

Visioning Chapter Charlestown Master Plan

Ongoing citizen and business participation has been a critical part of the master planning process. The best community master plans are the product of a process that solicits public input from a wide range of citizens and stakeholders. In a nutshell, the process of developing a Master Plan involves community residents and leaders answering four questions:

1. Where are we now? (Community profile)
2. Where are we going? (Trends)
3. What do we want to be? (Vision)
4. How do we get there? (Action plan)

The visioning process is essentially answering question #3 above. It is a process of finding out what the most commonly held community values are. Does the community desire economic growth? Where? Are there special natural and historic resources that the community wishes to preserve? What kind of housing should be encouraged? Answering these types of questions helps define the guiding principles and priorities for the master plan and subsequently, the resulting regulations and policies for the town of Charlestown.

As a first step in the visioning process, the Charlestown Planning Board held a Community Goals Workshop with community residents and town officials. Charlestown residents offered their opinions about land use, transportation, natural resources, economic development, housing, and community facilities, utilities and public services. In addition, residents shared their broad vision for what they would like Charlestown to be in fifteen years and beyond. The workshop input is summarized below in the form of a community vision, core principles, and recommendations. This input was the basis for the comprehensive Community Attitude Survey undertaken in March 2005, the results of which are tabulated in the following section.

The goals for the workshop were the following:

- To generate a set of statements that articulates the desires of Charlestown residents.
- To generate a list of priority issues to be addressed in the Community Attitude Survey and the Master Plan update.
- To possibly articulate issues that can be incorporated in the Master Plan.

COMMUNITY VISION

In fifteen years, Charlestown will be a community...

- That meets the needs of the future but reflects the character of today.
- Where our grown children and seniors will continue to live.
- That will be attractive for residential, commercial and industrial development.

- That has conserved its natural, historic, and cultural resources, and where these resources are accessible to all.
- That provides a quality education in the public schools.
- That is a destination for people to visit.
- Where existing land uses and property values will be protected, by strengthening regulation in Zone E.
- Where the valuation of real estate improves and property taxes stabilize.
- That continues to be a safe place in terms of crime and traffic.
- Where you continue to know your neighbors.
- That provides recreational opportunities.
- Where a larger percentage of residents are employed locally and are given entrepreneurial opportunities.

The following core principles and recommendations were created from the citizen input shared at the Community Goals Workshop:

CORE PRINCIPLES

- *Actively manage growth in the community:* Revisit and strengthen regulation in Zone E; ensure that future growth is in keeping with the existing character of the community; that commercial development keeps pace with residential development; and that growth is balanced with preservation of valued resources.
- *Protect and preserve our natural and historic resources:* Protect and preserve our groundwater, shoreland, floodplains, wildlife habitat and other critical natural resources. Protect and preserve our historic homes, sites, and structures.
- *Encourage high-quality housing while accommodating a mix of housing types:* Revisit policies on mobile homes, improve the quality of house lots, and implement other measures to raise the quality of the housing stock. Encourage accessory apartments, small multi-family residential housing, and other methods to provide affordable housing for elderly residents.
- *Maintain a strong, diversified local economy:* Identify and promote existing businesses and encourage businesses that are both small and diversified, and tourism-related.
- *Keep our village beautiful and vital:* Beautify Main Street, refine and implement the Main Street Corridor Plan, and encourage continued investment in the village. Plan for housing, especially senior housing, in the village center.
- *Provide transportation options that aren't automobile-dependent:* Create a network of multi-use trails including a two way bike path along Main Street and connecting with the Cheshire Bridge, encourage consistent public transportation and ridesharing, and empower the elderly and schoolchildren to be able to walk to schools and services.

- *Ensure that our greatest resources - our children and our elderly citizens - will be able to continue to live here:* Create policies that result in higher real estate values (e.g. expansion of commercial and light industrial properties and high value housing units) and lower taxes, and that ensure continued local employment for all, ample recreational opportunities, and a high quality of life.

RECOMMENDATIONS

Land Use

- Implement a variety of innovative land use techniques to manage development and preserve important resources, such as cluster and conservation zoning, transfer of development rights, etc.
- Modify allowed uses of land in Zone E by splitting the broad area into smaller sub-areas that share common traits and interests and provide increased opportunity for resource protection.
- Compact development should be promoted and scattered development discouraged, to maximize transportation efficiency, preserve important resources, and ensure that people live close to services.
- Senior citizen housing and centers should be planned for central areas rather than outlying areas.
- Impose limits on commercial business size to preserve town character and reduce pressure on town services.
- Use the build-out analysis to plan for balanced growth and match the pace of commercial, industrial and residential development.

Transportation

- Refine and implement the recommendations of the *Charlestown Main Street Corridor Study*.
- Investigate and promote a Park 'n' Ride facility in town.
- Advocate for consistent, reliable public transportation including dial-a-ride service.
- Create additional, interconnecting multi-use paths, especially ensuring a connection between the Cheshire Bridge and Main Street, to promote more walking and bicycling.
- Improve existing sidewalks to promote a safer pedestrian experience.
- Maintain scenic buffers along roadway corridors, in particular, along the Rt. 12 and 12A portion of the National Connecticut River Scenic Byway.
- Promote and encourage regional transit options, such as bus and rail.
- Work toward an improved and integrated public transportation system.
- Work with local businesses to promote and create incentives for employee carpooling.

- Network into state snowmobile trails and work with railroad to allow snowmobile crossings.

Natural Resources

- Educate residents about the benefits of and need to preserve groundwater resources.
- Adopt policies that protect prime agricultural lands from development pressures, such as creation of an agricultural overlay zone.
- Strengthen policies to protect surface water quality, such as shoreland regulations for rivers, streams, ponds, and lakes.
- Create policies that discourage development in sensitive natural areas, such as steep slopes, wetlands, and floodplains.
- Work with the Conservation Commission and land conservation groups to identify and conserve important open space lands, particularly shoreland.
- Consider subdivision design standards and other creative land planning techniques to preserve natural and historic resources, such as a mandatory cluster or planned unit development provisions.
- Ensure that new development does not contribute unduly to air, land or water pollution.
- Strengthen local earth excavation regulations to prevent excavations below prevailing grade of surrounding landscape.
- Improve noise and lighting regulations and consider a noise ordinance to guard against noise and light pollution.
- Maintain access and trails for scenic vistas.

Economic Development

- Proactively identify economic/employment opportunities that will attract young, educated people.
- Encourage small, diversified businesses and provide services to assist business owners.
- Encourage and promote tourism-related businesses and activities, especially related to the Scenic Byway and Fort #4.
- Beautify and promote Main Street.
- Identify and promote existing businesses and the services they provide.
- Continue to support the Charlestown Economic Development Association and work with the Claremont Chamber of Commerce in its efforts to represent the Charlestown business community and promote Charlestown and Fort at No. 4.
- Participate in regional economic development programs, such as Sullivan County CEDS, Dartmouth incubators, the "Creative Economy" groups, etc.
- Identify a suitable location for a potential shopping area for basic services (e.g. drugstore and general store).
- Implement historic preservation policies to encourage continued economic development and tourism.

- Develop a plan for improved access and underground utilities for CEDA's Gristmill property to even the playing field in competing for new businesses in Charlestown.

Housing

- Require minimum standards for manufactured home foundations.
- Encourage higher-quality housing through strengthening regulations in Zone E.
- Revisit policies on manufactured housing and consider allowing only on single lots.
- Allow and encourage Planned Unit Developments.
- Encourage housing developments where infrastructure and services already exist.
- Review and revise building standards for energy efficiency and work toward higher energy efficiency standards for buildings.
- Revise and update building code to reflect current construction and demolition practices, standards and statewide codes.
- As a means of addressing the need for a larger tax base, Charlestown should seek ways to attract a significant portion of the 120%+ Median income share of home building projected within the Claremont LMA during the decades up to 2010 (740 units) and to 2020 (1330 units).

Facilities, Utilities, Public Services, and Recreation

- Locate/build a new Public Safety building to house all emergency services.
- Investigate putting utilities underground on Main Street, in concert with a sewer system renovation.
- Encourage regional cooperation on recreational facilities, especially with the new Springfield Community Center.
- Support sensitive reuse of existing historical buildings, when feasible, for town services.
- Review existing solid waste management program and develop an action plan to make it more self-sustaining.
- Upgrade the storm drainage system in the downtown area.
- Conduct a needs analysis of current public facilities and make recommendations for additional facilities needed.
- Conduct a needs analysis of current recreational facilities and parks and make recommendations for changes and/or new facilities such as a skateboard park for area youths.
- Establish a committee to pursue creation of a recreational trail along the Connecticut River.
- Investigate the feasibility and evaluate the land use implications of connecting the Charlestown and North Charlestown water systems.

**Charlestown Community Goals Workshop
June 12, 2004
Charlestown Middle School**

SUMMARY

On June 12, 2004, a Charlestown Community Goals Workshop was held with community residents and town officials. Sponsored by the Charlestown Planning Board, the Workshop was made possible through the generous financial support of the following businesses:

- Whelen Engineering
- Meadowbrook Fabricating
- Wakeman Industries
- Connecticut River Bank
- Dan's Max Saver
- Bomar
- Design Standards Corp.
- Depot Home Center
- Norm & Mike Excavating
- JSP Fabricating
- Beaudry Enterprises
- Charlestown Economic Development Association (CEDA)
- Dr. George Grabe (Coordinated the business sponsorship of the program)

Attendees:

Terri Fisk, Zoning Board
Aare Ilves, Conservation Commission & Finance Committee
Sharon Francis, Planning Board
Jesse St. Pierre, Resident
Jim McClammer, UVLSRPC Commissioner and Resident
David Edkins, Planning and Zoning Administrator
Vic and Nancy St. Pierre, Residents
Eric Lutz, Alternate, Planning Board (?)
Barbara Blanchard, Finance Committee
Joyce Higgins, Finance Committee & Heritage Commission
Ric St. Pierre, Resident
Albert St. Pierre, Town Moderator, Highway Advisory, & Rotary Club
Valerie Bailey, Resident
Mike Davis, Resident
John Miklaszewicz (?), Resident

UVLSRPC Staff:

Victoria Boundy

Jason Rasmussen

Ken McWilliams

Introduction

Ongoing citizen and business participation is critical in the master planning process. The Community Goals Workshop was the first step in the public planning process. Charlestown residents offered their opinions about land use, transportation, natural resources, economic development, housing, and community facilities, utilities and public services. In addition, residents shared their broad vision for what they would like Charlestown to be in fifteen years and beyond. Charlestown residents, town staff, and UVLSRPC staff facilitated the discussions and the prioritization of issues that were discussed. The results are outlined below.

This written summary is the foundation for the Visioning Chapter of the Master Plan. The key issues identified in the Community Goals workshop will become the foundation for the Community Attitude Survey (CAS), which will be mailed out to all current property owners in Charlestown. The results from the CAS will be incorporated where appropriate throughout the chapters of the Master Plan.

Goals for the Workshop:

- To generate a set of statements that articulates the desires of Charlestown residents.
- To generate a list of priority issues to be addressed in the Community Attitude Survey and the Master Plan update.
- To possibly articulate recommendations to resolve these issues, to be incorporated in the Master Plan.

Workshop Format

Given the size of the group, we held a large group discussion rather than break up into smaller topical subgroups. Volunteers and UVLSRPC staff facilitated the discussion. Each session began with an overall brainstorm of important issues related to the respective topic. After full discussion, participants were given an opportunity to “vote” for what they felt to be the top five issues in that topic discussion. To do this, people physically placed a sticker next to what they felt were the most important issues noted on the flipchart pad. These prioritized issues are listed as “key issues” in the summary below. Finally, everyone was asked to complete the following sentence, to illustrate an overall vision for Charlestown: “In fifteen years, Charlestown will be a community...” Their vision statements are at the end of this written summary.

Community Goals Workshop - Summary of Key Issues

- Balanced growth - matching pace of residential and commercial development
- Strengthen Zone E and consider mixed uses
- Encourage high-quality housing and allow either single lot mobile homes or mobile home parks - not both
- Create a network of multi-use paths, and look at recreational trail potential along river
- Protect special natural resources, especially river frontage
- Encourage consistent public transportation, a Park 'n' Ride, and address the abilities of the elderly and schoolchildren to walk to services and schools.
- Emphasize the preservation and benefits of watershed protection zone and drinking water protection areas
- Identify existing businesses, and encourage both small, diversified businesses and tourism-related businesses
- Plan for housing, especially senior housing to be centralized in the Village; beautify Main Street and encourage investment in the Village
- Consider Planned Unit Developments - for assisted living, single-person, community services, multi-family projects
- Get 5th graders back into Charlestown schools and prevent the loss of other grades
- Consolidate emergency services and create a Public Safety building
- Underground utilities on Main Street
- Encourage regional cooperation for recreational facilities

Land Use

Facilitated by: Ken McWilliams

Land Use Key Issues:

- Match pace of residential development with economic development (Balanced growth) (13 dots)
- Strengthen Zone E (10 dots) and provide for mixed-uses, with limits, in Zone E (8 dots)
- Mobile homes - review whether or not to allow parks or just individual lots (9 dots)
- Impose limits on commercial business size (e.g. Home Depot) (9 dots)
- What to do with Charlestown's good farmland (productive soils): preservation vs. development (5 dots)
- Plan land uses to make transportation more efficient, e.g. centralized village area rather than scattered development (5 dots)
- Address recreational uses and the potential for additional campsites (5 dots)

List of Comments:

- Match pace of residential development with economic development (Balanced growth) - 13 dots

- Keep Charlestown from being a bedroom community
- What to do with Charlestown's good farmland (productive soils): preservation vs. development - 5 dots
- Land use techniques to be implemented: cluster development; transfer of development rights, zoning, etc. - 4 dots
- Land ownership rights vs. zoning - address - 4 dots
- Strengthen Zone E - 10 dots
- Provide for mixed-uses, with limits, in Zone E - 8 dots
- A lot of small businesses don't want to be dictated by zoning
- Substantial railroad frontage with potential to bolster economic development-address in Master Plan - 2 dots
- Mobile homes - review whether or not to allow parks or just individual lots - 9 dots
- Address issue of home occupations (types) in Zone E more specifically - 1 dot
- Address recreational uses and the potential for additional campsites - 5 dots
- Explore tourism/Scenic Byway opportunities - 3 dots
- Plan land uses to make transportation more efficient, e.g. centralized village area rather than scattered development - 5 dots
- Senior citizen centers are being located in rural areas; should be in more centralized areas - 3 dots (combine with previous one?)
- Provide funding to support regional transportation facilities (belong more with Transportation?) - 4 dots
- Impose limits on commercial business size (e.g. Home Depot) - 9 dots

Transportation

Facilitated By: Jason Rasmussen

Transportation Key Issues:

- Need network of multi-use paths, with connection between bridge and Main Street - this was discussed in Corridor Plan (13 dots)
- Consider Park 'n' Ride (11 dots)
- Should plan for senior center housing to be centralized, walkable and close to services (8 dots)
- Need consistent, reliable public transportation (bus, train) (7 dots)
- Consider schoolchildren walking to school, e.g. smaller school units (7 dots)
- Maintain attractiveness of Rt. 12 and 12A Scenic Byway (tourism draw) (6 dots)
- Maintain scenic buffers along roadway corridors (6 dots)
- Automobile-based transport is disenfranchising youth, elderly, disabled (4 dots)
- Central multi-modal transportation building needed (4 dots)
- Network into state snowmobile trails (4 dots)

List of Comments:

- Automobile-based transport is disenfranchising youth, elderly, disabled - 4 dots
- Need consistent, reliable public transportation (bus, train) - 7 dots

- Need inter-city transit, such as Greyhound bus route - 3 dots
- Need to consider that oil production is currently at peak - 2 dots
- Businesses should encourage carpools, provide incentives
- Educational plan/individual incentive needed for carpooling
- Should plan for senior center housing to be centralized, walkable and close to services - 8 dots
- Need network of multi-use paths, with connection between bridge and Main Street - this was discussed in Corridor Plan - 13 dots
- Need roadway modifications, e.g. sidewalks - 2 dots
- Consider schoolchildren walking to school, e.g. smaller school units - 7 dots
- Maintain attractiveness of Rt. 12 and 12A Scenic Byway (tourism draw) - 6 dots
- Look at road lighting
- Traffic lights needed - e.g. Railroad Street and Sullivan at Main - 2 dots
- Maintain scenic buffers along roadway corridors - 6 dots
- Crossing guards needed
- New Amtrak stop in town needed - 2 dots
- Central multi-modal transportation building needed - 4 dots
- Consider citizen monitoring of speed limits - 1 dot
- Reevaluate speed limits (look at road design)
- Consider Park 'n' Ride - 11 dots
- Fix Rt. 12 in South Charlestown (DOT Plan too slow)
- Crosswalk enforcement - 2 dots
- Network into state snowmobile trails - 4 dots
- Request railroad to allow snowmobile crossings
- Roadside litter is a problem - 1 dot
- Consider a bypass around the Historic District for trucks (Federal highways have a lower weight limit than state highways)

Natural Resources

Facilitated By: Valerie Bailey

Natural Resources Key Issues:

- Emphasize preservation and benefits of watershed protection zone and drinking water protection areas (16 dots)
- Address recreational trail potential along the river and include map of recreational areas/trails (11 dots)
- Protect special resources and direct development away from: steep slopes, wetlands, floodplains, wildlife habitat/corridors, etc. (10 dots)
- Protect river frontage (10 dots)
- Protect historic structures and residences, as assets for tourism, real estate, and the economy (8 dots)
- Protect surface waters, which are potential future drinking water supplies (6 dots)
- Address noise pollution, e.g. from hang gliders (4 dots)
- Maintain access and trails for scenic vistas (4 dots)

List of Comments:

- Emphasize preservation and benefits of watershed protection zone and drinking water protection areas - 16 dots
- Consider changing name of watershed protection zone as it is also a lower-density residential area, important habitat, green space, etc. - 1 dot
- For watershed protection zone consider larger lot sizes, for agriculture, etc. - 2 dots
- Protect surface waters, which are potential future drinking water supplies - 6 dots
- Protect special resources and direct development away from: steep slopes, wetlands, floodplains, wildlife habitat/corridors, etc. - 10 dots
- Address sand and gravel quarry operations - 3 dots
- Address timber resources - 1 dot
- Address air quality (due to incinerators, etc.) - 3 dots
- Address noise pollution, e.g. from hang gliders - 4 dots
- Address light pollution
- Conduct a build-out analysis and inventory of the watershed protection zone - 1 dot
- Maintain access and trails for scenic vistas - 4 dots
- Protect river frontage - 10 dots
- Designate an agricultural zone - 3 dots
- Protect historic structures and residences, as assets for tourism, real estate, and the economy - 8 dots
- Protect and maintain riverfront for flood protection - 2 dots
- Address recreational trail potential along the river and include map of recreational areas/trails - 11 dots

Economic Development

Facilitated By: Dave Edkins

Economic Development Key Issues:

- Encourage small, diversified businesses (13 dots)
- Encourage tourism-related business/activity (11 dots)
- Identify existing businesses and the services they provide (11 dots)
- Beautify Main Street and encourage investment in Village (8 dots)
- Attract young, educated people to work in area, e.g. in health care (6 dots)
- Encourage regional cooperation, through Sullivan County CEDS, Dartmouth incubator, etc. (6 dots)
- Create a Chamber of Commerce (6 dots)
- Proactively identify a location for a potential shopping area (5 dots)

List of Comments:

- Attract young, educated people to work in area, e.g. in health care - 6 dots

- Providing health care to all is important employment issue
- Encourage commercial/industrial development of appropriate scale to town (small businesses) - 1 dot
- Provide service to help small businesses (micro-credit)
- Large retailers result in increase in costs for town services
- Address commercial services appearance through design review standards - 3 dots
- Encourage small, diversified businesses - 13 dots
- Encourage regional cooperation, through Sullivan County CEDS, Dartmouth incubator, etc. - 6 dots
- Village-oriented general stores - 2 dots
- Tap into “creative economy” and encourage a school of the arts - 1 dot
- Proactively identify a location for a potential shopping area - 5 dots
- Discourage strip commercial development
- Discourage/prohibit polluting industries (define what “polluting” is) - 3 dots
- Beautify Main Street and encourage investment in Village - 8 dots
- Encourage tourism-related business/activity - 11 dots
- Existing businesses look at zoning - 3 dots
- Identify existing businesses and the services they provide - 11 dots
- Do an opportunity study (SWOT) of town - 3 dots
- Create a Chamber of Commerce - 6 dots
- Business visitation by Planning Board - 2 dots
- Permanent location for Visitors Center - 1 dot

Housing

Facilitated By: Jason Rasmussen

Housing Key Issues:

- Require minimum standards for home foundations (10 dots)
- Encourage “higher-end” housing (i.e. not mobile homes) and improve quality of house lots (8 dots)
- Consider Planned Unit Developments, for assisted living, single-person, community services, multi-family projects (8 dots)
- Revisit Zone E to encourage higher quality housing (7 dots)
- Monitor and use existing laws (7 dots)
- Choose one option for mobile homes - allow only on single lots; or mobile parks only (7 dots)
- Locate housing where water, sewer and services already exist (infill development in village centers) (6 dots)
- Review and revise building standards for energy efficiency and to allow more modern materials (5 dots)

List of Comments:

- Encourage “higher-end” housing (i.e. not mobile homes) and improve quality of house lots - 8 dots
- Revisit Zone E to encourage higher quality housing - 7 dots
- Higher-end housing to raise tax base, to lower taxes - 4 dots
- Monitor and use existing laws - 7 dots
- Provide incentives/motivations to encourage better care of homes, in cooperation with lenders - 3 dots
- Pay attention to older housing throughout town, beyond historic districts - 1 dot
- Consider Planned Unit Developments, for assisted living, single-person, community services, multi-family projects - 8 dots
- Locate housing where water, sewer and services already exist (infill development in village centers) - 6 dots
- Impact fee for scattered development - 3 dots
- Encourage development of better quality housing through deed restriction in Zone E - 1 dot
- Choose one option for mobile homes - allow only on single lots; or mobile parks only - 7 dots
- Develop condominiums along river - 1 dot
- Require minimum standards for home foundations - 10 dots
- Address quality of available housing
- Review and revise building standards for energy efficiency and to allow more modern materials - 5 dots
- Available, affordable low-maintenance assisted elderly housing needed - 2 dots

Community Facilities, Utilities, and Public Services

Facilitated By: Albert St. Pierre

Facilities, Utilities and Services Key Issues:

- Get 5th graders back to Charlestown (pursue school addition through legislation, prevent loss of another grade) - 70 percent support for this in town (8 dots)
- Consolidate emergency services and create a Public Safety building (7 dots)
- Underground utilities on Main Street (tie in work with sewer system renovations) (7 dots)
- Locate Police Department building next to the Fire Department (6 dots)
- Encourage regional cooperation on recreation, e.g. use of Springfield facility (6 dots)
- Get Charlestown in a NH phone book (6 dots)
- Implement reuse and preservation of historic buildings (3 dots)
- Review solid waste management program and make it more self-sustaining (3 dots)
- Upgrade all utilities, especially the storm drain system, and look at alternatives (3 dots)

List of Comments:

- Get 5th graders back to Charlestown (pursue school addition through legislation, prevent loss of another grade) - 70 percent support for this in town - 8 dots
- Bring entire school system back to Charlestown
- Improve quality of school system (state funding issue) - 1 dot
- Locate Police Department building next to the Fire Department - 6 dots
- Address space issues of Municipal Building
- Implement reuse and preservation of historic buildings - 3 dots
- Improve Recycling Program
- Review solid waste management program and make it more self-sustaining - 3 dots
- Encourage regional cooperation on recreation, e.g. use of Springfield facility - 6 dots
- Do an inventory/assessment (needs analysis) of existing facilities - 2 dots
- Upgrade all utilities, especially the storm drain system, and look at alternatives - 3 dots
- Address possible connection of Charlestown and N. Charlestown systems, ensuring that it doesn't result in strip development - 1 dot
- Institute school-based dental health program for at-risk kids - 1 dot
- Consolidate emergency services and create a Public Safety building - 7 dots
- Provide more public education about facilities/utilities needs - 1 dot
- Find recreation building in town, e.g. for youth - 2 dots
- Provide after-school services that don't require having to build a facility
- Implement Main Street Corridor Plan recommendations - 2 dots
- Need tennis court/skating rink - 2 dots
- Investigate telecommunication needs - 1 dot
- Refurbish fountain at Hope Hill Cemetery - 2 dots
- Make landscaping improvements at Pinecrest Cemetery - 1 dot
- Get Charlestown in a NH phone book - 6 dots
- Highlight (in Plan) our fantastic recreational parks, and the need to maintain quality - 2 dots
- Need new carpet for Library - 1 dot
- Expand Library by relocating other services
- Underground utilities on Main Street (tie in work with sewer system renovations) - 7 dots

Fort #4

Finally, although it didn't fit specifically into any one category, the group wanted to acknowledge the importance of having Fort #4 in Charlestown. All agreed that the Fort is critically important to Charlestown for its historical value, its value to tourism and economic development, and the strong sense of pride that the community holds for the historic site. Everyone agreed that its importance should be acknowledged and discussed throughout the Master Plan.

Community Vision

Facilitated By: Victoria Boundy

In fifteen years, Charlestown will be a community...

- Where our children will want to live.
- That will be attractive for residential and industrial development and tourism.
- Where our seniors will still be able to live.
- That has conserved its natural, historic, and cultural resources, and where these resources are accessible to all.
- That meets the needs of the future but reflects the character of today.
- That provides a quality education in the public schools.
- That is a destination for people to visit.
- That recognizes the artistic abilities of residents.
- Where the risks of owning land in Zone E will be alleviated.
- Where valuation of real estate improves and taxes diminish.
- That continues to be a safe place in terms of crime and traffic.
- Where you continue to know your neighbors.
- That provides recreational and entrepreneurial opportunities.
- Where a larger percentage of residents are employed locally.

CHARLESTOWN MASTER PLAN SURVEY 2005 RESULTS

SURVEY FACTS

Total Surveys Distributed = 2006
Number of Completed Returns = 727
Total Response Rate = 36%
Survey Mailing Date = March 8/9, 2005

1) Why do you feel Charlestown is a desirable place to live? (Check the letters for your top **three** choices)

<u>618</u>	<u>85%</u>	a. Small town atmosphere with rural character
<u>300</u>	<u>41%</u>	b. Scenic and unspoiled natural environment
<u>34</u>	<u>5%</u>	c. Employment opportunities
<u>42</u>	<u>6%</u>	d. Availability of housing
<u>145</u>	<u>20%</u>	e. Level of community involvement and spirit
<u>148</u>	<u>20%</u>	f. Quality of school system
<u>321</u>	<u>44%</u>	g. Convenient access to interstate highway system
<u>194</u>	<u>27%</u>	h. Access to Connecticut River and its recreational opportunities
<u>76</u>	<u>10%</u>	i. Availability of shops and services downtown
<u>158</u>	<u>22%</u>	j. Commuting distance
<u>55</u>	<u>8%</u>	k. Other(s) (Please Specify: _____)
<u>15</u>	<u>2%</u>	No Response.

