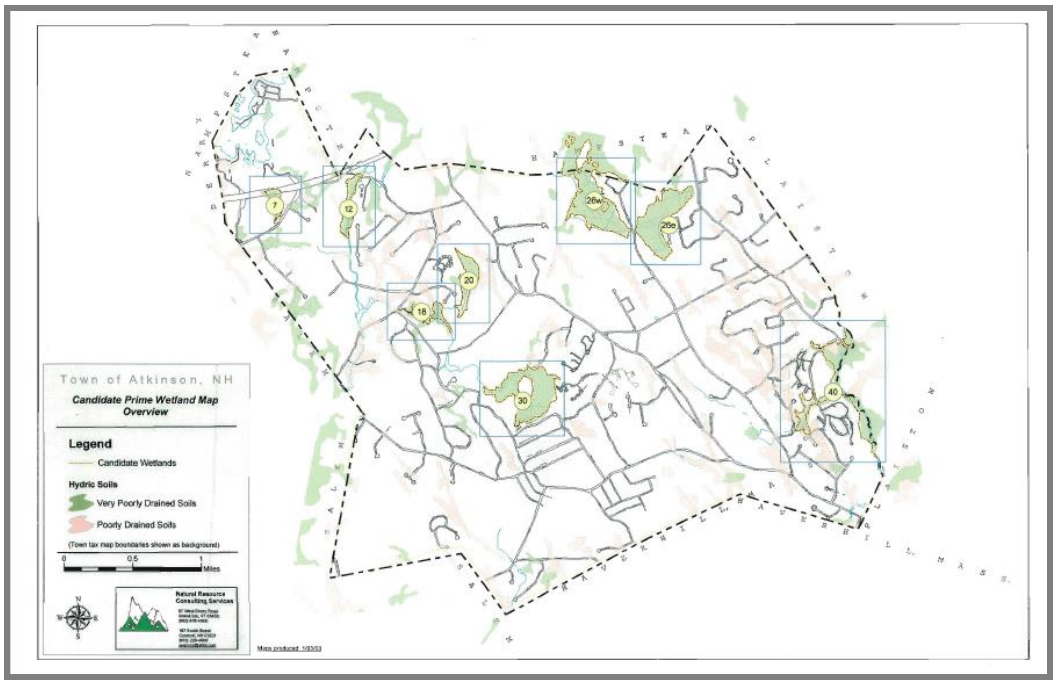
Prime wetlands were identified in the study *Town of Atkinson Prime Wetland Study* (2003) by Natural Resource Consulting Services. The study was conducted in three phases.

1. An initial screening of all wetlands in town in order to develop a list of prime wetland "candidates".
2. A field study to assess comparative functional values of the candidate wetlands.
3. Gathering of GPS data to establish the prime wetland boundaries, analysis of field data and functional values of the candidate wetlands, and production of maps and charts.

The candidate wetlands were evaluated using the Method for Comparative Evaluation of Nontidal Wetlands in New Hampshire (1991, the NH Method). The fourteen functions and values outlined in the NH Method were evaluated, including: Ecological integrity, wetland wildlife habitat, finish habitat, education potential, visual/aesthetic quality, water-based recreation, flood control potential, groundwater use potential, sediment trapping, nutrient

attenuation, shoreline anchoring and dissipation of erosive forces, urban quality of life, historical site potential, and noteworthiness.

Figure 7. Map of prime wetlands from Town of Atkinson Prime Wetland Study (2003) by Natural Resource Consulting Services



The study identified the following eight wetlands as having met the minimum criteria for candidates for designation as prime wetlands.

Table 11. Eight wetlands identified as candidates for designation as prime wetlands in the study Town of Atkinson Prime Wetland Study (2003) by Natural Resource Consulting Services

ID#	*Name*	*NWI Class*	*Acres**	*Prime Designation*	*Comments*
7	Hall Farm Pond	OW, SS1, EM1	10	Yes	
12	Hog Hill Brook	OW, SSW, EM1	36	Yes	113 acres located outside town
18	Hovey Meadow Wetland	OW, SS1, EM1, FO1	13	Yes	
20	Steward Pond Farm	OW, SS1, EM1, FO1	21	Yes	
26E	Sawmill Swamp East	OW, SS1, EM1, FO1	135	Yes	65 acres located outside town
26W	Sawmill Swamp West			Yes	
30	Wright Farm Pond	OW, SS1, EM1, FO1	75	--	
40	Bryant Brook	OW, SS1, EM1, FO1	40	Yes	29 acres located outside town
Total			***330***	***255 acres of prime wetlands***	

** Acreage located within Atkinson*
OW-open water, EM1-emergent persistent, SS1-scrub shrub broad-leaved deciduous,
FO1-forested broad-leaved deciduous

Atkinson has designated 255 acres of prime wetlands. The following wetlands were approved for prime designation at town meeting in 2009: Hall Farm Pond, Hog Hill Brook, Stewart Farm Pond, and Bryant Brook. The following wetlands were approved for prime designation at town meeting in 2010: East and West Sawmill Swamp and Hovey Meadow Swamp.

4.4 Recommendations

WTL1 Consider adopting in the zoning ordinance (Article IV: General Provisions, Section 410 Wetland Zoning) a mandatory minimum buffer to wetlands not designated as prime wetlands to help preserve their hydrologic and ecological functions and prevent impacts from development and other land based activities. *Refer to Section 4.1 Functions and Values of Wetlands.*

5.0 Groundwater Resources and Water Supply

5.1 Groundwater Resources

Stratified Drift Aquifer
Unconsolidated materials, called stratified drift deposits, contain sorted layers of gravel, sand, silt and clay. These deposits have high potential groundwater yield due to their permeability, or the abundance of interconnected pore spaces where water is stored. Drinking water wells located in these deposits are typically shallow and can often be affected by seasonal changes in the groundwater table and contamination from land based activities.

Table 12. Transmissivity and acreage of stratified drift aquifers

Transmissivity	***Acres***
<2,000 square feet per day (low yield)	455
2,000-4,000 square feet per day (moderate to high yield)	18

Definition of Terms

Aquifer transmissivity is a measure of how much water can be transmitted horizontally, such as to a pumping well. Transmissivity is directly proportional to horizontal hydraulic conductivity (Kh_i) and thickness (d_i). Expressing Kh_i in units/day and d_i in units, the transmissivity (T_i) is found in units^2/day.

Horizontal Flow
Hydraulic conductivity is the ease with which water can move through pore spaces or fractures, and depends on the intrinsic permeability of the material and on the degree of saturation. Saturated hydraulic conductivity, K_{sat}, describes water movement through saturated media.

Influence of the Water Table
When a soil layer is above the water table, it is not saturated and does not contribute to the transmissivity. When the soil layer is entirely below the water table, its saturated thickness corresponds to the thickness of the soil layer itself. When the water table is inside a soil layer, the saturated thickness corresponds to the distance of the water table to the bottom of the layer. As the water table may behave dynamically, this thickness may change from place to place or from time to time, so that the transmissivity may vary accordingly.

In Atkinson, stratified drift aquifer deposits are limited, found along West Side Drive at the Salem border and as isolated patches along the Plaistow border. The remainder of the town is covered by glacial materials called till, consisting of unsorted deposits of mud, sand, gravel and boulders.

Bedrock Aquifer
Fractured bedrock typically does not yield high quantities of groundwater compared with stratified drift deposits. Bedrock aquifers are more productive when the bedrock is covered by a layer of sand and gravel, which allows recharge to occur directly from the surface.

Bedrock aquifers are usually adequate for domestic wells serving a small population, and therefore should not be overlooked as a contributing source of a community's water supply needs.

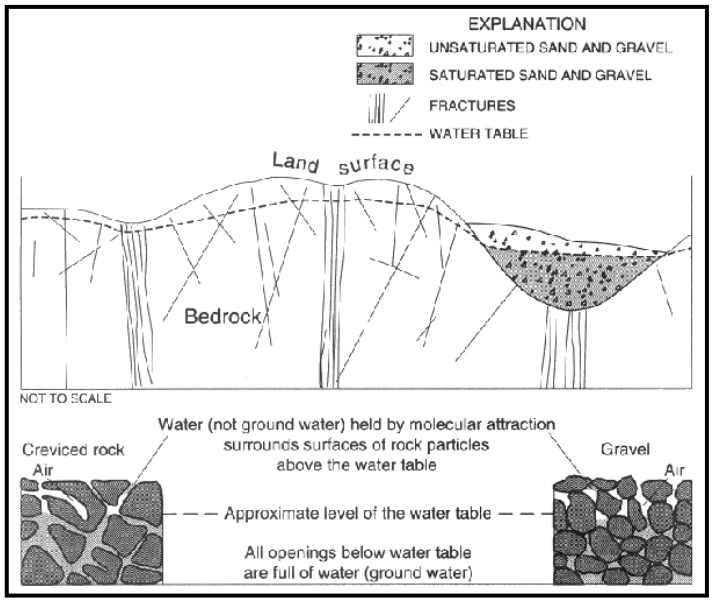


Figure 8: Illustration of groundwater interaction between stratified drift aquifers and bedrock aquifers

[Source: NH DES Environmental Fact Sheet GEO-6 New Hampshire Bedrock Aquifer Resource Assessments]

5.2 Drinking Water Supplies

Public Water Systems

A Public Water Supply (PWS) is a system for the provision to the public of piped water for human consumption, and has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year. Non-transient non-community water supply (not a municipal water system) is a system which serves the same 25 people or more, over 6 months per year, such as schools, or private businesses that have their own drinking water supply. A Non-community Transient water supply is a system that serves less than 25 people for less than 6 months of the year, such as at restaurants, campgrounds, and other types of service-related businesses or facilities.[9]

Table 13. Summary of active Public Water Supplies

Type	***Category/Use***	***Number***	***Population Served***	***Total Connections***
Community	Condominium, large Community Water Supply	6	3,158	1,263
Non-Transient / Non-Community	Schools, restaurant, industrial, day care, commercial property	5	1,172	9
Non-Community/Transient	Restaurant	1	200	1

[Source: NHDES One Stop Data Center]

[9] RSA 485:1-a Public Drinking Water Protection Program

Local and State Protections

Atkinson has not adopted zoning overlays or land use regulations that establish specific performance based standards to protect the quality and quantity of its aquifers and drinking water sources, with the exception of a 100 foot setback from wetlands for waste disposal systems, structures that generate human or animal waste, and residential and commercial garages (see Atkinson Zoning Ordinance Section 410:8).

The NH Department of Environmental Services implements many programs that provide communities the opportunity to strengthen at the local level protection of aquifers and drinking water sources.

The Groundwater Protection Act, RSA Ch. 485-C expressly recognizes that "groundwater is primarily a local resource, cities and towns should have the first opportunity to institute programs for groundwater protection" or "to enact local ordinances or regulations affecting groundwater, other than groundwater withdrawals" and providing that requirements imposed under the chapter be adopted as minimum requirements of any local ordinance or regulation. Although Chapter 485-C *recognizes* the right of municipalities to protect groundwater, it does not actually *grant* that authority. Instead, it refers to the authority of municipalities to enact ordinances under *other* statutes. Such local protection measures may include:

- As specified in RSA 4-C:22, the natural resources section of the master plan should include a *local water resources management and protection plan*. Although this plan is not required it is strongly recommended to establish the scientific basis and support for zoning ordinance provisions.
- The Groundwater Protection Act allows a municipality to request reclassification of groundwater resources by submitting a written request to DES local regulation. Reclassification offers additional protection through local inspection of potential contamination sources and enforcement of best management practices. The Act establishes four classes of groundwater (in order of most protected to least protected):
  - GAA Wellhead protection area for wells presently used or well sites identified for future use as public drinking water supplies.
  - GA1 Defined zone of high value for present or future drinking water supply.
  - GA2 Aquifers identified as highly productive for potential use as public water supply by US Geological Survey regional studies or other regional studies.
  - GB All other groundwater.
- When supported by the master plan, zoning ordinances may include environmental characteristics zoning through the Innovative Land Use Controls statute in RSA 674:36 and 674:44.
- Site Plan Review and Subdivision regulations can include provisions for limiting land based activities such as stormwater discharges and infiltration, water quality standards and earth excavation. [10]

[10] *Groundwater Protection: What Can Municipalities Do?* by Cordell Johnston, Government Affairs Attorney, Local Government Center/New Hampshire Municipal Association as presented at the NHDES Watershed Conference, November 13, 2004

5.3 Recommendations

GW1 Amend zoning ordinances and land development regulations to provide protection of groundwater resources by requiring infiltration of stormwater runoff in aquifers and groundwater recharge areas (i.e. adoption of stormwater standards and/or regulations).

GW2 Consider limiting high risk uses (those that have a high potential to contaminate water supplies) in aquifers and groundwater recharge areas.

GW3 Update the Town of Atkinson W*ater Resource Management and Protection Plan* (1991, Rockingham Planning Commission)

6.0 Wildlife and Ecological Resources

6.1 Wildlife and Ecological Resources

Natural Heritage Bureau

The NH Natural Heritage Bureau (NHB) finds, tracks, and facilitates the protection of New Hampshire's rare plants and exemplary natural communities (types of forests, wetlands, grasslands, etc.). As a bureau within the Division of Forests & Lands, we are fundamentally a service to New Hampshire landowners and land managers. The NHB is not a regulatory agency; instead their focus is working with landowners, land managers and land use boards to help them protect the State's natural heritage while meeting their land-use needs.

The NHB's mission, as mandated by the Native Plant Protection Act of 1987 (RSA 217-A), is to determine protective measures and requirements necessary for the survival of native plant species in the state, to investigate the condition and degree of rarity of plant species, and to distribute information regarding the condition and protection of these species and their habitats. The NHB maintains information on rare wildlife in cooperation with the NH Fish & Game Department's Nongame & Endangered Wildlife Program, which has legal jurisdiction over New Hampshire wildlife.

Types of Listings: federal and state lists, and expert rankings

What species are rare enough to be tracked in the NH Natural Heritage database?

- All species federally listed as Threatened or Endangered.
- All species officially listed as Threatened or Endangered in New Hampshire.
- Species that are not (yet) officially listed by the state, but that are judged by experts to be at risk of extinction in New Hampshire.

NH Natural Heritage considers all species in the database to be important candidates for conservation. However, listing status and conservation rank can be used to judge relative priorities. Also, regulatory protections are different for these different categories.

Table 14. Species and community status of wildlife and plant resources

Species/Community	Federal	State	Quality Rank	Precision	Last Observed
Vertebrate					
Spotted Turtle (*Clemmy's guttata*)	--	T	BC	S	2007
Blandings Turtle (*Embydoidea blandingii*)	--	E	C	S	2008
Smooth Green Snake (*Opheodrys vernalis*)	--	SC	--	S	1993
Plants					
Six Weeks Fescue *Vulpia octoflora var. glauca*)	--	E	NR	G	1858

[Source: New Hampshire Natural heritage Bureau, June 2010]

Listing Status	Ranks	Precision
T = Threatened	A-D = Excellent (A) to poor (D)	S = Location known to within ca. 300 feet
E = Endangered	H = Historical (last seen > 20 years	M = Location known to within ca. 1.5 mile
M = Monitored	X = Extirpated	G = Location known only to place name (ca. 5
-- = Special Concern	NR = Not Ranked	

Natural Communities

The NHB programs keep track of "exemplary" natural communities and natural community systems, as well as rare plants and animals.

- Natural communities are collections of species that tend to occur together, given certain landscape conditions, e.g., a hemlock - white pine forest.
- Natural community systems (also referred to as ecological systems) are particular collections of natural communities that recur in the landscape and are linked by common underlying conditions. An "exemplary" natural community system is one that is unusual in its size, quality, or type. Most examples of rare types are considered to be exemplary. So are large and undisturbed examples of common types.

6.2 Fishery

Atkinson's streams and brooks do not support cold water fisheries and little historic documentation or current sampling data exists of species found locally.

6.3 Beneficial and Invasive Species

Native and Beneficial Plant Species

In 1987, the New Hampshire legislature passed the Native Plant Protection Act (RSA 217-A) which formally recognized that "for human needs and enjoyment, the interests of science, and the economy of our state, native plants throughout this state should be protected and conserved; and their numbers should be maintained and enhanced to insure their continuation as viable components of their ecosystems for the benefit of the people of New Hampshire." Through the Native Plant Protection Act, the NH Natural Heritage Bureau compiles data and maintains lists to identify and protect threatened and endangered plant species, and develop recommendations to ensure that populations are recovered and sustained. Refer to Section 7.2 for a list of threatened and endangered species identified by the Natural Heritage Bureau in Atkinson.[11]

[11] New Hampshire Department of Resource and Economic Development, Division of Forests and Lands, Natural Heritage Bureau. Website at http://www.dred.state.nh.us/divisions/forestandlands/

Table 15. Native and beneficial species by habitat and environmental conditions

Habitat-Environmental Conditions	Associated Native Plants
Dry Sites	Pitch Pine, Native Lupine, Bayberry, Butterfly-weed, Stiff Aster, Red Pine, Scrub Oak, Lowbush Blueberry, Bracken Fern, Sweetfern, Little Bluestem, Switch Grass, Big Bluestem, Wild Rye
Moist Sites	White Pine, Beech, Red Oak, Hemlock, White Ash, Sugar Maple, Yellow Birch, Flowering Dogwood, Sassafras, Basswood, Solomon's Seal, Black Cherry, Elderberry, Wood Fern, Wild Yellow Lilly, Virgin's-bower, Highbush Blueberry, Bee-Balm, Columbine, Jewelweed
Wet Sites	Jack-in-the-pulpit, Cardinal Flower, Prairie Cordgrass, Ostrich Fern, Rushes, Sedges, Red Osier Dogwood, Silky Dogwood, Turtlehead, Balsam Fir, Red Spruce, Red Maple, Hemlock, Northern Arrowwood, Winterberry, Atlantic White Cedar, New England Aster, Blue Flag Iris, Sweet Flag
Streambanks and Shorelands	Willow, Silver Maple, Speckled Alder, Smooth Alder, Sycamore, Monkey Flower, Switch Grass, Pussy Willow
Shallow Ponds	Bur-reed, Buttonbush, Pondweed, Sedges, Rushes, Duck Potato, Fragrant Water Lily, Yellow Water Lilly, Pickerelweed, Wild Rice, Duck Weed

[Source: U.S. Department of Agriculture, New Hampshire Natural Resources Conservation Service]

New Hampshire's existing native plant communities have developed and evolved since the end of the last ice age, adapting to variations in climate and nature succession. Native plants form the structure of our natural landscapes – the canopy, understory and groundcover of forests, riparian areas adjacent to rivers and streams, and open meadows. Native plant communities provide vital and specific habitat for wildlife that depend on them for food and shelter.

It is important to note that certain types of native plants thrive when planted or maintained in their natural landscapes. The table below lists native plants commonly found in certain habitat and environmental settings.