2) How would you rate each of the following Town services? (Circle the best answer for each service)

	<u>Good</u>	<u>%</u>	<u>Fair</u>	<u>%</u>	<u>Poor</u>	<u>%</u>	<u>Uncertain</u>	<u>%</u>	<u>No Response</u>	<u>%</u>
a. Fire protection	554	76%	61	8%	8	1%	82	11%	22	3%
b. Police protection	545	75%	105	14%	19	3%	37	5%	21	3%
c. Sewer service	309	43%	84	12%	26	4%	188	26%	120	17%
d. Water service	363	50%	95	13%	26	4%	145	20%	98	13%
e. Road maintenance	212	29%	310	43%	164	23%	17	2%	24	3%
f. Snowplowing	384	53%	245	34%	60	8%	16	2%	22	3%
g. Schools	330	45%	196	27%	40	6%	105	14%	56	8%
h. Recreation services	227	31%	239	33%	75	10%	131	18%	65	8%
i. Library service	423	58%	127	17%	14	2%	109	15%	54	7%
j. Transfer station	510	70%	120	17%	15	2%	52	7%	30	4%
k. Town government	241	33%	286	39%	72	10%	91	13%	37	5%
l. Senior services	280	39%	143	20%	21	3%	235	32%	48	7%

3) What type of housing would you like to see Charlestown encourage in the future and where? (Check all that apply)

	Throughout Town	Village	Rural Areas	Shoreland Areas	Nowhere
a. Single-family dwellings	430 51%	117 14%	213 25%	54 6%	29 3%
b. Two-family (duplex) dwellings	180 31%	155 26%	120 21%	12 2%	118 20%
c. Multi-family conversion of existing dwellings (3-4 units)	114 21%	123 23%	60 11%	8 2%	227 43%
d. New multi-family construction (5+ units)	69 14%	56 11%	62 12%	9 2%	304 61%
e. Accessory apartments in existing dwellings	189 36%	134 25%	54 10%	8 2%	141 27%
f. Manufactured housing in parks	47 9%	29 6%	105 20%	5 1%	334 64%
g. Manufactured housing on individual lots	120 21%	33 6%	198 34%	15 3%	216 37%
h. Additional elderly housing Opportunities	249 38%	272 42%	52 8%	15 2%	65 10%
i. Conservation subdivision ("Cluster")	77 16%	28 6%	108 23%	29 6%	225 48%
j. Townhouses/ Condominiums	92 17%	79 14%	98 18%	28 5%	249 46%

4) Which of the following commercial and industrial uses would you like to see Charlestown encourage (Circle one for each letter):

	<u>Yes</u>	<u>%</u>	<u>No</u>	<u>%</u>	<u>Uncertain</u>	<u>%</u>	<u>No Response</u>	<u>%</u>
a. Professional offices	496	68%	73	10%	76	10	82	11%
b. Retail sales	483	66%	118	16%	57	8	69	9%
c. Recreation-related businesses	436	60%	85	12%	111	15	95	13%
d. Restaurants	564	78%	67	9%	38	5	58	8%
e. Motels/hotels/bed and breakfasts	349	48%	196	27%	97	13	85	12%
f. Personal services (e.g. laundry, hairdressers)	375	52%	155	21%	98	13	99	14%
g. Light industry	514	71%	92	13%	61	8	60	8%
h. Heavy industry	157	22%	396	54%	85	12	89	12%
i. High-tech industry	466	64%	11	15%	71	10	79	11%
j. Cottage industry/home occupations	414	57%	104	14%	113	16	96	13%
k. Agricultural-related businesses	476	65%	86	12%	75	10	90	12%
l. Basic services (e.g. drugstore)	599	82%	41	6%	24	3	63	9%
m. Large-scale commercial development (e.g. shopping center/WalMart/Home Depot)	155	21%	460	63%	43	6	69	9%
n. Fast-food restaurant	230	32%	391	54%	36	5	70	10%
o. Auto service and repair	434	60%	150	21%	59	8	84	12%
p. Resource extraction (e.g. gravel pits)	130	18%	368	51%	139	19	90	12%

5) Where would you like to see additional commercial development located in Charlestown? (Check all that apply)

<u>220</u>	<u>30%</u>	a. Village area (Main Street)
<u>167</u>	<u>23%</u>	b. Scattered throughout Town
<u>116</u>	<u>16%</u>	c. North Charlestown village
<u>388</u>	<u>53%</u>	d. Spread along Route 12
<u>420</u>	<u>58%</u>	e. CEDA's Grist Mill property opposite Transfer Station
<u>75</u>	<u>10%</u>	f. No further commercial development
<u>34</u>	<u>5%</u>	g. Other (Please specify: _____)
<u>26</u>	<u>4%</u>	No Response.

6) Where would you like to see additional industrial development located in Charlestown? (Check all that apply)

<u>497</u>	<u>68%</u>	a. In the two industrial zones (CEDA Park area and Saxonville Lumber vicinity)
<u>80</u>	<u>11%</u>	b. Scattered throughout Town
<u>357</u>	<u>49%</u>	c. CEDA's Grist Mill property
<u>91</u>	<u>13%</u>	d. No further industrial development
<u>36</u>	<u>5%</u>	e. Other (Please specify: _____)
<u>41</u>	<u>6%</u>	No Response.

7) What do you think Charlestown should do to improve its tax base? (Check all that apply)

<u>437</u>	<u>60%</u>	a. Encourage new industry
<u>387</u>	<u>53%</u>	b. Encourage expansion of existing industry
<u>240</u>	<u>33%</u>	c. Establish new small office park
<u>380</u>	<u>52%</u>	d. Encourage additional commercial development in existing areas
<u>202</u>	<u>28%</u>	e. Encourage new commercial areas
<u>217</u>	<u>30%</u>	f. Encourage new higher-value housing
<u>68</u>	<u>9%</u>	g. Other (Please specify: _____)
<u>49</u>	<u>7%</u>	h. Nothing
<u>19</u>	<u>3%</u>	No Response.

8) Zone "E" in Charlestown is designated as all land areas within the Town not otherwise zoned (approximately 75% of the entire town). Currently Zone E has no use regulations; thus it doesn't offer neighbors much protection from undesirable uses. Which of the following would you be in favor of? (Check all that apply)

<u>231</u>	<u>32%</u>	a. Break Zone E up into smaller "sub-neighborhood" zones that have specific uses
<u>164</u>	<u>23%</u>	b. Add common use regulations that apply to the entire Zone E
<u>264</u>	<u>36%</u>	c. Regulate impacts instead of uses (e.g. performance zoning regarding setbacks, hours, noise, lighting, etc.)
<u>189</u>	<u>26%</u>	d. Do nothing, leave as is
<u>64</u>	<u>9%</u>	No Response.

9) The Charlestown Main Street Corridor Study, completed in 2003, identified issues and needed improvements in the village Main Street area relative to motor vehicle traffic, bicycles, pedestrians and streetscape aesthetics. Which of the following recommendations from the Main Street Corridor Plan do you support? (Check all that apply)

<u>74</u>	<u>10%</u>	a. Roundabouts at each end of Main Street
<u>425</u>	<u>58%</u>	b. Streetscape improvements such as benches, lighting, and tree planting
<u>283</u>	<u>39%</u>	c. Separated shared two-way bike and pedestrian path along Main Street
<u>398</u>	<u>55%</u>	d. Safer pedestrian crosswalks
<u>77</u>	<u>11%</u>	e. Narrowed travel lanes in the Village to slow traffic
<u>201</u>	<u>28%</u>	f. Improved parking closer to services
<u>64</u>	<u>9%</u>	g. Other (Please specify: _____)
<u>67</u>	<u>9%</u>	h. None of the above
<u>24</u>	<u>3%</u>	No Response.

10) Which of the following would you be in favor of in regards to sign regulations in Charlestown? (Check all that apply)

<u>284</u>	<u>39%</u>	a. Providing suggested design guidelines for signs
<u>348</u>	<u>48%</u>	b. Setting size limitations for signs
<u>269</u>	<u>37%</u>	c. Regulating numbers of signs
<u>274</u>	<u>38%</u>	d. Regulating lighting for signs
<u>179</u>	<u>25%</u>	e. None of the above
<u>42</u>	<u>6%</u>	No Response.

11) Should the Town create an Historic District Commission to review construction or renovation designs on Main Street in the Village, to ensure compatibility with existing historic structures? (Check one)

<u>319</u>	<u>44%</u>	a. Yes
<u>202</u>	<u>28%</u>	b. No
<u>186</u>	<u>26%</u>	c. Not sure
<u>20</u>	<u>3%</u>	No Response.

12) Do you support protection of the following resources? (Check all that apply)

<u>539</u>	<u>74%</u>	a. Connecticut River corridor
<u>530</u>	<u>73%</u>	b. Areas of important wildlife habitat
<u>489</u>	<u>67%</u>	c. Historic buildings and sites
<u>467</u>	<u>64%</u>	d. Scenic views
<u>454</u>	<u>62%</u>	e. Surface water resources
<u>524</u>	<u>72%</u>	f. Groundwater resources
<u>429</u>	<u>59%</u>	g. Agricultural land/open fields
<u>520</u>	<u>72%</u>	h. Recreational access to the Connecticut River
<u>395</u>	<u>54%</u>	i. Recreational access to land (for skiing, hunting, snowmobiling, etc.)
<u>314</u>	<u>43%</u>	j. Night sky from "light pollution"/excessive lighting
<u>29</u>	<u>4%</u>	k. Other (Please specify: _____)
<u>37</u>	<u>5%</u>	No Response.

13) Which of the following types of recreational projects or facilities would you be in favor of the Town pursuing and/or improving? (Check all that apply)

<u>221</u>	<u>30%</u>	a. Regional cooperation on recreational facilities (e.g. use of new Springfield Recreation Center)
<u>312</u>	<u>43%</u>	b. Local Recreation Center in Charlestown
<u>176</u>	<u>24%</u>	c. Needs analysis of current recreational facilities
<u>406</u>	<u>56%</u>	d. Recreational trail along Connecticut River
<u>283</u>	<u>39%</u>	e. Network of multi-use recreational paths and trails for all-season recreation
<u>335</u>	<u>46%</u>	f. Bicycle path connecting downtown with Cheshire Bridge
<u>225</u>	<u>31%</u>	g. Additional trails and access points for scenic vistas
<u>207</u>	<u>28%</u>	h. Additional and/or improved tennis and basketball court(s)
<u>274</u>	<u>38%</u>	i. Skating rink
<u>437</u>	<u>60%</u>	j. After-school programs or services for youth
<u>345</u>	<u>47%</u>	k. Improved boating access and picnic facilities along Connecticut River
<u>41</u>	<u>6%</u>	l. Other (Please specify: _____)
<u>37</u>	<u>5%</u>	No Response.

14) Which of the following transportation-related projects would you be in favor of the Town pursuing? (Check all that apply)

<u>160</u>	<u>22%</u>	a. Park 'N' Ride facility in Town
<u>290</u>	<u>40%</u>	b. Consistent, reliable public transportation options (bus and train)
<u>131</u>	<u>18%</u>	c. Central, multi-modal transportation center (a central site from which public transportation serves, and which includes provisions for cyclists and pedestrians)
<u>109</u>	<u>15%</u>	d. Work with local businesses to create incentives for employee carpooling
<u>457</u>	<u>63%</u>	e. Improve existing sidewalks and crosswalks, particularly for schoolchildren
<u>25</u>	<u>3%</u>	f. Other (Please specify: _____)
<u>106</u>	<u>15%</u>	No Response.

15) A. Has your well water ever been inadequate in supply? (Please check one)

<u>36</u>	<u>5%</u>	a. Yes (If checking Yes, answer Part B, below)
<u>260</u>	<u>36%</u>	b. No
<u>26</u>	<u>4%</u>	c. Unsure
<u>350</u>	<u>48%</u>	d. Not applicable

B. If you answered "Yes" to Part A (above), what was the cause of this inadequacy? (Please check one)

<u>2</u>	<u>0%</u>	a. Contamination
<u>6</u>	<u>1%</u>	b. Drought
<u>6</u>	<u>1%</u>	c. Dug Well
<u>15</u>	<u>2%</u>	d. Low in Summer/Dry Season
<u>11</u>	<u>2%</u>	e. Other (Please specify: _____)
<u>56</u>	<u>8%</u>	No Response.

16) Please identify how strongly you do *or* do not agree with the statements below, by checking one box for each statement.

Statement	Strongly Agree	Agree	Neutral/No Opinion	Disagree	Strongly Disagree	No Response
A. The Town should develop a Capital Improvements Program (CIP).	158 22%	259 36%	172 24%	33 5%	20 3%	85 12%
B. Limits should be imposed on commercial business size to preserve Town character.	171 24%	238 33%	93 13%	110 15%	53 7%	62 9%
C. An agricultural overlay zone should be created to protect prime agricultural lands from being developed.	240 33%	236 32%	107 15%	65 9%	22 3%	57 8%
D. The Town should encourage the creation of a Chamber of Commerce.	85 12%	198 27%	266 37%	82 11%	27 4%	69 9%
E. The Town should promote tourism-related businesses and activities, especially related to Fort #4 and the Scenic Byway.	181 25%	322 44%	119 16%	41 6%	16 2%	48 7%
F. The Town should require minimum standards for home foundations.	142 20%	222 31%	164 23%	93 13%	38 5%	68 9%
G. The Town should not permit any new mobile home parks in any area until the valuation base among housing types is in better balance.	331 46%	150 21%	87 12%	63 9%	51 7%	45 6%
H. The Town should consider expanding the Village area to accommodate additional housing development, especially for seniors.	135 19%	268 37%	161 22%	83 11%	27 4%	53 7%
I. The Town should locate or build a new building to house all Emergency Services, Municipal office functions, and Public Works.	72 10%	123 17%	191 26%	191 26%	98 13%	52 7%
J. Overhead utility lines should be put underground on Main Street as the sewer and storm drain system is renovated.	163 22%	220 30%	173 24%	83 11%	38 5%	50 7%
K. The Town's solid waste management program should include mandatory recycling.	137 19%	187 26%	169 23%	115 16%	65 9%	54 7%
L. The Town's solid waste management program should implement a "pay as you throw" system.	36 5%	82 11%	145 20%	197 27%	208 29%	59 8%
M. The Town should attract and promote small, start-up businesses.	198 27%	317 44%	116 16%	27 4%	14 2%	55 8%
N. The Town should more strictly regulate development on or adjacent to sensitive natural resources such as surface waters, groundwater, steep slopes, and important wildlife habitat.	224 31%	268 37%	115 16%	44 6%	20 3%	56 8%
O. The Town should pursue the identification and preservation of important open space lands.	172 24%	264 36%	160 22%	49 7%	20 3%	62 9%
P. Planned Unit Developments should be allowed and encouraged in Town.	66 9%	212 29%	239 33%	84 12%	43 6%	83 11%

17) Are you a (check all that apply):

<u>618</u>	<u>85%</u>	a. Year-round resident
<u>24</u>	<u>3%</u>	b. Part-time or seasonal resident
<u>533</u>	<u>73%</u>	c. Property owner
<u>32</u>	<u>4%</u>	d. Non-property owner
<u>438</u>	<u>60%</u>	e. Registered voter
<u>16</u>	<u>2%</u>	No Response.

18) How many years have you owned property or resided in Charlestown? (Check one)

<u>38</u>	<u>5%</u>	a. Less than 1 year
<u>132</u>	<u>18%</u>	b. 1-5 years
<u>85</u>	<u>12%</u>	c. 6-10 years
<u>150</u>	<u>21%</u>	d. 11-20 years
<u>112</u>	<u>15%</u>	e. 21-30 years
<u>196</u>	<u>27%</u>	f. Over 30 years
<u>19</u>	<u>3%</u>	No Response.

19) In what age bracket are you? (Check one)

<u>9</u>	<u>1%</u>	a. Under 25 years old
<u>101</u>	<u>14%</u>	b. 25-39 years old
<u>243</u>	<u>33%</u>	c. 40-54 years old
<u>180</u>	<u>25%</u>	d. 55-64 years old
<u>192</u>	<u>26%</u>	e. Over 65 years old
<u>17</u>	<u>2%</u>	No Response.

Additional Comments:

<u>101</u>	<u>14%</u>	Response
<u>626</u>	<u>86%</u>	No Response

Population Chapter Charlestown Master Plan

A number of interrelated factors commonly shape and define the image and nature of communities. Population, housing and economic characteristics are foremost in defining the social environment in which people live and work. Understanding these features, their relationships, impact, and dynamic nature, is imperative in planning for the community's future. This section describes trends in Charlestown's population within the larger context of neighboring communities, Sullivan County and the State of New Hampshire.

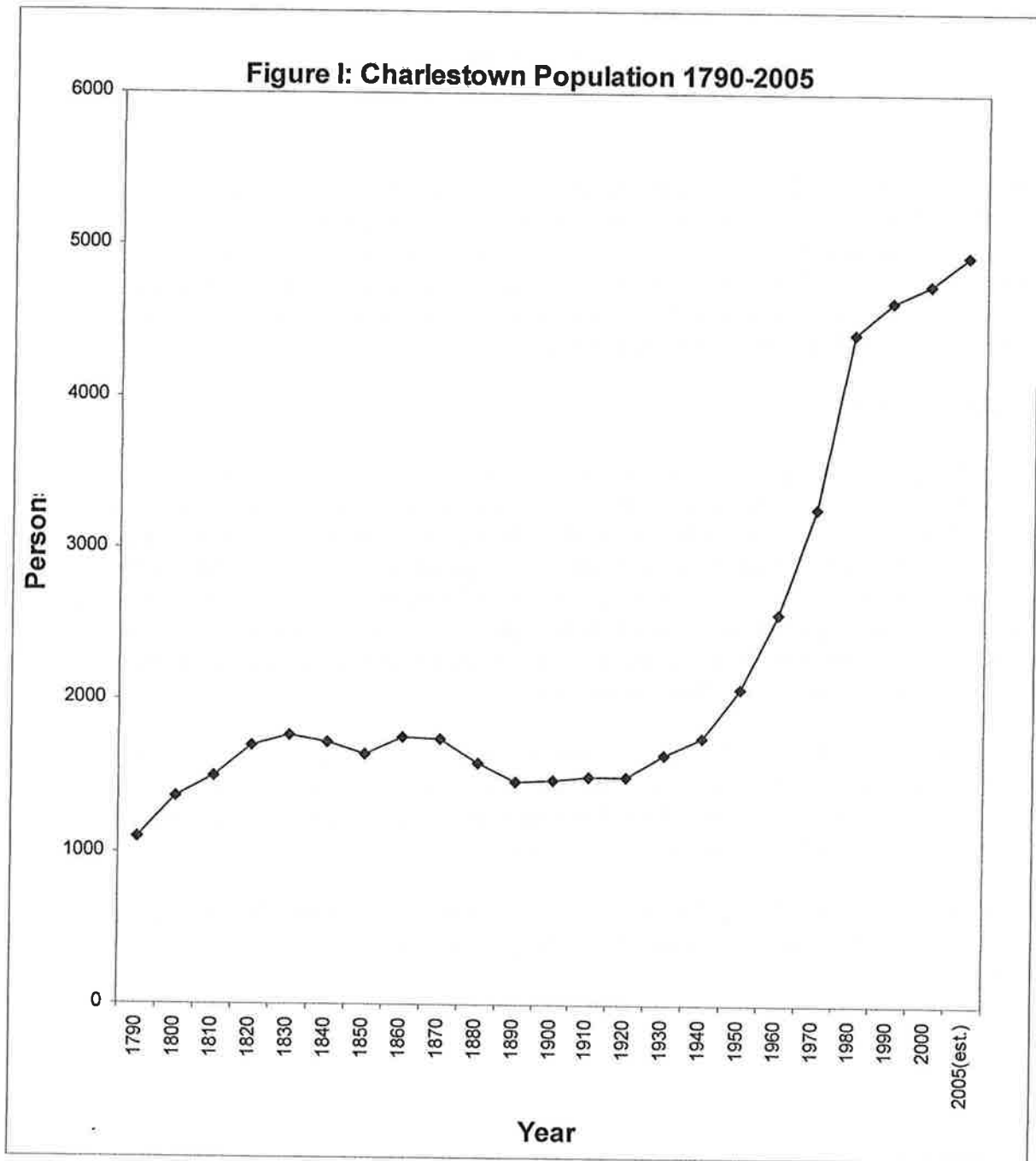
POPULATION TRENDS

Charlestown's year-round population increased significantly from 1940 to 1980 and then only slightly between 1990 and 2000 (see Figure I). The period of most active growth (35%) occurred between 1970 and 1980 when many New Hampshire communities experienced significant growth. All communities analyzed grew in population between 1980 and 1990 with the exception of the City of Claremont and the Town of Newport. Charlestown and Unity had had the largest average growth rates, at 3.0 and 4.4 per year respectively during the 1970s, and have been growing more slowly in recent years (see Table I). Population growth is the result of natural increase (births minus deaths) and migration.

Based on NH Office of Energy & Planning estimates Charlestown's population grew by an additional 192 persons or 4.0% between 2000 and 2005. This is consistent with Sullivan County's growth rate which was also 4.0% but somewhat lower than the state as a whole which grew by an estimated 6.6% over the same five year period.

Though growth in the overall population is an indication of the community's attractiveness, a closer look at the composition of the population helps define characteristics specific to Charlestown residents.

Adopted December 4, 2007



Source: US Census Bureau, Census 1790-2000. Office of Energy and Planning Estimate 2005.

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Adopted December 4, 2007

Area	1970	1980	Avg. Annual Rate of Growth 70- 80	1990	Avg. Annual Rate of Growth 80- 90	2000	Avg. Annual Rate of Growth 90- 00	2006	Avg. Annual Rate of Growth 00- 06	36 Yr. Avg. Annual Rate
Charlestown	3,274	4,417	3.0	4,630	0.5	4,749	0.3	4,915	0.6	1.4
Claremont	14,221	14,557	0.2	13,902	-0.5	13,151	-0.6	12,972	-0.2	-0.2
Unity	709	1,092	4.4	1,341	2.1	1,530	1.3	1,700	1.9	3.9
Newport	5,899	6,229	0.5	6,110	-0.2	6,269	0.3	6,363	0.2	0.2
Acworth	459	590	2.5	776	2.8	836	0.7	888	0.1	2.6
Sullivan County	30,949	36,063	1.5	38592	0.7	40,458	0.5	41,962	0.6	1.0
New Hampshire	737,681	920,610	2.2	1,109,252	1.9	1,235,786	1.1	1,315,000	1.1	2.2

Source: U.S. Census Bureau, 1970-2000 Census; NH Office of Energy & Planning 2006 Population Estimates

Age Characteristics

The largest number of residents falls within an age group common to the workforce, i.e., between the ages of 18 and 64. In 2000, this group of approximately 2,898 residents had a median age of 39.7 and comprised 61% of Charlestown's total population. Children up to age 17 accounted for just over 24%. The 1990s age distribution was very similar to that of 2000. All together, the workforce and dependent children age groups typically comprised between 85 and 90% of Charlestown's total population. Charlestown's population growth is primarily in the workforce age group (18-64 years). This population group is characterized by often having families and children.

**TABLE II:
Age Distribution: 1990-2000**

Area	Age 0-17			Age 18-64			Age 65+		
	1990	2000	Change	1990	2000	Change	1990	2000	Change
Charlestown	25.4%	24.7%	-0.7	60.2%	61.0%	0.8	14.4%	14.3%	-0.1
Claremont	24.8%	23.3%	-1.5	58.5%	59.8%	1.3	16.8%	16.9%	0.1
Unity	22.1%	20.0%	-2.1	58.5%	59.4%	0.9	19.4%	20.6%	1.2
Newport	26.9%	26.5%	-0.4	58.9%	58.2%	-0.7	14.2%	15.3%	1.1
Acworth	27.2%	25.7%	-1.5	61.5%	59.1%	-2.4	11.3%	15.2%	3.9
Sullivan County	23.3%	23.9%	0.6	62.0%	60.4%	-1.6	14.7%	15.8%	1.1
New Hampshire	25.1%	25.0%	-0.1	63.6%	63.0%	-0.6	11.3%	12.0%	0.7

Source: U.S. Census Bureau, Census 1990 and 2000.

Knowledge of the pattern of age distribution allows facilities and service planners to plan more confidently for age group specific needs of the population. This may include planning for adult day care facilities for the elderly or school expansions for a growing school-age population.

While during the 1990s the age group 65 years and older remained constant, it is expected to increase significantly in 2011 when the first phase of the "Baby Boomers" retire. This change in demographics will have a dramatic impact on communities in terms of transportation services, housing and senior activities.

Population Density

The number of persons in a given area of land determines the population density. In 1970, Charlestown had an average of 91 persons per square mile. By 2000, the average density had grown to 133 persons per square mile, reflecting the town-wide increase in population.

Density averages only indicate a general trend and do not reflect the actual pattern of population distribution. Actual patterns tend to be clustered in some geographic areas, like the downtown, and dispersed in others.

Table III illustrates Charlestown's density in comparison with neighboring communities, Sullivan County, and New Hampshire, since 1970.

TABLE III:
Population Density 1970-2000

Community	Land Area in Square Miles	1970	1980	1990	2000	2005
Charlestown	35.82	91.40	123.31	129.26	132.58	137.94
Claremont	43.15	329.57	337.36	322.18	304.77	304.15
Unity	36.96	19.18	29.55	36.28	41.40	44.70
Newport	43.52	135.55	143.13	140.40	144.05	146.94
Acworth	38.93	11.79	15.16	19.93	21.47	22.66
Sullivan County	528.00	58.6	68.3	73.1	76.6	79.66
New Hampshire	9,294.0	79.4	99.1	119.4	133.0	141.49

Source: U.S. Census Bureau, Census 1970-2000. Office of Energy and Planning Estimate 2005.

Projected Population Growth

The New Hampshire Office of Energy and Planning (OEP) periodically develops projections of future population growth for all cities and towns in New Hampshire. An important consideration in OEP's methodology is that town-level projections are controlled to county totals. In other words, they are based on the town's historical share of its respective county's growth and the assumption that established growth trends will remain about the same in the future. The following chart illustrates OEP projections, the U.S. Census from 2000, and estimates done by OEP of the 2005 population. As with any data projections, particularly for smaller areas, actual circumstances and events can drastically alter the figures. Projections should be used for trend analysis only and care should be taken to review and alter the data, as updated information is made available. OEP's projections were developed using a model based on past trends, including births, deaths and migration factors.

TABLE IV:
Population Projections

Area	2000 Census and Current Estimates		Population Projections			
	2000 Census	2005 Est.	2010	2015	2020	2025
Charlestown	4,749	4,941	5490	5,770	6,060	6,320
Claremont	13,151	13,124	13,710	14,080	14,530	15,060
Unity	1,530	1,652	1,920	2,060	2,170	2,270
Newport	6,269	6,395	6,810	7,060	7,330	7,600
Acworth	836	882	1,010	1,090	1,150	1,200
Sullivan County	40,458	42,061	46,250	48,570	50,730	52,890
New Hampshire	1,235,786	1,315,000	1,393,020	1,463,020	1,528,010	1,593,020

Source: 2000 U.S. Census; New Hampshire Office of Energy and Planning 2005 estimates and 2010-2025 projections

Factors Influencing Population Growth

Charlestown's actual population growth will depend on a variety of factors. The balance of amenities, resources, accessibility, housing and jobs availability, quality of life, cost of living, convenience - all are factors in determining the rate at which the community will gain or lose population. For example, a major employer opening or closing could result in dramatic gains or losses in the population. Raising or lowering taxes could encourage or discourage growth. The economic health of the area within commuting distance will

influence Charlestown's workforce. Although conditions in the Claremont and Springfield VT LMAs will have the greatest influence on Charlestown's population growth, strong labor market conditions and rapidly escalating housing costs as far north as the Lebanon/Hanover area and as far south as Keene are beginning to show their effects in Charlestown. Because of Charlestown's attraction for families, the quality of the educational system is also a key factor. Significant changes that affect population will result in a need to alter the projected data. The trend currently projected by OEP indicates an annual growth rate of about 0.9% until 2020.

Population Issues

Several key population-related issues need to be considered in planning for Charlestown's future growth and development, including:

- Projected total increases of approximately 56 persons per year to 2020 – Population growth equates to an increase in demands on all town services, including police and fire, building and driveway permits, and the increase in the volume of trash and recycling, to name a few. Charlestown needs to plan for the anticipated rate of population growth and providing sufficient services and infrastructure to support that growth.
- Changes in area labor and housing markets including Claremont, Springfield Vermont and even the Lebanon/Hanover and Keene areas should be monitored as they affect Charlestown's population trends.
- Consider town service needs of families – During the 1990s the age group 18-65 years, or the working age population, grew the most. This group often is comprised of family and single-parent households, which dominated growth during the 1990s.
- Expected increase in senior citizen population – Beginning in 2011 the first of the "Baby Boomer" generation will reach retirement age. This will require consideration of elderly housing options, transportation, and senior centers for social activities.

**Housing Chapter
Charlestown Master Plan**

INTRODUCTION

Safe, quality affordable housing that reflects the community is vitally important to the long-term future of Charlestown. The housing character of any community is perhaps the most obvious indication of the town's quality of life. Charlestown's housing stock consists of single-family homes and duplexes (57 %), multi-family homes (13%) and mobile homes (30%).

At the Community Goals Workshop held in June 2004, participants provided direction for future residential development as follows:

- Encourage high-quality housing stock. Currently, one-third of Charlestown's housing stock consists of mobile homes.
- Locate housing in central areas where water, sewer and town services already exist.
- Encourage Planned Residential Developments so that there are greater housing choices, flexibility in development, and efficiency and conservation in planning and site design.

This chapter examines the housing conditions and trends in Charlestown using available Census data, assesses general housing needs by means of the most recent studies available, and inventories assisted housing. The Housing Chapter of the Master Plan adopted in 1997 continues to be a valid supplementary reference for the distribution of housing types and related demographic information and is summarized beginning on page 11, "Implications of Housing Development on Charlestown's Economy and Tax Base" .

HOUSEHOLDS AND FAMILIES

**TABLE I:
Household Growth**

Households and Families

	1990	2000	Change
Total Households	1,837	1,920	4.5%
Persons per Household	2.51	2.46	-2.2%
Family Households	1,338	1,332	-0.4%
Persons per Family Household	2.99	2.90	-3.0%
Married-Couple Family Households	1,128	1,068	-5.3%
Single-Parent Family Households	210	264	25.7%
Non-Family Households*	499	588	17.8%
Persons per Non-Family Households	1.24	1.48	19.3%

* Includes Single Person Households

Source: US Census Bureau, Census 1990, 2000

The total number of households in Charlestown grew by 4.5 percent during the 1990s. All household growth has occurred in single-parent families and non-family households, while the number of married couples and family households has decreased over the same period (See Table I above).

One hundred and seventeen households, or 6 percent, meet poverty income thresholds according to the 2000 U.S. Census. Out of this group, 61 percent are non-family households.

HOUSING TRENDS

Very few housing units were constructed in the region over the past decade. On average, only about one and a half homes per year were added to the Charlestown housing stock between 1990 and 2000. Total housing grew from 2,051 units in 1990 to 2,067 in 2000. In comparison, annual housing figures for Unity show an addition of 36 units over the decade, while Claremont and Newport lost units during the same period. Table II provides an overview of the regional housing stock in 1990 and 2000.

TABLE II:
Total Housing Stock 1990 and 2000

Area	Total Housing Stock: 1990					Total Housing Stock: 2000				
	Total Units	Occupied Units	% of Total	Vacant or Seasonal Units	% of Total	Total Units	Occupied Units	% of Total	Vacant or Seasonal Units	% of Total
Charlestown	2,051	1,837	89.6	214	10.4	2,067	1,920	92.2	147	7.1
Claremont	6,228	5,997	96.3	231	3.7	6,074	5,685	93.6	389	6.4
Unity	558	547	98.0	11	2.0	594	504	84.8	90	15.2
Newport	2,675	2,515	94.0	160	6.0	2,633	2,473	93.9	160	6.1
Acworth	507	285	56.2	222	43.8	512	318	62.1	194	37.9
Sullivan County	19,532	14,873	76.0	4,659	24.0	20,158	16,530	82.0	3,628	18.0
New Hampshire	503,904	411,186	81.6%	92,718	18.4%	547,024	474,606	86.8	72,418	13.2

Source: U.S. Census Bureau, Census 1990 and 2000.

Occupancy

Housing units that are occupied year-round by the resident population are defined by the US Census as occupied units. All other housing units are classified as vacant, including those that are used as vacation or seasonal homes. Of communities in the region, Unity and Acworth have the highest percentage of their total housing classified as vacant. A more detailed discussion of vacancies is included later in this section.

Occupied housing units shelter residents who either own or rent their homes. Table III provides information concerning occupied housing units and the proportion of owner and renter occupancy.

**TABLE III:
Housing Occupancy 1990 and 2000**

Area	Total Occupied Units			Owner Occupied			Renter Occupied		
	1990	2000	% Change	1990	2000	% Change	1990	2000	% Change
Charlestown	1,847	1,920	4.0	1,440	1,469	2.0	397	451	13.6
Claremont	5,610	5,685	1.3	3,248	3,271	0.7	2,362	2,414	2.2
Unity	393	504	28.2	355	467	31.5	38	37	-2.6
Newport	2,352	2,473	5.1	1,538	1,637	6.4	814	836	2.7
Acworth	285	318	11.6	246	267	8.5	39	51	30.8
Sullivan County	14,873	16,530	11.1	10,517	11,903	13.2	4,356	4,627	6.2
New Hampshire	411,186	474,606	15.4	280,415	330,700	17.9	130,771	143,906	10.0

Source: U.S. Census Bureau, Census 1990 and 2000.

Approximately 92% of Charlestown's total housing stock was occupied in 2000 for year-round use. The slight increase in occupancy corresponds with a decline in the proportion of vacant units. The percentage of residential units available for sale or rent, known as the "vacancy rate," decreased from 4.4% in 1990 to 3.1% in 2000. The significance of the proportional growth in occupancy and decline in vacancy is related to the growth in population and slower new home construction. This is the same trend occurring at the state and regional levels where, in 2000, 2% of both Sullivan County and New Hampshire's housing stock was vacant.

During both decades, most occupied units housed year-round resident homeowners. Year-round Charlestown residents rented the remaining occupied units. The proportion of owner-occupied units is higher in Charlestown than for Sullivan County or for New Hampshire as a whole.

Charlestown's total housing stock is about 71% owner occupied, about 10 percentage points higher than the State's proportion. In neighboring communities, units occupied by owners ranged between 52% and 79% of the total number of occupied homes. Of the neighboring communities, only Unity has a larger proportion (79%). A high proportion of resident ownership coupled with population growth is one indication of the desire and ability of residents to purchase their home. It might also be noted that owner occupied mobile homes in Charlestown may serve as a substitute for the renter occupancy which is more prevalent in other communities.

Housing by Unit Type

Housing units are constructed as single family or duplexes, multi-family, or manufactured units. In addition, campers, vans and non-conventional units are sometimes used as permanent residences. All of these unit types are addressed in Table IV.

**TABLE IV:
Housing Stock by Type – 2000**

Area	Total Units	Single Family/ Duplexes	% of Total	Multi-Family	% of Total	Mobile Home	% of Total	*Other Unit Type	% of Total
Charlestown	2,067	1,175	57	262	13	630	30	0	0
Claremont	6,074	3,737	62	1,873	31	464	8	0	0
Unity	594	477	80	5	1	112	19	0	0
Newport	2,633	1,757	67	609	23	267	10	0	0
Acworth	515	471	91	0	0	40	8	4	0
Sullivan County	20,158	15,059	75	3,017	15	2,061	10	21	<1
New Hampshire	547,024	401,196	73	109,499	20	35,544	7	785	<1

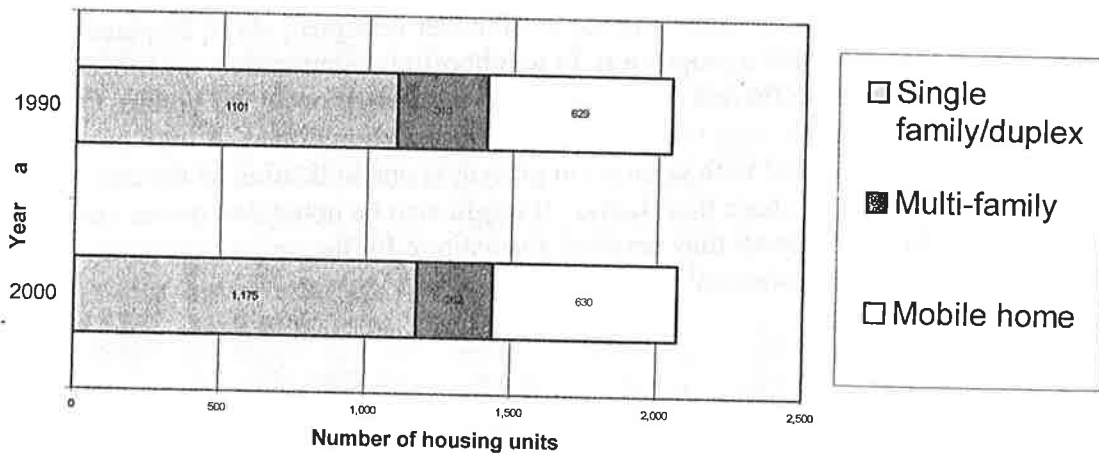
*Other unit types include other living quarters used as permanent residence: includes campers, vans or other structures.

Note: All figures refer to individual residence units, not structures. Percentages may not sum due to rounding.

Source: U.S. Census Bureau, Census 2000.

Single-family units dominate Charlestown's housing stock with a proportional share (57%) that is significantly less than State and County figures. Unity and Acworth both exceed the County and the State in the proportion of single-family units. The remaining communities (employment centers) each have a higher proportion of multi-family units. Charlestown has by far the highest proportion of mobile homes relative to its neighboring communities and the State.

**Figure I: Housing Units by Type-
Town of Charlestown**



Source: US Census Bureau, Census 2000, SF3 Table H30, Sample Data.

Note: 1990 data contains 11 units categorized as "other".

According to U.S. Census sample data, the greatest growth in housing units has been in single family dwellings, about 32 units between 1990 and 2000 (see Figure 1). Multi-family units decreased substantially during the same period, while the number of mobile homes stayed about the same.

Housing Costs

In 2000, the median value of an owner-occupied home in Charlestown was \$81,500. This was somewhat lower than the Sullivan County median of \$91,900 and substantially lower than the State median of \$133,300. In other neighboring communities, values ranged from a low of \$79,800 in Claremont to a high of \$92,700 in Acworth.

Median rents in the area ranged from \$464 per month in Charlestown to \$722 in Unity. Sullivan County (\$537) and the State (\$646) are in about the middle of the range. Base costs for rent, house payment, real estate taxes, and insurance are estimated as a percent of annual household income in Table V. These figures do not include other necessary costs associated with housing, such as maintenance costs, electricity, heating fuel, telephone, or other utilities and services.

**TABLE V:
Housing Costs and Value**

	2000 Median Housing Costs			2000 Median Housing Value
	Owner With Mortgage (Per Month)	Owner Without Mortgage (Per Month)	Renter Median Gross Rent (Per Month)	Median Value Owner-Occupied
Charlestown	\$867	\$423	\$464	81,500
Claremont	\$910	\$395	\$499	79,800
Unity	\$870	\$353	\$722	88,100
Newport	\$913	\$384	\$552	80,900
Acworth	\$870	\$407	\$613	92,700
Sullivan County	\$955	\$409	\$537	91,900
New Hampshire	\$1,226	\$441	\$646	133,300

Selected owner costs include: house payment, real estate taxes and insurance.

Source: U.S. Census Bureau, 2000 Census

CHARLESTOWN AND ITS LABOR MARKET

In August 2002, the Upper Valley Lake Sunapee Regional Planning Commission commissioned a study of housing needs within the region's Labor Market Areas (LMAs). Applied Economic Research, Inc. conducted the analysis.

Charlestown is within the Claremont Labor Market Area.¹ The housing market within this area is the weakest among its neighboring LMAs. This is primarily due to the area's weak economy.

The most critical housing issue is not the quantity of housing, but rather the quality of an old and deteriorating housing stock. Some investment has occurred within the Claremont LMA as a result of the housing shortage in the Upper Valley, and some communities such as Claremont are beginning to see an increase in housing costs due to the influx of the Hartford/Lebanon area workforce. This could increase housing costs beyond the reach of Claremont area residents and increase the demand for affordable rental housing. Although the number of subsidized units has increased, there remain growing unmet needs. This does not currently appear to be an issue for Charlestown as there is not the influx of these workers into the community.

Housing demand was estimated and projected for both homeowners and renters. In the year 2000, about 61 percent of renter household demand in the Claremont LMA was estimated to be among those with 80 percent of median income and less. Only 24 percent of homeowner demand is in the 80 percent of median income and lower groups (see Table VI below). In fact, more than half of homeowner demand is by those households with 120 percent and above the median income. Growth for renter and owner households is projected to occur evenly over each of the income groups.

**TABLE VI:
Housing Demand by Tenure and Income Group-**

Claremont LMA	2000	2010	2020	Change 2000-2010	Change 2010-2020
RENTERS					
<30% Median	1180	1240	1440	60	200
30-60% Median	1180	1240	1440	60	200
60-80% Median	1040	1100	1270	60	170
80-100% Median	660	690	800	30	110
100-120% Median	460	480	560	20	80
120%+ Median	480	510	580	30	70
Total Households	920	970	1120	50	150
OWNERS					
<30% Median	510	570	690	60	120
30-60% Median	940	1060	1260	120	200
60-80% Median	1320	1480	1770	160	290
80-100% Median	1280	1430	1700	150	270
100-120% Median	1570	1760	2110	190	350
120%+ Median	6170	6910	8240	740	1330
Total Households	11790	13210	15770	1420	2560

Source: Applied Economic Research, Upper Valley Housing Needs Analysis, August 2002.

As a means of addressing the need for a larger tax base, Charlestown should seek ways to attract a significant portion of the 120%+ Median share of home building projected

¹ Claremont LMA includes the towns of Charlestown, Claremont, Croydon, Goshen, Lempster, New London, Newbury, Newport, Springfield, Sunapee, Sutton, Unity and Wilmot.

within the Claremont LMA during the decades up to 2010 (740 units) and to 2020 (1330 units). Zoning is the key to attracting higher value housing construction, as home builders will seek to maximize value and minimize risk with appropriate regulation of land use for surrounding properties.

Typically real estate tax revenues do not cover the cost of town services. The cost of educating children of a household alone usually exceeds the value of real estate taxes. Housing development must be balanced with commercial and industrial development, which not only increase the tax base but also bring jobs to the community that are an important part of its economic well-being.

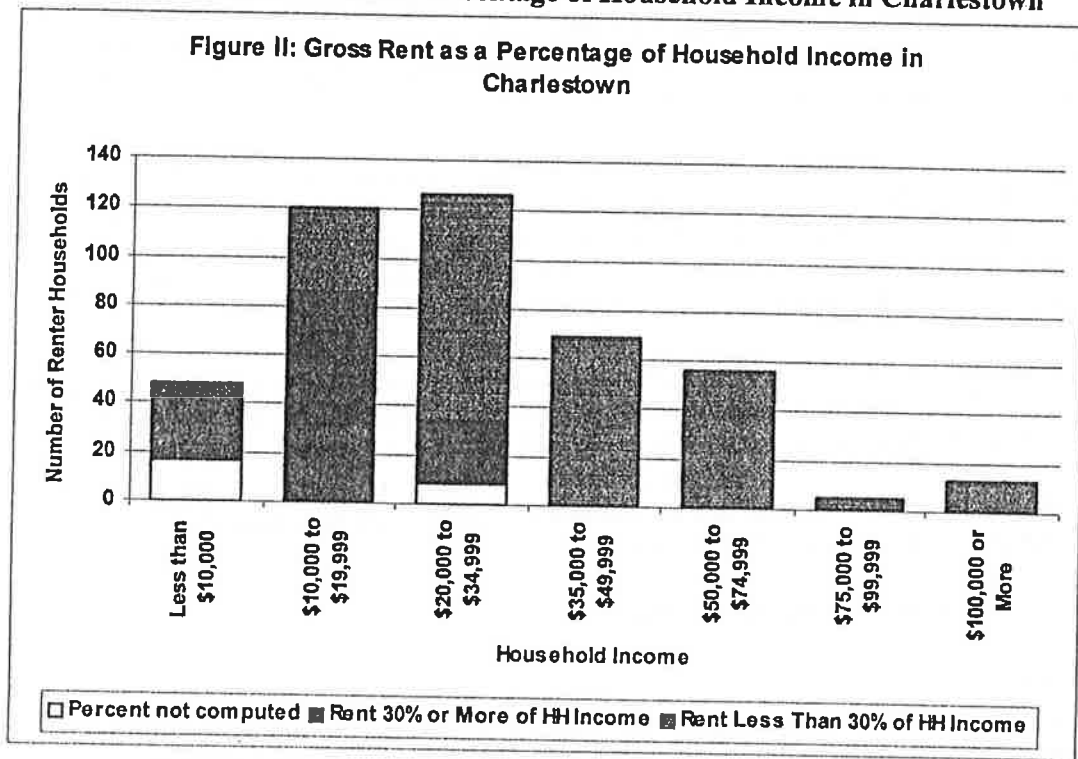
Housing development in which occupancy is restricted to seniors usually does not add to the town's tax burden as education costs are precluded. This applies to traditional and manufactured housing. For example, a planned unit development that included services for seniors, with manufactured homes on individual lots, would most likely not add to the tax burden for the town, particularly if minimum quality and floor area standards for housing units were included in the plan.

ABILITY TO PAY FOR HOUSING

Renters

According to U.S. Census sample data, thirty-three percent of Charlestown's renter households are considered to be overpaying for rent. That is, 30 percent or more of total household income is spent on housing costs, leaving inadequate funds for other basic necessities (see Figure II below). All of these households earn equal to or less than \$34,999. As one might expect, the higher the household income, the less a household is burdened by housing costs.

Figure II: Gross Rent as a Percentage of Household Income in Charlestown

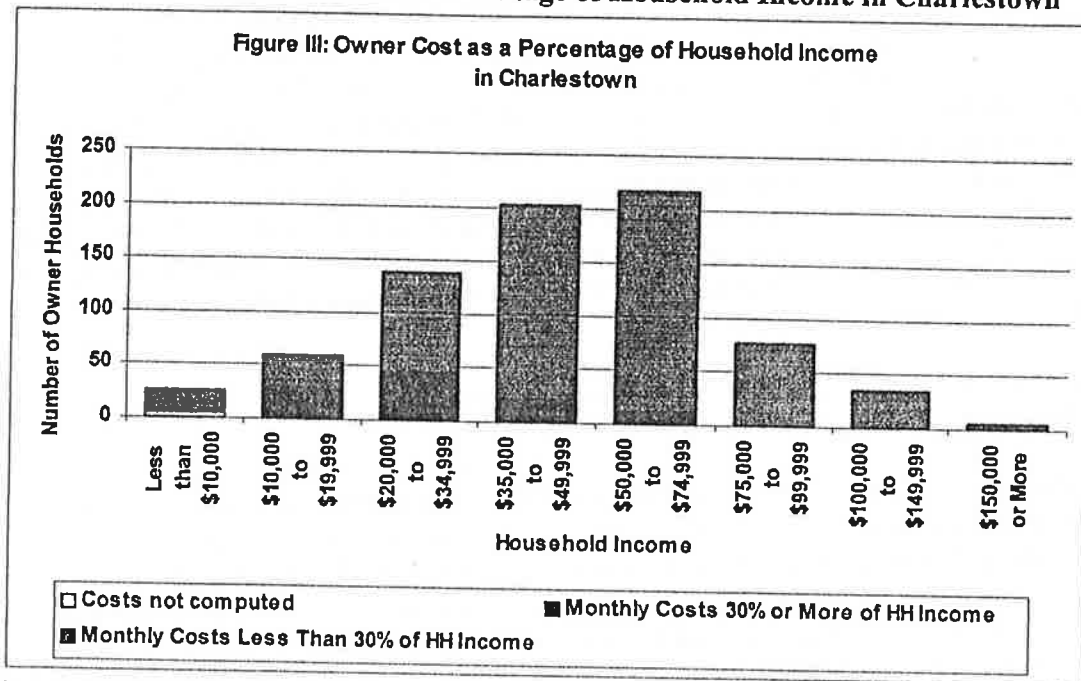


Source: Census 2000, SF3, Table H73

Owner Households

As a general rule, owner households tend to have higher incomes than renter households and so are able to spend a higher amount on housing and still have an adequate amount left for other needs. However, as shown in Figure III below, several Charlestown owner households are burdened by housing costs. In today's housing market, those at or below the median income are finding it increasingly difficult to find housing that is affordable.

Figure III: Owner Cost as a Percentage of Household Income in Charlestown



Costs not computed Monthly Costs 30% or More of HH Income Monthly Costs Less Than 30% of HH Income

Source: Census 2000, SF3, Table H97

ASSISTED HOUSING

There are a total of 100 assisted housing units in Charlestown. The Charlestown Green, Oakdale and Charlestown Senior Housing projects provide 44 units for elderly residents financed by the NH Housing Finance Authority, Farmers Home Administration and Southwestern Community Services respectively. The only dedicated family complex is the Tall Pines, which has a total of 32 units. Another 24 units are for both elderly and families in the Woodrise Apartments, which together with Tall Pines is financed by the Farmers Home Administration.

Although the current Census does not show a significant increase in Charlestown's elderly population, beginning in 2011 the first of the "baby boomer" generation will reach retirement age. Population and household projections for the Claremont LMA completed as part of the Upper Valley Housing Needs Analysis indicate that between 2010 and 2020 the largest increase in households will be in the age group 65 years and older. This change in demographics will place unique demands on the housing needs within Charlestown and the region.

DIVERSITY IN HOUSING TYPES

The current trend in Charlestown's economy and the resulting demographics indicate the need for increased housing options. It is in the interest of the community to not have any one housing type dominate the housing stock. As noted earlier, Charlestown has an unusually high percentage of mobile homes and a decreasing number of multifamily

units. Mobile homes provide an affordable housing alternative for many families, but they may not be the best option for everyone, such as those with limited mobility. A diversity of housing supports a healthy tax base that enables a community to provide adequate services to existing and future residents. Charlestown already contains a relatively high percentage of low cost housing (Fair Share Housing Analysis, Upper Valley Lake Sunapee Regional Planning Commission, 1995) so planning should be oriented more to attracting high-end housing construction while permitting affordable housing to the extent that a good balance of housing stock is maintained within the town. A growth ordinance could be employed to control the number of affordable housing units relative to the overall number (this would require adoption of a Capital Improvements Plan).

Charlestown should not permit any new mobile home parks in any area until the valuation base among housing types is in better balance.

In the Charlestown Master Plan of 1983 and its revision in 1997(see summary below) when the Board analyzed housing valuations and their relation to the town's tax base the Board found the following: "There is something of a vicious circle at work in Charlestown at present. The high rate of property taxation, partly as a consequence of the low value of the housing stock, is a disincentive to industry, which would have the potential of creating the larger tax base that the town requires. Individuals contemplating new high-value housing are dissuaded from doing so because the tax burden is high and the value of property is not secure." The unusually high tax burden on Charlestown residents continues to warrant improvement that can be achieved through better land use policies on the part of the Town.

Density Bonuses

To create a more attractive living environment for its citizens the town should consider a Planned Residential Development provision to be included in the zoning ordinance. This mechanism encourages maintenance of open space for recreation and aesthetics. Housing units would be permitted on lots that are smaller than otherwise permitted for the zone so long as the overall housing density does not exceed the number that would otherwise be possible on the parcel of land. Additional benefits to the town and to developers would be reduced costs of installations and services.

Accessory Apartments

An accessory housing unit is a small apartment located within what is otherwise a single-family home. These arrangements are often found in single-family zoning districts as a way to provide inexpensive housing, often for older or younger relatives. For the elderly, it provides the individual a degree of independence. For younger people it may provide the ability to save for purchasing their own home. The provision's chief benefit is that the dwelling can service a wide range of needs while maintaining the single-family character of the neighborhood. -Charlestown currently allows such accessory units through provisions allowing two family homes in all residential zoning districts.

Zoning District E

About 70% of the town is contained in Zone E, in which any land use is permitted. This is a significant land use challenge that has implications in every facet of the community. High quality housing, as well as commercial and industrial uses, is discouraged when there is no security that land uses next door will be compatible with neighboring properties. Proposals to locate industrial and commercial units in the vicinity of housing developments create land-use conflicts that are discouraging to potential investors. The current conditions may also be encouraging the development of mobile homes as they can be easily moved should unwanted land uses develop nearby.

The town should consider dividing Zone E into several areas with land use restrictions better suited to location and topography and that would encourage a healthier mix of commercial, industrial and residential units. A more specific table of uses in Zone E, the creation of new zones or the incorporation of performance zoning, will encourage a good mix of residential and non-residential land use by ensuring that future land use developments will be compatible. Because this issue has connections to the community's economic development, natural resources, community facilities and finance in addition to housing, a comprehensive approach should be undertaken to determine options.

Lot Size Averaging

Lot size averaging allows dwelling units to be clustered on a portion of the property where development costs are lower, while conserving other important features of the land such as surface water buffers, agricultural soils or steep slopes. The lower site development costs may translate into a higher quality of housing or lower purchase costs.

Mobile Homes

Charlestown has a relatively high number of mobile homes in its housing stock. In fact, there are 166 or about 36% more mobile homes in Charlestown than in the City of Claremont, a community with almost three times the number of total housing units. Limiting mobile home parks to areas of the town where they currently exist and allowing them only on single lots in the rest of the town would be one way to limit growth in this housing type. Issues with condition and taxation can be addressed through building codes and enforcement. Requiring mobile homes, through building codes, to be placed on a foundation or slab is one means of increasing long-term quality and value.

CONDITION OF HOUSING STOCK

About half of Charlestown's residential structures were built after 1970. Charlestown's oldest homes, those built before 1940, made up 25% of the 2000 total housing stock. The median year for housing construction in Charlestown was 1972, similar to the state-wide median of 1971. This means that as many homes were built after 1972 as before.

The condition of the existing housing stock and its quality was an issue addressed in the Upper Valley Housing Needs Assessment and repeatedly raised during the Charlestown Community Goals Workshop in 2004. The condition of housing is primarily linked to a homeowner's ability to afford repairs and maintenance. When the local economy is weak, wages and disposable income are low, and other day-to-day matters take priority over

much-needed roofs and the painting of siding and trim. Only strengthening the area's economy will address this problem.

In the meantime, Charlestown may consider providing incentives for residents to repair and maintain their homes. Also, educating residents about home repair funding programs, including those provided by NH Rural Development, will assist many in better understanding their options.

SETTLEMENT PATTERNS AND DESIGN

The location and design of housing can have significant impacts on a community. New housing developments that are located far from services necessitate automobile use, while design features such as cul-de-sacs and excessive streets are expensive to maintain. In order to guide land use to best fit community objectives, it is important to understand the impacts development can have on both the way a community looks and its finances.