Native plants have several advantages over exotic or introduced species, including seasonal hardiness, resistance to pests (fewer chemical treatments), and low maintenance needs (less water and fertilizer). These advantages are due to the adaptation by native plants to local climate and environmental conditions. For these reasons, native plants are often:

- ✓ easier and less costly to care for;
- ✓ reduce potential sources of water pollution; and
- ✓ reduce potential negative effects of pesticides and insecticides on wildlife and humans.

Statewide Invasive Species

What Are Invasive Species

An invasive species is a plant, insect, and/or fungal species that is not naturally present in a particular region and has the ability to thrive and spread aggressively outside its natural habitat or climatic range. It is important that residents be informed about and aware of invasive species of plants, insects and fungi because of their potential to displace native species that are vital to sustain local ecosystems and biodiversity. Rich, diverse plant communities can become monocultures of invasive plants with limited value to sustain native wildlife. The public must be educated to control existing invasive plants, especially when purchasing landscaping plants and materials.

Why and Where Are Invasive Species A Problem?

Invasive species typically possess certain traits that give them an advantage over many native species, including the production of many offspring, early and rapid development, easily and efficiently spread, adaptability, tolerance of a broad range of environmental conditions, resistance to disease, and absence of natural controls to keep them in check (disease, competition, predators). These traits allow invasive species to be highly competitive and, under certain conditions, suppress or completely replace native species. In this manner, invasive species can reduce natural diversity, impact endangered or threatened species, reduce wildlife habitat, create water quality impacts, stress and reduce forest and agricultural crop production, damage personal property, and cause health problems.[12]

In 2000, the State of New Hampshire enacted legislation (House Bill 1258-FN) which required the state to conduct research and educational activities which address the effects of invasive plant, insect and fungal species upon the state, and to publish annual lists of invasive species that present potential or immediate danger to the environmental and economic interests of the state. From this legislation, the New Hampshire Invasive Species Committee was formed with representatives from the Department of Agriculture, Department of Environmental Services, Department of Resources and Economic Development, Department of Transportation, NH Fish and Game, the University of New Hampshire, The Nature Conservancy, the horticultural community, and the general public. The Committee is a volunteer group that considers and evaluates the adverse environmental and economic effects of invasive terrestrial plants, insects, and fungal species upon the state.[13]

NH Prohibited Invasive Species List

The list of Prohibited Species below is reported annually by the NH Department of Agriculture. The list includes invasive species considered to present an immediate danger to the health of native species, to the environment, to commercial agricultural or forest crop production or to human health. These species are prohibited from sale, transport, distribution, propagation or transplantation in New Hampshire.

[12] NH Department of Agriculture, Division of Plant Industry, http://agriculture.nh.gov/divisions/plant_industry/index.htm
[13] Final Version HB 1258-FN.

Table 16. Prohibited plant and tree species in New Hampshire

Acer platinoides	Norway Maple
Ailanthus altissima	Tree of Heaven
Alliaria petiolata	Garlic Mustard
Berberis thunbergii	Japanese Barberry
Berberis vulgaris	European Barberry
*Butomous umbellate**	Flowering Rush
Celastrus orbiculatus	Oriental Bittersweet
Cynanchum nigrum	Black Swallow-wort
Cynanchum rossicum	Pale Swallow-wort
*Egeria densa**	Brazilian Elodea
Elaeagnus umbellate	Autumn Olive
Euonmyous alatus	Burning Bush
Heracleum mantegazzianum	Giant Hogweed
*Hydrilla verticillata**	Hydrilla
*Hydrocharis morsus-ranae**	European Frogbit
Iris pseudacorus	Water-flag
Ligustrum obtusifolium	Blunt-leaved Privet
Lonicera x bella	Showy Bush Honeysuckle
Lonicera japonica	Japanese Honeysuckle
Lonicera morrowii	Morrow's Honeysuckle
Lonicera tatarica	Tartarian Honeysuckle
*Najas minor**	European Naiad
*Nymphoides peltata**	Yellow Floating Heart
Polygonum cuspidatum	Japanese Knotweed
*Potomogeton crispus**	Curly-leaf Pondweed
Rhamnus cathartica	Common Buckthorn
Rhamnus frangula	Glossy Buckthorn
Rosa multiflora	Multiflora Rose
*Trapa nutans**	Water Chestnut
Aquatic Species	
*Cabomba caroliniana**	Fanwort
*Myriophyllum aquaticum**	Parrot Feather
*Myriophyllum heterophyllum**	Variable Milfoil
*Myriophyllum spicatum**	European Water-Milfoil
*Lythrum salicaria**	Purple Loosestrife
*Phragmites australis**	Common Reed

* Indicates that the species is currently regulated by the Department of Environmental Services [DES]

[Source: NH Natural Heritage Bureau, 2008)

The Atkinson Conservation Commission identifies the following species as being problematic:

Oriental Bittersweet – hedge rows, road side, forested areas
Japanese Knotweed – road side, residential areas
Milfoil – Big Island Pond

NH Restricted Species List

Species that present the potential for environmental or economic harm, but such potential may be reduced or eliminated by cultural or biological practices. These species exhibit invasive tendencies, but do not meet all the criteria to be listed as Prohibited.

Table 17. Restricted plant and tree species in New Hampshire

Ampelopsis brevipedunculata	Porcelain-berry
Centaurea maculosa	Spotted Knapweed
Circium arvens	Canada Thistle
Coronilla varia	Crown Vetch
Eleagnus angustifolia	Russian Olive
Euonymus fortunei	Wintercreeper
Glyceria maxima	Sweet Reedgrass
Ligustrum vulgare	Common Privet
Lonicera maakii	Amur Honeysuckle
Lysmachia nummularia	Moneywort
Microstegium vimineum	Japanese Stilt Grass
Phalaris arundinacea	Reed Canary Grass
Populus alba	White Poplar
Pueraria lobata	Kudzu
Robinia pseudoacacia	Black Locust
Ulmus pumila	Siberian Elm

[Source: NH Natural Heritage Bureau, 2008)

6.4 Recommendations

WER1 Include strategies for controlling invasive species as part of management plans for town owned properties.

WER2 Provide informational materials for distribution to residents and businesses about invasive species and how to control them.

7.0 Forest Resources and Forestry

7.1 Forests Resources

Historic Forested Areas

The native inhabitants of Rockingham County maintained the area in a dominantly forested condition, consisting of hemlock, red oak, and white pine. Wet soil conditions, wind, natural fires, and land clearing by the native tribes resulted in some openings throughout the forested areas. By the 1600's, early European settlers exploited the forest resource and created vast expanses of open land. The open land generally was used as pasture for livestock and horses. The land was unmanaged, and resource and soil conservation practices were not used for many years later. By the mid 1800's, only about 50 percent of the county remained forested. During this period, agriculture flourished and, at the same time, a shift from farm life to town life began as manufacturing became a more important part of the local economy. By 1952, about 74 percent of the county was forested, 17 percent was used for agricultural purposes and 2 percent was used for urban development.[14]

7.2 Forests

Atkinson has 4,127 acres of forested lands (56.7 of the total town area) which are generally equally distributed across town between the major roadway systems. The dominant types are beech/oak, hardwood and mixed forests. These forested lands comprise significant portions of larger blocks of unfragmented lands, which include natural areas, open space and undeveloped lands. Refer to *Map 8 – Open Space and Unfragmented Lands*. Contiguous forest blocks function as prime habitat for all local species and connections between them provide species access to important breeding, hunting and foraging.

Since 1962, Atkinson has lost nearly 2,218 acres of forests primarily to residential and non-residential development and to a lesser degree to roads and recreational areas.

Table 18. Dominant forest types and acreage

Forest Type	***Acres***	***% total forest***
Beech/Oak	1,200.7	29.0
Hardwood	1,306.4	31.6
Hemlock	27.0	0.65
Mixed (hardwood/softwood)	1,481.5	35.8
Red/White Pine	121.6	2.9
Total	***4,137.2***	--

[14] Rockingham County Soil Survey, U.S. Department of Agriculture Soil Conservation Service in cooperation with the New Hampshire Agricultural Experiment Station, 1994.

NH Big Tree Program

In an effort to find, record, and recognize individual landmark specimen trees, the New Hampshire Big Tree Program was started in 1950, and works cooperatively with the National Register of Big Trees. The list of recorded champions now includes more than 200 giant trees. Community Tree Steward volunteers help identify, measure, and record these giant trees at the state, county and national levels. The NH Community Tree Steward Volunteer Program publishes a list of the biggest trees of each species throughout the state (available at http://extension.unh.edu/forestry/BigTree.htm). The list reports information about the largest specimen of each species including: height, circumference, average crown diameter, year of measurement, location by city and county, and health status. Note: The location of individual trees is not published to protect the integrity of the resource.

Table 19 below lists the inventory of Big Trees in Atkinson; however, it is feared that this willow tree may have been severely injured during a recent storm in 2009.

Table 19: Inventory of Big (Champion) Tree species

Species	Latin Name	CBH (inches)	Status	Year	Condition
Willow	Quercas phellos	69	State	1996	Good

[Source: State and County Listing of NH Big Trees]
CBH = Circumference at Breast Height; forestry convention for measuring tree circumference

Benefits of Forests

Forest resources provide economic, recreational and aesthetic functions and values to the community. Atkinson's forest resources provide the following: fire wood and wood products, wildlife habitat, scenic beauty, stabilization of land, removal of pollutants, maintenance of stream quality and habitat, improvements to air quality and temperature, and research opportunities. Forests and woodlands provide recreational functions including scenic trails for hiking, walking, biking and horseback riding, hunting grounds for bird and game species, and a natural laboratory for botanists, bird watchers and scientific research. Forest and woodland buffers along roads and between properties provide aesthetic benefits such as visual screening, and reduce sound, noise and air pollution from developed areas.

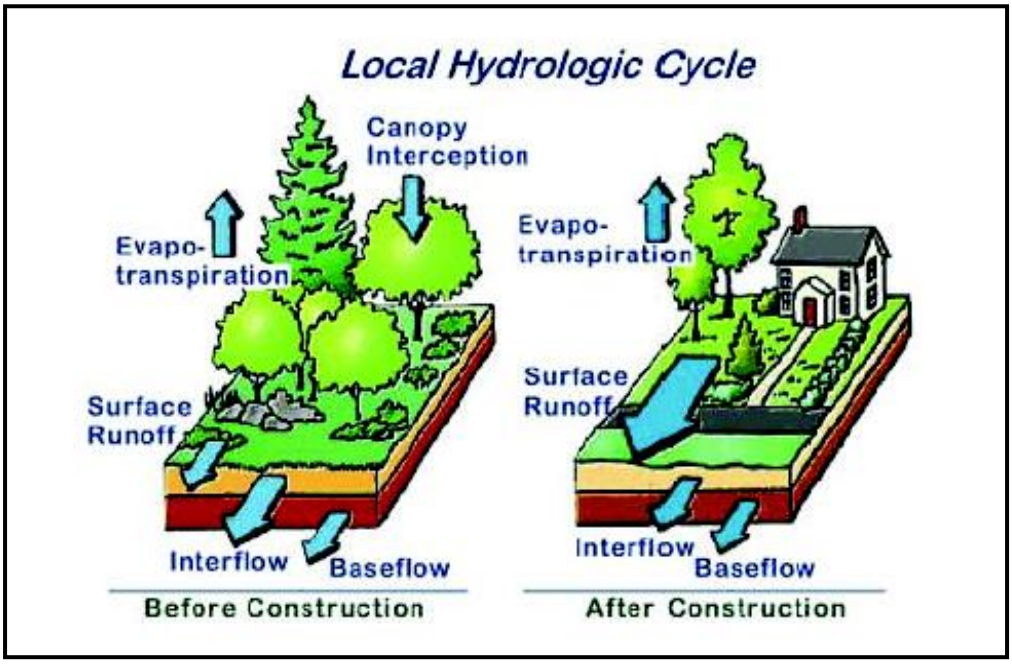
Forests provide various social, health, ecological, and economic benefits on local, regional and national levels. Forests process rainwater through absorption and evapotranspiration, reduce carbon dioxide in the atmosphere, increase groundwater infiltration, and improve surface water quality by removing pollutants and nutrients from runoff, and serve as buffers to protect wetlands from sedimentation and contamination. Near surface water bodies, homes, roads and urban areas, trees cool summer temperatures, break winter winds, and filter dust and pollutants from the air. American Forests (a national non-profit forestry research and advocacy group) estimates that many cities nationwide have seen a decline in natural tree cover by as much as 30 percent over the last several decades while impervious surface coverage has increased rapidly. As urban areas expand and populations move outward to suburban areas, there is ecological and economic value to evaluating this important conservation issue.

Large mature trees and forests provide more cooling shade and more places for wildlife to perch and nest, and sequester more carbon dioxide, trap more pollutants, and purify more water than small immature trees and forests. Although many tree species can outlive humans - 100 to 200 years is not unusual – trees naturally succumb to age, disease and insects, and environmental conditions such as wind, rain, and drought. Today these valuable mature trees are often lost to development. All trees contribute to the improvement our environment in various ways. It is society's responsibility to maintain a healthy environment that allows trees to grow to champion status in order to continue providing their valuable ecological and societal benefits.

Urban Tree Canopy

Urban tree canopy is the layer of leaves, branches, and stems of trees that cover the ground when viewed from above. The function of the urban tree canopy is to improve water quality in urban areas by increasing canopy cover and reducing surface runoff (refer to Figure 9 below).

Figure 9: Role of urban tree canopy in managing stormwater runoff



[Source: Maryland Department of Natural Resources, Urban & Community Forestry Program]

Trees provide two stormwater management functions: first, by leaves and branches intercepting and absorbing some rainfall, and second, by reducing the size and velocity of intercepted raindrops before they reach the ground. Maintaining and restoring riparian forests is an effective method to manage and treat runoff before it reaches surface waters and wetlands. In urban areas, stormwater is efficiently collected from an impervious surface to a conveyance (like a curb and gutter) to an inlet to a pipe and into surface waters and wetlands. Disconnecting this conveyance

"train" to allow interception of rainfall and runoff is a critical step to restoring the stormwater management function of the urban tree canopy.[15]

Town Forest

The Atkinson Town Forest consists of numerous properties varying in size totaling approximately 384.4 acres. The Town Forest itself is also a registered tree farm.

The Town routinely consults with professional foresters to maintain the health and viability of Town Forest properties through implementation of forest best management practices. The Conservation Commission is currently working with a consulting forester to update the management plans for several properties in the Town Forest. These reports and plans shall be incorporated in this inventory when completed.

7.3 Recommendations

FR1 Reference the Forest Management Plan update by the Town's consulting forester, including recommendations contained in the plan.

FR2 Complete one Forest Management Plan per year until plans are completed for all town forests; update the Forest Management Plans on a regular basis (i.e. approximately every 10 years).

FR3 Participate in the NH Community Tree Steward Volunteer Program to update the New Hampshire Big Tree Program inventory for Atkinson.

[15] Maryland DNR, Urban & Community Forestry Program: *http://www.dnr.state.md.us/forests/programs/urban/urbantreecanopygoals.asp*

8.0 Open Space and Land Conservation

What is Open Space?

For the purpose of this report, open space is defined as any lands that remain in a natural and undeveloped condition that contribute ecological, scenic or recreational value. The definition of open space may be expanded to include working lands (forests, agriculture, field corners, fence rows and abandoned pastures) and managed green space such as golf ranges, parks, and recreation areas. The terms 'natural environment' and 'natural resources' are used to broadly describe Atkinson's air, water, and land resources including, but not limited to, the town's scenery, air quality, aquifers, streams, soils, plants and animals. These features form an integrated natural network or "green infrastructure" in which the town's built environment and its key cultural and historic resources are embedded. The opens space and green infrastructure provides the ecosystem services required to sustain a vibrant and healthy community.

8.1 Benefits of Open Space Preservation

Studies from across the nation have demonstrated that farmland open space preservation can provide more revenue to a community than is incurred in expenditures, resulting in a net fiscal benefit. In many instances, the costs associated with support of residential and commercial development often exceed the costs to support farmland and open space. Tax benefits are maximized when a conservation easement is placed on land already enrolled in current use.

Open space preservation serves multiple goals within a community and provides the following benefits:

- ✓ *Attracts investment by residents and businesses seeking high quality of life*
- ✓ *Revitalizes town and village centers*
- ✓ *Supports of resource based tourism economy*
- ✓ *Helps prevent flooding and flood related damage*
- ✓ *Protects farms and agricultural lands*
- ✓ *Promotes sustainable development patterns*
- ✓ *Protects environmental resources (water, aquifers, air, forests)*
- ✓ *Provides recreational and educational opportunities*

A study conducted by the Trust for Public Land (see below *Managing Growth: The Impact of Conservation and Development on Property Taxes in New Hampshire, 2005*) concluded that towns that have the most permanently protected land have slightly lower tax bills on average. It is unlikely that land conservation alone is responsible for these tax benefits. However, land conservation is a tool that shapes the landscape of a community by:

- ✓ helping maintain the rural character of a community,
- ✓ creating more centralized, dense development patterns,
- ✓ creating more efficient municipal service areas, and
- ✓ providing multiple environmental and aesthetic benefits.

Thus, the resulting landscape is a direct result and reflection of the community's support of open space preservation.

8.2 Conservation Lands

Conservation Lands

For the purpose of this document, conservation lands means lands that have a permanent easement or other legal restriction preventing them from being developed in the future. Most conservation lands are protected through fee-simple purchase by the town or other land protection organization/agency, or by voluntary placement of a conservation easement by the landowner.

Open space refers to lands have been permanently designated as undeveloped land as part of subdivision approval pursuant to the Atkinson Zoning Ordinance, Article VI Rural Cluster Residential Development. Open space may be privately or publically held and provide for public or private access.

Table 20. Summary of conserved lands and unfragmented blocks

Category	*Acres*	*% town area*
Conservation Lands*	1,325.4	18.2
Unfragmented Blocks (>50 acres)	3,017	41.4
Total Town Area (land and water)	***7,296***	**---**

*Conservation Lands include all parcels that have a conservation easement or other permanent form of protection (532.98 acres), and open space created by rural cluster subdivisions (792.41 acres), which include both publicly and privately held lands.

Land Use Change Tax (LUCT)

The Town of Atkinson currently allocates annually 100 percent of the total Land Use Change Tax collected (excluding interest). The Town has not compiled a summary of annual Land Use Change Tax contributions to the Conservation Fund.