As Charlestown grows, consideration should be given to expanding the village area to accommodate additional housing development. This would help preserve important natural resources in rural areas of the community and offer housing options close to services such as the grocery store. This is especially important for the aging and disabled populations. Zoning and subdivision regulations' dimensional requirements need to encourage existing settlement patterns in terms of lot size and coverage, setbacks, road width and design in order to facilitate this growth. Also, policies could encourage the reuse of old buildings for housing.

The design of housing and the use of materials also have consequences in terms of health, safety and energy use. Fire retardant materials can help prevent the spread of fire and assist in the evacuation of occupants. Energy efficient materials and methods can reduce operation costs and conserve energy. To ensure that construction adheres to the most current materials and standards, the building code should be kept up to date by referencing the current standard code.

IMPLICATIONS OF HOUSING DEVELOPMENT ON CHARLESTOWN'S ECONOMY AND TAX BASE *(summarized from 1997 housing chapter)*

In order to understand the economic relationship between housing types and the tax base of Charlestown, in 1996 the Planning Board undertook a study that was subsequently incorporated in the Housing Section of the Master Plan. The following discussion summarizes that study, which was based on 1995 data. Even though valuation has increased since that time, the relationship between taxes generation and the cost of services has not varied significantly.

The tax base is the total valuation of all real properties in town, and incorporates residential, commercial, industrial, agricultural, utility, and open land categories. The tax assessment rate is set annually, and is the result of the cost of services for that year divided by the tax base. The *break-even value* of a property class is the value at which the revenues generated just cover the cost of services provided. The 1996 study compared tax assessments and costs of services for the following classes of housing units:

1. Apartments
2. Manufactured homes in mobile home parks
 - a. mainly adult occupants
 - b. family occupants
3. Manufactured homes on individual lots
4. Frame homes

Two analyses were performed, using two different methods:

Method #1 -- Assumes that residents of the town, through their taxes, pay for all services of the town, and therefore the costs of all services are allocated solely to residential taxpayers². This method overstates the cost of services provided to residents, since some services are provided to other categories of taxable property too.

Table I

Economic Impact of Housing Types – All Costs Included		
Type of housing unit	Surplus (deficit) assessment per unit, \$	Surplus (deficit) tax generated per unit, \$
Rental units (apartments)	(9666)	(370)
All mobile home parks	(21955)	(840)
“Adult” mobile home parks	1373	53
Other mobile home parks	(42173)	(1612)
Mobile homes on own lots	(29839)	(1142)
Frame homes	(9787)	(374)

For Method #1, where all costs are assumed to accrue to housing, the average housing unit has a break-even valuation of \$70,179, while the equivalent average assessed valuation is \$55,973. The deficit in assessment per unit (average for all units) is \$14,206, which is covered by taxes generated on non-residential properties.

² Costs are developed in two categories: (1) general services per capita and (2) education costs per student. The town inventory for 1995 was used to determine population and age distributions in each category of housing unit. Tax revenues per unit and for the category were based upon assessed valuation and tax rate. Costs per housing unit and for the category were determined from the number of non-student and student occupants per unit, each multiplied by the general services cost and the education cost, respectively, with all costs allocated to housing rather than to other real estate categories such as commercial and industrial. Housing units in each mobile home park were calculated separately and then combined for the category, i.e. ‘adult’ and ‘other’. ‘Adult’ mobile home parks were initially developed for adult occupants only, but subsequent legislation required that these restrictions be relaxed, although still predominantly occupied by adults.

Method #2 – Assumes that taxes on each property category – residential, commercial, industrial, agricultural, etc. are assumed to pay for services to that category³. Under this approach, housing is assumed to pay, via taxes generated, approximately 80% of service costs in Charlestown. Each category is considered self-supporting. Thus residential property tax payers cover only that portion of tax attributable to services provided to residential property owners. The results are shown in Table II.

Table II

Method 2: Economic Impact of Housing Types – Housing tax revenue = Cost of services

Type of housing unit	Surplus (deficit) assessment per unit, \$	Surplus (deficit) tax generated per unit, \$
Rental units (apartments)	(1722)	(66)
All mobile home parks	(12133)	(464)
“Adult” mobile home parks	6232	238
Other mobile home parks	(28019)	(1072)
Mobile homes on own lots	(15369)	(588)
Frame homes	7705	296

The two methods provide a range of break-even values that better explain the economic impact of the various classifications of housing on the town. The actual situation lies between these two extremes. Housing is not self-supporting, but rather depends on commerce, industry and open land to pay for the approximately 13% of expenditures for services not covered by self-generating revenues⁴.

Of all housing types, only adult mobile home parks, which have low education service costs, are self-supporting. Of the other housing types, only frame homes are approximately at break-even. All other types show a deficit of service costs over revenues generated, with non-adult mobile home parks showing the greatest deficit.

The problem of low average value of housing units can also be examined in relation to the situation in the other towns of the Fall Mountain Regional School District, since taxes for elementary and secondary education comprise about 71.6 % of the total tax burden for the town. The equalized valuation (EV)⁵ per housing unit and EV per student are shown in Table III.

³ In this method general service costs per capita and education costs per student are reduced by the ratio of total residential valuation to total valuation for the entire town. In this way costs are reduced so that, on average, housing units pay only for that portion of services covered by taxes generated. The ratio of residential to total valuation is about 80%, so in this method it is assumed that the remaining 20% of service costs are paid via taxes on other categories of real estate.

⁴ Although a precise measurement was not attempted for Charlestown, the ratio for a town with very similar characteristics was used as the basis for this estimate.

⁵ Equalized valuation is calculated annually by the State in an effort to normalize the tax base for all New Hampshire communities, so that their tax bases can be compared. It is based on the ratio of market to assessed value in each city and town.

Table III

Equalized valuation per housing unit and per student in Fall Mountain District, \$

Town	Equalized valuation (000) (1)	Number of housing units (2)	Number of students (3)	Equalized valuation per housing unit (000)	Equalized valuation per student (000)
Acworth	47978.1	507	147.4	94.6	325.5
Alstead	84854.2	843	324.5	100.7	261.5
Charlestown	170016.7	2051	862.2	82.9	197.2
Langdon	33654.8	243	90.3	138.5	372.7
Walpole	259682.7	1465	555.6	177.3	467.4

(1) Equalized valuation from annual report of FMRSD 2003

(2) US Census data - 1990; this has been left unmodified because the number of housing units reported for Charlestown is slightly larger than the count in 1995; assuming growth rates in each of the towns has been fairly similar, the relative values of EV per housing unit should only be slightly affected

(3) Average daily attendance (ADM) from annual report of FMRSD 2003; this is slightly different from the head count of population of school age.

By either of these measures, Charlestown's position is most disadvantageous of any of the towns in the district. The equalized valuation per housing unit or per student in the most favorably situated of the five towns is at least twice that of Charlestown.

Several observations are derived from this data:

- The average housing valuation is inordinately low and is one of the major reasons for the high property tax rate in Charlestown. Although great strides have been realized with the CEDA Industrial Park and other commercial and industrial development in building up the tax base, the magnitude has not yet grown to sufficient proportions to offset the low average valuation of housing units.
- Although the average family size is modest (an average of only 2.37 total occupants and 0.42 students per housing unit) the low average valuation of housing units generates insufficient revenues to adequately cover the cost of services provided, particularly the cost of educational services.
- To adequately cover the cost of services under the prevailing conditions the average assessment should at least equal the break-even valuation for the category. In Method 2 it is seen that only housing units in "Adult" mobile home parks and frame homes meet this criterion.
- Housing units, when occupied primarily by adults, are self supporting at a relatively low valuation. This can easily be understood from a comparison of costs for education (\$4,604 per student) compared with general services) \$322 per capita).
- Some of the mobile home parks that were originally restricted to adult residents have since seen an influx of families with children in response to the federal Fair Housing Act

(as amended in 1988) which prohibits discrimination with regard to age and other factors in the sale or rental of housing units. While they once were self-supporting in terms of generated tax revenues vs. service costs, this situation no longer prevails as the result of increased student populations and the attendant increase in service costs. Section 3607 of the Act allows for housing for senior citizens provided compliance with certain conditions with regard to building design and facilities. In principle, there seems to be no impediment to the use of manufactured housing in such applications, provided that all the service and quality requirements are met.

- Rental units show a deficit in each method of analysis. However, some of the apartment units have a preponderance of senior citizens and consequently have a considerably better impact than the average rental unit.

If the town manages to attract higher valuation housing, the impact could be quite significant. For example, if the new housing units were frame homes with a valuation of \$200,000, an increase of about 162% over the valuation used in the 1996 analysis ¹, the effect on the tax rate would be approximately as follows (assuming no change in the level of services provided):

Increased housing units (1)	100	200	300	400
Decrease in tax rate, \$/1000 (2)	1.97	3.55	4.84	5.91

- (1) Between 2000 and 2005 the average annual increase in the number of housing units in Charlestown was just under 20 units per year. (NH Office of Energy & Planning estimate)
- (2) For indicative purposes only. The base valuation of about \$77,000 in 1996 is considerably higher in 2004.

In addition to housing, significant effects on the tax rate will result from commercial and industrial developments. These effects, in turn, will depend largely upon factors such as the quality standards discussed above and cost of services, particularly education, which currently absorbs about 71 cents out of every tax dollar.

For equivalent size and quality, the price of manufactured housing is about 80% of that of conventional construction. To be attractive to industries contemplating setting up operations in Charlestown, the availability of a trained work force is an important consideration, with affordable housing a significant factor. However, a balance should be sought in which the increased tax burden resulting from low cost housing is offset by the creation of a greater tax base.

Economic impact of housing as an industry

The construction of housing generates income, which accrues to Charlestown residents in the form of wages and salaries, profits, rents, interest, etc. The direct contribution to the economy of Charlestown from the addition of a housing unit depends on the portion of construction expenses incurred within the town compared to the costs of materials or other expenses that may be imported from elsewhere. In conventional, stick-built

¹ These estimates are based upon the approximate cost of services per housing unit in 2004. Actual valuations of new housing units could be greater than \$200,000, with correspondingly greater tax rate impact.

construction, from one-half to two-thirds of the cost is labor that would probably be paid to Charlestown residents, thereby contributing to the town's economic welfare. For manufactured housing, a much smaller portion of the construction labor accrues to local residents.

Copies of the 1996 housing study can be obtained from the Charlestown Planning Office.

SUMMARY

- Household growth during the 1990s has been strictly in non-family and single parent households. Sixty-one percent of Charlestown households in poverty are non-family households.
- One third of the housing stock in Charlestown is mobile homes, reflecting the regional population's need for enhanced housing options and Charlestown's minimal zoning regulations.
- About 33% of renters pay 30% or more of their incomes for housing costs.
- Over the past decade there has been a significant loss in multi-family housing units, limiting housing options that are affordable for Charlestown households.
- A housing study by Applied Economic Research, Inc. in 2002 concluded that the Labor Market Area's weak economy and lack of investment are the cause of housing condition issues and that growing unmet needs for affordable housing remain in the region.
- Although the current Census does not show a significant increase in elderly populations within Charlestown, beginning in 2011 the first of the "baby boomer" generation will reach retirement age, placing unique demands on the housing stock.
- Community zoning regulations may discourage housing development in Zone E and may have additional impacts on natural resources and community finance. Options to redirect growth towards community centers should be undertaken together with other community issues such as economic development and preservation of significant natural, cultural and historical features.

HOUSING GOALS AND POLICIES

Goal 1: Encourage a wide range of housing options to meet the different and changing needs of Charlestown's residents and taxpayers including individuals, single-parent households, the elderly, people with disabilities, lower-income households, and higher-income households.

- Ensure that zoning regulations allow a diversity of housing opportunities, including higher value housing, multi-family housing and accessory apartments.
- Through Town development policies, encourage quality employment opportunities and private investment to support higher-value housing, better housing quality, and rehabilitation of the existing housing stock.
- Comprehensively consider alternatives for Zone E, including creating new zones and additional regulations in order to encourage more rational and compatible land uses.
- Encourage higher density (lower lot size and multi-family housing) in areas of Zone E served by water & sewer.

Goal 2: Improve the condition of the existing and future housing stock.

- Educate residents about available funding programs for housing repair and rehabilitation.
- Investigate the possibility of providing incentives for the rehabilitation of existing housing.
- Continue to support local and regional economic development initiatives aimed at raising the income levels of current residents, thereby increasing income available for housing costs.
- Revise the building code to require newly installed mobile homes outside of parks to be placed on foundations or slabs.
- Review and revise building standards to encourage energy efficiency and modern building materials.

Goal 3: Use land effectively by maintaining traditional human-scale settlement patterns that are not land consumptive.

- Zoning and subdivision regulations' dimensional requirements should be consistent with existing settlement patterns in terms of lot size and coverage, setbacks, and road width/design, and intended to promote residential construction in or near existing and planned settled areas (village centers).
- Allow conversion of larger homes and buildings to multiple units or multi-family dwellings.
- Focus development where infrastructure already exists.

Goal 4: Promote compatible mixed-uses by allowing appropriate services, commerce and employment to be intermingled with residential development near existing and future Town Center areas.

- Develop and support zoning regulations that encourage density and mixed-uses in the Town Center area.
- Identify areas for future expansion of the Town Center District.
- Maintain and revive traditional settlement patterns that permit and encourage higher densities.

Goal 5: Encourage neighborhoods that are walkable and provide a sense of community while providing transportation choice to residents of all physical abilities and ages.

- Continue to allow accessory apartments as part of single-family residences.
- Implement simple zoning changes, such as going from 15,000 sq ft lots to 10,000 in the Town Center District.
- Consider reducing the 25-foot front setback in the Town Center District.
- Provide opportunities for elderly housing in the Town Center District.
- Permit multi-family development by either right or special exception in the Town Center District.

Goal 6: Preserve and enhance open space, historical resources, and the protection of agricultural lands.

- Allow lot size averaging to encourage the siting of housing to preserve resources and lower development costs.
- Preserve historically significant buildings and features in the process of meeting the town's housing needs.

Goal 7: Work with neighboring communities and the regional planning commission to address regional housing issues.

- Continue to collaborate with regional government and private partners to better understand and address housing needs of local residents.
- Continue to periodically assess the need for housing.
- Review subdivision regulations, building codes and zoning ordinance periodically to ensure the implementation of community housing standards and policies.

Community Facilities and Utilities Chapter Charlestown Master Plan

COMMUNITY FACILITIES

INTRODUCTION

The purpose of this section is to evaluate Charlestown's community and recreational facilities. Providing and maintaining both types of facilities is one of the primary functions of government, as these facilities add to the quality of life in a community. As the population and demographics of the community change over time, it is important that the Town of Charlestown make adjustments in its delivery of services to meet the needs of the changing community.

This section inventories and assesses current community and recreational facilities, the adequacy of existing equipment, and current and long-term staffing needs. Finally, goals and recommendations for how to meet some of these needs are outlined. Town department heads were interviewed on the status of their department's facilities, staffing and equipment. They were also asked to provide an assessment of their current and anticipated future needs.

At the Community Goals Workshop held in June 2004, participants identified several community facilities goals, including:

- Support reuse of existing historic buildings, when feasible, for town services.
- Locate/build a new Town building to house all emergency services, municipal office functions and Public Works. This suggestion was not strongly supported in the survey but warrants further discussion, with 26 percent of respondents neutral, 26 percent disagreeing, and 17 percent agreeing.
- Encourage regional cooperation on recreational facilities. Although 30 percent of survey respondents favored regional cooperation on recreational facilities (e.g. use of new Springfield Recreational Center), 43 percent favored having a local recreational center in Charlestown.

CHARLESTOWN MUNICIPAL OFFICES/GOVERNMENT

Town government was given a fair-good rating by Master Plan Survey respondents.

Facilities and Staffing

The Municipal Offices provide space for several personnel:

- Four full-time office staff: Includes Administrative Assistant (1/2 time) and Planning/Zoning Administrator (1/2 time).
- One part-time clerical staff person
- One part-time Building Inspector
- One contracted part-time Welfare Director

The Selectboard Office staff and Building Inspector occupy the Selectboard Office on the recently renovated main floor of the "Bakery Building". That office is approximately 1,400 square feet and is in good condition. The Administrative Assistant/Planning & Zoning Director and P/T Clerical staff occupy approximately 450 square feet on the lower floor of the Bakery Building and that space is in fair condition. The offices of the Town Clerk/Tax Collector and Welfare Director are located on the lower floor of the Silsby Library/Municipal Building and are also in good condition, the Town Clerk's office also having been recently renovated. The Municipal Building also includes a meeting room which holds town board and community meetings and serves as the daily Senior Meals facility.

Equipment

The Selectboard and Town Clerk/Tax Collector offices share a computer network whose value exceeds \$10,000.

POLICE

The Police Department was given a favorable rating in the community survey, with 75 percent of respondents giving it the highest rating.

Facilities and Staffing

The Police Department currently occupies approximately 600 square feet on the lower floor of the of the Library building. The current personnel include eight full-time staff (one Chief, four officers, and three dispatchers) and nineteen part-time staff (eleven officers and eight dispatchers). There is 24-hour police staff coverage.

Equipment

- Two Cruisers valued at about \$17,000 each; one traded every year,
- Ford Explorer valued at approximately \$25,000 donated by local businessman,
- Radio system, two years old, valued at \$8,000 to \$10,000, with a ten-year life expectancy
- Computer system valued at \$8-10,000; some upgrades each year
- Four used laptops recently purchased from State Surplus for \$50 apiece

Issues

- The Police Department identified the need for a repeater tower to improve radio service within the Town. That project is currently being pursued through grant funding from the US Department of Homeland Security. It is anticipated that the repeater will be co-located on an existing tower serving the area.

- A dispatcher and at least one officer are on duty at all times, and the building space is cramped and inefficient. Additionally, the town building inspector has determined there are many safety and code issues with the building space. A new site for the Police Department is a high-priority need for the Town of Charlestown.

FIRE

The Fire Department was given a high rating in the community survey, with 76 percent of respondents rating it "good."

Facilities and Staffing

The Fire Station is in fair condition. Built in 1974, it is 4,529 square feet. The Department currently utilizes 30 paid on-call personnel. The building size is adequate for equipment at the present time but will require expansion as the Town's needs grow.

Equipment

Name of Equipment	Year	Life Expectancy	Value
Ford F350 Forestry	1987	2-Year	\$45,000
American LaFrance Engine	1981	4-Year	\$300,000
Ford 450 Mini Pumper	1996	8-Year	\$150,000
American LaFrance Engine	1991	14-Year	\$350,000
International Tanker	1999	15-Year	\$150,000

Issues

- The Fire Station needs an addition that includes handicapped accessible bathrooms, a changing area with showers, and a laundry room for personnel equipment cleaning.
- The 1981 American LaFrance Engine is nearing the end of its useful life and will be due for replacement within the next several years.
- The Town's insurance carrier has expressed concern that the design of both American LaFrance engines requires firefighters to ride unsecured to the rear of the cab. This may need to be addressed through the acquisition of a new utility/transport vehicle (crew cab pick-up truck) until the engines are replaced with new ones meeting current safety standards.

HIGHWAY

Road maintenance services in Charlestown was rated "fair" overall, with 43 percent of respondents giving it that rating and 29 percent rating it "good." Snowplowing service, however, was rated more highly with the majority (53 percent) giving it a "good" rating.

Facilities and Staffing

There are presently seven full-time employees within the Highway Department. The main Highway Department building is an 80-foot x 60-foot metal building approximately 35 years old. This is a four-bay building that currently houses thirteen pieces of equipment (listed below), along with work benches, oil drums, parts room, bathroom, and office space. The Highway Department also has a storage building that houses signs, barricades, tools, and other equipment.

Equipment

Name of equipment	Year	Replacement Year	Replacement Cost
Fiat-Allis Grader with plow and wing	1985	Past (5 years)	\$225,000
International Dump Truck with nose plow and sander	1987	2005	\$130,000
Gardner Air Compressor	1988	2010	\$18,000
Case Backhoe	2006	2020	\$125,000
International dump truck with plow, wing, sander	2006	2020	\$135,000
Bandit wood chipper	1989	2007	\$20,000
John Deere bucket loader	1992	2007-8	\$100,000
Wacker vibratory roller	1995	2007-8	\$85,000
International dump truck with plow, wing, sander	1997	2008	\$130,000
Ford F-550 dump truck	2006	2013	\$45,000
Ford F-550 dump truck plow, sander	2000	2007	\$65,000
Freightliner dump truck with plow, wing, sander body	2003	2013	\$130,000
Chevy I-Ton dump truck	1999	2009-10	\$50,000

Issues

- This building is inadequate in size to house all of the equipment; the building and equipment are suffering some damage as a result of the cramped space and employees on occasion have to climb over things to access some equipment. Either a couple of additional bays need to be built, or a new building is needed to accommodate this need for more equipment space. There has been some discussion of constructing a new Public Works building to house Water & Sewer, Highway, and Cemetery staff and equipment.
- The salt/sand storage building is not structurally sound.

AMBULANCE

Facilities and Staffing

There are currently 18 part-time, paid on-call personnel, and the Ambulance corps feels this is an adequate number. A former paid F/T EMT position was discontinued by vote at Town Meeting. The facility on Springfield Road, built in 1996, is 2,188 square feet and sits on a .35-acre property.

Equipment

- Two ambulances (one brand new); replacement value \$131,000, life expectancy 2020-25
- Two defibrators

Issues

- As equipment and vehicles have grown in size the size of the building itself is becoming an issue.

RECREATIONAL FACILITIES AND SERVICES

Survey ratings on recreational facilities were mixed. Thirty-three percent rated these services as "fair" and 31 percent as "good."

Facilities and Staffing

The Recreation Department employs two part-time staff and seven seasonal staff, and there is a nine-member volunteer Recreation Committee. The Department is currently considering the need for creating a full-time Recreation Director position.

Building/Facility	Use	Size	Current or Future Needs
Old Town Hall	Recreation equipment room; community meeting space	225 square feet	Fire egress, upper floor is not structurally sound. The potential use of this building is hampered by lack of parking.
Band Shell Building in Patch Park (gazebo, concession stand)	Gazebo and concession stand; has storage, kitchen, bathrooms	350 square feet	Bathrooms need to be upgraded
Bathhouses (2) at Town Pool	Office, pump room, pool	1200 square feet	The bathroom needs to be upgraded for handicapped accessibility. There has been some consideration of building a Recreation Center on Town owned land near the pool once the gravel pit has been exhausted.

In addition to these local facilities, the Town has recently appropriated funds to allow Town residents use of the new Springfield Regional Recreation Center in Springfield,

VT. The Recreation Committee is currently exploring programming options for the use of those funds that will best meet the recreational needs of all residents.

Equipment

There are no known equipment needs at this time.

Issues

- The Band Shell building bathrooms and Pool Bathhouses need to be upgraded.
- The Town should resolve the question of whether or not a full time Recreation Director is needed.

LIBRARY

Survey responses for the library were positive overall, with 58 percent rating it "good" and 17 percent "fair." 15 percent noted that they were "uncertain" which implies that the library services might be underutilized.

Facilities and Staffing

The Library is on the main floor of the Municipal Office building. The front of the building was built in 1894 and the back section was added in 1976. The total square footage is 4,500. The Library has one full-time Librarian, one part-time Assistant Librarian, and several other part-time staff people.

Issues

- The Library Trustees continue to support the need for Library renovations, and in the long-term, would like to reclaim the downstairs space if new space can be provided for the Police Department and Town Clerk.
- The handicapped access ramp serving the Bakery Building could be extended to the library as a backup for the electric elevator/lift.

CEMETERY

Facilities and Staffing

Hearse House in Forest Hill is used for equipment storage. Staff hopes to have a two-bay garage built across the street on Town property in 2006. There is one full-time, seasonal Sexton and three temporary, seasonal personnel.

Equipment

- One truck to be replaced in 2009
- Mowers worth about \$25,000 total, to be replaced every seven year.

Issues

- There is additional forested land available at Hope Hill Cemetery in North Charlestown for future cemetery space needs.
- Tree maintenance and the management of existing large pine trees in several of the cemeteries has become a significant issue for the Cemetery Trustees and staff.

EDUCATION

Charlestown is a member of the Fall Mountain Regional School District. It shares the High School with Alstead, Acworth, Langdon and Walpole. Each town has its own elementary schools, but some elementary students are sent to other towns in the district with tuition (rate established by apportionment formula). The schools were rated fair-good in the Master Plan Survey, with 45 percent rating "good" and 27 percent rating "fair."

Facilities and Staffing

Buildings

Building	Replace. Cost \$	Condition	Use, grades	# of students	Floor area, sq. feet	# of classrooms	Deficiencies
CHAS.							
Chas. Primary	2,250,870	Fair	K-4	238	31,626	24	
N. Chas.	1,042,052	Good	1-5	84	11,560	7	No gym/phys. ed, no library
Chas. Middle	4,340,142	Good	6-8	210	48,330	13	Eating area, music room, library too small
Total replace. cost	7,021,719						
OTHER DISTRICT	12,885,683				115,901		
HIGH SCHOOL *	9,902,934				101,779		Good
TOTAL DISTRICT	30,639,070				266,010		

* Including Media Center and Early Learning Center

Floor Areas of District Buildings, Square Feet

Other District Buildings		District Facilities	
Acworth	8,320	High School	93,104
Sarah Porter	3,578	Media Center	2,025
APS	12,100	Early Learning Center	6,650
Vilas	25,150	Total	101,779
Vilas OB	2,368		
NWS	13,835		
WPS	7,800		
WES	42,750		
Total	115,901		

Current Personnel

	Fall Mountain Regional School District		Charlestown Elementary Schools (1)	
	Full-Time	Part-Time	Full-Time	Part-Time
Teachers (including guidance, nurses)	66		39	1
Paraprofessionals (2)			23	
Secretaries			1	4
Custodians			3	3
Kitchen workers				6 (ave. five hours per day)
TOTAL CHARLESTOWN			63	14
FM DISTRICT TOTAL (3)	370	1		
On-Call (Paid) (4)				

(1) According to present education budget allocation system, Charlestown is essentially responsible for all costs associated with primary (K-8) education.

(2) Classroom aides and special ed. instructors (Individual Education Plans - IEP)

(3) 7 regional staff persons share time with Charlestown and other 4 sending districts

(4) Substitutes for all sending districts managed by District Coordinator

Equipment

Buses

	Fall Mountain Regional District	Charlestown
Fleet	17 (1)	8 (2)
Spares	3	1
Minis	2	
Total number of vehicles	22	9

(1) All but 2 for high school transportation

(2) All but 1 for high school transportation

Buses are purchased on a 7-year cycle. Currently, the value of all buses is \$1.4 million. Charlestown's buses are valued at about \$573,000. Actual payment is through a leasing arrangement with the providing enterprise, which takes care of major maintenance. Total leasing expenses for FY 2005 are about \$317,000, while the overall cost of transportation (including personnel) is about \$965,000. Charlestown's share of the total operating cost is about \$395,000.

Playground equipment and computers

	Number	Aggregate Value	Remaining Life
Playground equipment, N. Charlestown (1)	1	12,000	5 years
Playground equipment, Primary School 1 (1)	1	20,000	5 years
Computers (2)	~50	50,000	3 years

(1) This equipment was paid for with donations by parents of students

(2) Replacement cost for each desktop computer is about \$1,000. The average life of a desktop computer is estimated as 5 years; the estimated remaining life averages to about 3 years.

Issues

- The Middle School is in need of a soundproof music room to accommodate up to 90 students. The library should be upgraded to a Technology Center for a new technology program, but it is not currently large enough. The school also needs another SPED room, as currently two SPED teachers occupy the same room.

UTILITIES

INTRODUCTION

Utilities are also essential services that are delivered to residents through both public and private companies. Population and usage are driving forces that determine the level of services and the municipality requires. This section provides an overview of the utilities in Charlestown and raises any issues that need to be addressed.

At the Community Goals Workshop held in June 2004, participants identified several community utilities goals, including:

- Review existing solid waste management program and develop an action plan to make it more self-sustaining.

SOLID WASTE

The majority (70 percent) of survey respondents gave the Transfer Station a "good" rating. When asked if the Town's solid waste program should support mandatory recycling, a plurality was in favor, with 19 percent strongly agreeing, 26 percent agreeing, 23 percent neutral, and 16 percent disagreeing. When asked if the Town's solid waste program should implement a "pay as you throw" system, the majority disagreed. 29 percent strongly disagreed, 27 percent disagreed, and 20 percent were neutral.

Solid Waste disposal is an increasing problem. The town should consider a program of education and incentives to minimize waste generation in general, and particularly generation of non-recyclable waste. A goal of 50% recyclables should be set for the next 5 years, and 75% within 10 years.

Facilities and Staffing

The Transfer Station employs two full-time staff and three part-time staff.

Facilities

Building	Size in Sq. Feet	Condition	Notes
Scale house	576	Good	Less than 3 years old
Recycling building	4,000	Good	15 years old
Open receiving building	480	Good	
Compactor building	100	Good	

Equipment

Name of equipment	Year	Replacement Year	Replacement Cost
Compactor		2010-15	\$50,000
Truck	2003	2008	\$90,000
Baler (1)	2006	2015	\$40,000
Fork lift		2015	\$30,000
John Deere backhoe with grapple attachment	2005	2015+	\$73,500

Issues

- The Department of Environmental Services (NHDES) requires a building over the C&D and metal recycling boxes. This structure would be a simple open shed, roughly 10' x 45' and would cost approximately \$5,000.
- Solid waste reduction and recycling to achieve a 75% recycling rate in 10 years and financial self-sufficiency in that time frame.

ELECTRIC SERVICE

The following electric service providers serve the Town of Charlestown:

- National Grid: Serves the majority of residents in town.
- Public Service of NH: Serves North Charlestown
- NH Electric Cooperative: Serves less developed areas in the eastern portion of town

Existing industrial areas in town have three-phase power.

TELEPHONE

Telephone service in the Town of Charlestown is with Verizon.

Issues

- In the past, the Planning Board has received complaints about poor telephone service quality, especially for businesses that rely on high-speed, broadband telecommunication services.
- It has been noted by Planning Board members that infrastructure has been allowed to deteriorate, as evidenced by the highly visible shedding of insulation off telephone lines on Main Street.

CABLE TELEVISION

Comcast and its predecessor, Adelphia, has recently renovated most of the system serving Charlestown, upgrading from an analog to a digital system, which allows for greater

channel capacity and the provision of high-speed internet services. However, the Town regularly receives complaints about constant price increases. Once corporate stability is restored, the Town will continue negotiating a franchise agreement that was begun with Adelphia.

INTERNET ACCESS

In addition to standard dial-up internet access provided through telephone lines, high-speed internet services are provided by Verizon (DSL) and Comcast Cable. Comcast does provide the Town Offices with one high-speed internet connection at no cost. This connection is shared by the Selectboard and its staff, the Town Clerk/Tax Collector's office, Police Department, Water & Wastewater Superintendent, Planning & Zoning office, and Library. This service is available from Comcast for a fee, wherever digital cable is available.

TELECOMMUNICATIONS

One of the land uses posing a particular challenge for communities to manage is communication towers for wireless communications. The maintenance of a modern and accessible telecommunications network is considered essential to the public welfare. Public safety functions, such as fire and police departments, rely on adequate communication facilities to provide essential services. Cellular telephone coverage in Charlestown is inadequate. Two cell phone facilities have been approved by the Planning Board, and one has been built but is not yet activated. The field of telecommunications is undergoing constant and rapid changes, and advancements in technology will continue to affect growth in Sullivan County. Technological improvements are likely to enable people to work at home or telecommute.

WATER AND SEWER

The water and sewer system serves Charlestown Village and the neighborhoods to the north along Old Claremont Road and Springfield Road. There is also a separate water system (no sewer) that serves the village of North Charlestown.

Facilities and Staffing

The fourteen Water and Sewer buildings and structures are all in good condition. This department employs three full-time employees and one temporary/seasonal employee.

Equipment

Name of equipment	Year	Replacement Year	Replacement Cost
S10	1992	2006	\$100,000 new
Ford 350	2001	2007	
Ford 350	1993	ASAP	
Jetter	2000	2015	
Old backhoe	Unknown	ASAP	

Issues

- The Wastewater Treatment Facility has plenty of additional capacity.
- Sewage lagoons will need to be dredged soon, at a cost of upwards of one million dollars.
- The Town just completed improvements to the water and sewer systems. The improvements recently made to the North Charlestown system were designed to facilitate the potential connection between the two systems. This may be desirable in the future to provide back-up capabilities for both systems.
- An arsenic removal system is required for the North Charlestown water system to meet recently enacted, more stringent federal safe drinking water standards.
- The town sewer system serving the west side of the village is still in need of major improvements.
- The storm drain system serving the entire village is in need of major improvements.
- More storage space - both inside and outside - is needed for the main storage building on Main Street.

GENERAL FACILITIES AND UTILITIES ISSUES

Reuse and Renovation of Existing Town Building Space

At the Community Goals Workshop held in June 2004, participants reiterated their support for reusing and renovating existing historic buildings, when feasible, for town services. When asked in the Master Plan Survey about building or locating a new site to house multiple Town departments, there was a mixed response. This suggestion was not strongly supported in the survey but warrants further discussion, with 26 percent of respondents neutral, 26 percent disagreeing, and 17 percent agreeing. Creating a permanent, ongoing Community Facilities Committee to investigate and assess current or potential space for all Town departments would be a worthy investment in volunteer time. Committee members could make recommendations and set priorities for renovating existing space or acquiring new sites.

Capital Improvements Program

A Capital Improvement Program (CIP) is a blueprint for planning a community's capital expenditures. A capital budget and plan is authorized in the NH Statutes, RSA 674-5 through 674-8. The CIP is a statement of the Town's policies and financial abilities to

manage the physical development of the community. The development of a CIP provides a systematic plan for providing infrastructure improvements within a prioritized framework.

There are several benefits from developing and adopting a Capital Improvement Program. It provides a schedule of capital projects that can be considered for the Capital Improvements section of the Annual Budget. It becomes a management tool for the Town administration, and also provides valuable information to the Planning Board, citizens, developers and businesses who are interested in the development of the community. The CIP document will also assist in leveraging available resources through improved timing of projects, and coordinating Town projects with those of other public or private entities.

It is important to highlight the fact that this is a fluid document, and changes can occur for many reasons. Revenues can fluctuate as a result of changing economic conditions or shifts in public policy. Private economic decisions can also affect the timing, scale and location of capital projects. Finally, community objectives are difficult to set and may be altered during the budget process when priorities are often revised. In summary, a CIP should reflect community assets, needs and goals. A CIP should also provide guidelines for growth and development.

When asked in the Master Plan Survey whether or not the Town should develop a Capital Improvements program (CIP), the majority of respondents agreed and twenty-four percent were neutral, which seems to indicate that more education is needed about the benefits of having a CIP in place.

COMMUNITY FACILITIES & UTILITIES RECOMMENDATIONS

- The Town should create a Facilities Committee to assess, evaluate and make recommendations on current and potential space for all municipal departments.
 - A new Police Station should be the top priority for the Facilities Committee to investigate.
 - Seek addition for Fire Station that includes handicapped bathrooms, a changing area with showers, and a laundry room for personnel equipment cleaning.
 - Consider a new Public Works building to house the Highway, Water & Sewer, and Cemetery staff and equipment.
 - Investigate a larger main storage building for the Water & Sewer Department.
- The Town should create a Capital Improvement Program for major capital projects.
- The Police Department should continue to seek funding for a repeater tower to improve radio service within the Town.
- Seek funding to upgrade the bathrooms in the Band Shell and the Pool Bathhouses.

- Continue investigating the need for a new Recreation Center in Charlestown and a full-time Recreation Director.
- Seek funding (approximately \$5,000) for an open shed for the Transfer Station to satisfy NHDES requirements.
- Support Verizon in their efforts to improve service and upgrade deteriorating infrastructure.
- Support Comcast in making high-speed internet access readily available townwide.
- Investigate the costs and benefits of undergrounding utility lines on Main Street, as supported in the community survey.
- Initiate efforts to make needed improvements to the sewer and storm drain systems serving the village.

Natural Resources Chapter Charlestown Master Plan

INTRODUCTION

Charlestown's natural environment is one of the Town's major assets: its frontage on the Connecticut River, agricultural lands, hilltops, and forested areas are the backdrop and foundation for all human activities. Our physical, emotional and cultural well-being is inseparably linked to the health of natural systems. The economic, cultural, public safety and health benefits of environmental protection are increasingly being quantified in economic and social measures that show them to bring significant values to human society.

At the Community Goals Workshop held in June 2004, participants identified several natural resource goals including:

- Preserve and raise awareness of the watershed protection zone and drinking water protection areas.
- Protect special resources and direct development away from steep slopes, wetlands, floodplains, wildlife habitat, and wildlife corridors.
- Protect river frontage.
- Protect surface waters.

This chapter provides an overview of Charlestown's environment that includes its open spaces, watersheds, water bodies, potential drinking water supplies, wildlife, forests, and other natural systems, and suggested measures for conserving and deriving benefits of our considerable natural resources.

FOREST RESOURCES

Forested areas provide the appealing backdrop for New England villages. In Charlestown, wooded areas include a broad range of species, sizes and ages of trees located in its forests, as timberland, and in street plantings. Roughly 18,000 acres (or 74 percent) of Charlestown's lands are forested, with 87-91% of that land privately owned and the majority of that in parcels of 10 acres or less. The State of New Hampshire owns about 1,000 acres.

These areas have many benefits, including:

- Providing important wildlife habitat;
- Providing jobs and raw materials for construction and wood products;
- Improving air quality;
- Contributing to the scenic landscape;
- Creating shade and acting as windscreens;
- Serving as a recreational resource; and
- Stabilizing land to minimize soil erosion and resulting sedimentation, which degrades water quality.

Poorly managed forest harvesting operations, as well as development of large areas of forested land, can result in wildlife habitat degradation, soil erosion, and other negative environmental impacts.

Residential trees also play many important roles in the town of Charlestown. Local efforts to improve the quality of some of our street plantings have been undertaken by the Charlestown Women's Club and other citizens, through the planting of appropriate decorative and hardy native species of trees throughout the main street and on adjacent public areas.

Among other benefits, residential and street trees provide shade, beauty, windbreak, cleaner air, privacy, and higher property values. When planted in the proper location, trees can help decrease summer cooling and winter heating bills. Also, the leaves, branches and trunks of trees catch rainwater before it reaches the pavement, taking a slower route to storm sewers and reducing peak flows. As people become more aware of the benefits of trees, they realize the importance of maintaining the health of existing trees and the desirability of planting new ones. It is very important that native and site-suitable species be planted in the right places, to keep maintenance costs low and prevent impacts from natural hazards such as ice storms.

- Goals:** Preserve and protect Charlestown's forest and street tree resources to ensure that they continue to provide environmental, aesthetic, and economic benefits.
- Provide educational materials on forestry best management practices to forestland owners.
 - Support state, federal, and private acquisition of land, through donation or conservation easements, to protect the Town's forestry resources.
 - Continue implementing a regular care and maintenance program for street trees in the village area. Consider applying to the Tree City USA Program for its incentives and educational benefits.
 - Replace diseased and dying street trees on Main Street.

AGRICULTURAL RESOURCES

Much of the northern New England character is built upon the framework of the preexisting agricultural economy; however, open land that farming maintains does more than provide bucolic views. These lands provide habitat and travel corridors for wildlife, educational opportunities and "breathing space" for residents and visitors, as well as a disappearing link with history. Local farms provide fresh, high-quality food directly to the community and the region, eliminating the need for energy- and cost-intensive shipment and travel. They contribute directly and also indirectly to the economy by providing the quality of life that attracts companies and their workforce as well as tourists.

Since agriculture is an important contributor to Charlestown's scenic, historic, and cultural quality of life, incentives should be created or continued to ensure that farmlands will remain open and viable in the future. In addition, looming fossil fuel constraints over the next several decades may alter national food distribution patterns so that our agricultural land becomes a more important contributor to the local food supply. The values or benefits of open space and agricultural lands include the following:

- Enhance the small-town character of Charlestown;
- Promote self-sufficiency and small-scale economy when continued for agricultural purposes;
- Provide scenic views that contribute to the quality of life and to a visitor's aesthetic experience;
- Support tourism;
- Enhance and protect wildlife habitat; and
- Ensure a positive fiscal impact on the town by enhancing property values and keeping property taxes down.

In contrast to much of the steep, forested areas, which pose significant constraints for development, agricultural lands usually impose the least constraints to development for residential, commercial, or industrial uses. This partly explains why so few of these resources remain today, and is the reason why the community needs to act soon if it wishes to conserve these lands.

The Current Use program in New Hampshire provides property owners the benefit of reduced property taxes on open space lands, but does not ensure long-term protection. The purchases of conservation easements, development rights or fee simple acquisition of significant open space or agricultural lands do provide long-term protection.

- Goal:** Conserve our agricultural lands for their positive impact on the economic base resulting from their scenic qualities and food production value.
- Work closely with local, state, federal and private land protection organizations and land trusts to preserve agricultural lands through the use of conservation easements or fee simple acquisition.
 - Adopt policies that protect prime agricultural lands from development pressures, such as creation of an agricultural overlay zone.
 - Assist agriculture-related businesses through participation in state, regional, and local programs.

OPEN SPACE AND SCENIC RESOURCES

The scenic landscape of a community helps define its natural, cultural and historical heritage and thus establishes its identity. A visually pleasing environment makes a significant contribution to a community's overall quality of life. The erosion of the visual character of a community can have not only psychological impacts, but also very real economic impacts through the loss of tourism, depreciated real estate, and an inability to

market the community to prospective businesses and residents. As with other environmental impacts, visual degradation can happen incrementally to slowly change the character of a community. Open space land also provides wildlife habitat and corridors.

Several recent studies have shown the high economic value contributed by open space land. Open space also brings in more money in taxes than it uses in services. Each acre of open space land provides \$1,500 of economic benefit to the community and state.¹ Open space is vitally important to attracting and retaining businesses and increasing property values. It is also the foundation of the economic sectors of agriculture, forestry, tourism, and recreation industries.

UVLSRPC developed a scenic inventory methodology for the Connecticut River Joint Commissions, which the Town of Charlestown may want to use in the future, especially along Routes 12 and 12A. Inventorying and assessing scenic resources can help the Town prioritize lands for protection. This methodology looks at key scenic features, and then looks at important aspects of scenic views that are part of the Connecticut River Scenic Byway, how visible they are, and how vulnerable they are.

Scenic features

- Hilltops and ridgelines
- Meadows and agricultural lands
- Water bodies
- Cultural and historic features
- “Working landscape” (farms, animals, crops)
- Natural features and open space
- Community gateways

Important aspects

- Diversity and contrast
- Sense of order
- Uniqueness
- Depth and layers
- Focal points
- Intactness

Enjoyment of Charlestown’s open space is often experienced on the Town’s trail network. The Charlestown Economic Development Association’s Trails Committee developed a trail system, which has been in place since 1997. The Town Conservation Commission has assumed responsibility for ongoing development and maintenance of town and state trails. This trail system provides a connection with many outdoor activities, including hiking, show-shoeing, horseback riding, hunting and fishing. The only motorized vehicles permitted on designated trails are snowmobiles.

¹ *The Economic Impact of Open Space in New Hampshire*, Resource Systems Group, Inc. for the Society for the Protection of NH Forests, 1999

There are also trails through the Connecticut River State Forest and Hubbard Hill State Forest, under two-year agreements with the New Hampshire Division of Forests and Lands. Maps prepared by the Charlestown Conservation Commission showing both non-motorized and snowmobile trails are available at the town office for a fee.

The Town currently contributes 50% of the Land Use Change Tax revenues over and above the first \$10,000 to the Conservation Fund. The conservation fund may be used for expenses associated with land or easement acquisition and management, studies, maps, or any other conservation commission activity authorized by RSA 36-A.

- Goal:** Identify and conserve important open space and scenic lands, for their economic, recreational and scenic values.
- The Town should consider allocating 100 percent of the use change tax to their Conservation Fund, as many other communities, including Claremont and Walpole, do.
 - Identify and prioritize parcels of land that the Town feels should be protected because of important cultural, ecological, historical, scenic or recreational value.
 - Develop an inventory and analysis of Charlestown's scenic views and vistas, particularly those at high risk of being lost and those along the Connecticut River Scenic Byway.
 - A program of regular planning and maintenance of the trails organized by the Conservation Commission and concerned citizens should be undertaken to assure continuing usefulness, safety, and appropriate expansion of the trail system.

WILDLIFE AND RARE PLANT SPECIES

Because Charlestown has extensive river frontage, large forested areas, a number of wetlands and open fields, it has excellent habitat for a diversity of wildlife. This biodiversity enriches the community by providing environmental, economic, social, and health benefits.

Important benefits of protecting wildlife habitat and maintaining biological diversity are:

- Wildlife and its habitat enhance our quality of life and enrich our community.
- Wildlife related activities, such as fishing, hunting and wildlife watching, generate significant economic activity.
- Wildlife and its habitats cannot be supported solely through public acquisition of lands for protection, so local communities and private landowners are critical partners in wildlife conservation.

Critical habitat types include deer wintering areas ("deeryards"), wetlands and riparian areas. Wetlands and riparian areas are covered under the Water Resources section of this

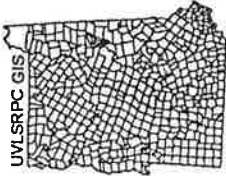
chapter. Deeryards are wooded areas consisting mainly of coniferous trees (softwoods such as hemlock and pine) that provide shelter from heavy snowfall and cold winter temperatures. Without such areas, many deer would not survive the long winter months. In 1987, the New Hampshire Fish and Game Department mapped deer wintering areas ("deeryards") using aerial photography to locate areas ten or more acres in size with dense evergreen cover (see Map).

The Connecticut River, which flows north-south and forms the western boundary of the town, is a major route for migratory birds. Many species stop over especially in the Great Meadows area. Residents should be informed of the importance of vegetation along waterways for bird survival. Migration of birds along the river is of interest to bird watchers and promotes tourism and other recreational activities. The New Hampshire Audubon Society is conducting a survey of birds in the vicinity of the Great Meadows and the findings can aid the Town in identifying conservation measures.

The NH Natural Heritage Inventory (NHI) is a state program within the Division of Forest and Lands. The NHI finds, tracks, and facilitates the protection of NH's plant and animal species of concern, and exemplary natural communities. Exemplary communities are distinctive communities of forests, wetlands, grasslands, etc. that are found in few other places in the state, or are communities that are very old and in good condition. Species of concern are those species listed as threatened or endangered under the New Hampshire Endangered Species Conservation Act of 1979 or under the New Hampshire Native Plant Protection Act of 1987.

The NHI data represents the best available information for locations and status of species of concern and natural communities in NH, but there are certainly occurrences that have not yet been found since a comprehensive inventory of the State and Town has not been done. Rare plant species and natural communities information from the NHI indicates that there are five areas in Charlestown where such resources may possibly occur. The resources are listed in Table I below. The general locations of these rare plant species and natural communities are shown on the following Map. Note that these are only general locations in order to maintain confidentiality of precise locations of these protected species.

Charlestown, NH Natural Resources

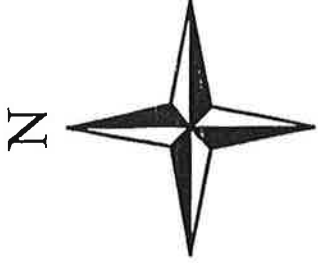


Map created by Upper Valley
Lake Sunapee Regional
Planning Commission,
September 2003.

Base map features from USGS 1:24000 scale Digital Line Graphs, distributed by Complex Systems Research Center (CSRC), Durham NH.

Rare plant species and natural communities data compiled by NH Natural Heritage Inventory and maintained by CSRC.










Deer wintering areas from NH Fish & Game
Deer Wintering Survey maps, 1987.



Scale: 1:55000



Legend

- | | |
|---|--|
|  | Town Boundary |
|  | Roads |
|  | Interstates and State Highways |
|  | Other Roads |
|  | Rivers, Lakes and Ponds |
|  | Marsh or Swamp |
|  | Streams |
|  | Rare Plant Species and Natural Communities |
|  | Deer Wintering Area |

Natural Resources Charlestown, NH



Map created by Upper Valley
Lake Sunapee Regional
Planning Commission,
September 2003.

Base map features from USGS 1:24000
scale Digital Line Graphs, distributed by
Complex Systems Research Center (CSRC),
Durham NH.

Rare plant species and natural communities
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Deer wintering areas from NH Fish & Game
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Scale: 1:55000

0.5 0 0.5 1 Miles

Legend

- Town Boundary
- Roads**
 - Interstates and State Highways
 - Other Roads
- Rivers, Lakes and Ponds
- Marsh or Swamp
- Streams
- Rare Plant Species and Natural Communities
- Deer Wintering Area

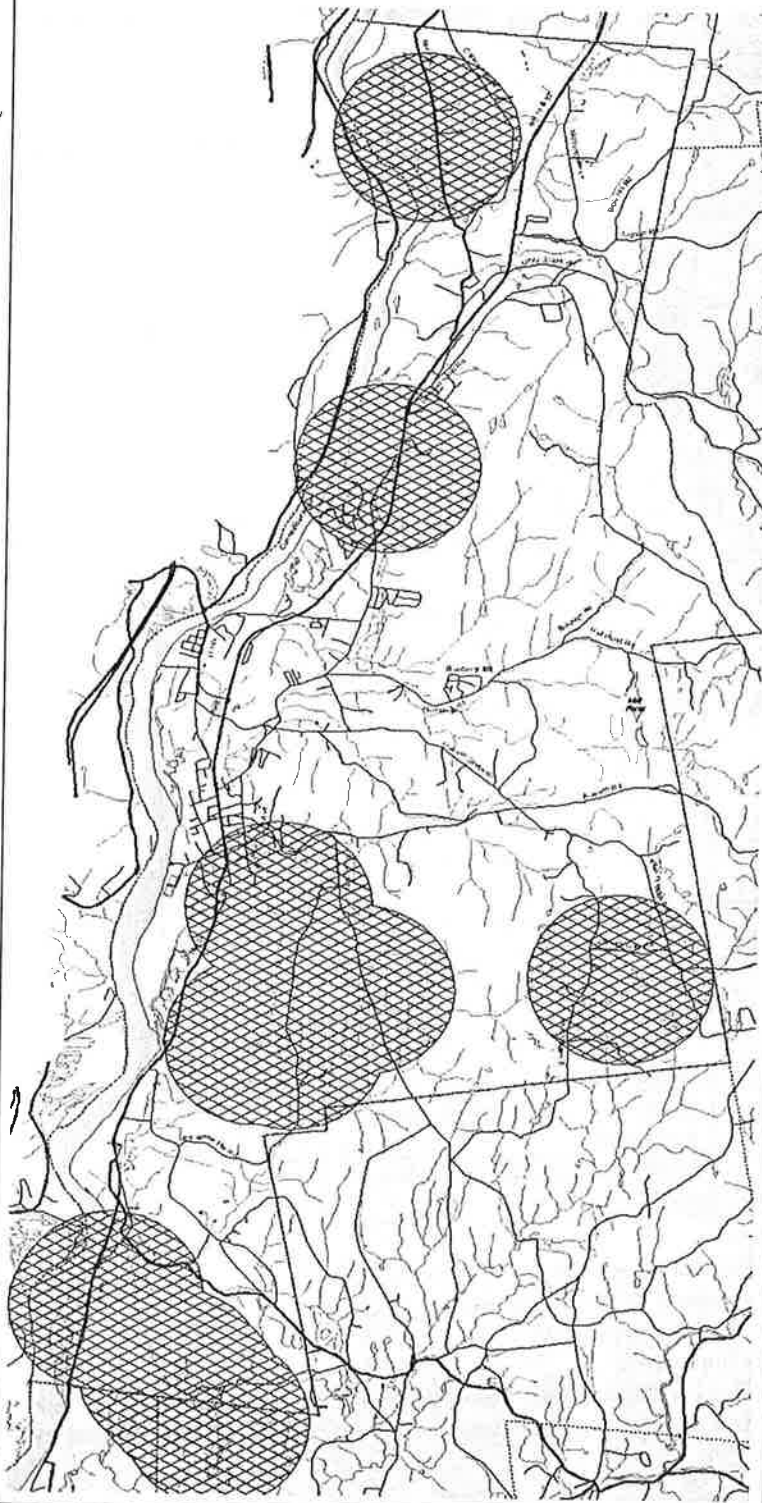


Table I: NHI Data - Charlestown

Flag	Species or Community Name	Listed		# Locations Reported in last 20 years	
		State	Federal	Town	State
	Natural Communities - Terrestrial				
	SNE Acidic Rocky Summit/Rock Outcrop Community	--	--	Historical	21
*	SNE Circumneutral Cliff Community	--	--	1	2
**	SNE Circumneutral Rocky Summit/Rock Outcrop Community	--	--	1	6
***	SNE Floodplain Forest	--	--	1	48
**	SNE Rich Mesic Forest	--	--	1	12
	Natural Communities - Palustrine				
**	NNE Cliff Seep Community	--	--	1	5
	Plants				
	Ambiguous Sedge (<i>Carex amphibola</i> var <i>rigida</i>)	--	T	Historical	4
	Flatstem Pondweed (<i>Potamogeton zosteriformis</i>)	--	T	Historical	10
	Four-Leaved Milkweed (<i>Asclepias quadrifolia</i>)	--	T	Historical	10
*	Goldie's Fern (<i>Dryopteris goldiana</i>)	--	T	1	34
	Hog-Peanut (<i>Amphicarpaea bracteata</i> var <i>comosa</i>)	--	T	Historical	4
	Knotty Pondweed (<i>Potamogeton nodosus</i>)	--	--	Historical	18
****	Northeastern Bulrush (<i>Scirpus ancistrochaetus</i>)	E	E	6	8
	Sago Pondweed (<i>Potamogeton pectinatus</i>)	--	T	Historical	7
***	Water-Stargrass (<i>Heteranthera dubia</i>)	--	E	1	3

**** = Highest Importance

*** = Extremely High Importance

** = Very High Importance

* = High Importance

(These flags are based on a combination of (1) how rare the species or community is and (2) how large or healthy its examples are in this town.) Source: Natural Heritage Inventory, 25 February 2004

Development impacts on wildlife and plant communities²:

There are four basic impacts on wildlife that result from development:

- Unique or significant habitats are not recognized as such and are subsequently developed;
- Too much of an area may be developed, leaving an inadequate representation of natural plant communities to support native wildlife;
- Some wildlife will be more successful in association with human development at the expense of other species;
- Domestic pets, especially cats, prey excessively on native wildlife.

The future well-being of wildlife in Charlestown depends upon large areas that are natural and undeveloped, as well as natural corridors along rivers, streams, and wetlands. A major challenge for biological diversity is sprawling development patterns that cover the rural landscape and that can cause habitat fragmentation. The fragmentation of wildlife habitat can result in parcels that are too small to support populations of some native species. Small parcels likely mean an increase in human disturbance, low productivity, decreased food availability, and increased predation by domestic animals. Wide-ranging species such as black bear will no longer be found in that habitat.