Table 21. Land Use Change Tax (LUCT) history from 2000 to 2005

Year	*LUCT Collected*	*Year*	*LUCT Collected*
2000	68,280.00	2006	No data
2001	516,714.11	2007	No data
2002	296,025.89	2008	No data
2003	161,900	2009	21,900
2004	No data	2010	No data
2005	No data		

8.3 Goals for Land Protection

The Atkinson Conservation Commission identifies the following primary land protection goals:

- Update forest and land management plans regularly
- Encourage voluntary conservation through community education and outreach
- Encourage public participation in events on conservation lands and use of recreational opportunities/facilities
- Support policy of setting no financial or acreage cap on land preservation efforts
- Utilize Innovative Land Use Techniques to support land preservation
- Investigate use of transfer of development rights to support land preservation
- Establish a volunteer "warden" program to encourage stewardship of Town Forest lands

8.4 Land Preservation Strategies for Consideration

A variety of land preservation strategies should be implemented recognizing that acquisition alone will not achieve land preservation goals. Each strategy listed in the table below has specific benefits and associated costs ($ expenditure) which should be evaluated on a case by case basis to guide the best use of public funds and resources and ensure the functions and values of a given parcel are adequately protected.

Table 22. Land protection strategies and their benefits

Protection Strategy	Benefit	$ Expended*
Land Acquisition	Purchase of land at fair market value or as a bargain sale where the difference between fair market value and sale price becomes a tax-deductible donation; Public access, leverage for securing funding	High
Purchase of Easements/ Development Rights	Growth management tool; retain development density and tax base if rights transferred to growth areas	High
Regulatory Protection	Preservation of public resources and their functions and values to the community; federal, state and local implementation	Low/No
Land Use Regulations	Adoption of an incentive based Conservation Subdivision ordinance can provide large tracts of open space lands as part of development approval	Low/No
Voluntary Protection and Conservation Easements	Voluntary conservation easements involving donation of development rights; Private stewardship and management; public access permitted in some cases	Low/No
Land and Resource Management	Fosters public participation and stewardship	Low/No
Transfer of Development Rights	Voluntary transfer of development rights from designated open space areas to designated growth areas that allow greater development density	Low/No

* ***$ Expended*** refers to the use of municipal and/or public funds to implement a specific land protection strategy (i.e. use of Land Use Change Tax contributions, bonds, and other municipal funding sources).

8.5 Access to Public Lands, Trails and Water

The map on the following page is an excerpt from the Atkinson Conservation Trails brochure, which shows the location, access points and configuration of trails, and provides a general description of conserved lands and the natural features and resources found on them. Public trails are located at the following town owned conservation properties: Stickney Land, Marshall Land, Pope Road Land, Sawmill Swamp, Crown Hill-Noyes Rock, Carolyn Orr Conservation Land, and Sawyer Land.

Canoe and Kayak Launch at Island Pond

After five years without a public launch, and over 20 years since the first launch was opened, Atkinson has a canoe and kayak launch at Island Pond. The launch is on Stickney Road off Lake Shore Drive and has parking for up to ten cars.

Volunteer Stewardship

On their website, the Conservation Commission encourages residents and visitors to report the condition of the conservation properties, including items on the following list.

- *Overall Status of Trails, forest, vegetation and wildlife*
- *Type of Land (topography, vegetation or forest cover)*
- *Condition of Land (new or old growth (untouched, undeveloped), light or heavy use, signs of erosion)*
- *Access (trail head entrance, size and condition of parking area, trail marking system, trail condition)*
- *Human Use (dog walking, hiking, biking, ORHV, camping, picnicking, campfires)*

- *Plants (percent wooded and type (conifer, hardwood, softwood), percent grass and undergrowth (ground cover, mosses)*
- *Animals and Other Wildlife (insects (density and type), seen amphibians, mammals, reptiles, birds. Signs of wildlife: trails, scat, dens or burrows)*
- *Boundary Markers (present and condition, type)*
- *Approximate Acreage*
- *Points of Historical or Cultural Interest (old foundations, quarries, farmed areas, orchards, and known historical points. Special land formations: glacial boulder "erratics", ancient beaches, outcroppings)*
- *Environmental Changes (transition from pine to hardwood, wet to dry, unusual plants or animals)*
- *Special Features (anything that sets this area apart from other town lands)*

8.6 Recommendations

OS1 Amend zoning ordinances (Article VI: Rural Cluster Residential Development), site development plan regulations, and subdivision regulations to provide additional incentives for increased protection of and provisions for access to open space lands.

OS2 Organize an Open Space Committee to guide land protection efforts and use of town and other funding sources for protection of open space lands and resources, and other significant cultural and historic resources.

OS2 Develop an Open Space Plan to help plan future land acquisition and protection efforts and to guide future funding through the Capital Improvement Plan, bonds and allocation of Land Use Change Tax collections.

OS4 Consider securing a town bond and source other funding opportunities for purposes of land protection and acquisition.

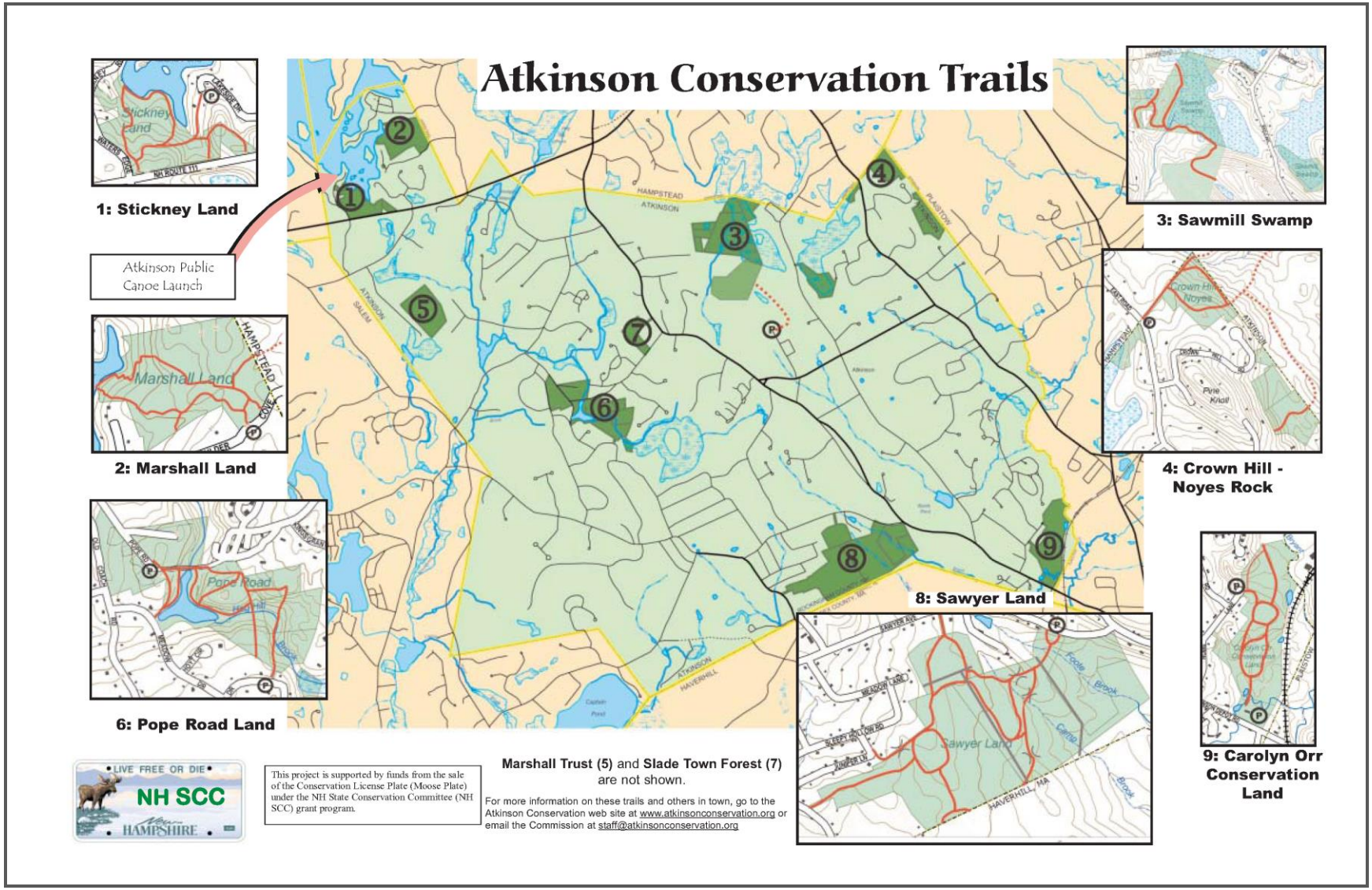


Figure 10. Map of trails on public conservation lands

9.0 Local, Regional and State Studies and Projects

9.1 New Hampshire Wildlife Action Plan

The New Hampshire Fish and Game Department collaborated with partners in the conservation community to create the state's first Wildlife Action Plan (2006). The Plan, which was mandated and funded by the federal government through the State Wildlife Grants program, provides New Hampshire decision-makers with important tools for restoring and maintaining critical habitats and populations of the state's species of conservation and management concern - those species identified by the Northeast Wildlife Diversity Technical Committee as a regional concern because of reduced populations or loss of habitat. It is a pro-active effort to define and implement a strategy that will help keep species off of rare species lists, in the process saving taxpayers millions of dollars. The New Hampshire plan is a comprehensive wildlife conservation strategy that examines the health of wildlife. The plan prescribes specific actions to conserve wildlife and vital habitat before they become scarce and more costly to protect.

The *New Hampshire Wildlife Action Plan* is available at http://www.wildlife.state.nh.us/Wildlife/wildlife_plan.htm**.** Refer to Table 11 below for a summary of natural habitat communities and protected lands and as shown on *Map 7-New Hampshire's Wildlife Action Plan* (see Appendix D.).

Table 23. Important ecological communities identified in the NH Wildlife Action Plan (NH Fish & Game, 2007)

Wildlife Action Plan	Acres	% total area
Highest ranked habitat in biological region	1,065.6	14.6
Highest ranked habitat in NH (by condition)	5.0	0.07
Supporting Landscapes	3,311.7	45.4
Total	***4,382.4***	***60.0***

NHWAP Definitions

Highest ranked habitat in NH. NHFG biologists developed condition filters to provide data and maps that show which habitats are in the best ecological condition in the state. These filters are a set of GIS data that indicate to what degree a particular patch of habitat has good biological diversity (particularly in terms of rare species), is connected to other similar patches in the landscape, and is negatively impacted by humans. All 16 habitat types were assessed for condition as well as all surface waters. For each category (biological, landscape and human impact), a single score was calculated by weighting all factors equally. Then the scores from each category were weighted evenly to come up with a single condition score called the.

Highest Ranking in Biological Region. Since NH is so ecologically diverse, the highest ranked habitats were then ranked within their ecoregional subsection (based on 9 ecoregions developed by The Nature Conservancy) which are geographical areas with similar physical characteristics that influence biology. The top 15% by area of forests and the top 50% of other terrestrial

habitats in each ecoregion are considered Highest Ranking in the Biological Region. If these were not already top ranked in the state (pink), they are colored green on the map.

As reported in the *New Hampshire Wildlife Action Plan*, Atkinson has the following natural habitat communities. Collectively these natural habitat communities comprise nearly 60 percent of the total land area of Atkinson.

Table 24. Natural habitat communities from the NH Wildlife Action Plan

Natural Habitat Community	Acres	% all habitats
Appalachian Oak Pine Forest	2,092.0	29.1
Floodplain Forest	0.59	0.008
Grasslands	697.0	9.7
Hemlock Pine Forest*	4,078.0	56.8
Peat Swamp	20.3	0.3
Wet Meadow	296.0	4.1
Total	***7,183.9***	**--**

* Comprise nearly 56% of the total land area of Atkinson

Appalachian Oak Pine Forest. Appalachian oak-pine forests are found mostly below 900 ft. elevation in southern New Hampshire. These forests include oak, hickory, mountain laurel, and sugar maple, and are typically associated with warmer and drier climatic conditions. Appalachian oak-pine forests are fire-influenced landscapes with nutrient-poor, dry, sandy soils. They are home to hognose snakes, whip-poor-wills, silver-haired bats and other species of concern. Intense development has dramatically reduced the area of this forest type, which comprises some 10% of the state's total land area, in New Hampshire's southern tier.

Floodplain Forest. Floodplain forests occur in valleys adjacent to river channels and are prone to periodic flooding. Also referred to as riparian forests, they support diverse natural communities, protect and enhance water quality by filtering and sequestering pollution, and control erosion and sediment. Their rich soils have been used in agriculture for centuries, such that many floodplains are no longer forested wildlife habitat.

Grasslands. Extensive grasslands are defined as areas greater than 10 hectares (~ 25 acres) that are dominated by grasses, wildflowers, and sedges with little shrub or tree cover. Some examples include hayfields, pastures, and cropland (cornfields and other row crops). Grasslands in NH must be mowed to prevent them from becoming shrublands or forests. Only 8% of NH grasslands are currently under conservation easements.

Hemlock Hardwood Pine Forest. Hemlock hardwood pine forests are transitional forests, occurring between hardwood conifer and oak-pine forests. This common forest type is comprised of dry, sandy soils with red oak and white pine. When hemlock-hardwood-pine forests have been burned regularly over time, they may be able to support a pitch-pine sand plains system.

Peatlands. Peatlands have water with low nutrient content and higher acidity caused by limited groundwater input and surface runoff. Conservation of the 11 different natural communities that comprise peatlands is vital to the continued existence of many rare plant and wildlife species in New Hampshire. The most challenging issues facing peatlands habitat are development; altered hydrology (amount and flow of water); non-point source pollutants such as road salt, lawn fertilizers, and pesticides; and unsustainable forest harvesting.

Wet Meadow/Shrub Wetland. Emergent marsh and shrub swamp systems have a broad range of flood regimes, often controlled by the presence or departure of beavers. This system, which is an important food source for many species, is often grouped into three broad habitat categories: wet meadows, emergent marshes, and scrub-shrub wetlands. Marsh and wetlands filter pollutants, preventing them from getting into local streams, and help hold water to reduce flooding.

9.2 New Hampshire's Climate Action Plan

Appointed by Governor John Lynch in 2008, the 29 members of the Climate Change Policy Task Force developed New Hampshire's Climate Action Plan which focuses on those actions that are expected to achieve the greatest reductions in greenhouse gas emissions while providing the greatest net medium- to long-term economic benefits. The Task Force identified 10 overarching strategies necessary to reduce New Hampshire's annual greenhouse gas emissions and position the state to achieve long-term emissions reductions of 80 percent below 1990 levels by 2050. These strategies are necessary to comprehensively address the causes and the impacts of climate change and include:

1. Maximize energy efficiency in buildings.
2. Increase renewable and low-CO2-emitting sources of energy in a long-term sustainable manner.
3. Support regional and national actions to reduce greenhouse gas emissions.
4. Reduce vehicle emissions through state actions.
5. Encourage appropriate land use patterns that enable fewer vehicle-miles traveled.
6. Reduce vehicle-miles traveled through an integrated multimodal transportation system.
7. Protect natural resources (land, water, wildlife) to maintain the amount of carbon fixed or sequestered.
8. Lead by example in government operations.
9. Plan for how to address existing and potential climate change impacts.
10. Develop an integrated education, outreach and workforce training program.

Forest Preservation
Preserving our working forests and avoiding conversion of our forest lands to other purposes will be critical to the success of New Hampshire's Climate Action Plan. New Hampshire is currently 84 percent forested, and the forest products industry has been and will continue to be a key component of our state's economy. In addition, our tourism and outdoor recreation economies are heavily dependent on the health of our forests. Sustainably managed forests in New Hampshire provide a broad range of benefits, including: the ability to absorb and store large amounts of carbon; renewable supply of wood for heating, lumber, and a variety of forest products; and recreational opportunities.

To achieve the goals in the Plan, the Task Force recommends the formation of a public/private partnership – the New Hampshire Energy and Climate Collaborative – to oversee and guide early implementation of the NH Climate Action Plan. Effectively, the Collaborative will be "the keeper of the Plan." The primary purpose of the Collaborative will be to track and facilitate

implementation of the Plan's recommendations, and to report to the Governor, Legislature, and general public on progress toward achieving the desired outcomes.[16]

9.3 Recommendations

LRS1 Utilize information from the NH Wildlife Action Plan in developing land protection priorities, amending zoning ordinances and land development and subdivision regulations, and acquisition of open space lands.

[16] The New Hampshire Climate Action Plan: A Plan for New Hampshire's Energy, Environmental and Economic Development Future (2009)

10.0 Environmental and Land Use Impacts to Natural Resources

10.1 Population Growth

Population Growth

New Hampshire is the fastest growing state in New England. The impact of increased population growth on our natural resources is compounded by the increase in the amount of land occupied by new residents. While population growth averaged 71 percent from 1974 to 1992, the area of developed land increased nearly twice as fast, by 137 percent (Center for Environment and Population and National Wildlife Federation, 2003).

The Rockingham Planning region in southeastern New Hampshire has experienced a net population increase of 12,978 during 2000 to 2010 (NH Office of Energy and Planning, Census 2010), an average annual growth rate of 0.70 percent. As indicated by the data below, the region continues to experience a slowing trend in growth from 1960's to present.

Years	1960-1970	1970-1980	1980-1990	1990-2000	2000-2010
AAGR	3.11%	2.31%	1.83%	1.06%	0.70%
Net Population Change	28,487	27,686	26,926	17,926	12.978

As buildable lands decrease over time, it is important to consider the potential consequences when increased development pressures compete with natural resource protection. Communities may consider updating a growth and planning study to evaluate build-out conditions under current zoning, and alternative buildout scenarios that would provide necessary protection of important natural resources while accommodating project growth and associated development.

Table 25. Housing statistics for Atkinson and Rockingham County

	Total	Net Change in Units								
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Atkinson	2431	88	25	24	6	18	6	8	3	3
Single-family	1826	34	11	16	4	10	6	8	3	5
Multi-family	595	54	14	8	2	8	0	0	0	-2
Manufactured	10	0	0	0	0	0	0	0	0	0
Rockingham County	113,023	1576	1579	2071	2019	1583	944	733	635	432

[Source: Current Estimates and Trends in New Hampshire's Housing Supply: Update 2009", NH Office of Energy and Planning]

Table 26. Population from 1990 and projected through 2030 for Atkinson

1990	2000	OEP Estimate 2009	2009 persons Per square mile	OEP Projection 2030
5,188	6,178	6,466	577.3	7,790

[Source: NH Office of Energy and Planning, 2009 Population Estimates of NH Cities and Towns and 2010 - 2030 Population Projections for New Hampshire Municipalities]

The impacts of population growth and increasing land consumption include fragmentation of wildlife habitat and other environmentally sensitive lands, climate change, loss of farmland, loss of forest land, increase in costs of infrastructure and municipal services, decline in air quality, increase of contamination of fisheries, decline in water quality, and increase in demand for fossil fuels and other energy sources.