For optimum wildlife habitat, blocks of unfragmented land should be limited to human activity or development. Wildlife biologists consider 250 acres as a minimum for unfragmented habitat.

- Goal:** Protect and preserve sufficient and viable habitats to ensure the continuation of healthy wildlife and rare plant species.
- Develop a Natural Resources Inventory to identify, analyze, and make recommendations for wildlife habitat and travel corridor protection.
 - Identify and catalogue parcels of unfragmented land in Charlestown, with a special emphasis on lands that abut other parcels of conservation land, water bodies, or known wildlife habitat or travel corridors.
 - Use a conservation design approach for the design of subdivisions, particularly within those areas identified as unfragmented.
 - Amend the Site Plan and Subdivision Regulations to require applicants proposing construction on undeveloped properties to contact the NHI Program to find out if species of special concern are known to be located on the property.
 - Educate landowners about the importance of protecting and enhancing wildlife habitat, by providing workshops and/or displaying wildlife maps and publications in the Town offices and library.

² *Identifying and Protecting New Hampshire's Significant Wildlife Habitat: A Guide for Towns and Conservation Groups*, Nongame and Endangered Wildlife Program of the NH Fish and Game Department, 2001.

- Support private, state and federal acquisition of land, through donation or conservation easements, to protect the Town's wildlife resources.
- The Conservation Commission should undertake an education program for citizens covering migrating species and conservation measures.

Invasive species are a threat to existing wildlife habitats, second only to fragmentation of habitats in their negative impacts on native species of both flora and fauna. Invasive exotic plant species are rapidly taking over in many areas of Charlestown, particularly along the river, its tributaries, and roadways, driving out more desirable native species that are needed for wildlife survival. Invasive species are a threat to the economic value of town forests as they impede growth and crowd out desirable species, altering young forests by depleting desirable timber species. Vehicles can carry seeds of invasive species in their tire treads and easily infect a new site.

For control and eradication of invasive plant species, some of the goals are as follows:

Goals:

- Consider hiring a consultant, who could train volunteers to survey invasive plants, of which there are about 20 species in the Charlestown area.
- Road crews should be trained to identify invasive plants such as Japanese Knotweed, so that patches of this plant can be thoroughly mowed and disposed of properly to avoid further spreading when mowing along the road.
- The town should provide information to foresters and loggers on Best Management Practices in timber harvesting operations.
- The Conservation Commission should seek sources of funds to educate the public on invasive species so that control of these plants can be done at the landowner level along with other property maintenance.

WATER RESOURCES

Introduction

Charlestown's water resources are central and highly valued features of the Town's landscape. The Connecticut River and its tributaries contribute to the scenic environment, encourage tourism and stimulate economic development, provide important habitat, and present a variety of recreational opportunities. Groundwater resources provide important existing and potential drinking water sources for residents of Charlestown. The topics in this section are presented in subsections for organizational purposes, but it is important to remember the interconnectedness of all water resources. All water in the environment is part of one hydrologic cycle and alterations to one feature of the system may lead to changes in another. Similarly, water resources know no political boundaries and consequently, activities that take place in one community often affect the residents of another.

Watersheds

All of Charlestown is within the Connecticut River watershed. Surface waters drain into the Little Sugar River, and in a small section into the Cold River. Other major water bodies and tributaries in Charlestown are Ox Brook, Smith Brook, Hall's Pond, Clay Brook, Great Brook, Hackett Brook, Jabes Meadow Brook, Beaver Brook and North Mountain Pond (see Map). A watershed is made up of all the land that drains into a body of water. The line that connects all of the highest elevations around the water body defines the boundary of a watershed. As rain and snowmelt travel within this "catch basin" and flow by gravity into the water bodies and ground, they carry various amounts of nutrients and pollutants with them. A watershed approach to water resources planning is critically important, as watersheds are the main units of surface water and groundwater recharge. In addition, the land uses located within a watershed directly impact the water quality.

Charlestown has a sizeable Watershed Zone, approved by the voters in 1981 for the protection of surface and subsurface water supplies in the upper elevations of the northeast part of the Town. The voters approved the Watershed Zone, encompassing nearly 25 percent of the Town's land, to protect sources of drinking water from contamination. The Planning Board has published guidelines for the protection of the Watershed Zone for use when agricultural, forestry or building activities are proposed in the Zone. Through large-lot zoning and employment of the Guidelines for the Watershed Zone, the townspeople have sought to protect their drinking water.

Surface waters

In the Community Goals Workshop, participants clearly communicated that protecting surface waters, and in particular river frontage, as one of the Town's primary natural resource goals. One of Charlestown's greatest assets is the Connecticut River that flows some sixteen miles along the western border of the town. The Connecticut River Joint Commissions, based in Charlestown, writes about the river: *"It is a life-giving river, blanketing its floodplain over thousands of years with the finest agricultural soils in New England. Its waters and banks provide nationally recognized fish and wildlife habitat. The river is beautiful. It draws people to live in its peaceful setting, to grow businesses and prosper, to fish and canoe, to explore the historic heritage of its nearby villages."*³

Surface water pollution can result from a variety of human activities within a watershed. Nonpoint source pollution (pollution that cannot be traced to a single source such as a pipe) is the biggest contributor to water quality degradation nationwide (See Table II below). Pollution from pesticides, herbicides, septic systems, road chemicals, and other sources run over "impervious surfaces" such as parking lots, roads and construction sites on developed land, and into waterways.

³ Connecticut River Corridor Management Plan: Riverwide Overview, Connecticut River Joint Commissions, 1997.

Watershed Boundaries Charlestown, NH



Map created by Upper Valley
Lake Sunapee Regional
Planning Commission,
August 2003.

Base map features from USGS 1:24000
scale Digital Line Graphs, distributed by
Complex Systems Research Center,
Durham NH.

Watershed boundaries from NH Department of
Environmental Services, Water Resources
Division, 1:24000 scale, 1994.

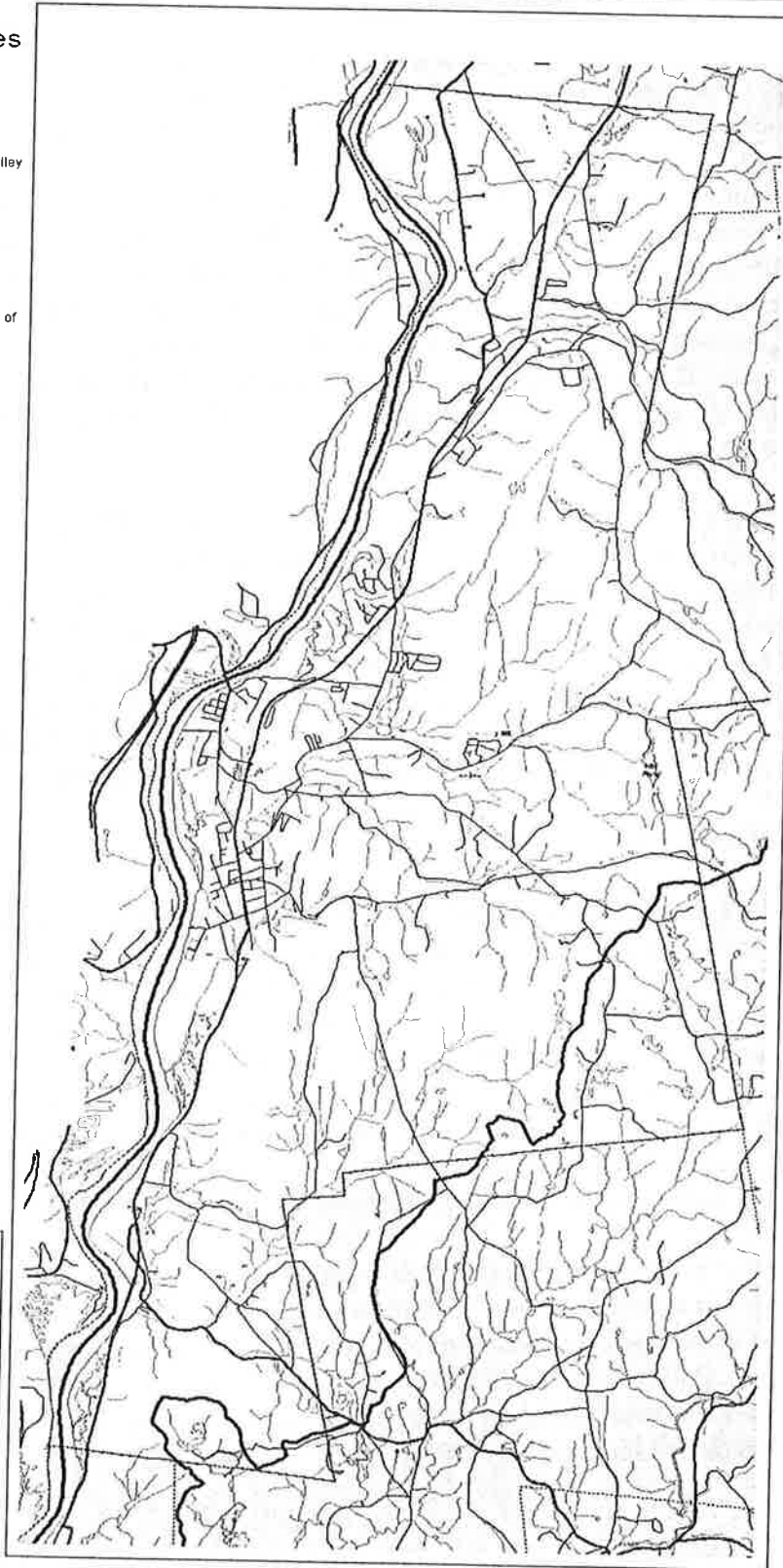


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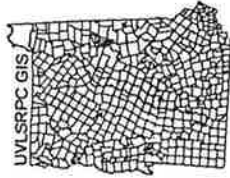
0.5 0 0.5 1 Miles

Legend

- Town Boundary
- Roads**
 - Interstates and State Highways
 - Other Roads
- Rivers, Lakes and Ponds
- Marsh or Swamp
- Streams
- Watershed Boundary



Charlestown, NH Watershed Boundaries



Map created by Upper Valley
Lake Sunapee Regional
Planning Commission,
August 2003.

Base map features from USGS 1:24000
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Durham NH.

Watershed boundaries from NH Department of
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Scale: 1:55000



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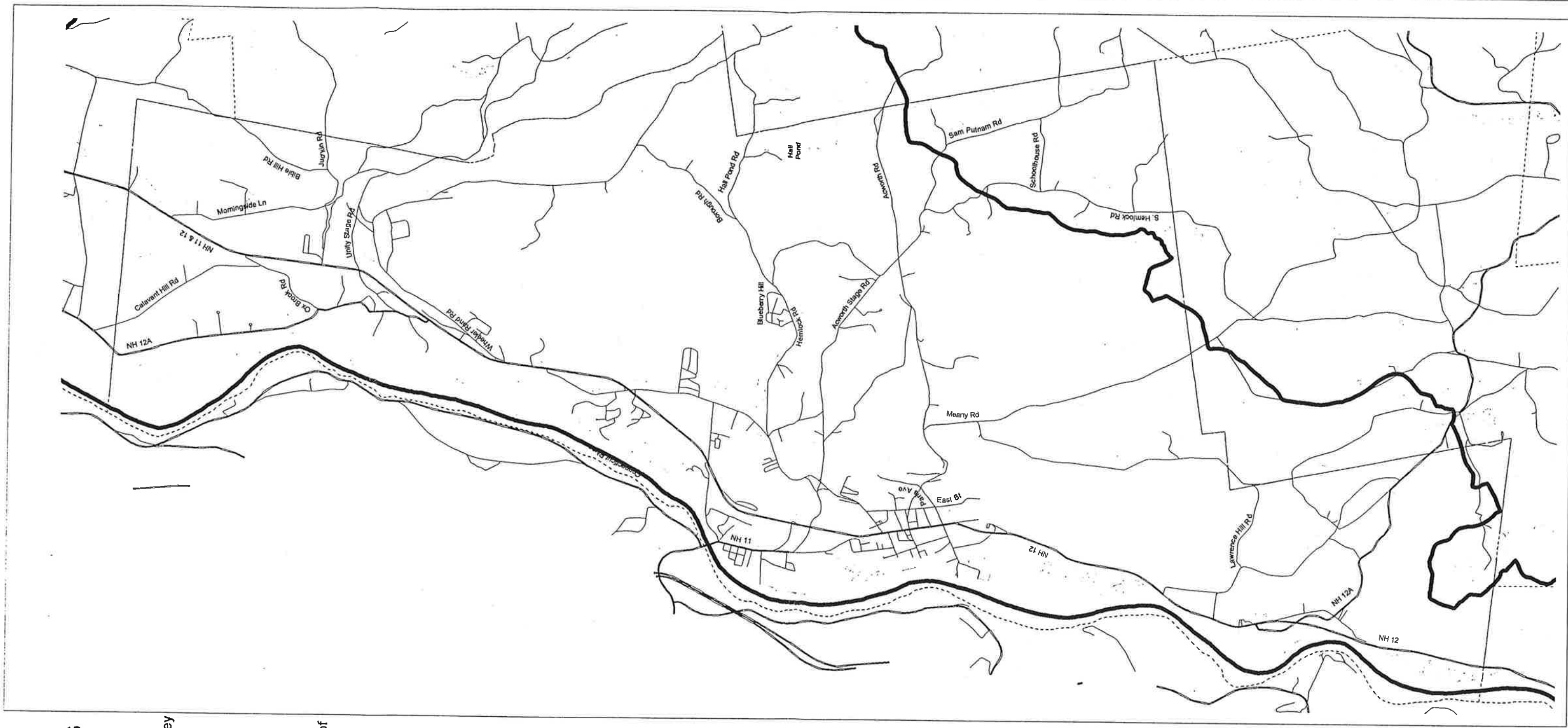


Table II: Nonpoint Pollution Sources

Primary Groundwater Impacts	Primary Surface Water Impacts
Surface impoundments	Erosion
Manure storage facilities	Snow dumps
Industrial chemicals	Stormwater runoff
Municipal chemicals	Agricultural runoff
Septage disposal lagoons	Pesticide use
Subsurface disposal concentration	
Junkyards	
Landfills and dumps	
Hazardous waste	
Salt piles	
Salted roads	

Much can be done at the local level to prevent degradation of surface water quality. Shoreline protection, including preservation of vegetative buffer strips, and erosion and sedimentation control can both be used to reduce the amount of pollution entering surface waters. It is the intent of the NH Legislature through the River Management & Protection Program to empower each community to participate in developing a local mechanism for protecting the river and its shoreline.

In 1994, New Hampshire enacted limited protection for lake, river, and coastal shores through RSA 483-B, the Comprehensive Shoreland Protection Act. The Act governs all structures within the protected shoreland. This includes, but is not limited to, primary structures, accessory structures, and water dependent accessory structures. Some changes made to the Act in 2001 affect the placement of structures within the protected shoreland. While the primary building setback remains 50 feet from the reference line, no municipality may establish a setback less than 50 feet from the reference line after January 1, 2002. A municipality with a less stringent shoreland setback, established prior to January 1, 2002, may retain that setback. In the case of a municipality with a greater shoreland setback, the more stringent setback shall apply. The other change to the Act was the inclusion of the Connecticut River, which is now protected.

Maintenance or restoration of a natural vegetation buffer within the shoreline setback is equally important to water quality. In 1998, the Town of Charlestown received recommendations in the Connecticut River Corridor Management Plan of the Connecticut River Joint Commissions (CRJC) regarding the protection of the Connecticut River and its watershed. The CRJC maintains that preserving a vegetated buffer along waterways, including smaller streams, is probably the single most effective protection for water resources. This buffer zone filters polluted runoff, stabilizes banks, regulates stream flow, and provides important habitat, among other things. A 100' buffer, according to CRJC, will generally remove 60 percent or more of pollutants and provide adequate habitat. However, a wider buffer may be needed if the land is floodplain, soils erode easily, the land use is intensive, or the land above is sloped. Many people tend to think of shoreline protection as only important for large water bodies such as the Connecticut River.

However, a disturbed area on the edge of a tributary stream with steep banks is likely to result in more erosion or sedimentation than in a flat plain along a large river.

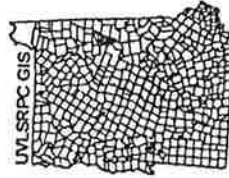
In developing a strategy for establishing protective buffers for surface waters and wetlands, the Town should include protection and management techniques that go beyond regulations. Land acquisition is an important non-regulatory measure to protect water quality. Charlestown has been fortunate in the fact that much of its river frontage is controlled and maintained by a power company and consequently, not available for development. However, many opportunities remain for riverfront protection. The Conservation Commission is authorized by RSA 36-A: 4 to acquire the fee simple (full title) or a lesser interest in land for conservation purposes in the name of the Town. Other water resource protection options to pursue are conservation easements, which place permanent restrictions on certain uses of the land, or landowner donations.

Erosion and sedimentation control and stormwater management are other tools that can be used to decrease surface water quality degradation associated with development and other activities. Development on steep slopes is a significant source of sedimentation of surface waters. The erosion potential is greater because the soils tend to be shallower in these areas and the volume and velocity of surface water runoff is higher. Areas with slopes over 15 percent (See Map) *pose* a challenge to develop in an environmentally sound and cost-effective manner. Land with slopes over 25 percent is often best left as open space, due to the potential for erosion when disturbed.

Stormwater runoff from roads and other impermeable surfaces often enters surface waters directly or via drainage structures, and carries with it salt, sediment and other pollutants. One approach, termed "low-impact development" or "LID" promotes dispersed, onsite practices that slow down and cleanse runoff on its way to ground and surface waters. This approach promotes low-tech methods such as rain gardens, open drainage swales, and depression storage to disperse and treat stormwater runoff.

In Charlestown, a subdivision must have a sediment and erosion control plan. In the Town's Watershed Zone, farmers must employ measures to prevent erosion, sedimentation and pollution.

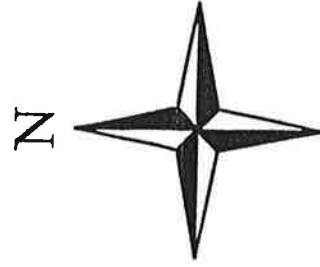
Charlestown, NH Steep Slopes



Map created by Upper Valley
Lake Sunapee Regional
Planning Commission,
September 2003.

Base map features from USGS 1:24000
scale Digital Line Graphs, distributed by
Complex Systems Research Center,
Durham NH.

Steep slopes from soil types mapped by USDA
Natural Resources Conservation Service and
digitized by Complex Systems Research Center,
Durham, NH; April 2001.

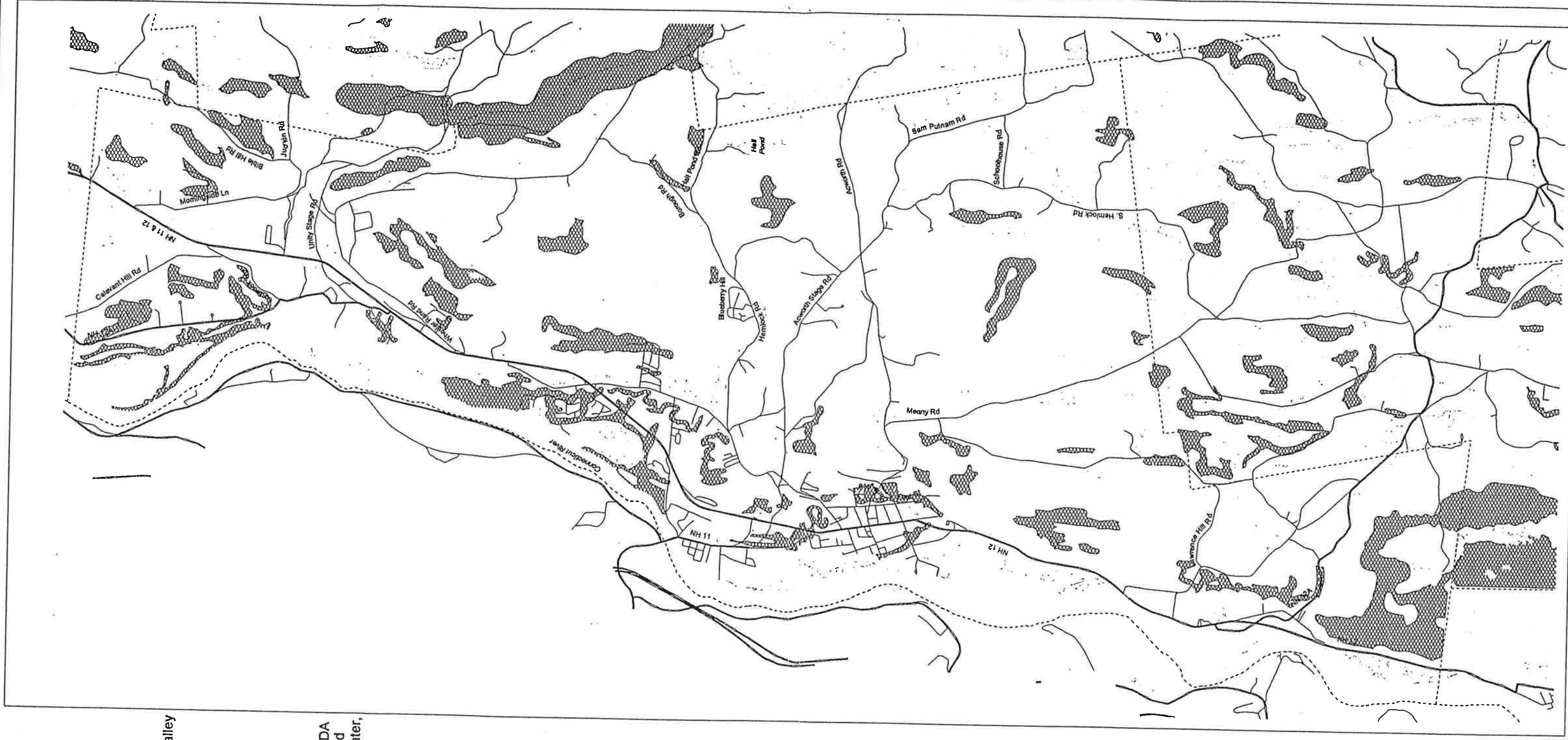


Scale: 1:55000



Legend

- Town Boundary
- Roads
- Interstates and State Highways
- Other Roads
- Rivers, Lakes and Ponds
- Marsh or Swamp
- Streams
- Steep Slopes Greater than 15%



Steep Slopes Charlestown, NH



Map created by Upper Valley
Lake Sunapee Regional
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Steep slopes from soil types mapped by USDA
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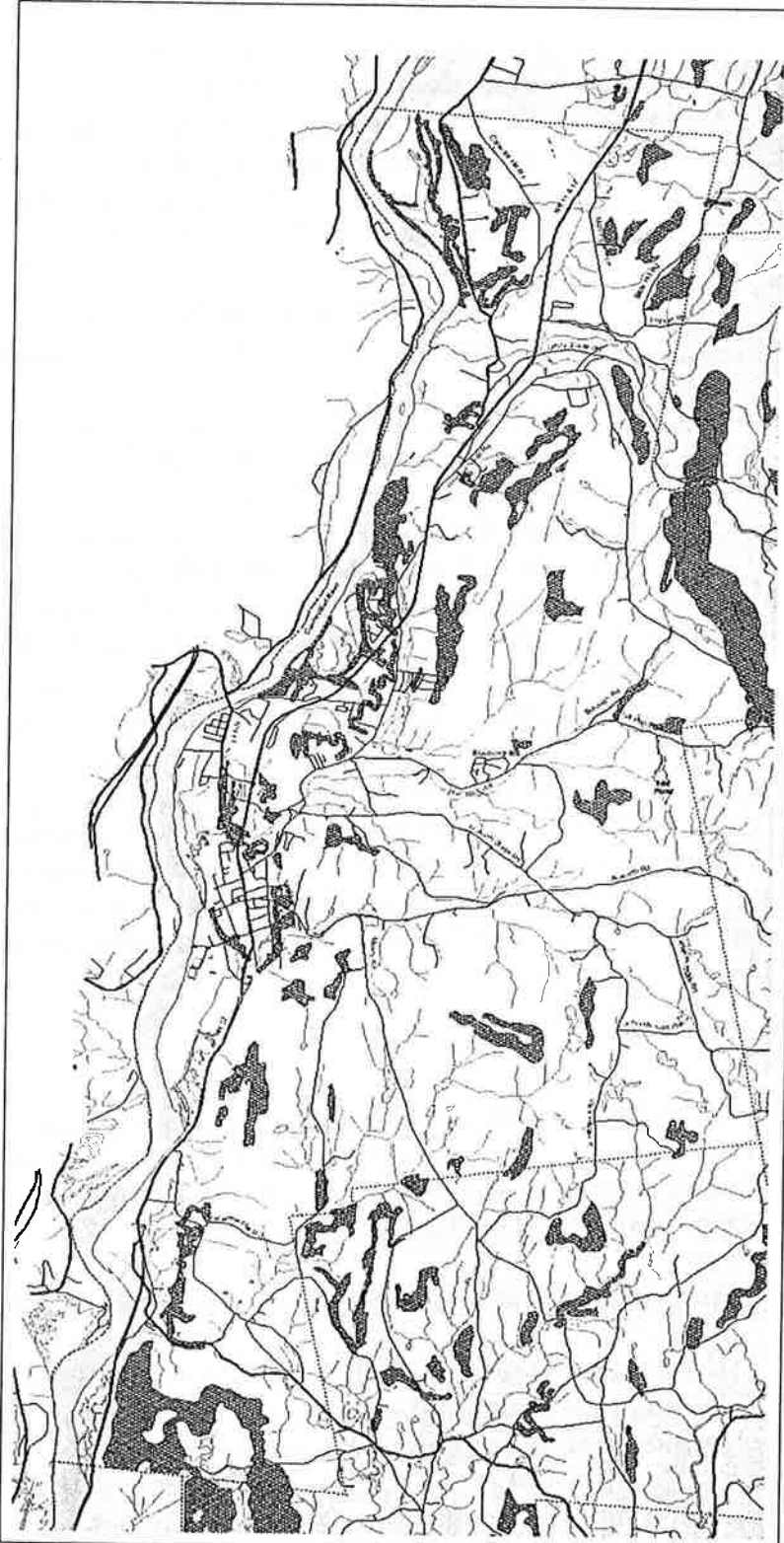


Scale: 1:55000

0.5 0 0.5 1 Miles

Legend

- Town Boundary
- Roads**
 - Interstates and State Highways
 - Other Roads
- Rivers, Lakes and Ponds
- Marsh or Swamp
- Streams
- Steep Slopes Greater than 15%