Resource Consumption

In order to effectively manage our natural resources, we must first assess the significant threats, analyze the current data available, and formulate policies and strategies to address those threats to natural resources based on the available data. In examining the threats to our natural resources, it becomes apparent that our resources, which we may call "the green infrastructure," interact with our built infrastructure through the impacts of development.

10.2. Land Use Change

Tables 27 and 28 below show the changes of land use from 1962 to 2005 and the conversion of natural landscapes and resources – predominantly forested lands - to residential development. The data shows a marked increase in residential development in the 20 year period from 1978 to 1998.

Table 27. Summary of land use/land cover types and change from 1962 to 2005

Land Use/ Land Cover Type	1962		1974		1998		2005	
	Acres	% total area	Acres	% Total	Acres	% total area	Acres	% total area
Residential	574.0	7.9	1,062.8	14.6	2,228.2	30.7	2,571.1	35.4
Industrial/Commercial	5.4	0.1	23.5	0.3	116.5	1.6	86.2	1.2
Mixed Urban	0.0	0.0	7.5	0.1	6.7	0.1	6.9	0.1
Transportation/Roads	75.9	1.0	99.5	1.4	159.5	2.2	215.3	3.0
Rail Transportation	0.9	0.0	0.9	0.0	0.9	0.0	24.6	0.3
Auxiliary Transportation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Playing Fields	0.0	0.0	2.0	0.0	95.6	1.3	197.8	2.7
Active Agriculture	740.4	10.2	397.2	5.5	207.6	2.9	256.4	3.5
Farmsteads	23.4	0.3	22.1	0.3	12.8	0.2	36.6	0.5
Forested	5,445.0	75.0	5,098.0	70.2	3,996.7	55.1	3,227.4	44.5
Water	125.9	1.7	110.8	1.5	157.8	2.2	179.9	2.5
Wetlands	120.0	1.7	126.2	1.7	48.6	0.7	363.7	5.0
Idle/Open Land	147.4	2.0	307.9	4.2	227.7	3.1	92.3	1.3

Note: Gains and losses in acreage may be influenced by environmental conditions, mapping protocols and improved accuracy, or data collection methods.

Table 28. Summary of natural resources and developed lands change from 1962 to 2005

Land Use Type	***Loss or Gain (reported in acres)***			
	1962 - 1974	***1974 - 1998***	***1998 – 2005***	***Total***
Natural Resources				
Agricultural	-343.2	-189.6	48.8	-484.0
Forests	-347.1	-1,101.3	-769.2	-2,217.6
Ide/Open land	307.9	-80.3	-135.3	-55.1
Natural Resources Change (acres)				***-2,756.7***
Developed Lands				
Residential	488.8	1,165.4	343.0	1,997.2
Industrial/Commercial	18.1	93.0	-30.2	80.9
Transportation/Roads/Rail	23.6	60.0	55.8	139.4
Developed Lands Change (acres)				***2,217.4***

10.3 Fragmentation and Sprawl

According to the Society for the Protection of New Hampshire Forests, New Hampshire is the second most forested state in the nation, after Maine. Forest cover has been steadily declining since the early 1980s however, at a rate of 17,500 acres a year. This decline is largely due to increased land development (SPNHF, 2005). A major consequence of land development and threat to forested areas is fragmentation.

41 percent of Atkinson is comprised of unfragmented lands.

Unfragmented Lands Statistics

Unfragmented Lands	3,017 acres	41 % total area of town
Conserved Unfragmented Lands	acres	% of total area of town

Fragmentation occurs when large, contiguous parcels of undeveloped land are broken up into smaller or non-contiguous tracts of land. This process occurs as large parcels of undeveloped land including farmland are subdivided for residential or commercial development. Parcelization occurs when land is divided into smaller units of ownership. (Sundquist and Stevens, 1999). Fragmentation occurs hand-in-hand with a sprawling development pattern (i.e. a pattern that consumes a high percentage of land per person): "A typical subdivision in northern New England requires 1 or 2 acre lots. Twenty houses can consume 40 acres, leaving little open space. Placing the same 20 homes on ¼ acre lots and using attractive landscaping and design elements to create privacy consumes only 5 acres, leaving room for 35 acres of open space." (Forest Service, 2005; CEP, 2003)

In the 1950s, the average single-family home lot in the United States covered 1.05 acres, but by 1997, the average had risen to 1.82 acres (Peterson, 2000). According to one recent report, "Each New Hampshire resident effectively occupies one-third more land area for housing, schools, shopping, roads, and other uses than s/he did twenty years ago." (CEP, 2003)

Fragmentation and sprawl lead to several negative impacts on natural resources, the economy, and society. Fragmentation impacts flood retention and storage as more impervious surfaces such as pavement are added in the course of development. A one-acre parking lot generates 16 times more runoff than a one-acre meadow, and the runoff from the parking lot carries pollutants such as nutrients and toxic metals (EPA, 2001).

Invasive plant and animal species can invade local environments more easily in an altered or fragmented landscape as such species are sometimes early colonizers or are introduced through residential landscaping. Species that require large tracts of unfragmented land cannot thrive in fragmented areas and often decline in population. Fragmentation disrupts wildlife corridors used by animals as routes to food and water, and severs connections of habitat areas (Forest Service, 2005). The Society for the Protection of New Hampshire Forests observes that "the state's predicted growth of the next twenty years will fragment the large blocks of forests and wetlands that are crucial for providing wildlife habitat and sustaining critical ecological processes (SPNHF, 1999).

Economic impacts of fragmentation and sprawl include greater municipal costs for maintenance of roads, water supply, sewers, school bus routes, and fire and safety services as the population spreads out. As the community requires more services at greater cost, property taxes also rise, forcing landowners to make difficult decisions concerning future land use on their property (Forest Service, 2005). Automobile use increases with sprawled-out development patterns resulting in greater fossil fuel use, and increases in traffic congestion, noise, and pollution when work, residences, and goods and services are all in separate locations (Putnam, 1995).

Social impacts of fragmentation and sprawl result in changes to the community. Community culture can change, particularly in small New Hampshire towns where residents once had a close connection to the land through forestry, farming, hunting and fishing, and other recreational activities. The community may suffer as a whole through the loss of recreational activities and a shared natural heritage. Residents who are more widely dispersed often have lower levels of participation in civic affairs and community volunteerism, due to less frequent contact with neighbors and other residents, resulting in an overall loss of social capital for the town: "Each additional ten minutes in daily commuting time cuts involvement in community affairs by 10 percent" (Putnam, 1995).

As the pattern of fragmented development and sprawl continues over time, towns also may lose historic buildings and local businesses, as nationally-owned enterprises purchase property, construct franchise developments, and out-compete local markets through economies of scale. In this way, towns lose not only their local economic base and the local business class, but also lose the "sense of place" so important to the tourism, travel-based economy and local history of many towns in the region (Hiss, 1990; Putnam 1995).

10.4 Climate Change

According to the United States Environmental Protection Agency:

> The Earth's climate has changed many times during the planet's history, with events ranging from ice ages to long periods of warmth. Historically, natural factors such as volcanic eruptions, changes in the Earth's orbit, and the amount of energy released from the Sun have affected the Earth's climate. Beginning late in the 18th century, human activities associated with the Industrial Revolution have also changed the composition of the atmosphere and therefore very likely are influencing the Earth's climate. (EPA website, 2008).

Scientists agree that climate change is largely due to the release of greenhouse gases such as carbon dioxide to the atmosphere. The burning of fossil fuels and deforestation has caused concentrations of heat-trapping greenhouse gases to increase significantly in our atmosphere over the past 200 years. When present in adequate concentrations, greenhouse gases prevent heat from escaping to space, keeping the planet's atmosphere and surface at temperatures necessary to sustain life as we know it. As the concentrations of these gases continue to increase in the atmosphere, the Earth's temperature is steadily increasing above levels measured during our post-industrial and pre-industrial history.

According to NOAA and NASA data, the Earth's average surface temperature has increased by about 1.2 to 1.4ºF in the last 100 years. The eight warmest years on record (since 1850) have all occurred since 1998, with the warmest year being 2005. Most of the warming in recent decades is very likely the result of human activities. Other aspects of the climate are also changing such as rainfall patterns, snow and ice cover, and sea level. If greenhouse gas concentrations continue to increase, climate models predict that the average temperature at the Earth's surface could increase from 3.2 to 7.2ºF above 1990 levels by the end of this century. The overwhelming weight of scientific evidence supports the conclusion that human activities are changing the composition of the atmosphere, and that increasing the concentration of greenhouse gases may change the planet's climate dramatically in the future.

Land Use Climate Change Connection

Scientists agree that the main cause of climate change is due to the concentration of carbon dioxide released to the atmosphere as a result of burning fossil fuels. Most uses of fossil fuels result from the energy used to power factories, heat and light homes and businesses, and operate vehicles (CA-CP, 2008). Land consumption through sprawl development and inefficiency in planning communities, infrastructure and transportation systems result in ever higher land and resource consumption per person. This equates to increases in energy consumption and demand. As population and land consumption increase over time, demand for energy for buildings and vehicles will increase.

The choices made today in planning - for alternative energy use, efficient use of fuels for businesses and residences, building design and construction, land use patterns, road networks, vehicle fleets, and land conservation and stewardship - will have long-term implications for the region's response to the effects of climate change and the region's future economic prosperity and environmental health.

Impacts on Natural Resources Due to Climate Change

Recent studies predict that climate change will impact New Hampshire's natural resources negatively. These changes include impacts to: forest composition, wildlife species and their habitat, insect and pest infestations, sea level rise, coastal and estuarine ecosystems, agricultural

production, human health, air quality, and natural resource-based outdoor recreation and tourism (Clean Air Cool Planet, 2008, Carbon Coalition 2008).

Greenhouse Gas Emissions Reductions

The increasing trend of carbon dioxide emissions to our atmosphere in recent decades has caused concern over its effect on environmental ecosystems and climate worldwide. Concentrations of carbon dioxide, a byproduct of the burning of fossil fuels, have increased rapidly in the atmosphere as consumption of fossil based fuels has also increased. Alterations to our region's climate could result in changes or decline in certain sectors of the economy, including winter tourism, agriculture, maple syrup production, coastal real estate values (due to sea level rise and increased storm intensity), and health costs associated with respiratory health and heat related illnesses.

The NH Climate Action Plan calls for a reduction in emissions of 20 percent below 1990 levels by 2025, and 80 percent below 1990 levels by 2050. In order to meet these reduction goals statewide, NH communities must engage in local energy planning that includes strategies for decreasing their emissions overall.

10.5 Water Quality

Groundwater and surface water resources are plentiful and diverse in southeast New Hampshire, but are nevertheless prone to threats from a variety of sources. Water quality is threatened by six elements: pollution from point sources and non-point sources, septic systems, site development activity, atmospheric deposition of acid rain and mercury, and excessive withdrawals (CEP, 2003). Contaminants also affect wildlife species and degrade overall water quality required for ecosystem function, for example, through increased turbidity in freshwater streams due to erosion. Fish and shellfish consumption advisories due to contamination not only affect human health, but also have an economic impact on the fisheries economy and travel and tourism industry.

Surface Water Quality

The NH DES Surface Water Quality Assessment Program produces two surface water quality documents every two years, the "305(b) Report" and the "303(d) List". As the two documents use the same data, the 305(b) Report and 303(d) List were combined into one Integrated Report starting in 2002. The Integrated Report describes the quality of New Hampshire's surface waters and an analysis of the extent to which all such waters provide for the protection and propagation of a balanced population of shellfish, fish, and wildlife, and allow recreational activities in and on the water.

Designated Uses

All surface waters of the State are either classified as Class A or B, with the majority of waters being Class B. NH DES maintains a list that includes a narrative description of all the legislative classified waters. Designated uses represent the uses that a waterbody should support. Below are the Classification Designated Uses for Class A and Class B waters as described in RSA 485A:8.

Class A — These are generally of the highest quality and are considered potentially usable for water supply after adequate treatment. Discharge of sewage or wastes is prohibited to waters of this classification.

Class B — Of the second highest quality, these waters are considered acceptable for fishing, swimming and other recreational purposes, and, after adequate treatment, for use as water supplies.

Criteria. The second major component of the water quality standards is the "criteria". Criteria are designed to protect the designated uses of all surface waters and may be expressed in either numeric or narrative form. A waterbody that meets the criteria for its assigned classification is considered to meet its intended use. Water quality criteria for each classification may be found in RSA 485A:8, IV and in the State's surface water quality regulations (NHDES, 1999).

Antidegradation. The third component of water quality standards is antidegradation which are provisions designed to preserve and protect the existing beneficial uses and to minimize degradation of the State's surface waters. Antidegradation regulations are included in Part Env Ws 1708 of the State's surface water quality regulations (NHDES, 1999). The NHDES is currently developing specific antidegradation standards for water quality, which may be released in 2010. According to Env Ws 1708.03, antidegradation applies to the following:

- any proposed new or increased activity, including point and nonpoint source discharges of pollutants that would lower water quality or affect the existing or designated uses;
- a proposed increase in loadings to a waterbody when the proposal is associated with existing activities;
- an increase in flow alteration over an existing alteration; and
- all hydrologic modifications, such as dam construction and water withdrawals.

Impervious Surface and Water Quality

Impervious or impermeable surfaces are areas covered by material that impedes the infiltration of water into the soil. Examples of impervious surfaces are paved roads, parking lots, buildings, concrete, pavement, and severely compacted soils (New Hampshire Estuaries Project, 2004). Pollutants in runoff include suspended carcinogens known as polycyclic aromatic hydrocarbons, which can leach from asphalt, coal tar-based sealants, oil and gasoline. Other pollutants often found in runoff include pesticides, nitrates, phosphates, and salt for de-icing roads (Science News, 2004).

The increase of impervious surfaces through land development affects water resources in several ways. Impervious surfaces combined with urban drainage systems - such as curbs and gutters and storm drain pipes - can alter the natural hydrology in a watershed by increasing the volume of stormwater, reducing groundwater recharge, and diverting water from surface water bodies. Impervious surfaces can also result in contamination of drinking water resources, loss of aquatic habitat, loss of biological diversity, and an overall decrease in water quality due to the accelerated delivery of pollutants into rivers, lakes, and estuaries (NHEP, 2004).

Recently scientists have reported that levels of impervious surface in excess of ten percent in a watershed can affect water quality. When the percentage of impervious surfaces in a watershed is ten percent or less, streams typically retain good water quality and stable channels. When the proportion is between ten to twenty-five percent, streams exhibit noticeable erosion (Science

News, 2004). More than twenty-five percent impervious surface coverage can lead to severe physical and ecological damage to streams in a watershed (Science News, 2004).

Impervious surfaces represent a threat not only to the green infrastructure of watersheds and water quality, but also to the social and built infrastructure components of municipal services. In other words, reducing impervious surface not only helps to improve water quality, it may also result in lower municipal costs for road and infrastructure maintenance and lower development costs. A 100-foot reduction in road length can result in a savings of about $15,000. This figure includes savings from reduction in pavement surface, curb and gutter installation, and stormwater management structures (Better Site Design, 1998). Well-planned street layouts effectively reduce impervious surfaces, help to alleviate traffic congestion, promote efficient development patterns, protect conservation areas, and create a street system that optimizes the ability of town fire and rescue officials to respond to emergencies in a timely and efficient fashion (Robinson, 2005).

10.6 Wildlife and Their Habitat

Fragmentation

Fragmentation and habitat loss threaten the continued viability of wildlife in the state. When landscapes are fragmented by development, species requiring large ranges for basic survival and reproduction needs are threatened. When only patches of habitat remain that are separated by great distances that make movement from one patch to another impossible, the ability of a species to reproduce and withstand stress is diminished. Small patches are also more vulnerable to severe disturbance, such as fires and ice storms. Fragmentation also changes predator/prey relationships, as fragmentation leads to higher numbers of generalist predators and thus increased predation on remaining species (DESFS, 2004). Fragmentation thus may lead to a decline in species population as well as an increase in human/wildlife conflicts as former habitat is replaced by development. Development may result in the elimination of habitat features such as native plant species, or the vegetative community may change. Invasive species are often the first to colonize a newly-developed site. (DES Fact Sheet , 2004).

Biodiversity

Wildlife losses can be measured not only in terms of individual species, but also in terms of an overall loss in biodiversity. Biodiversity is critical to ecosystem function, or green infrastructure, due to the interdependent relationships between animal and plant species. Biodiversity is also important to sustaining the built and social infrastructures, due to the importance of ecosystem function to science, economics, energy, and health.

The reduction of the earth's biodiversity is a major concern due to its importance to the fields of basic and applied medicinal research, biotechnology, ecological engineering, pollution control, alternative energy, and food science. For example, nearly 25 percent of prescription drugs in the U.S. are derived from plants, at an estimated market value of over 8 billion per year.

With increased development pressures, the environmental, economic, and social utility provided by New Hampshire's water resources, wetlands, forests, fields, and wildlife is severely compromised. Although ecosystems are made up of dynamic, adaptive processes that can

respond to many stressors, the recent impacts of growth and the loss of important resources has resulted in the loss of species and the degradation and loss of water resources, forests, wetlands, salt marshland, and farmlands.

Habitat Loss Effects

Development may also increase edge effects, which are defined as "changes in environmental conditions and animal behavior and well-being that result from being in close proximity to the border between habitat areas." Although edge habitats are critical to many species, human developments may result in harder edges, or more abrupt changes from one habitat type to another. Development may also change the proportion of interior habitat relative to edge habitat. Interior habitat that is relatively isolated is important to many species such as nesting birds, which require isolation for some period during their life cycle (DES Fact Sheet, 2004).

Aquatic Habitat

Development affects aquatic habitat in many ways. Increases in impervious surface result in less infiltration of rainwater into the soil which causes flooding, streambed erosion, and sedimentation (DESFS, 2004). Runoff may also change the temperature of bodies of water as it may be warmer, and may contain pollutants including household chemicals, metals, fertilizers, pesticides, oil and grease, and pathogens. Loss of vegetative buffers due to development or erosion can also alter the temperature of water bodies to a level at which species cannot persist (DEFS, 2004).

Human Activity

Everyday activities associated with development can have negative effects on wildlife. Lighting can affect the behavior and biological rhythms of species that are guided by cycles of light and dark. Domestic pets such as cats may become predators to ground-nesting birds. Household trash may attract certain species and allow them to thrive (DESFS, 2004) and may create nuisance conditions or human/wildlife conflicts.

10.7 Human Health

Increases in summer temperatures are a likely result of climate change. As temperatures increase, there will be more ground-level ozone formation, and more smog alerts. As air quality worsens, it could potentially impact both those with existing respiratory disorders such as asthma as well as impact human health of those who work, exercise, or travel outdoors. Climate change will also impact potentially the spread of diseases by mosquitoes and ticks, such as Lyme Disease and West Nile Virus.

Lyme disease, which is already prevalent in the region, has been increasing in NH overall. If undetected or untreated, the disease can lead to permanent neurological disability as well as a number of cardiac and nervous system impacts. Lyme Disease is passed to humans through ticks carried by deer and field mice, and thus it poses a threat to those who enjoy outdoor hiking, hunting, and fishing. Some recent research suggests that warmer winters could increase the incidence of the disease and push its potential range further into northern New England. Similarly, more frequent extreme weather events is likely to increase mosquito populations and

increase the size of recurrent outbreaks of viruses carried by mosquitoes such as West Nile Virus (Clean Air Cool Planet Fact Sheet 2008).

10.8 Tourism and Recreation Economy

Climate change will be a major future impact on tourism and recreation in New Hampshire. Continued warming is expected to result in a shorter and less predictable ski season. In addition to affecting ski areas and related winter recreation, climate change threatens forests of public lands in the region, including the Acadia National Park, the Allagash Wilderness Waterway, Baxter State Park, the White Mountains National Forest, and Mount Washington State Park (Clean Air Cool Planet Fact Sheet, 2008)

Climate change and changing precipitation patterns could also impact the New England fall foliage season and related tourism by muting fall colors or by decreasing the range of sugar maples in our state's forests.

More information on the impacts of Climate Change can be found in the publication "Preparing for a Changing Climate: The Potential Consequences of Climate Variability and Change, New England Regional Overview" prepared by the U.S. Global Change Research Program, University of New Hampshire.

10.9 Natural Resource Management and Protection – The Three Infastructures

The Three Infrastructures

The way we manage our natural resources also impacts our social infrastructure, because the landscape and natural resources of New Hampshire are central to the culture, tourism, and economy of the region. We call this relationship "The Three Infrastructures" based on the New Hampshire model developed by the New Hampshire Audubon Society and The Jordan Institute. This model is used as a method to help evaluate the relationships between the green, built, and social infrastructures. As strategies are developed to address threats and impacts to natural resources, the effects of these strategies on the built and social infrastructures are also considered.

The basic premise of this approach to planning is that the three infrastructures must be in balance in order to maintain our quality of life and ensure a sustainable future:

Built Infrastructure,

Green Infrastructure

Social Infrastructure

In 1999, a group of local, state and federal agencies, and non-governmental organizations under the leadership of The USDA Forest Service and the Conservation Fund developed the following definition for *Green Infrastructure*:

> ***Green Infrastructure*** in our nation's natural life support system—an interconnected network of waterways, wetlands, woodlands, wildlife habitats, and other natural areas;

> greenways, parks and other conservation lands, working farms, ranches and forests; and wilderness and other open spaces that support native species, maintain natural ecological processes, sustain air and water resources and contribute to the health and quality of life for America's communities and people. (Benedict and McMahon, 2001).

The NH Minimum Impact Development Partnership has adopted the following very similar definition:

> ***Green Infrastructure*** is the natural life support system which supports human life and economic activity. It is a network of interconnected lands and waters, providing ecological goods and services (such as clean air and water, food and fiber, waste decomposition, and climate moderation) and contributing to the health and quality of life for human communities. Green infrastructure includes working lands, ecological reserves, recreation lands, riparian buffers around wetlands and lakes, ponds, rivers, and streams; and streetside and backyard vegetation. (NHMID, 2001).
>
> ***Built Infrastructure*** "includes all human-made constructed elements, such as roads and rails, buildings and bridges, phone wires and sewer pipes, homes and offices and all the rest. A well-planned and developed built infrastructure integrates in a healthy way with the green infrastructure and the social infrastructure (NHMID, 2005).
>
> ***Social Infrastructure*** "is the network of the human relationships which form the basics of our private lives, our work lives, and our lives as members of our local communities. Part of this network includes employment, public health, education, the arts, recreation, and similar activities in our communities which contribute to-or detract from-our quality of life" (NMID, 2005).

The three infrastructures approach provides a way of thinking about the relationships between the different aspects of development as inter-related systems, but it also provides a starting-off point for developing policies and practices to ensure the integration and efficiency of these three spheres. While some organizations such as NHMID have focused on specific practices, others seek to use this approach to help planning boards and municipal officials develop and implement policies that promote sustainable development. The three infrastructures approach may be used to develop policies and practices to enhance the natural resources policies and protection mechanisms of the town.

See the text and Figure 10 on the following page for a description of Atkinson's Green Infrastructure.

Atkinson's Green Infrastructure is shown on the map below. The map depicts the collective geographic extent of forested areas, wetlands, lakes, streams and ponds. Note: Forested areas may contain some development but it is assumed that canopy cover is intact in areas where there are existing roads.

Figure 11. The Green Infrastructure of Atkinson including forested areas, wetlands, lakes, streams and ponds

Appendices

Appendix A Recommendations
Appendix B Conserved Lands Inventory
Appendix C Additional References
Appendix D Map Set

Appendix A Recommendations

2.0 Natural Conditions and Landscape

NCL1 Amend existing zoning ordinances (such as Article VI: Rural Cluster Residential Development ordinance) and land development regulations to encourage and provide incentives to preserve important farmland soils and existing agricultural activities.[17]

NCL2 Encourage and promote continued use and productivity of farmland soils by supporting farmers to maintain viable agricultural operations and activities that support agriculture. This may include organizing an Agricultural Committee or Commission, developing an agricultural based newsletter and calendar of annual events, or holding other agriculturally oriented civic and public events.

NCL3 Conduct an audit of zoning ordinances and land development regulations to evaluate whether barriers to agricultural activities exist (i.e. using the 'Farm Friendly Checklist').

NCL4 Draft performance standards for development on steep slopes (>15 percent) that address water quality, erosion, land stability and land disturbance.

3.0 Surface Water Resources

SWR1 Consider amending the zoning ordinance to require a minimum buffer to streams and brooks.[18] [Note: First order streams represent nearly 63 percent of the total linear stream miles in town. For this reason, protection of first order streams is key to preserving high quality watersheds.]

SWR2 Organize a volunteer group to participate in the NH Department of Environmental Services, Volunteer River Assessment Program (VRAP) to gather surface water quality data. (See Appendix C for additional information about VRAP.)

SWR3 Conduct a professional planning audit of zoning ordinances and land development regulations to evaluate the effectiveness of existing water quality protection measures in place and, if necessary, develop recommendations to improve them.

SWR4 Amend existing zoning ordinances (such as Article VI: Rural Cluster Residential Development and Article IV: General Provisions, Section 402 Floodplain Management Ordinance) and land development regulations to encourage and provide incentives to preserve riparian areas and provide water quality treatment of stormwater runoff.[19]

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[17] Refer to the NH Department of Environmental Services '*Innovative Land Use Planning Techniques Handbook: Chapter 1.4 Conservation Subdivision*' at http://des.nh.gov/organization/divisions/water/wmb/repp/innovative_land_use.htm

[18] Refer to the Piscataqua Region Estuaries Partnership (PREP) website for information and technical guidance about buffers at http://www.prep.unh.edu/resources/buffers.htm

[19] Refer to the Department of Environmental Services '*The NH Stormwater Manual Volumes 1-3*' (2008, as amended) at http://des.nh.gov/organization/divisions/water/stormwater/manual.htm and The Center for Watershed Protection stormwater information resources at http://www.cwp.org/

SWR5 Conduct a professional planning audit of zoning ordinances and land development regulations to identify where new requirements and standards may be incorporated to mitigate existing conditions and prevent flooding in the future. [Note: The town may also consider developing an inventory of sites that currently have flooding problems.]

4.0 Wetlands

WTL1 Consider adopting in the zoning ordinance (Article IV: General Provisions, Section 410 Wetland Zoning) a mandatory minimum buffer to wetlands not designated as prime wetlands to help preserve their hydrologic and ecological functions and prevent impacts from development and other land based activities. *Refer to Section 4.1 Functions and Values of Wetlands.*

5.0 Groundwater Resources and Water Supply

GW1 Amend zoning ordinances and land development regulations to provide protection of groundwater resources by requiring infiltration of stormwater runoff in aquifers and groundwater recharge areas (i.e. adoption of stormwater standards and/or regulations).

GW2 Consider limiting high risk uses (those that have a high potential to contaminate water supplies) in aquifers and groundwater recharge areas.

6.0 Wildlife and Ecological Resources

WER1 Include strategies for controlling invasive species as part of management plans for town owned properties.

WER2 Provide informational materials for distribution to residents and businesses about invasive species and how to control them.

7.0 Forest Resources and Forestry

FR1 Reference the Forest Management Plan update by the Town's consulting forester, including recommendations contained in the plan.

FR2 Complete one Forest Management Plan per year until plans are completed for all town forests; update the Forest Management Plans on a regular basis (i.e. approximately every 10 years).

FR3 Participate in the NH Community Tree Steward Volunteer Program to update the New Hampshire Big Tree Program inventory for Atkinson.

8.0 Open Space and Land Conservation

OS1 Amend zoning ordinances (Article VI: Rural Cluster Residential Development), site development plan regulations, and subdivision regulations to provide additional incentives for increased protection of and provisions for access to open space lands.

OS2 Organize an Open Space Committee to guide land protection efforts and use of town and other funding sources for protection of open space lands and resources, and other significant cultural and historic resources.

OS2 Develop an Open Space Plan to help plan future land acquisition and protection efforts and to guide future funding through the Capital Improvement Plan, bonds and allocation of Land Use Change Tax collections.

OS4 Consider securing a town bond and source other funding opportunities for purposes of land protection and acquisition.

9.0 Local, Regional and State Studies and Projects

LRS1 Utilize information from the NH Wildlife Action Plan in developing land protection priorities, amending zoning ordinances and land development and subdivision regulations, and acquisition of open space lands.

Appendix B List of Conserved and Open Space Lands in Atkinson

Conserved lands have a permanent easement or other legal restriction preventing them from being developed in the future. Open space lands have been permanently designated as undeveloped land as part of subdivision approval (Zoning Ordinance, Article VI Rural Cluster Residential Development).

Conserved Lands	***Map/Lot***	***Acreage***
	2-53	10.200
	3-108	13.980
	3-19	57.870
	4-11-1	48.380
	4-50	24.355
	4-46	4.200
	5-48	59.190
	12-2	29.570
	12-8-1	11.670
	16-12-1	31.200
	16-19	1.700
	18-109	7.700
	18-70	4.200
	18-77	17.430
	18-86	4.000
	18-78	45.740
	18-65	7.000
	18-41	7.000
	18-82	4.040
	18-83	3.850
	18-84	2.780
	19-80	4.070
	19-18	17.050
	19-76	2.000
	19-61	7.360
	19-62	12.000
	20-36	35.170
	20-13-1	3.910
	20-15-1	3.400
	20-15	1.000
	20-35	24.300
	20-31	1.500
	23-40	25.000
	23-91	0.161
	Total	***532.976***

Open Space Lands	***Map/Lot***	***Acreage***
Fieldstone Village	2-1	28.14
Twin Oaks	6-76	14.82
Eldon Way	7-139	12.84
Little River	9-33	7.90
Carriage Chase Estates	9-62-22	17.21
Bryant Woods	10-7	170.23
Millstream Crossing	11-39	3.25
	11-11	2.78
	11-54	5.88
	11-53	2.22
Settlers Ridge	12-1	83.26
Jesse Page Estates	13-22	26.55
Jamison Ridge	13-29	36.76
Centerview Hollow	13-96	47.94
Wright Farm I and II	13-94	43.09
Cogswell Farm	13-1-1	18.33
Ashford Drive	17-29-7	11.30
The Commons	17-86	67.84
Dearborn Ridge	18-74	14.59
Atkinson Woods	20-49	41.25
Waterwheel Estates	21-1	40.88
	Total	***697.07***

Appendix C Additional References

Volunteer River Assessment Program (VRAP)

In 1998, the New Hampshire Volunteer River Assessment Program (VRAP) was established to promote awareness and education of the importance of maintaining water quality in New Hampshire's rivers and streams. VRAP aims to educate people about river and stream water quality and ecology and to improve water quality monitoring coverage for the protection of water resources.

What does VRAP do?

VRAP loans water quality monitoring equipment, provides technical support, and facilitates educational programs to volunteer groups on numerous rivers and watersheds throughout the state. VRAP volunteers conduct water quality monitoring on an ongoing basis and increase the amount of river water quality information available to local, state and federal governments, which allows for better watershed planning.

Why is VRAP Important?

VRAP establishes a regular volunteer-driven water sampling program to assist DES in evaluating water quality throughout the state. VRAP empowers volunteers with information about the health of New Hampshire's rivers and streams. Regular collection of water quality data allows for early detection of water quality changes allowing DES to trace potential problems to their source. Data collected by VRAP volunteers are directly contributing to New Hampshire's obligations under the Clean Water Act. Measurements taken by volunteers are used in assessing the water quality of New Hampshire's river and streams, and are included in reporting to the US Environmental Protection Agency (EPA).

VRAP Contact: Ted Walsh, Watershed Management Bureau (603) 271-2083

The NH Stormwater Manual, Volumes I-II (2008)

The New Hampshire Stormwater Manual was developed by the NH Department of Environmental Services as a planning and design tool for the communities, developers, designers and members of regulatory boards, commissions, and agencies involved in stormwater programs in New Hampshire.

Volume 1: Stormwater and Antidegradation presents an overview of New Hampshire's stormwater program together with related federal program requirements, describes New Hampshire's antidegradation provision (Env-Wq 1708) with respect to controlling water quality impacts due to stormwater discharges, and provides an introduction to the non-structural and structural measures for managing stormwater.

Volume 2: Post-Construction Best Management Practices Selection and Design presents a detailed description of the structural BMPs applicable for use in New Hampshire for the prevention, control, and treatment of stormwater.

Volume 3: Erosion and Sediment Controls During Construction presents a selection of practices applicable during the construction of projects to prevent adverse impacts to water resources as a result of land-disturbance activities.

The manual is intended to be a "living" document and will be updated as new information becomes available. The revision number of the most recent version is included on the title page and the footer on each left-hand page. Copies are available for order or download at http://des.nh.gov/organization/divisions/water/stormwater/manual.htm.

NH Fish & Game

Program Contact: Matthew carpenter (603) 271-2969

Appendix D Map Set

Map 1. Base Map
Map 2. General Soils
Map 3. Agricultural Soils
Map 4. Surface Water Resources and Wetlands
Map 5. Surface Waters Under the Comprehensive Shoreland Protection Act
Map 6. Groundwater Resources
Map 7. New Hampshire's Wildlife Action Plan
Map 8. Open Space and Unfragmented Lands
Map 9. Color Orthophotograph

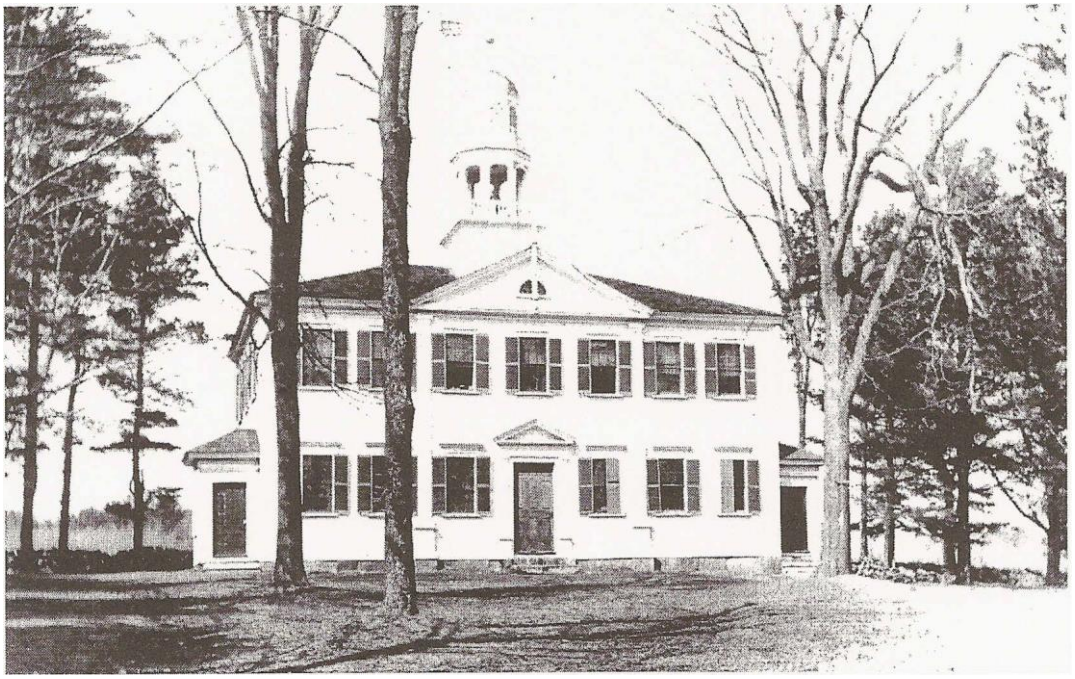
HISTORICAL AND CULTURAL RESOURCES

Introduction

The Town of Atkinson is rich in history. Many of the original homes, buildings, roads and trails of previous generations still exist for the enjoyment of Atkinson's residents. The following sections provide a summary of Atkinson's unique history, a list of historic resources in the town, and recommendations for continuing and enhancing the town's historic resource preservation.

Atkinson's Pre-Revolutionary History

The Town of Atkinson was originally a part of Haverhill, Massachusetts, and its history is inseparably associated with that of its larger, more urbanized neighbor to the south.



The first recorded settlers in what was to become Atkinson were Ben Richards of Rochester, John Dox of Haverhill, and Nathaniel, Jonathan and Edmund Page of Haverhill. In the years 1727-1728 they became residents of the western portion of Haverhill's "North Parish", which included those lands now known as Plaistow and Atkinson.

The earliest settlers began as subsistence fanners who grew forage for their animals and family food such as com, wheat, fruit and potatoes. (The cultivation of potatoes and flax for the spinning of linen had been introduced to the area around 1718 by a group of Scotch-Irish immigrants who eventually settled near Londonderry). These two products, the area's first major marketable commodities, represented the first link in the chain of agricultural trade that was to sustain Atkinson's economy through the latter part ofthe nineteenth century.

When the New Hampshire-Massachusetts boundary was established in 1740, much of the "North Parish" became part of New Hampshire. On February 28, 1749, the town of Plaistow was incorporated. The area known as Atkinson was subsequently separated from Plaistow and was incorporated as a town on August 31, 1767.

The town was named after Theodore Atkinson, a nephew of the former Provincial Governor of New Hampshire, Benning Wentworth. The part of the original land grant that Governor Wentworth reserved for himself, as was his custom, was located along what is now Providence Hill Road.