- Goal:** Maintain or improve the water quality in all of the Town's surface water features. Ensure that the water bodies continue to support environmental, recreational, aesthetic, and other values.
- Strengthen policies to protect surface water quality, such as shoreland regulations for rivers, streams, ponds, and lakes.
 - Support efforts to educate landowners regarding issues such as the importance of vegetated buffers and the impacts of improper use of fertilizers.
 - Cooperate with landowners and land protection organizations to permanently protect riparian lands through conservation easements or other means.
 - Consider creating a Steep Slopes District in order to prohibit development on slopes over 25 percent, and carefully plan and manage development on slopes between 15 and 25 percent.
 - Consider the establishment of a 100-foot minimum building setback along the Connecticut and Little Sugar Rivers.
 - Amend the Site Plan Review and Subdivision Regulations to support the retention of a natural, vegetated buffer within the shoreland setback area.
 - The Town of Charlestown should update its regulations to adequately address the issues of stormwater management, erosion and sediment control to improve the quality of the Town's waterbodies.
 - Because of the potentially detrimental effect of sedimentation on the Town water supply, the Planning Board should require erosion and sediment control plans for logging and land clearing operations on those lands that drain directly into water bodies and the water supply.
 - Review and update the land use Guidelines for the Watershed Zoning District

Wetlands

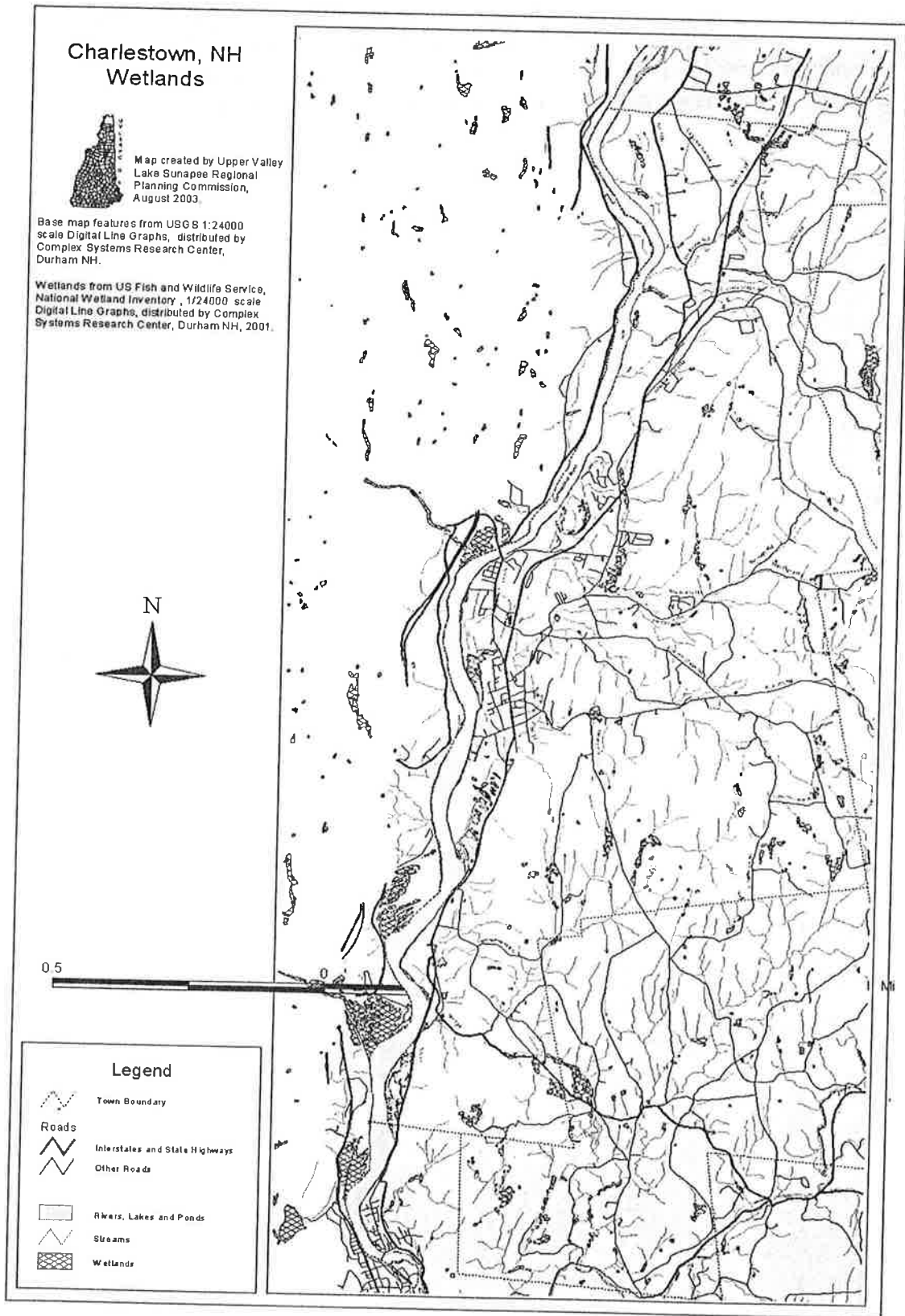
Wetlands are lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. Wetlands include such areas as swamps, bogs, fens, floodplains and shorelands. Wetlands must have the following three attributes:

1. At least periodically, the land supports predominantly hydrophytes (wetland flora);
2. The substrate is predominantly undrained hydric soil; and
3. The substrate is saturated with water or covered by shallow water for at least fourteen days during the growing season each year.

The value of wetlands for groundwater and stream recharge, flood attenuation, pollution abatement, and wildlife habitat is still little understood and vastly under-appreciated. Wetlands and their valuable functions are essentially doing the work of engineers free of charge, saving municipalities money and effort in pollutant and flood mitigation.

Adopted December 4, 2007

Most wetland areas in Charlestown are found in areas of poorly drained soils associated with the Connecticut River, and ponds and brooks. The following Map shows wetland areas mapped from the US Fish and Wildlife Service, National Wetland Inventory. Smaller wetland systems are not identified through this aerial photography.



Wetlands are delicate ecosystems, susceptible to disruption by change in the surrounding environment. Wetlands possess the potential to absorb nutrients from sewage, wastewater effluent and runoff, carrying trace metals and agricultural chemicals. Pollutants such as oil, grease or road salt from highways can be trapped by wetlands before polluting surface waters and groundwater. However, partial loss of wetland area can reduce the capacity of a wetland to perform its important functions. The small, incremental filling and degradation of wetlands over the years continue to add up to a significant loss of wetland acreage and function. Frequently, this loss is accompanied by an increase in urban runoff, carrying pollutants to surface waters and increasing sedimentation.

Vernal pools, seasonal accumulations of water in shallow woodland depressions, are an important breeding habitat for wildlife, especially for some amphibians. New Hampshire has a program that encourages the documentation of vernal pools; in other states they are being granted protected status. The Town Conservation Commission should undertake a project to identify map, conserve and protect these important, but little understood wetlands, which are critical to the survival of many amphibians, and the other wildlife that feed on them, perhaps using volunteers to do the field work. The town should contact the Public Affairs Division, NH Fish and Game for information on vernal pool identification and documentation.

New Hampshire legislation RSA 482-A, Fill and Dredge in Wetlands, states that a permit is required from the New Hampshire Wetlands Bureau for any construction, excavation, removal, filling or dredging in wetlands. Municipalities are also permitted to designate some wetlands within their borders as "Prime Wetlands" because of size, unspoiled character, fragility, or uniqueness. Designation of these wetlands as prime assures an added layer of protection in the dredge and fill permitting process.

The state guidebook *Buffers for Wetlands and Surface Waters* (NH Office of Energy & Planning) recommends 100 feet as a reasonable minimum buffer width under most circumstances to protect wetlands for the benefit of wildlife, drinking water quality, scenic beauty and the local economy. In addition, acquisition of easements, acquisition by the Conservation Commission from willing landowners is an excellent non-regulatory strategy for protecting important wetlands.

The Conservation Commission has several major responsibilities towards the protection of wetlands, including the opportunity to review and comment on any proposed local wetland project to the NH Wetlands Bureau and/or the U.S. Army Corps of Engineers. The Conservation Commission is also responsible for inventorying and mapping wetlands.

- Goal:** Protect and preserve wetlands to ensure continued habitat preservation, flood control, and purification of surface waters.
- Establish setback requirements within the zoning and subdivision regulations to protect wetlands.

- Conduct a local wetlands inventory to identify and evaluate wetlands and assess protection needs.
- Inventory and legally designate prime wetlands for special protection from encroachment by development.
- When evaluating development proposals that affect wetlands, the landscape-level context should be considered. In other words, rather than focusing on merely wetland acreage, consider adjacent upland habitats, buffers, stormwater effects, and other such impacts.
- Work with land trusts and other conservation organizations to prioritize wetlands for conservation easements and other forms of permanent protection.
- The Town Conservation Commission should contact the Public Affairs Division, NH Fish and Game for information on vernal pool identification and documentation, and undertake a project to identify map, conserve and protect them.

Floodplains

Floodplains are the periodically inundated flat lands adjacent to rivers and streams. Floodplains serve as storage areas for water during times of flooding and provide travel corridors for wildlife. Due to their important ecological characteristics, development in floodplains presents some special problems, including: 1) A high probability of property damage during flooding; 2) The restriction of periodic water storage resulting in potentially greater flooding; and 3) The increased likelihood of erosion and sedimentation. The latter factor can cause increased turbidity of water in rivers and streams. The following Map depicts floodplains within Charlestown.

Soil-based Floodplains Charlestown, NH



Map created by Upper Valley
Lake Sunapee Regional
Planning Commission,
August 2003.

Base map features from USGS 1:24000
scale Digital Line Graphs, distributed by
Complex Systems Research Center,
Durham NH.

Flooding soil types mapped by USDA Natural
Resources Conservation Service and digitized
by Complex Systems Research Center, Durham,
NH; April 2001.

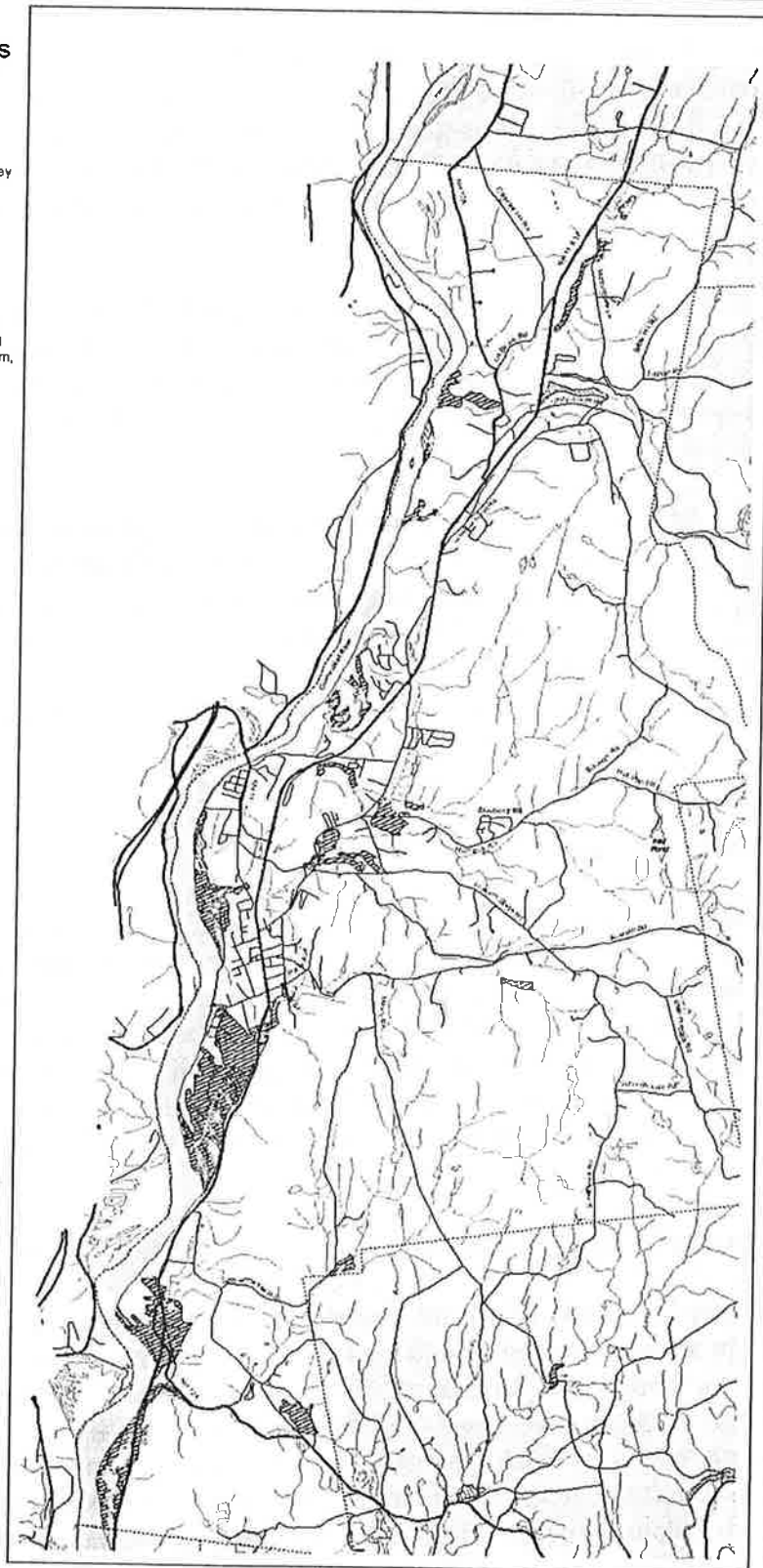


Scale: 1:55000

0.5 0 0.5 1 Miles

Legend

- Town Boundary
- Roads**
 - Interstates and State Highways
 - Other Roads
- Rivers, Lakes and Ponds**
 - Marsh or Swamp
 - Streams
- Flooding**
 - Frequent
 - Occasional



Damaging floods along the Connecticut River have been recorded since the 1700s. Principal damaging floods of the twentieth century have occurred in 1913, 1927, 1936, 1938 and 1968. Ice jams near the Bellows Falls Hydropower Dam have backed up as far as Charlestown. A story in the "Valley News" in 1996 reported flooding in Charlestown, closing Route 12 and necessitating the evacuation of 18 families in the Connecticut River Mobile Home Park.⁴

Charlestown adopted a building code ordinance in 1975 for flood hazard areas. This ordinance was amended in 1981 and 2006 to comply with the requirements of the National Flood Insurance Program (NFIP). Floodplain maps were prepared by the Federal Emergency Management Agency (revised May 23, 2006) and these maps show where flooding is likely to occur.

- Goal:** Manage development of the 100-year floodplain so that the floodplain can perform its function of passing and storing floodwaters.
- Consider implementing floodplain regulations that are more stringent than the current (FEMA) regulations, and that discourage development in the floodplain.
 - Consider cumulative impact of floodplain development, not static criteria as in FEMA regulations.

Groundwater Resources

Groundwater is water below the land surface. Groundwater is found in gravel pockets or in fissures in bedrock. The term "aquifer" describes water saturated earth materials from which a water supply can be obtained. There are three types of groundwater aquifers: stratified drift; till; and bedrock. The basic difference is that stratified drift and till aquifers are composed of unconsolidated glacial deposits (loose earth materials), while bedrock aquifers are solid rock. In stratified drift aquifers, the materials are sorted sand and gravel. In till aquifers, the materials are a gravel, sand, silt and clay mixture. In bedrock aquifers, the rock is fractured.

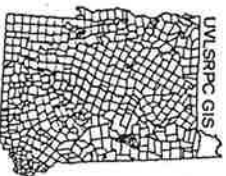
The following Map shows groundwater resources in Charlestown.

Groundwater is a vitally important resource, providing drinking water for more than half of the United States population and more than 95 percent of its rural population. All of Charlestown's municipal water supply is from groundwater. Additionally, more than one-third of the water used in agriculture for irrigation and livestock watering is from groundwater resources. Many industrial processes depend on groundwater and it also serves to support sensitive ecosystems, such as wetlands and wildlife habitats. In Charlestown, approximately one-third of residents are not served by the community water system and thus are reliant upon groundwater resources.

⁴ Cold Regions Research and Engineering Laboratory (CRREL), Ice Jam Database.

Charlestown, NH

Groundwater Resources



Map created by Upper Valley
Lake Sunapee Regional
Planning Commission,
August 2003.

Base map features from USGS 1:24000
scale Digital Line Graphs, distributed by
Complex Systems Research Center,
Dufham NH.

Aquifers mapped by U.S. Geological Survey in
cooperation with N.H. Department of
Environmental Services; distributed by Complex
Systems Research Center.

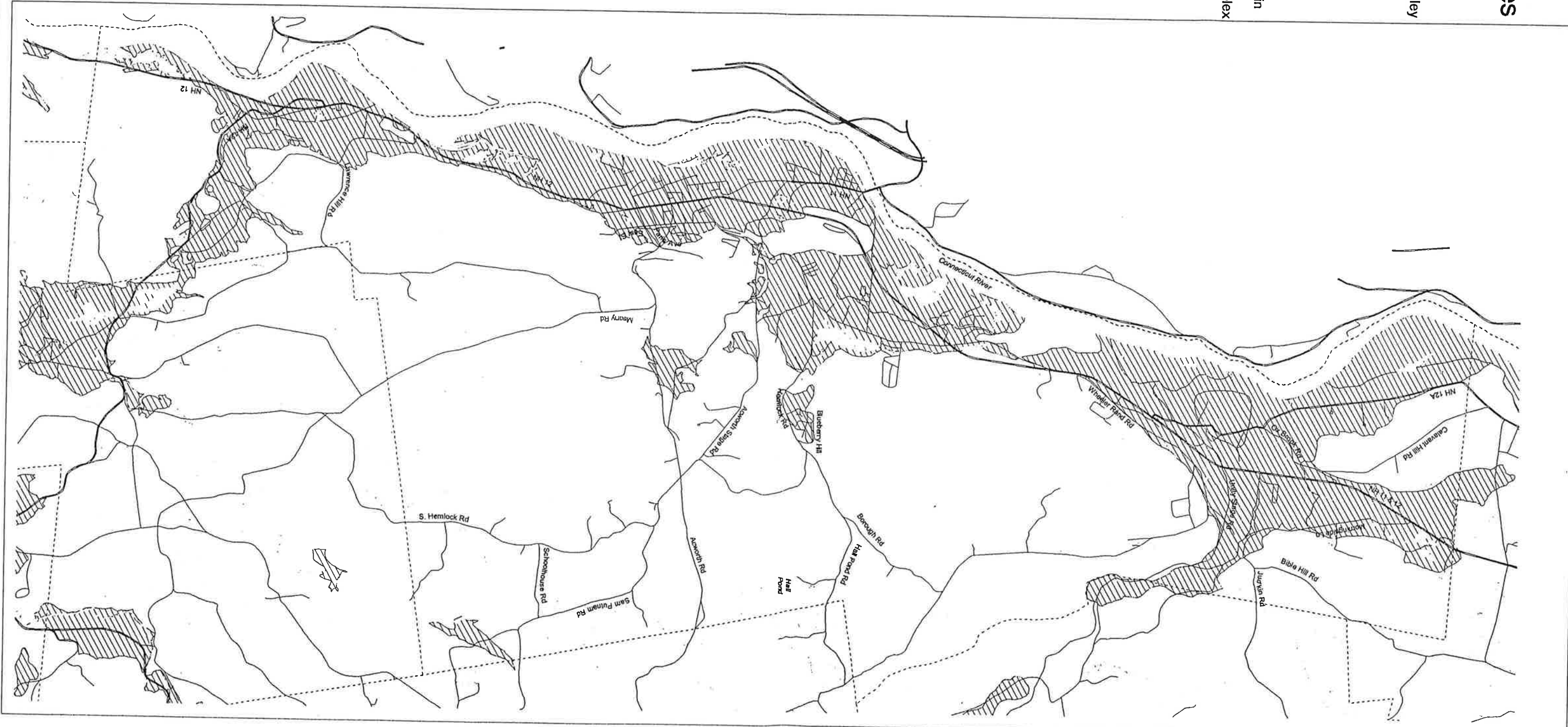


Scale: 1:55000



Legend

- Town Boundary
- Roads
- Interstates and State Highways
- Other Roads
- Rivers, Lakes and Ponds
- Marsh or Swamp
- Streams
- Stratified-drift Aquifers



Groundwater Resources Charlestown, NH



Map created by Upper Valley
Lake Sunapee Regional
Planning Commission,
August 2003.

Base map features from USGS 1:24000
scale Digital Line Graphs, distributed by
Complex Systems Research Center,
Durham NH.








Aquifers mapped by U.S. Geological Survey in
cooperation with N.H. Department of
Environmental Services; distributed by Complex
Systems Research Center.

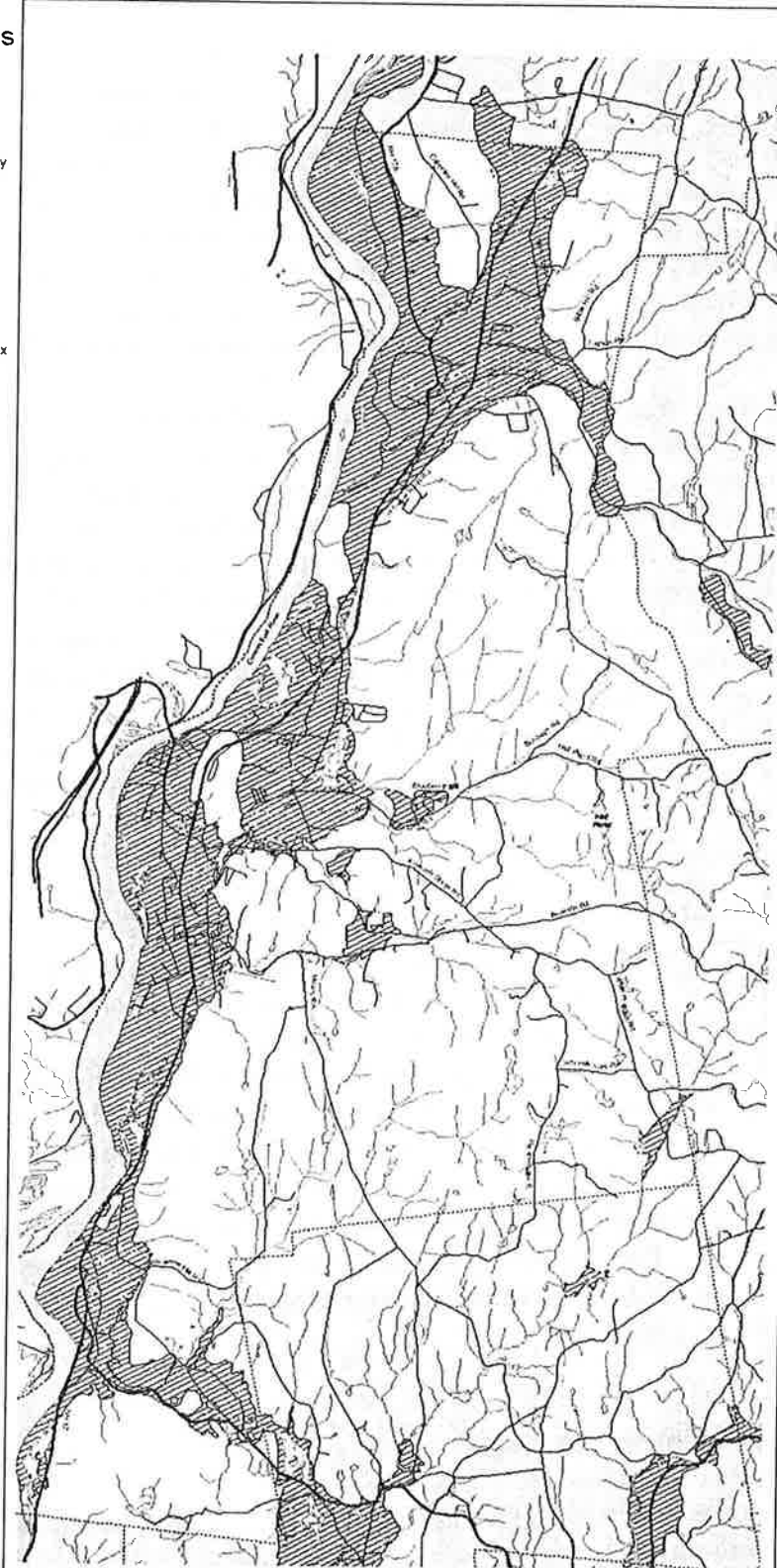


Scale: 1:55000

0.5 0 0.5 1 Miles

Legend

-  Town Boundary
- Roads**
 -  Interstates and State Highways
 -  Other Roads
-  Rivers, Lakes and Ponds
-  Marsh or Swamp
-  Streams
-  Stratified-drift Aquifers



Groundwater contamination can occur from a variety of sources, both natural and manmade. While groundwater may commonly contain one or more naturally occurring chemicals, such as iron and manganese, which are leached from the soil through which it percolates in concentrations that may exceed Federal or State drinking water standards, it is the contamination from human activities that pose the greater threat. Human contamination sources are referred to as point and nonpoint pollution. Point sources are localized and often come through a pipe, while nonpoint sources are dispersed over broad areas. The most common sources of human-induced groundwater contamination are: waste disposal practices; materials/waste storage practices; and agricultural practices.

A Drinking Water Protection Ordinance was adopted in Charlestown in 1998. The Drinking Water Protection District is an overlay zone encompassing the wellhead protection areas delineated around Charlestown's municipal wells. The uses permitted in the underlying zoning district are permitted, with the exception of certain uses with a high potential for groundwater contamination. Some prohibited uses include: uses involving toxic or hazardous materials, single walled fuel tanks, snow dumping, automotive uses, laundry and drycleaning, landfills, and road salt storage. Certain other uses are allowed only by conditional use permit from the Planning Board, for which the applicant must show that the use will not be detrimental to groundwater quality or quantity. These include: multifamily residences, other industrial and commercial uses, animal feedlots, sand and gravel excavation, and storage of chemicals for water treatment.

- Goal:** Protect the groundwater resources in Town to ensure that an adequate supply of clean drinking water is available for residents, businesses, and visitors.
- Development proposals should be designed to minimize the amount of impermeable surfaces and provide for on-site stormwater treatment to enable groundwater recharge.
 - Amend the Zoning and Subdivision Regulations to limit or prohibit those activities, such as land application of municipal sludge and/or septage, which might have an undesirable impact on the wellhead areas.
 - Strengthen provisions in Site Plan and Subdivision regulations to prohibit discharge toxic/hazardous substances to air, land and water bodies.
 - Participate in regional household hazardous waste collections.
 - Educate residents about the benefits of and need to preserve groundwater resources.

Best Management Practices

In many cases, the water quality impacts associated with development and other activities can be minimized if proper care is taken in how the activity is planned and carried out. Best Management Practices (BMPs), strategies to prevent or reduce nonpoint source pollution, have been developed for many activities, including:

- Septic systems, to maintain proper functioning;
 - e.g., proper tank cleaning
- Road construction and maintenance, to control erosion and sedimentation;
 - e.g., grass drainage ditches to remove sediment
- Road salting and snow dumping;
 - e.g., limit the use of road salt near water bodies
- Site development;
 - e.g., provide vegetative buffers between development and water resources
- Excavations;
 - e.g., limit the amount of exposed gravel at any given time
- Agriculture;
 - e.g., proper use of fertilizers
- Stormwater management;
 - e.g., reduce peak stormwater flows by retention
- Use and storage of hazardous materials.
 - e.g., make sure storage is undercover and over an impervious surface

If applied, BMPs can help protect surface waters and groundwater. Information on BMPs is available from a variety of agencies and organizations.

- Goal:** Gather information and resources for, and implement, best management practices to protect surface waters and groundwater from nonpoint pollution.
- Provide information about BMPs to landowners.
 - Incorporate BMPs into future land use regulations as conditions of approval for applicable activities.
 - Ensure that BMPs are followed when required.