During the first year after incorporation, town meetings were held in the home of John Dow, and by the end of 1768 a meetinghouse had been built on the north side of Main Street next to the old cemetery. (The meetinghouse fell into disrepair and was razed in 1845). By the time of the Revolution, at least three saw and grist mills had been built and a cemetery had been established (1773). The remains ofthe mills may be seen today on Shannon Road, West Side Drive and Island Pond Roads. The old cemetery on Main Street still stands.

Surviving Architecture of this Period

There are some 22 houses representing the three Georgian style house types that survive in Atkinson.

They include the 2 1/2-story, 5-bay, central chimney house, the 1 Y2-story, 5-bay, central chimney Cape and the "half-house."

The historically significant John Dow House (site #65), built by one of the original settlers, is an example of the 2 1/2-story Georgian house, and the Peaslee House (site #1) is a good example of the 1 1/2-story Georgian Cape. The Page homestead (site #83), built by Edmund Page, also an original settler, is an excellent example of the Georgian "half -house."

Atkinson's Post-Revolutionary Federal History

The period following the Revolution was the time of a regional upswing in industry, education, transportation and architecture.

Textile mills and shoe factories in Haverhill began to assume importance in the local economy. In Atkinson, due to the opening ofnew roads, the advent ofthe stagecoach and a general increase in travel, the services ofblacksmiths and wheelwrights became more in demand than ever before.

A surge of interest in educating the young people of the new republic led to the organization oflibrary associations, colleges and academies. The Atkinson Academy, surviving as the town's single most architecturally significant building, was built in 1803 (site #71). It was designed by Ebenezer Clifford, who had also designed the Exeter Congregational Church and several buildings at the Phillips-Exeter Academy. The establishment of the Academy changed Atkinson from a purely agricultural town to an "academy town" and had a strong impact on the Town's culture and economy.

The early nineteenth century was the era of the stagecoach. By 1793, stagecoach service had begun between Haverhill and Concord, passing through Atkinson. The route taken through the town was the Post Road (now Main Street). Serving this route, several taverns operated in or near the town center.

The new republic's national pride began to be expressed in new construction in the Federal style and the remodeling of older Georgian style houses to fit the new, more sophisticated fashion of the times. At the same time, many builders in the town clung to the earlier styles ofthe eighteenth century.

Surviving Architecture of this Period

There are 23 Federal style houses surviving in Atkinson. They include three basic house types: the 2 1/2-story, 5-bay brick house, the 2 1/2-story, 5-bay, wood frame house, and the 1 1/2-story Cape style house of both brick and wood construction.

The Hiram Pierce House (site #68) is an excellent example ofthe brick Federal House. The John Vose House (site #74) is a wood frame house in the Federal style. An example ofthe Cape style of the Federal period is the Mason House (site #4).

Atkinson's Pre-Civil War (Greek Revival) History

The period following the Federal period and preceding the Civil War was marked by increased industrialization in the Haverhill-Atkinson area. Turnpikes and canals, hailed as great advances, in a few years were superseded by the network of railroads that left only a few farms more than a half day's drive from a station. By the middle of the 19th century, the New England network of railroads surpassed in density anything to be found elsewhere in the United States.

Haverhill emerged as an important industrial town and some Atkinson inhabitants began to turn out piece work for these factories in their homes. This opportunity for people to earn cash income in their homes went hand in hand with a general agricultural prosperity due to the coming of the railroad and the accessibility of transportation for their produce.

The Atkinson Academy continued to grow and play an important role in the life of the town. Its students were boarded in various farmhouses throughout the area and many of them became teachers in Atkinson and neighboring towns. Other alumni became prominent in public life and included at least two governors, a State Supreme Court Justice, and several members of Congress.

Agriculture was gradually becoming less an all-inclusive calling than a diversity of occupations. The era of the milk runs began, and Atkinson now had the capacity to ship milk, butter and cheese to markets in Boston as well as Haverhill. Around 1854, E.N. Greenough became the first local farmer with a milk run between Atkinson and Haverhill.

The high incidence ofnew construction (in the Greek Revival style) can be seen as a reflection of the expanding industrial, and agricultural economies of Haverhill and Atkinson.

Surviving Architecture ofthe Period

There are 22 houses surviving in Atkinson that were built in the Greek Revival style. Some of them were built as 1 Yz or 2-story houses with gable front orientation to the street and side-hall entry. Others were built on the central hall plan with the main facade facing the street. A third type is the Cape style house of the period, adapted from the earlier, Georgian Cape.

The Noyes House (site #13) is an excellent example of the 2 1/2-story Greek Revival house with gable front orientation to the street and side-hall entry. The central hall plan type is represented by the Little House (site #90), and the Barratt House (site #19) is a Greek Revival Cape.

Atkinson's Post-Civil War (Late Nineteenth Century) History

The thirty years that followed 1870 seem to have been one of the most difficult periods that the local farmers had ever faced; a time when they had to adapt to the changing needs of a nation that was moving West.

By the time of the 1870 census report, thousands ofthe poorer, multi-purpose farms of New England had gone out ofproduction, and the era of the abandoned farm was beginning.

Ironically, the same railroad system that had created a period of prosperity for the small farm of southeastern New Hampshire was now taking it away by its expansion into the Midwest and West. Looking for a product to replace the wheat and cattle that the West now produced more cheaply, the one product that would appeal to the markets of Boston and other large cities of the region was milk. As these cities became more industrialized and more densely populated, the demand for milk and other dairy products grew and the trend from the multi-purpose farm to the dairy farm had begun.

The farms of Atkinson became a part ofthis "milkshed", as the fresh milk area came to be called. By 1875, local dairy farmers were selling 420,000 quarts of milk annually to Boston, making Atkinson the second ranking milk-producing town in Rockingham County.

The effect of the general decline of multi-purpose agriculture in the forestation of towns like Atkinson was dramatic. The decade of the Civil War (1860-1870) had marked the area's high point for cultivated land and the low point for its forest cover. Steadily, as people abandoned the farms and sought employment in nearby mill towns, young forests began to take over.

This change in ecology is reflected in present-day Atkinson's high percentage of wooded area, a condition that had not existed in the earlier nineteenth century when a thriving, multi-purpose agriculture had flourished on the cleared lands ofthe town.

Several efforts to revive the sagging economy of the town were made in the late nineteenth century. One ofthese was an effort to attract summer tourists to Atkinson. In 1877, a correspondent for the Exeter News Letter described the town as "a pleasant little town of less than 500 souls and a favorite resort for city people who rent a house for the warmer weeks or board in private homes here." One aspect ofthe effort to attract tourists to the town was a new emphasis on beautification, witness the planting of handsome trees along Maple Avenue which still stand today.

Another manifestation of the attempt to combat the economic pressures of the times was the widespread organization that characterized agriculture during the last part of the 19th century. The establishment of local Granges began at this time and continued into the early 20th century. In Atkinson, the Grange Hall was built in 1912, and razed in 1987.

Surviving Architecture of this Period

There are 18 houses in Atkinson that were built in the late nineteenth century, after the Greek Revival Period. They comprise a varied mixture of vernacular and eclectic house types and styles, the most significant of which is the Colonial Revival. The Colonial Revival style is expressed in the Congregational Chapel (site #60), the Gilmartin House (site #45), and the Sawyer House (site #104).

Twentieth Century History

The first half of the twentieth century was marked by a general decline in agricultural activity. In 1900 there had been 11 milk runs bringing a total of$60,000 per year into the town; by 1942, there was only one remaining milk route to Haverhill. Accompanying this decline was the movement of a number of farmers into full time employment in the factories of Haverhill.

Attempts to attract summer tourists to the area continued in the early years of the century. Newspaper articles ofthe time depicted Atkinson as a "resort town", and in the first decade of the century a trolley car line was proposed to run from Haverhill to Hampstead to the playground area of Island Pond. The advent of the automobile led to the cancellation of the plan but the Island Pond area to this day has several cottages that are opened for the summer season.

In Atkinson, as in the rest of the nation, the twentieth century brought with it technological advancements that would eventually change the character of the town and the lifestyle of its inhabitants.

Telephones appeared in town as early as 1905, and in 1911 the Plaistow Electric Company provided electricity to Atkinson households for the first time. Henry Ford introduced his Model "T" automobile in 1908, and the first automobile to be owned by an Atkinson resident is believed to have been purchased in 1910.

With the advent of the automobile, crushed stone surfaces began to take the place of mud and gravel on farm-to-market roads, and these new roads were to be the precursors of the network of interstate highways that now surround the town.

Surviving Architecture of This Period

The construction of vernacular houses, basically unremarkable from an architectural point of view, continued into the twentieth century. The single most identifiable house type that emerged in the first quarter of the century vas the bungalow, ofwhich there are three within the time frame of the survey (pre-1931) that survive in Atkinson. The bungalow was popular nationally and regionally as an inexpensive and easily constructed house which had a style of its own but was affordable by the middle class.

Excellent examples ofthe bungalow style are the Orio House (Site #113) and the Sawyer House (Site #105).

While this architecturalJhistorical survey stops at the year 1930, the history of Atkinson is continuous. Great changes have taken place, particularly since the 1950's. During the 1950's and 1960's, increased mobility afforded by the large interstate highways created a situation in which 61.8% of the town's work force in 1979 were employed out of town.

Boston's urban sprawl and the flight from Massachusetts, along with New Hampshire's more favorable tax rate, have contributed to a tremendous increase in the population of Atkinson.

The challenge of reconciling Atkinson's future with it's past experience lies in the hands of its present generation.

Key to Historic/Architectural Areas and Landscape Vistas

Atkinson's architectural character is inseparably linked to the landscape. Atkinson was historically a farming community, and the architecture and the landscape reflect this agricultural heritage.

There are areas of Atkinson where there survive concentrations or clusters of older structures. These areas have been defined as Historic/ Architectural Areas. They are shown on a base map and keyed with a capital letter to be easily distinguishable from numbered individual sites. Areas of the landscape which retain their historic agricultural character or which scenically frame the historic architecture have also been noted. These have been designated Landscape Vistas[1]. This key contains a brief description of the features and sites identified in each of these areas. They are grouped by road for easier location.

1 "Landscape Vistas" - not to be confused with "Scenic Vistas" and 'Pronounced Landscapes' as designated in the 1980 Master Plan.

The original character of the town is relatively unaltered within these areas. Standing in or driving through them it is possible to recall the earlier days of Atkinson's heritage.

East Road

The northern end of East Road has experienced a considerable amount of new development. There are several unchanged areas however, and the southern end remains almost entirely untouched including the agricultural Landscape Vista to the north and west. The overall character of this road is derived predominantly from the number of brick Federal farms and related open fields.

Area A is on the northen end of East Road and includes the property historically known as the Peaslee House, a one and one-half story Georgian cape. To the northwest is an open field enclosed by stone walls creating a strong visual reminder of Atkinson's agricultural heritage.

Area B includes site #,'s 2, 3, 4, 5, & 6. Federal and Greek Revival architectural styles are featured in this area: a transitional Federal/Greek Revival cape (site #2); two brick Federal capes (sites #'s 3, & 4); a one and one-half story Greek Revival style house (site #5); and a vernacular house which incorporates many Greek Revival elements (site #6). Site #'s 3 & 4 are linked historically to the French family. They also make an important visual impact on this area as they are almost identical. This area readily recalls the small family farms that were the backbone of the town.

Area C contains the property historically known as the Noyes Homestead (site #7), a two and one-half story Georgian home with a Victorian era ell connecting the house to the Greek Revival barn. For over 100 years, this home was owned by the members of the prominent Noyes family, and in the late 1800's it was the location of one of Atkinson's larger dairy farms. This complex is also educational, visually tracing the historical evolution of one family's farm through its architectural modification.

Area D contains site #'s 9, 19, & 11. These three houses were built during the Federal Period, including the brick Federal cape which has been modified by the addition of a mansard roof (site #9). The Campbell house, site # 10, is an intact twin chimney brick Federal style home. In 1785 General Nathaniel Peabody established a school for boys here, which was the predecessor to the Atkinson Academy. Site #11 is a two and one-half story twin-chimney Federal style home which is the first historic structure seen when entering Atkinson from Plaistow along East Road. Entering the town from this direction, affords the viewer a pleasant agricultural vista to the north and west.

Maple Avenue

The character and name of Maple A venue were changed at the end of the 19th century when George Wason planted the maple trees which have grown into an impressive canopy. One of the older roads in town, it exhibits a collection of houses from nearly every architectural style.

Area E is situated along the northern portion of Maple Avenue and includes site #12, which is a two and one-half story central-chimney Georgian style house. Built c. 1730, it is one of Atkinson's oldest surviving structures. In the mid 1700's, Asa Page, a relative of one of the first settlers, lived here.

Area F is situated along Maple Avenue south of the intersection of Maple and Academy Avenues and includes site #'s 19,20, and 21. Site #19 is a handsome and intact Greek Revival cape. Site #20 is an early 20th century vernacular cape which shows the Bungalow influence in its exposed rafters. This property has a particularly interesting bam with unusual windows. Site #21 is a Greek Revival style house which was later modified with a fieldstone porch.

Area G includes site #'s 22 and 23. The Lt. James Noyes house (site #22) is an intact twin-chimney Federal style home built c. 1774. Pleasant View Farm (site #23) is a two and one-half story central-chimney Georgian style structure built c. 1780.

Area H starts on the west side of Maple Avenue encompassing site #'s 24 and 25, then crosses to the east side ofthe road to include site #'s 26, 27, 28, and 29. Site #'s 25,26,27, and 28 have historical ties to the Little family. Two impressive examples being the Samuel Little House (site #26) and the Little Family Home (site #27), Federal and Georgian styles respectively. Other architectural styles represented in this area include: transitional Federal/Greek Revival (site #25); Vernacular Colonial Revival (site #24); and Bungalow (site #29). A Landscape Vista extends along the east side of Maple Avenue from site #25 and site #30 and includes Blunt's Pond.

Main Street

Area I is situated on the northern end of Main Street and includes site #'s 89 and 90, both houses built in the Greek Revival style. The Little House (site #89) is an outstanding example with its gable-end oriented to the street, side-hall entry topped by a full entablature, and sidelights extending the height of its four panel Greek Revival door. These houses also have historical ties because in 1892 they were owned by members of the prominent Little family. This links them as well to Area H on Maple Avenue. Surrounded by an extensive agricultural Landscape Vista, this area serves as a gateway when entering Atkinson from Route 111.

Area J includes site #'s 55 through 85 and 13 through 15. It runs northwest along Main Street from the intersection of Willow Vale Avenue to and including the Town Pound (site #85). It extends eastward along Academy Avenue to and including the

property ofthe Rockwell School (site #15). This major Historic/Architectural Area encompasses the town center, and is important historically, visually, and socially to the town. This was the first portion of the town to be developed, and it includes some of Atkinson's oldest homes many of which are located along Main Street which originally was the Post Road from Haverhill to Concord. Surviving from this era are several fine examples of Georgian style architecture. Some of these are: the John Dow House (site #65) which has been remodeled with Greek Revival and Victorian era additions; the Nathaniel Cogswell House (site #56) a modified cape; and the Kimball Library (site #75). Other examples are: a Georgian half-house (site #59); two central-chimney Georgians (site #'s 57 and 58), and a two-story Georgian Saltbox half-house (site #83) which is one of the oldest houses in town.

The second (and most important) period of development in the town center was after the Revolution, during the Federal Period. The Atkinson Academy, built c. 1810, was and still remains the finest building in Atkinson. The raising of this magnificent building in the town center surely gave the impetus for the construction ofthe several fine Federal style houses nearby. These houses include site #'s 61, 62, 66, 68, and 72, 73,74.

Development during the Greek Revival period, roughly 1830 to 1860, is represented by five surviving examples. There are four houses: site #'s 63,64 and 13, 14. The most noteworthy Greek Revival is the Congregationalist Church c. 1835 (site #60). The parsonage, built somewhat later c. 1890 (site #112), was obviously designed to compliment the church.

A 20th century addition of some historic and social importance was the Grange, built c. 1912 (site #69), which was used as the Town Hall and offices until 1985.

Non-architectural sites included in the town center area are the town cemeteries (site #'s 76 and 78), and the Town Pound (site #85).

A Landscape Vista, important to this area, includes the fields and woodland at the north side of Main Street opposite the Page Homestead (site #83). Historically, this was the area where the militia trained. A second, larger Landscape Vista is located on the south side of Main Street stretching in back of all the properties (site #'s 77 through 54).

Area K located southeast of the intersection of Sawyer Avenue and Main Street, includes the property historically known as the Thomas Wheeler House (site #47). This attractive and intact twin-chimney brick Federal style house was the birthplace ofHon. Judge Stephen M. Wheeler, New Hampshire's Attorney General from 1942 to 1957. Open fields and woodland are visible from this intersection, and extend along the south side of Sawyer Avenue.

Area L includes site #'s 39 through 46. Several architectural styles are represented here, and although modem in-filling has occurred within the historic area, it is still possible to recall Atkinson's earlier days. The most visually interesting structure is the Densmore House (site #39), a brick Federal style house which was modified with Italianate details. These details combine with the setting (it is screened by four large pines) to give this house a most unusual atmosphere. The Colonial Revival style is represented by site #45, and the Sawyer House (site #46), are vernacular houses with Greek Revival and Italianate ornamentation. Another vernacular house is the Witley House (site #44) which was the site of Atkinson's first and only factory. Run by A.M. Sawyer from 1907 until the onset of World War **I,** this factory canned local produce. A Landscape Vista extends to the rear and south of site #'s 42, 43, 45, and 46. This open space nicely frames the surviving structures.

Area M includes site #'s 37 and 38. These two houses form a cohesive unit as they are almost identical in design. Both are twin-chimney brick Federal Style homes which have even been similarly modified with Victorian era porches.

Island Pond Road

Area N is located on the west end ofIsland Pond Road. The fields have now returned to woodland. This area is characterized by its first generation forest and a meandering stream, Hog Hill Brook. Not particularly visible, but nonetheless extremely important for preservation considerations, are the two historic archaeological sites found in this area. One is the ruins of a saw mill begun by Joseph Chandler c. 1770 and later owned by the Hall family until at least 1880. The other is the site of a "black and white" smithy run by Paul Heald 1835-1860. Two surveyed house sites within this area (site #'ss 91 and 92) are one and one-half story capes.

Sawyer Ayenue

Area 0 situated at the intersection of Sawyer Avenue and Meditation Lane, includes the property historically known as the Jeremiah Poor farm, a brick Federal style house built c. 1830. Surrounded by open land, including a horse track, and a distant Landscape Vista to the northeast, this property provides a strong visual link with Atkinson's agricultural heritage.

Shannon Road

Area P includes site #'s 97 and 98. Site #97 is a twin-chimney Federal style home whose property includes the site of a grist mill once operated by Nathaniel Watts c. 1770. Site #98 is a one and one-half story cape style structure. This area is visually similar to area N characterized by woods and Hog Hill Brook.

North Broadway

Area Q includes two houses at the intersection of North Broadway and Salem Road (site #'s 103 and 104) and two houses on the north side of North Broadway (site #'s 105 and 106). Site #' s 103 and 104 are linked historically as both properties were

owned at one time by Jesse Sawyer, whose son Charles operated one of Atkinson's largest dairy farms at site # 104. The house located on this property built c. 1887, and modified c. 1915, is linked to the Colonial Revival style and features a palladian window. Site #105 is a superb example of the Bungalow style. It has historic ties with sites #103 and #104, being built by Arthur Sawyer c. 1913. Site #106 is a two and one-half story Georgian style home which was built by Joseph Page, one of that prominent family of Atkinson's first settlers. James Merrill, who bought the property in 1768, opened a tavern here in 1791.

Area R is located at the southern end of North Broadway and encompasses sites #108, a Federal style house built c. 1810 which exhibits a semi-elliptical louvered fan; site #109, a Greek Revival style house built c. 1840 and later site #107, a vernacular house with a cross-gable roof.

Salem Road

Area S located at the intersection of Salem and Jericho Roads, contains site #'s 100, 191 and 102. The rolling fields and woodlands capture the essence of Atkinson's agricultural character. Site #100 is a two and one-half story Georgian style home which was occupied by the decedents of John Pettengill for five generations. Site #101 was owned by lW. Pettengill in 1892. The third house in this area, site #102, is a late 10th century Victorian era home with unusual detailing including a canted comer.

Atkinson's Architectural Time Line - Map Index

c.I725 to c. 1749	c.1750 to c.1774	c. 1775 to c.1799
#65 c.I727 2.5 story Georgian	#18 c.l756 Georgian Cape	#88 c. 17762.5 story Georgian Cape
#12 c. 17302.5 story Georgian	#55 c.1757 2.5 story Georgian	#27 c. 1780 2.5 story Georgian
#99 c. 1730 Georgian Cape	#106 c. 17572.5 story Georgian	#23 c. 1780 2 story Georgian
#8 c. 1735 2.5 story Georgian Saltbox	#1 c. 1760 Georgian Cape	#28 c. 17802.5 story Georgian! Federal
#83 c. 17372 story Georgian Saltbox half-house	#94 c. 1768 Modified to Greek Revival	#10 c. 17802.5 story Brick Federal
#7 c. 17382.5 story Georgian	#56 c. 1766 Georgian Cape	#11 c. 17802.5 story Federal
#57 c. 17402.5 story Georgian	#59 c. 1770 2.5 story Georgian	#61 c. 17902.5 story Federal
#87 c. 17402.5 story Georgian	#75 c. 1772 2.5 story Georgian	#72 c. 17902.5 story Federal
#100 c. 17402.5 Story Georgian	#58 c. 17702.5 story Georgian	#26 c. 1793 2.5 story Federal
		#22 c. 1794 2.5 story Federal

c. 1800 to c. 1824	c. 1825 to c. 1849	c. 1850 to c. 1899
#3 c. 1800 Brick Cape	#111 c. 18302 story Brick Federal	#19 c. 1850 Greek Revival Cape
#4 c. 1800 Brick Cape	#2 c. 1830 Federal Greek Revival Cape	#21 c. 1850 1.5 story Greek Revival
#74 c. 18002.5 story Federal	#33 c. 1830 Greek Revival Cape	#17 c. 1850 Cape
97 c. 1800 2.5 story Federal-	#84 c. 18302.5 story Federal Greek Revival	#20 c. 1850 1.5 story Greek Revival/Stick Style
#71 c. 1803 2 story Federal (High Style)	#92 c. 1834 Cape	#44 c. 18502.5 story Vernacular
#9 c. 1805 2 story Brick Federal Cape (mansard roof)	#25 c. 1835 Federal/Greek Revival	#49 c. 1855 2 story Greek Revival
#68 c. 1810 2.5 story Brick Federal	#60a c. 1835 1.5 story Greek Revival	#89 c. 18602.5 story Greek Revival
#73 c. 18102.5 story Federal	#5 c. 1840 1.5 story Greek Revival	#31 c. 1870 Cape
#86 c. 18102.5 story Brick Federal	#13 c. 18402.5 story Greek Revival	#32 1870 1.5 story Greek Revival
# I 08 c. 18102.5 story Federal	#14 c. 1840 1.5 story Greek Revival	#34 c. 1870 2 story Greek Revival
#47 c. 18122.5 story Brick Federal	#63 c. 1840 1.5 story Greek Revival	#50 c. 1870 2 story Greek Revival
#39 c. 1820 2 story Brick Federal Ital. modification	#64 c. 1840 2.5 story Greek Revival	#54 c. 1870 #3 c. 1800 Brick Cape 1.5 story Vernacular
#66 c. 18202.5 story Federal	#77 c. 1840 1.5 story Cape	#91 c. 1870 Cape
#101 c. 1820 Federal Cape	#79 c. 1840 1.5 story Greek Revival	# 82 c. 1874 Vernacular
#37 c. 18302.5 story Brick Federal	#90 c. 18402.5 story Greek Revival	
#38 c. 18302.5 story Brick Federal	#93 c. 1840 2 story Greek Revival	
	#95 c. 18402 story *N/A*	
	# I 09 c. 1840 1.5 story Greek Revival	
	# 15 c. 1842 1.5 story Brick Greek Revival	
	#30 c. 1845 1.5 story Greek Revival	
	#98 c. 1840 1.5 story Cape	

c. **1875 to c. 1899**	c. **1900 to c. 1924**	c. **1925 to c. 1930**
#51 c. 1875 1.5 story Vernacular	#45 c. 19002.5 story Colonial Revival	#53 c. 1927 1.5 story N/A
#70 c. 1880 1.5 story Vernacular	#67 c. 1900 2 story Vernacular	#29 c. 1930 1.5 story Bungalow
#43 c. 1885 Cape	#40 c. 1905 1.5 Story Vernacular	#96 c. 1930 1.5 story Vernacular
#104 c. 18872.5 story Colonial Revival	#41 c. 1905 1.5 story Vernacular	
#24 c. 1890 2.5 story Vernacular	#48 c. 1910 1.5 story Jerkinhead	
#36 c. 1890 1.5 story Eclectic	# 69 c. 19122 story Vernacular	
# 52 c. 1890 1.5 story Vernacular	#105 c. 1913 2 story Bungalow	
#103 c. 18902.5 story Vernacular	#107 c. 19152 story Cross Gable	
#112 c. 18902.5 story Vernacular	# 110 c. 1916 1.5 story Vernacular	
#6 c. 1895 1.5 story Vernacular	#113 c. 19191.5 story Bungalow	
#46 c. 1895 1.5 story Vernacular	#42 c. 1920 1.5 story Vernacular	
#102 c. 18952 story N/A		
#60b c. 1897 1.5 story Colonial Revival		

Recommendations:

1. The resources identified in this report should be considered with the other elements in the planning process such as soils, transportation, public services, etc.

2. Modifications to the existing zoning ordinance should take into consideration the sites and areas identified by this inventory.

3. The school system should be encouraged to use the information in this Chapter to teach the history of Atkinson.

4. The survey should be updated periodically to indicate changes to buildings that have occurred. Included are such changes as remodeling, fire or demolition. Changes in surrounding environment should also be noted and mapped.

TOWN OF ATKINSON

Master Plan

Chapter - Energy Efficiency and Sustainable Development

Prepared for the

Atkinson Energy Committee

by the Rockingham Planning Commission

Revised December 2009, Version1.3

This project was funded by a grant from Clean Air Cool Planet through the New Hampshire Charitable Foundation.

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Town of Atkinson, New Hampshire

1.0 INTRODUCTION

1.1 Purpose

The purpose of this Chapter is to provide guidance and tools, identify strategies and actions, and provide a vision for achieving energy efficiency and conservation, and sustainable growth and development in Atkinson. The interconnected relationship between rising costs of energy and the environmental and economic implications of climate change have raised serious concerns about what communities can do to protect their future interests. Reduction in energy consumption provides both economic and societal benefits including reduced energy costs, reduced greenhouse gas emissions and improved air quality. Energy efficiency and conservation strategies should target all municipal and private facilities, infrastructure and systems that use energy such as buildings, homes, transportation, lighting, water, waste management, emergency services, public spaces and recreation.

Ultimately, implementation of sustainable development practices can help provide a balance between environmental protection, economic benefits, and equity in the community. This can be achieved by removing obstacles from planning and regulation, creating opportunities for energy efficiency, renewable energy generation, and permitting compact land use patterns.

1.2 What is Energy Efficiency and Conservation

Energy efficiency and conservation focuses on one main objective - reducing overall energy consumption across all sectors thus reducing energy costs and environmental pollutants. Communities can achieve reductions in energy consumption by addressing the following:

- Efficiency for both existing and new buildings
- Community awareness and participation
- Transportation systems, choices and alternatives
- Access to clean fuel choices
- Street and outdoor lighting
- Recycling, composting and reuse programs
- Consumerism of local products and services
- School and classroom education programs

1.3 Rationale for Energy Efficiency and Conservation

Cost and Efficiency

Statewide trends in energy consumption, translated to the regional level, reveal that the average resident in New Hampshire consumes 9% more energy in 2004 than they did in 1990. From 1990 to 2004, the major economic sectors experienced growth: commercial by 74%, transportation by 50%, and residential by 26%. However, in 2004, the residential sector was the second largest energy consumer exceeded only slightly by the transportation sector. Petroleum was by far the highest consumptive fuel source across all sectors, followed by nuclear power, an electric power fuel source.

Alterations to our climate could result in adaptive changes or decline in certain sectors of the regional economy, including winter tourism, agriculture, maple syrup production, coastal real estate values (due to sea level rise and increase in storm intensity), and health costs associated with respiratory health and heat related illnesses.

Land Use and Planning

The infrastructure for energy use and delivery can influence land use decisions about where growth occurs and where we live, work and play. NH State law encourages energy efficient patterns of development through zoning that does not unreasonably limit development of alternative and renewable sources of energy. Reductions in energy consumption can also be achieved through implementation of conservation measures, smart growth, and development of alternative transportation systems. These concepts are described in the table below.

Table 1. Summary of implementation strategies to reduce energy consumption.

Conservation Measures	▪ Energy efficiency in buildings, fixtures and infrastructure ▪ Behavioral changes including trip consolidation, ride sharing, reduction in lighting and appliance use, efficiency in equipment and other purchases
Smart Growth	Principles ▪ Incorporate a mix of uses to provide a variety of housing, employment, shopping, services, and social opportunities for all members of the community. ▪ Preserve working landscape by sustaining farm and forest land and other rural resource lands to maintain contiguous tracts of open land and to minimize land use conflicts. ▪ Provide choices and safety in transportation to create livable, walkable communities that increase accessibility for people of all ages, whether on foot, bicycle, or in motor vehicles. ▪ Protect environmental quality by minimizing impacts from human activities and planning for and maintaining natural areas that contribute to the health and quality of life of communities. ▪ Involve the community in planning and implementation to ensure

	that development retains and enhances the sense of place, traditions, goals, and values of the community. ▪ Manage growth respecting the local community tradition, but work with neighboring towns to achieve common goals and address common problems more effectively.
Alternative Transportation	▪ Public transit including buses, vanpools, rideshare programs, and park and ride facilities ▪ Accommodations for bicycles and pedestrians ▪ Promote and participate in regional collaboration to improve transit system.

New Hampshire Climate Action Plan

Assigned by Governor Lynch, the Climate Change Policy Task Force developed in 2008 the New Hampshire Climate Action Plan. The Plan aims at achieving the greatest feasible reductions in greenhouse gas emissions while also providing the greatest possible long-term economic benefits to the citizens of New Hampshire. The most significant reductions in both emissions and costs will come from substantially increasing energy efficiency in all sections of the economy by continuing to increase sources of renewable energy, and designing our communities to reduce reliance on automobiles for transportation. The Climate Action Plan recommends that New Hampshire strive to achieve long-term reduction in greenhouse gas emissions of 80 percent below 1990 levels by 2050. The Climate Change Policy Task Force also recommends 67 specific actions to achieve the following goals:

- Reduce greenhouse gas emissions from buildings, electric generation, and transportation;
- Protect natural resources to maintain the amount of carbon sequestered;
- Support regional and national initiatives to reduce greenhouse gases;
- Develop and integrated education, outreach and workforce training program; and
- Adapt to existing and potential climate change impacts.

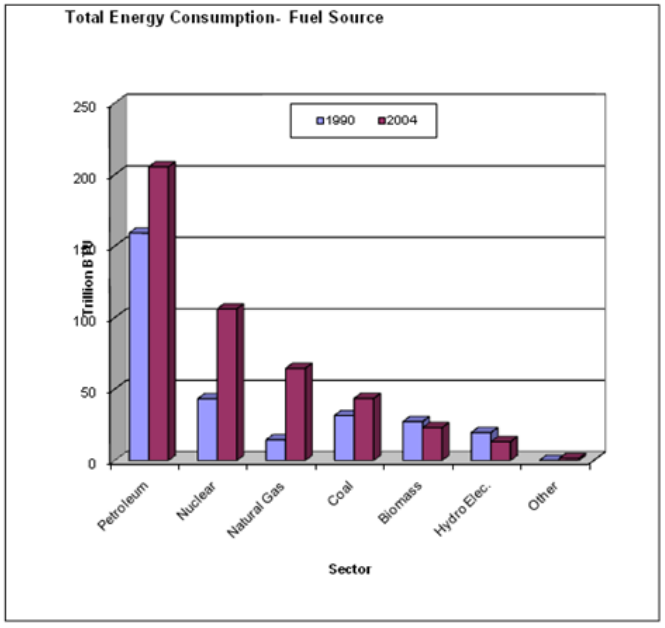
It is envisioned that with participation from all communities, the New Hampshire Climate Action Plan will benefit the economy, increase state and regional energy security, and improve environmental quality.

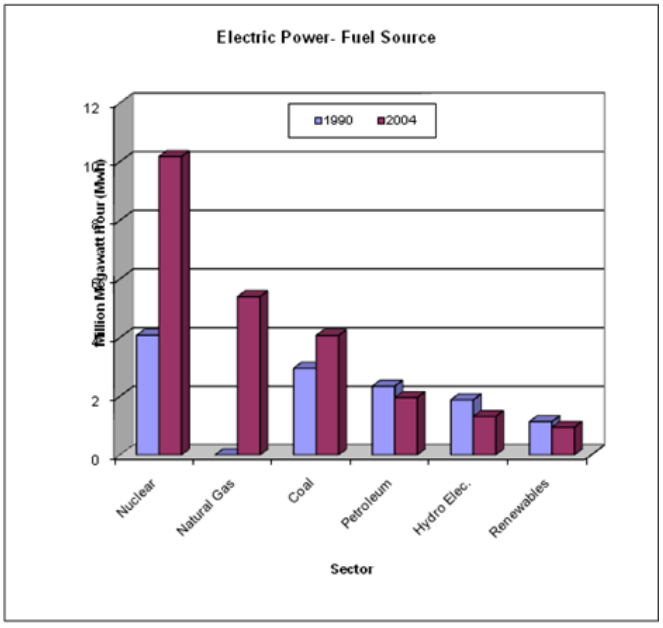
Greenhouse Gas Emissions Reductions

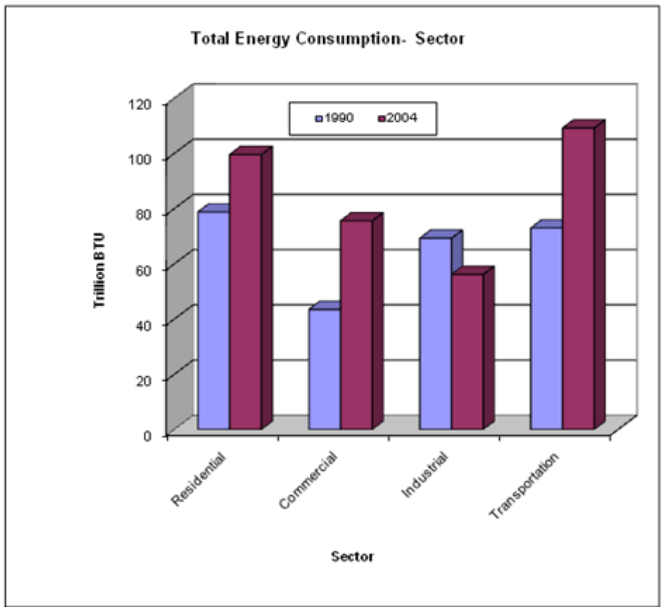
The increasing trend of carbon dioxide emissions to our atmosphere in recent decades has caused concern over its effect on environmental ecosystems and climate worldwide. Concentrations of carbon dioxide, a byproduct of the burning of fossil fuels, have increased rapidly in the atmosphere as consumption of fossil based fuels has also increased. Alterations to our region's climate could result in changes or decline in certain sectors of the economy, including winter tourism, agriculture, maple syrup production, coastal real estate values (due to sea level rise and increased storm intensity), and health costs associated with respiratory health and heat related illnesses.

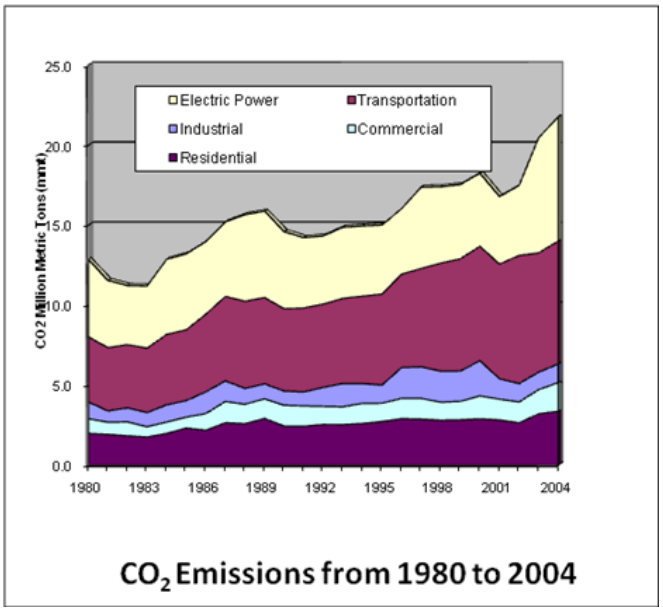
The NH Climate Action Plan calls for a reduction in emissions of 20 percent below 1990 levels by 2025, and 80 percent below 1990 levels by 2050. In order to meet these reduction goals statewide, NH communities must engage in local energy planning that includes strategies for decreasing their emissions overall.
The figure below illustrates energy usage and CO_2 emissions by energy sector in New Hampshire from 1990 to 2004.

Figure 1. Energy use and carbon dioxide emissions by energy sector in New Hampshire from 1990 to 2004 [Source: New Hampshire Climate Action Plan (2008)]









2.0 ROLE OF THE ATKINSON ENERGY COMMITTEE

2.1 Introduction to NH Local Energy Committees

In 2008, Atkinson was one of 163 municipalities that passed the New Hampshire Climate Change Resolution that calls on the federal government to prioritize climate change policy and enables the formation of a local energy committee (LEC) to address energy efficiency and conservation, emission reductions, and other energy related issues. The generation and use of energy and emissions from energy use - whether for our homes, businesses, transportation or recreation - has a very significant impact on our environment, and the health and welfare of the community. Local energy committees are an important way to help inform decisions makers and residents about how to advance cost-effective strategies that save energy, reduce costs and help protect the environment. Through new initiatives and strong policies, the community with assistance from the LEC can move toward a more sustainable and clean energy future.

2.2 Mission Statement and Role

Mission Statement

The mission of the Atkinson Energy Committee (AEC) is to promote energy conservation, energy efficiency, and explore other ways to reduce carbon emissions among the town's residents, businesses, and municipal operations, thus reducing energy expenditures for residents and taxpayers, while improving the quality of living in our community.

Roles

The role of the Atkinson Energy Committee is to:

- advise the Planning Board on regulatory and planning strategies relating to energy efficiency and conservation;
- coordinate with boards, commissions, schools and other organizations to promote and implement voluntary energy efficiency and conservation measures in the community;
- report to the Board of Selectmen on energy usage for municipal facilities on an annual basis and as requested; and
- provide information to the Board of Selectmen about strategies and improvements to increase the energy efficiency of municipal facilities.

The Atkinson Energy Committee meets monthly or every other month depending upon availability of members and need. The meetings are noticed at Town Hall and open to the public. There is typically an agenda developed for each meeting to guide discussion and inform the public of the activities of the Committee. The Committee keeps minutes of their meetings, which are available on the AEC's web blog at http://atkinsonsavesenergy.blogspot.com and at the Board of Selectmen's Office at Town Hall.

2.3 Goals of the Atkinson Energy Committee

The Atkinson Energy Committee has identified the following general short term and long term goals relating to energy efficiency, use and conservation.

Table 2. General, short term and long term goals of the Atkinson Energy Committee.

General Goals	Short Term Goals (1 year)	Long Term Goals (2or more years)
Reduce overall energy use, conservation, and emissions throughout the community →	▪ Complete an energy inventory for municipal buildings and infrastructure and report findings to the Board of Selectmen ▪ Audit buildings with highest ****EUI*** and identify potential municipal building energy improvement project(s) ▪ Evaluate and reduce municipal street lighting costs ▪ Encourage community participation in the NH Carbon Challenge	▪ Complete an evaluation of energy use and savings resulting from improvements to municipal buildings and infrastructure ▪ Establish budget/funding process for municipal projects ▪ Identify outside funding sources for energy efficiency projects ▪ Complete an evaluation of energy use and savings resulting from improvements to street lighting
Provide outreach and raise awareness in the community about energy use, conservation and emissions →	▪ Conduct an annual Energy Fair ▪ Develop speaker series in conjunction with library ▪ Develop graphic reporting community progress	▪ Reduce residential and commercial energy use, conservation, and emissions ▪ Develop energy project partnerships with schools
Annual Energy Use Reduction Progress Report →	▪ Complete an annual evaluation of energy use and savings resulting from improvements	▪ Complete an evaluation of energy use and savings resulting from improvements in the community, as a whole
Increase community participation on the AEC →	▪ Increase AEC membership ▪ Develop partnerships with area energy companies	▪ Conduct ongoing outreach to residents regarding AEC activities and events

EUI = Energy Use Intensity expressed in KBTU's per square foot of building space; KBTU = thousand British Thermal Units

2.4 Energy Inventory and Audits

Municipal Inventory

IN 2009, the Atkinson Energy Committee completed an energy inventory which included data on energy use and energy costs for all municipal buildings (see details below) as well as municipal street lighting and vehicle fleet. The town has 9 vehicles used by the Fire Department and 8 vehicles used by the Police Department. The town has 195 street lights.

Table 3. Inventory of municipal buildings and facilities.

Municipal Building	Date Constructed	Total Area (square feet)
Community Center	1914 (1950's)	6,800
Fire Station	2000	11,000
Police Station	1800's (1900's)	3,575
Town Highway Dept. garage	1999	2,970
Town Hall	1987	6,600
Kimball House	1800's	3,304
Kimball Library	2008	
Total square footage	--	

2.5 Atkinson Energy Committee Partners

The Atkinson Energy Committee has identified the following energy partners in the town:

- Timberlane Regional High School and Timberlane Regional Middle School
- Atkinson Academy
- Atkinson Library
- Unitil
- Waste Management
- Area Communities

The Atkinson Energy Committee has gained support from the following:

- Board of Selectmen
- Planning Board
- Conservation Commission

The Atkinson Energy Committee hopes to partner in the future with energy industry professionals to provide information and outreach on energy issues for the community, including: energy providers, builders, architects, manufacturers, researchers, and state and federal agencies, and nonprofit organizations.

2.6 Energy Related Issues in the Community

The Atkinson Energy Committee has identified the following issues relating to energy consumption and use in the community.

Issue 1: Increased commute to work distances for many residents resulting in high vehicle miles travelled per person or household

Issue 2: Lack of public transportation and alternative transportation options

Issue 3: Balance high standard of living and median income with societal and environmental benefit of energy conservation

Issue 4: Low participation in recycling and composting throughout the community

2.7 Atkinson Energy Committee Findings

The Atkinson Energy Committee has identified the following findings relating to energy efficiency, use and conservation.

1. Town buildings could benefit from general weatherization and, in some cases, improvements to heating and cooling systems.

2. The Town has a manual system for tracking of energy usage and costs for municipal facilities.

3. The Town currently has no policy, regulatory measures or voluntary incentives, beyond the minimum state standards, to ensure energy efficiency for new and existing private and municipal construction.

4. The Town does not include in the Capital Improvement Plan (CIP) funds for implementation of energy efficiency and conservation measures, including improvements to municipal buildings and infrastructure or to purchase energy efficient equipment and vehicles.

5. Most residents and business owners are not aware of initiatives, events and opportunities to learn about and implement energy efficiency and conservation measures in their home and at their businesses.
6. Community members are not allowed to “repurpose” items dropped off at the recycling/transfer station. (Many communities allow residents to take reusable items that are dropped off at the transfer stations for their own personal use.)
7. The town does not have a subdivision and site review process to assist in the integration of energy saving measures into the building process.

3.0 HOW TO DEVELOP AND GROW WITH EFFICIENCY

3.1 Opportunities for Implementation

Regulatory Measures

Zoning and Ordinances

Many communities are leading by example by adopting innovative zoning and ordinances that promote energy efficiency and sustainable development such as:

- Alternative energy systems (solar, geothermal, wind)
- Mixed use development
- Minimum performance-based building standards
- Conservation subdivisions (60 percent and greater open space)
- Open space and agricultural zones (land preservation and low density)

Subdivision and Site Plan Review Regulations - Commercial

Subdivision and site plan review regulations can require specific site design elements that achieve energy efficiency and conservation at the site and lot level. Such elements include:

- Maximize benefits of solar heating through building orientation and window placement
- Orient buildings to reduce wind loads
- Maximize benefits of passive cooling with landscaping to provide shading and wind breaks
- Use of native and drought tolerant species to reduce resource demand for maintenance

Voluntary Incentives

Voluntary incentives can be incorporated into development requirements including subdivision and site plan review regulations. Examples include:

- Density bonuses for subdivisions that incorporate renewable energy and energy efficient design and infrastructure
- Zoning that permits renewable energy systems through an expedited review process and adherence to certain site design standards
- Tax credits for installation of renewable energy and energy efficient design and infrastructure
- Maximize benefits of solar heating through building orientation and window placement
- Orient buildings to reduce wind loads
- Maximize benefits of passive cooling with landscaping to provide shading and wind breaks
- Use of native and drought tolerant species to reduce resource demand for maintenance

Redevelopment and Infill

Reuse of the built environment helps renew and maintain vibrant communities by generating new economic opportunities, while preserving resources and open space. Restoring idled or abandoned or underutilized property to productive uses that provide services, jobs and housing (including supportive language for accessory apartment structures to meet the requirements of workforce housing) in the community can increase land values and property tax revenues and improve quality of life.

Energy Efficiency in New Construction

Sustainable practices are aimed at guiding how new development is constructed to attain energy efficiency and conservation, and to promote use of sustainable materials and energy.

- Performance based standards and building codes will ensure that all new buildings are constructed to a minimum efficiency level, for example using LEED standards or EPA Energy Star standards.
- Construction standards can ensure energy efficiency, use of products that provide long term durability, and use of sustainable and recycled materials (including salvaged, refurbished or reused materials).
- Site design techniques that take advantage of sun exposure, differences in microclimate, and landscaping reduce a development's energy demand and overall energy consumption.

Energy efficient planning principles and provisions to allow for renewable energy generation should be implemented through subdivision and site plan review regulations, zoning ordinances and building codes.

Transportation, Land Use and Environmental Planning

In order to achieve energy efficiency and sustainable growth and development, Atkinson will need to integrate its long-term transportation, land use and environmental planning initiatives. This may include an audit of existing zoning, ordinances and regulations to determine whether the goals of this chapter are being implemented adequately and consistently across transportation, land use and environmental planning. In addition, the town's ongoing participation in the Rockingham Planning Commission's Metropolitan Planning Organization (MPO) will be essential to meeting the future transportation and transit needs of the community.

3.2 Community Energy Needs for the Future

The NH Office of Energy and Planning (NHOEP) estimates that the population of Atkinson to increase by 20 percent to 7,790 residents by 2030.

Table 4. Historic population and population projections to 2030 for Atkinson.

US Census Data		NHOEP (estimated)	NHOEP (projections)				
1990	**2000**	**2007**	**2010**	**2015**	**2020**	**2025**	**2030**
5,188	6,178	6,468	6,800	7,090	7,330	7,570	7,790

With an estimated population increase of 20 percent by 2030, Atkinson would benefit from an evaluation of community energy needs for the future. This may include analysis of existing growth and development patterns, build-out scenarios under current zoning (provided by the Rockingham Planning Commission), and current energy supply sources. Atkinson may also consider what its role will be in addressing the goals of the New Hampshire Climate Action Plan, and whether the town will adopt a commitment to achieving these goals. Atkinson would benefit from a review of existing zoning and planning procedures aimed at eliminating regulatory roadblocks to renewable energy installations within the town.

4.0 SUSTAINABLE GROWTH AND DEVELOPMENT

4.1 What Is Sustainability?

Sustainability is the ability to provide for present needs without damaging the ability of future generations to provide for themselves. The primary philosophy of sustainable growth and development is that new development and redevelopment can de done in such as way that they provide environmental, economic, and quality of life benefits to all members of the community. Without proper attention to the affects of unmanaged growth, communities are at risk of exhausting their environment of what makes them unique and desirable places to live, work and visit.

There are several indicators of "sustainability" and *a sustainable community is one that is consistent with all of these*. Indicators of sustainability are summarized in the table below.

Table 5. Indicators of sustainability.

Sector	***Indicators of Sustainability***
Environment	Conservation Development Water Resource Protection Sustainable and Natural Landscapes Community Character Historic Preservation Green Infrastructure
Economy	Energy Efficiency and Conservation Renewable and Alternative Energy Recycling and Reuse of Materials Livable Communities Green Building
Equity	Housing Choices Transportation and Mobility Access/Options Open Space, Parks and Recreation

4.2 Rationale for Sustainable Development

The built environment has a profound impact on our natural environment, economy, health and productivity. Sustainable development is a pattern of resource use that aims to meet the needs of the community today and protect its needs of the future, while preserving the environment. Sustainable development ties together concern for the carrying capacity of natural systems with the social challenges facing individuals and communities. Communities can achieve sustainable development by integrating land use and resource based strategies with economic development approaches that benefit the local environment and quality of life.

In the United States, buildings alone account for:

- 72% of electricity consumption
- 39% of energy use
- 14% of potable water consumption
- 38% of total carbon dioxide (CO2) emissions
- 40% of raw materials use
- 30% of waste output (136 million tons annually)

Sustainable development provides a framework under which communities can use resources efficiently, create efficient infrastructures, protect and enhance quality of life, and create new businesses to strengthen their economies. Fostering sustainable approaches to community development helps strengthen the capacity of communities to take integrated action toward improving environmental, social, and economic conditions.

4.3 Planning For Sustainable Growth and Development

Planning for sustainability promotes responsible development and includes the following processes, practices, and outcomes.[1]

Planning Processes

- Making planning decisions in a holistic and fully-informed manner that involves all segments of the community and the public and private sectors.
- Educating all age groups to raise public understanding of and regard for the future consequences of past and current planning decisions and ultimately change human behavior.

Planning Practices

- Developing a future-oriented vision, looking beyond current needs and recognizes environmental limits to human development.
- Advancing projects and activities that promote economic development that: efficiently and equitably distribute resources, services and goods; minimize, reuse and recycle waste; and protect natural resources.
- Foster a widely accepted ethic of stewardship that strongly encourages individuals and organizations to take full responsibility for the economic, environmental, and social consequences of actions, and balances individual needs with environment and public welfare.
- Take leadership in implementation of local, regional and state policies and engage in inter-municipal and regional initiatives that support sustainability.

Planning Outcomes

- Local and regional development patterns that expand choice and opportunity for all persons.
- Resilient, diverse, and self-sufficient local economies that meet the needs of residents and build on the unique characteristics of the community whenever possible.

[1] American Planning Association, *Policy Guide on Planning and Sustainability* (2000)

- Communities with a healthy environment and social climate that function in balance with natural ecosystems and allow individuals to lead healthy, productive and enjoyable lives.

4.4 Sustainable Development Principles and Practices

Sustainable Principles

Sustainable development principles cut across all dimensions of sustainability: environmental, economic and societal.

Table 6. Summary of sustainable principles and practices.

Principles	***Sectors***	***Practices***
Efficient use and production of alternative energy Efficient use of water and other water resources Protect quality of the air, water, land and other natural resources Reduce waste, pollution and environmental degradation Protect human health and safety Minimize impacts on local and worldwide ecosystems	**WATER**	*Indoor* Water Conservation Water Efficient Appliances and Fixtures Water Budget *Outdoor* Pervious Materials Xeriscape Greywater Irrigation Harvested Rainwater
	ENERGY	*Construction* Passive Solar Design Solar Hot Water, Heating and Cooling Systems Photovoltaic Systems Progammable Thermostats *Outdoor* Energy Efficient Lighting and Landscaping
	BUILDING MATERIALS	Reduce, Reuse, Recycle Purchase local and regional materials
	SOLID WASTE	Recycling and Compost Systems Construction Waste Recycling

Many communities have discovered that traditional approaches to planning and development are creating, rather than solving, societal and environmental problems. Where traditional approaches can lead to congestion, sprawl, pollution and resource overconsumption, sustainable development offers real, lasting solutions that will strengthen communities in the future.

Sustainable Practices

Sustainable practices are aimed at guiding how new development is constructed to attain energy efficiency and conservation, and to promote use of sustainable materials and energy.

- Performance based standards and building codes will ensure that all new buildings are constructed to a minimum efficiency level, for example using LEED standards or EPA Energy Star standards.
- Construction standards can ensure energy efficiency, use of products that provide long term durability, and use of sustainable and recycled materials (including salvaged, refurbished or reused materials).
- Site design techniques that take advantage of sun exposure, differences in microclimate, and landscaping reduce a development's energy demand and overall energy consumption.
- Energy efficient planning principles and provisions to allow for renewable energy generation can be implemented through subdivision and site plan review regulations, zoning ordinances and building codes.
- Incentives in the form of tax credits, deferments, deductions or abatements can help lessen the initial cost burden of investing in energy efficient systems.
- Incentives to redevelop brownfields and abandoned sites, and develop infill projects on underutilized sites.

Energy Conservation and Renewable Energy

Energy is central to sustainable development efforts. It affects all aspects of development -- social, economic, and environmental -- including livelihoods, access to water, agricultural productivity, health, population levels, and education. Energy efficient design and planning techniques can be used in constructing housing and non-residential developments, prescribing density limits, integrating land uses, and designing transportation systems and infrastructure.

Environment

Ecologists recognize that there may be limits to sustainable growth and offer the alternative of a "steady state economy" in order to address environmental concerns such as resource consumption, energy production, and land conservation.

Building Efficiency

Green building practices offer an opportunity to create environmentally-sound and resource-efficient buildings by using an integrated approach to design and efficiency. Green buildings promote resource conservation, including energy efficiency, renewable energy, and water conservation features; consider environmental impacts and waste minimization; create a healthy and comfortable environment; reduce operation and maintenance costs; and address issues such as historical preservation, access to public transportation and other community infrastructure systems. The entire life-cycle of a building and its components is considered, as well as the economic and environmental impact and performance.

5.0 RECOMMENDATIONS

The goals of the following recommendations are to achieve energy efficiency and conservation, and foster sustainable growth in the community.

1. Municipal Building Standards. Newly constructed, renovated or expanded municipal facilities must meet energy efficiency standards. For example, U.S. Green Building Council, Leadership in Energy and Environmental Design (LEED) building rating system, standards similar to the Town of Epping Energy Efficiency and Sustainable Design zoning ordinance, or other building performance based system.

2. Minimum Thresholds for Private Development. Implement energy efficiency standards for residential and non-residential development. For example, U.S. Green Building Council, Leadership in Energy and Environmental Design (LEED) building rating system, standards similar to the Town of Epping Energy Efficiency and Sustainable Design zoning ordinance, or other building performance based system.

3. Green Building Education. Develop local incentives for and provide outreach and information about implementation of renewable energy systems in the community.

4. Pedestrian and Bicycle Use. Develop a planning policy to make Atkinson a "walkable and bikeable" community by establishing neighborhood connectivity and pedestrian and bicycle accommodations.

5. Open Space Access. Develop a policy and local incentives to encourage preservation of open space and public access to open space to promote alternative transportation and multiple users.

6. Community Energy Policy. Develop an energy policy and long-range plan for the Town of Atkinson. The Plan should incorporate budgetary provisions on the town's Community Improvement Plan (CIP) and be consistent with the goals of the Master Plan.

7. Transportation. Continue participation in the Rockingham Planning Commission's Metropolitan Planning Organization (MPO).

8. Community Outreach and Education. Provide opportunities for residents and business owners to learn about energy efficiency and conservation measures.

6.0 ACTION AND IMPLEMENTATION PLAN

This section is optional and would be based on the town prioritizing its goals for energy efficiency and conservation, and sustainable growth as contained in this Chapter, and developing action items to achieve them.