Transportation Chapter Charlestown Master Plan

INTRODUCTION

At the Community Goals Workshop held in June 2004, participants identified several transportation goals. These goals were further supported in the results of the Community Attitude Survey, distributed in March 2005.

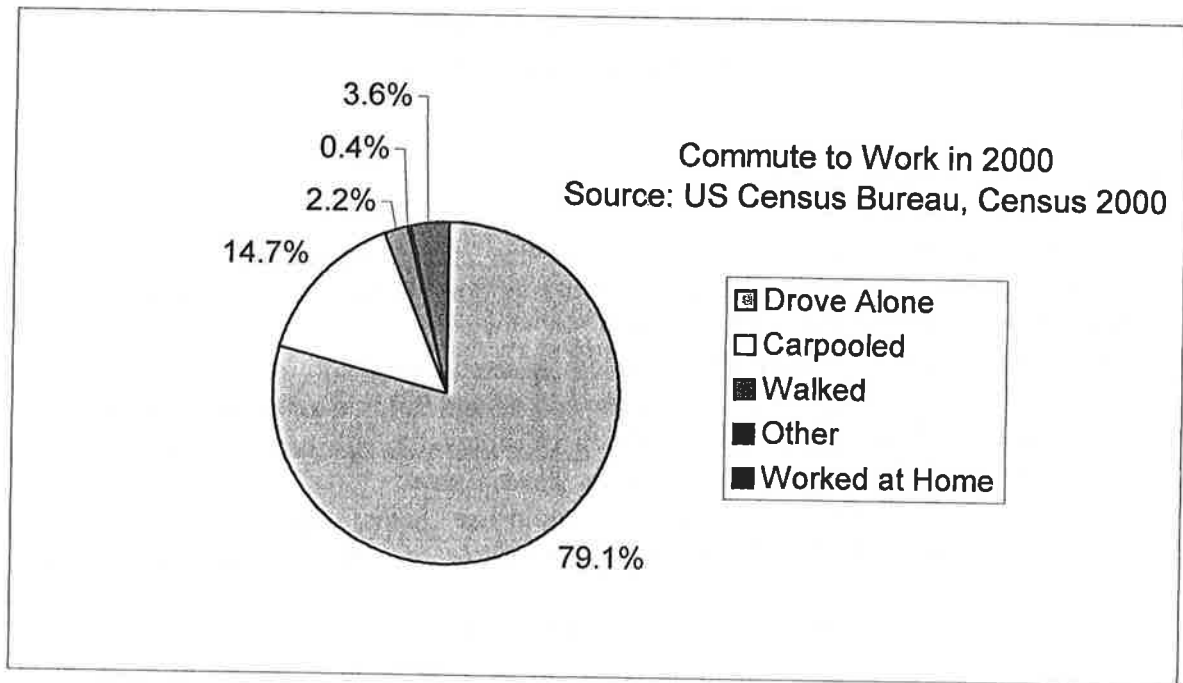
- Advocate for consistent, reliable public transportation.
- Address the abilities of the elderly and schoolchildren to walk to services and schools, by improving the condition of sidewalks and crosswalks and making other streetscape improvements in the Town Center.
- Create additional, interconnecting multi-use paths, especially a connection between the Cheshire Bridge and Main Street, to promote more walking and bicycling.
- Investigate and promote a Park 'n' Ride facility in Town.

Land use in Charlestown is primarily residential and trends indicate this type of development will continue. New development can contribute to maintaining a rural atmosphere by constructing buildings and roads that are scaled and located most appropriately for the area. Overall, Charlestown's transportation system currently embodies many of the traits desired by those seeking a rural atmosphere. The challenge is to continue to preserve it, as well as to provide more transportation options, as the community grows. Emerging energy constraints of the 21st century should also be taken into account in the Town's transportation planning.

DEMOGRAPHIC DATA

Commuting Patterns

In the year 2000, there were 2,396 Charlestown residents 16 years and older who commuted to work. A high percentage (32 percent) of Charlestown residents are employed in Charlestown. The second largest workplace for Charlestown residents is Claremont (24 percent), and Springfield, Vermont is the third largest with eight percent of residents employed there. The mean travel time to work is 21.4 minutes (Check factfinder.com for 1990 figure). The State of NH's 2000 average commuting time was 25 minutes. It is interesting to note that Charlestown has a high percentage of carpoolers (15%) compared to the State of NH where only about 10 percent carpooled in the year 2000.



Other Important Demographic Facts Related to Transportation

- Seven percent of Charlestown's total population is dependent upon transit or assisted automotive travel due to their young age and inability to drive a motor vehicle (between 10-15 years).
- Fourteen percent of Charlestown's population is 65 years old and older. This segment of the population is expected to grow as the "baby boomer" generation ages.
- 19.5 percent of the population in Charlestown between the ages of 21 and 64 have a disability, which for some makes transportation to employment and services a challenge due to their inability to drive a vehicle.
- 6.5 percent of individuals in Charlestown live below the poverty level making motor vehicle transportation prohibitively expensive.
- 4.5 percent of Charlestown's households are without a vehicle.

It is important to note that many of the statistics noted above are consistent with similar communities in New Hampshire, except for the large percentage of residents that have a disability. A growing challenge is to provide transportation options to those who cannot utilize motor vehicles. Part of the answer from a municipal perspective is encouraging an environment that provides transportation choice. However, this may not be enough considering Charlestown's rural environment where demand for these services is relatively low and the cost to serve those in need prohibitively high.

As more people have become reliant upon automobile travel, development has become increasingly dispersed. This is evident in Charlestown outside of the village area. This development trend results in considerable travel distances between places that are

important to people's lives such as home, work, shopping and school. In order for Charlestown to focus development closer to the village centers, zoning and site plan review will be necessary to coordinate land use and traffic circulation. These tools can provide a community with the ability to shape development so that it provides more transportation choice. Zoning can require development densities and mixed uses that will encourage walking and bicycling. Site plan review can require the installation of sidewalks and other alternate transportation facilities to link commercial and residential development to the community. Clearly, shaping development and mixing land uses will not eliminate the need for motor vehicles or bus transportation, which will remain necessary to reach destinations outside of Charlestown where most goods and services are available.

Table 1: Land Use Features and Transportation Impacts

Feature	Manifestation	Impact
Density	Compactness of development	Higher density development makes transit more economically feasible
Land use mix	Different land uses within a development, neighborhood or region	Shorter trip distances reduce the need for vehicle ownership
Transit Accessibility or Transit Oriented Development	Locate commercial and residential development near transit stations	Increases transit use
Pedestrian Environment/ Urban Design Factors	Features that enhance the pedestrian or bicycle environment such as crosswalks, sidewalks, benches, landscaping, bike lanes, bike paths, bike parking.	Increases the desirability of bicycling or walking
Regional Patterns of Development	Refers to the dispersion, clustering, centralization patterns within a region	Encourages transit use by locating activities closer together

Source: EPA Guidance: Improving Air Quality Through Land Use Activities, January 2001.

PUBLIC ROAD SYSTEM

Roadway network and land use. Roadways serve two basic functions: *access* to properties and *movement* between different locations. Traffic accidents and congestion occur when roads are asked to serve both functions at the same time. Roadway improvement projects and municipal codes should encourage land uses that are compatible with the adjacent road. Care should also be taken when laying out new roads so that the new infrastructure fits the intended land use and vice versa.

Roadway classification. The public road system in Charlestown totals roughly 87 miles. All Charlestown's public roads are broken into (4) different highway classifications per RSA 229:5 as outlined below.

- A. Class I. Primary State Highways consist of all highways on the primary State highway system, except for those segments of certain highways within the urban compact section of cities and towns listed in RSA 229:5, V. State maintained.
- B. Class II. Secondary State Highways consist of all highways on the secondary State highway system, except for urban compact sections. State maintained.
- C. Class V. Town or City Roads and Streets consist of all highways, which the municipality has the responsibility to maintain regularly. Municipally maintained.
- D. Class VI. All other existing public ways including all highways discontinued as open highways and subject to gates and bars and all highways that have not been maintained and repaired by the municipality in suitable condition for travel for 5 successive years or more. Unmaintained.

Table 1 outlines Charlestown's roadway miles based on this highway classification system. The number shown for Class VI roads reflects the information available through the current NHDOT road inventory database.

Table 1: Road Classification Mileage

Roadway Classification	Roadway Miles
Class I. Primary State Highways—NH Routes 11 & 12	13.307 miles
Class II. Secondary State Highways—NH Route 12A	7.197 miles
Class V. Town Roads and Streets	61.005 miles
Class VI. Unmaintained Roads	5.385 miles
TOTAL	86.892 miles

Source: New Hampshire Department of Transportation 2004.

Road conditions. There is currently no comprehensive information about the condition of Charlestown's roads. Class V roads are maintained by the town and comprise the

majority of the road system. As roadway reconstruction projects are very expensive, maintaining roads in a consistent good condition to prevent severe deterioration can help to keep the costs down. The Town of Charlestown should carry out a road surface management system (RSMS) to assist in prioritizing maintenance. This system consists of a methodology that is used in managing municipal highways and developing a budget and priorities for roadway improvements. Worst-first maintenance policies can end up costing a community greatly as roads that could be repaired inexpensively are sometimes left to deteriorate while roads already too far gone receive needed highway funds and would probably require no additional cost if repaired later.

Traffic volumes. The NH Department of Transportation conducts traffic counts at hundreds of locations around the State on a three-year cycle. In addition, Upper Valley Lake Sunapee Regional Planning Commission (UVLSRPC) conducts an annual traffic counting program that enables municipalities to request traffic counts at a few specific locations in town. Traffic volume counts estimate the average weekday traffic for a typical weekday and are adjusted for seasonal variation.

Traffic volumes in Charlestown have for the most part steadily increased in all locations at the selected locations (Table 2, below). Traffic on Bridge Street has risen most sharply, from 320 in 2000 to 1,400 in 2004. This may well however be the result of an anomaly in the traffic counting process.

Table 2: Annual Average Daily Traffic Volumes at Selected Locations

LOCATION	1998	1999	2000	2001	2002	2003	2004
NH 11 West of NH 12	-	2500	-	-	2800	-	-
NH 11 at Toll Bridge	-	-	4100	5700	-	-	6500
NH 12 (Connecticut Valley Rd.) So of RR Crossing	5200	4900	-	-	-	-	5200
Old Claremont Rd. East of NH 12	2000			1500			1800
Lovers Lane over B&M RR	2300			3100			3500
Bridge St. over B&M RR			320		530		1400
Fling Rd. over Clay Brook		390			690		670

Source: New Hampshire Department of Transportation and Upper Valley Lake Sunapee Regional Planning Commission.

Accident Data

There are three key intersections in Charlestown where accidents regularly occur: ¹

1. Chestnut Flat/Route 12: Accidents have decreased at this area since a blinking caution light and streetlight were installed.
2. Route 12/Unity Stage Rd.
3. Old Claremont Rd./Claremont Rd. ("Red Robin" intersection). There is a separate left turn lane here.

Other high accident areas:

- Route 12 from the south end of town to the North Walpole town line is extremely narrow and there is a proposal on the Ten-Year Plan to widen this section of highway.
- Main Street in the Village could benefit greatly from implementation of access management measures (see below). Designating entrances and exits more clearly by adding cement curbing or plantings would reduce conflicts.

Bridges, culverts and drainage. Bridges and culverts are important structures providing access over surface water and drainage features. If damaged, they can potentially cut off or delay emergency vehicle service to the Town or a residential area. Those locations that are accessed by only one route over a bridge or large culvert without alternate routes are most susceptible. The 2005 flood damage on Scotts Drive is a good example. It is particularly important that these structures be built of appropriate minimum dimensions to accommodate at least 25-year storm events and be maintained in good structural condition.

There are 17 bridges in Charlestown for which the NHDOT maintains bridge condition data. Two of these bridges are on the State Primary Highway Route 12 and fifteen others are on local roads. According to the NHDOT's bridge condition assessment, there are seven red listed (have known deficiencies) and one yellow listed (structurally deficient) bridges in Charlestown.

Dirt Roads. About 18.9% percent (17 miles) of all roads in Charlestown are unpaved. These unsurfaced roads are designed differently than larger roads such as NH Route 11 and likewise have different demands and impacts on the environment. In fact many of these roads were once trails and were gradually improved by adding crushed rock and/or gravel with little, if any, engineering.

To maintain roads in good condition, it is essential to drain water off roadways. Once stormwater is appropriately drained, it is then important to manage it so that it does not create pollution problems in adjacent surface waters. Impervious surfaces including unpaved and paved roads, driveways and parking lots can adversely affect surface waters by contributing pollutions. Pollutants from roadways can include sediments such as sand, petroleum products and salt. In order to minimize the impact of roads, it is important that

¹ Charlestown Police Chief, October 2005

site development limit impervious surface, roadway/driveway design properly handle runoff, and road maintenance procedures minimize erosion.

Best Management Practices (BMPs) can be implemented by the Town to maintain good water quality and to minimize flood damage to Town infrastructure. Those BMPs may include vegetated buffer zones around surface waters, drainage basins that minimize erosion and allow for sediments to settle, and slope stabilization methods.

Town Highway Expenditures

Road maintenance costs are an important consideration in most municipalities as the expense to operate a highway department is typically a large percentage of a community's annual budget. In 2004, Charlestown's budget was 20.7 % of general fund expenditures (excludes water & sewer). The budget for 2005 was 24.4% of general fund expenditures. The development of a Capital Improvement Plan (CIP), as outlined in the Facilities and Utilities chapter of the Master Plan, would provide a systematic plan for providing infrastructure improvements within a prioritized framework.

ROAD STANDARDS/POLICIES

As Charlestown continues to grow and the use and pressure on local and major roads intensifies, it will become increasingly important for the Town to explore strategies for maintaining a rural atmosphere. The characteristics of a road including shoulder type, width, etc., all contribute to the overall feel of the road. Balancing typical rural New England roads with safety standards is a challenge. As Charlestown is primarily a bedroom community, it is important to maintain the main commuting corridors as transportation corridors. Access Management will be important to preserve the safety, mobility and efficiency for travelers within these corridors. Charlestown is in the enviable position currently of preserving what is essentially a safe, efficient and pleasant transportation system.

Access to highways and roads. Access points along highway and road corridors are important for the public's transportation needs; however, excessive or poorly planned access can have a major impact upon safety and roadway capacity. Too many, uncoordinated curb cuts and/or driveways can cause higher accident rates and safety hazards. Improperly designed and constructed access points could cause adverse harm to the adjacent roadway and to the health and safety of Town residents and to the traveling public. Therefore, accesses should be designed, built and maintained in the best way possible to provide access to sites and to minimize potential problems.

The New Hampshire Department of Transportation regulates access by issuing driveway permits for all residential driveways, commercial entrances and new subdivision roadways along Class I and II highways. The State's design requirements limit a site to two driveways unless highway frontage exceeds 500 feet. Additionally, the maximum

width of any access is 50 feet, driveway turn radii is not to exceed 50 feet, and that driveway grades are to slope away from the highway to the existing ditch line.

RSA 236:13-V authorizes planning boards to adopt driveway regulations to require a permit for all driveways, entrances or exits to public ways under municipal jurisdiction. Driveway regulations are based on safety issues such as adequate site distances, maximum grade, minimum and maximum width requirements and proper drainage. In Charlestown the Highway Superintendent administers the driveway permit system with appeals to the planning board. All new access points should be given careful consideration in driveway regulations in order to maintain and preserve the safety and general welfare of the Town.

Scenic roads. The goal of keeping well maintained roads and preserving their rural character do not necessarily need to be at odds. The rural character of roads is important to Charlestown residents and visitors. Features such as stonewalls, old trees, narrow winding roads and scenic vistas add to the aesthetics of the community and contribute to the rural character of the Town. Charlestown has many roads with significant scenic qualities. In 1973 the Town meeting designated the following Scenic roads in Charlestown:

Meany Road – 2.88 miles
Borough Road – 3.42 miles
Sam Putnam Road - 1.7 miles
Lamb Road - Class VI portion
Stage Road (aka Old Acworth Stage Road) – Class VI portion

Access Management

Access management is the practice of controlling access points along roadways to minimize conflicting traffic movements and to maximize roadway capacity and system efficiency. It involves limiting overly abundant, poorly designed access points and driveways. Often access management can be improved by focusing on site improvements, like defined entryways and exits, shared driveways, and connections between adjacent subdivisions, for example. The Zoning Ordinance can further aid the process by tailoring frontage requirements, lot sizes, and signage.

Effective access management:

- Reduces crashes by as much as 50%
- Increases capacity 23-45%
- Extends life of the highway
- Consistent treatment of applications for access permits
- Protects investment in abutting property
- Reduces travel time and delay by 40-60%

- Decreases fuel consumption by 35%
- Reduces vehicular emissions
- Reduces transportation costs

Source: Access Management, Location and Design; US Department of Transportation, Federal Highway Administration, National Highway Institute, April 2000.

CONNECTICUT RIVER SCENIC BYWAY

In 1999, the States of Vermont and New Hampshire gave official stamp to years of planning by designating a bi-state route for the new Connecticut River Scenic Byway along New England's largest river. Their goals:

- to balance the preservation, promotion, enjoyment, and stewardship of the Connecticut River Valley
- to link people, organizations, communities, and agencies in promotion of the Connecticut River Byway as a tourism asset

In Charlestown portions of NH Routes 12 and 12A are designated as segments of the Connecticut River Scenic Byway

TRANSPORTATION ISSUES IN THE VILLAGE

Highway design can have a dramatic impact upon driver behavior. Various design elements, often referred to as "traffic calming," aesthetically enhance a corridor while encouraging drivers to slow down. Traffic calming is speed control built into the design of highways and the built environment. This technique is most frequently used in populated areas where slow traffic speeds are important to pedestrian and/or bicycle safety. Applications of traffic calming include narrowing roadways, curb extensions, village gateways, decorative planting and signs to name a few.

There are both challenges and opportunities inherent in having a major state highway as the town's Main Street. The Community Survey showed strong support from residents for many Village improvements outlined in the Corridor Study, such as safer pedestrian crosswalks, streetscape improvements, and a bike path along Main Street.

BALANCE AND CHOICE IN TRANSPORTATION

For people to choose alternative transportation over use of their automobiles, there must be viable alternatives to driving, such as the following:

- Walking routes must be safe, direct and attractive and homes must be close to workplaces and services.
- Streetscapes should be human-scaled, balancing pedestrian amenities with automobile access.

- Public streets must support a balanced variety of uses, with the balance being different for different streets based on their function.
- Transit service must be convenient, reliable, and timely.
- Bicycle routes must be safe and destinations must have convenient parking for bicycles.

Bicycle and Pedestrian

Transportation is not just the realm of cars and other motorized vehicles. Bicycle and foot travel are viable modes of transportation and have been indicated as desirable by many residents. Certain segments of the population typically have limited options to get around the City, such as the young, elderly and other special needs populations who for various reasons cannot drive. The lack of viable alternative modes of travel greatly restricts the freedom of many residents and impacts the quality of life of everyone.

A common statistic reveals that the typical pedestrian will walk an average of ½ mile to get from point A to point B; and the typical bicyclist is willing to travel an average of 2 miles. With that in mind, compact land use development patterns that are easily accessible by public transport and bicycle/pedestrian travel should be implemented to facilitate and encourage these efficient and cheap forms of transportation.

Alternative transportation needs should be addressed in all roadway projects in such a way that attractive and safe facilities are available throughout the community. For busy and high-speed locations, for instance, a landscaped buffer should be placed between the sidewalk and the roadway. In addition, benches, ample and well-placed crosswalks, shade trees and other landscaping should be provided to encourage walking. Chances for pedestrian-vehicle conflicts are greatly reduced by providing appropriate design features, such as curb-extensions at all crosswalks where the driver of a vehicle can easily see a pedestrian. Bicycling accommodations should also be provided to allow cyclists to safely travel the roadways throughout the Town. In addition, ample support facilities such as bike racks or lockers should be available at all employment, commercial and cultural centers to encourage bicycling as a viable form of transportation.

The Town should encourage and promote the development of interconnected networks of sidewalks, bicycle routes and paths and other recreational trails that facilitate better transportation throughout the community.

Supporting Transit

New development has been oriented to the use of automobiles at the expense of public interaction and inexpensive transportation. The goal should be to create developments that include a safe and ample multi-modal transportation network linking residential areas to commercial, educational, recreational and cultural centers. This network would include limiting roadway widening type projects and providing for safe and attractive facilities for pedestrians, bicycles and transit.

Charlestown has no fixed route public transit service. Community Transportation Services (CTS) provides demand-response services only. Demand-response service works fairly well for arranged appointments but is limited for unscheduled evening, weekend or holiday times. Demand-response is also often not coordinated with many human service providers. UVLSRPC conducted an analysis recently of the relative transit need of each community in the region. The analysis was calculated based on US Census statistics for young and elderly population groups, persons with disabilities, individuals below the federal poverty level, auto-less households, and the size of the community. Charlestown was fourth (out of 27 NH communities) in relative transit need, behind only Claremont, Newport, and Lebanon.²

In a rural community like Charlestown, providing quality transit is costly and transit operators are not allocated adequate and consistent funding to meet the growing demand for services. Without public transportation, however, employment opportunities in both Claremont and the Hanover-Lebanon job centers are missed, particularly for those unable to commute by automobile (elderly, young, disabled, and low- income).

GOALS AND RECOMMENDATIONS

- Goal 1: Create and maintain cost-effective road construction and maintenance procedures that respect the environment.
- Enhance the maintenance of gravel/dirt roads by implementing Best Management Practices (BMP) to minimize sediment erosion and protect water quality.
 - Encourage concentrated development in order to minimize the amount of needed road infrastructure and thereby reduce impervious surface.
 - Implement a road surface management system (RSMS) to assist in prioritizing maintenance
- Goal 2: Apply and adhere to sound access management principles to reduce congestion in key areas and increase safety.
- Review and revise Subdivision Regulations to provide for shared driveways and connector roads between subdivisions.
 - Review and revise Zoning Ordinance for frontage requirements, lot sizes, and signage.
- Goal 3: Refine and implement downtown and Main Street improvements as recommended in the Main Street Corridor Study.
- Provide and improve crosswalks, sidewalks, and pedestrian amenities, such as street trees and benches.
 - Construct a separated shared bike and pedestrian path along the west side of Main Street.

² UVLSRPC Regional Transportation Plan, Adopted February 5, 2004

- Goal 4: Provide options and alternatives in transportation.
- Work with UVLSRPC and transit providers to increase and improve transit service options in Charlestown.
 - Work with UVLSRPC and NH Department of Transportation to assess and evaluate the need for a park-and-ride lot in Charlestown.
 - Promote safe intersection design and bicycle, pedestrian and transit friendly traffic signage.
 - Promote improved pedestrian facilities through-out the Town including well-maintained, interconnected sidewalk network, benches, landscaping that provides pedestrian shade, attractive non-obtrusive lighting.
 - Create additional, interconnecting multi-use paths, especially a connection between the Cheshire Bridge and Main Street, to promote more walking and bicycling.

**Economic Development Chapter
Charlestown Master Plan**

INTRODUCTION

At the Community Goals Workshop held in June 2004, participants identified several economic development goals. These goals were further supported in the results of the Community Attitude Survey, distributed in March 2005.

- Proactively identify economic/employment opportunities that will attract young, educated people.
- Encourage small, diversified businesses and provide services to assist business owners.
- Impose limits on commercial business size.
- Encourage and promote tourism-related businesses and activities, especially related to the Connecticut River Byway and Fort at No. 4.
- Beautify and promote Main Street.

This chapter provides an overview of available information on overall job growth, unemployment rate, income growth, and poverty rates. The chapter then outlines economic development assets and challenges of the community and region, highlights opportunities, and concludes with goals and recommendations.

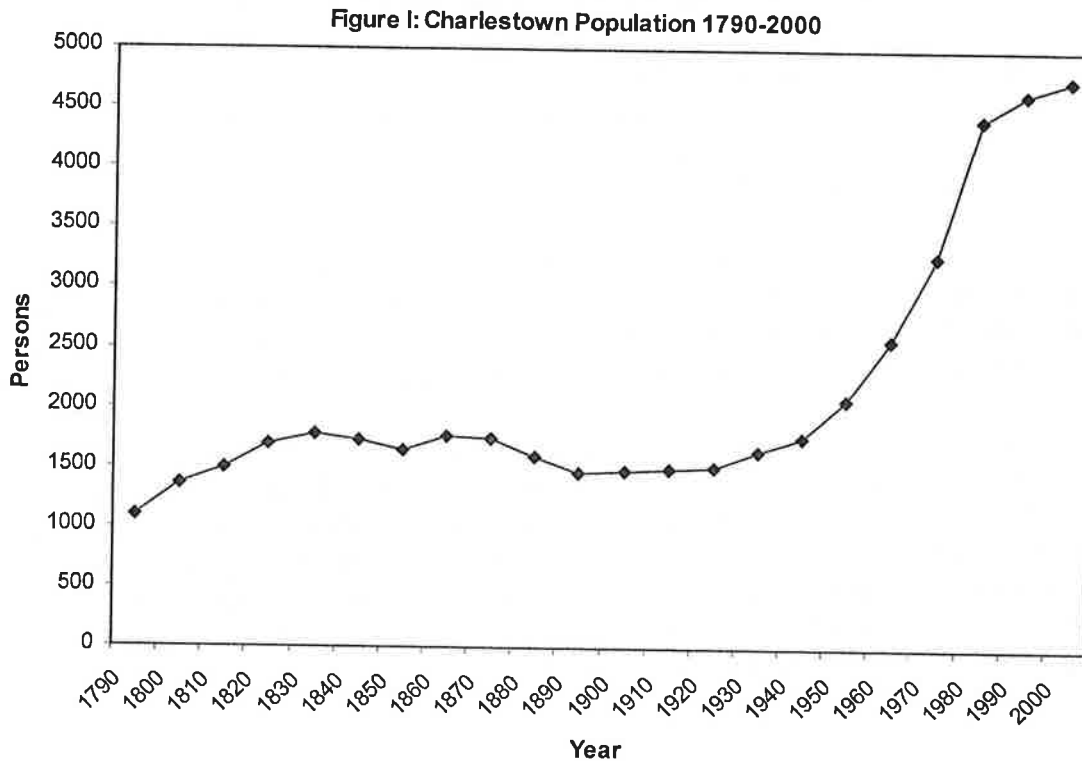
Charlestown and Sullivan County as a whole have experienced significant economic changes over the past 40 years. Once a prominent center for the machine tool industry, the County is now lagging behind the State of New Hampshire in terms of growth in employment and wages. The loss of manufacturing jobs in the region has led to a decreasing tax base, higher costs for services, and higher property taxes. Charlestown is dependent on the regional economy and must consider its role in the regional economy while planning for development.

DEMOGRAPHIC AND ECONOMIC ANALYSIS

This section summarizes key information from demographic and economic data on Charlestown and Sullivan County.

Population

Charlestown's year-round population increased significantly from 1940 to 1980 and then only slightly between 1980 and 2000 (see Figure 1). The highest increase was 35 percent between 1970-1980; which was followed by a five percent increase between 1980-1990, and a three percent increase between 1990-2000.



Charlestown had 4,915 residents in the year 2006, which ranked it 64th among New Hampshire's incorporated cities and towns. The largest number of residents falls within the ages of 18 and 64 (workforce). In 2000, this group of approximately 2,898 residents had a median age of 39.7 and comprised 61 percent of Charlestown's total population.

Economic Indicators

This assesses how well Charlestown's overall economic base is growing and how well its residents are benefiting from this job growth. Four indicators are looked at:

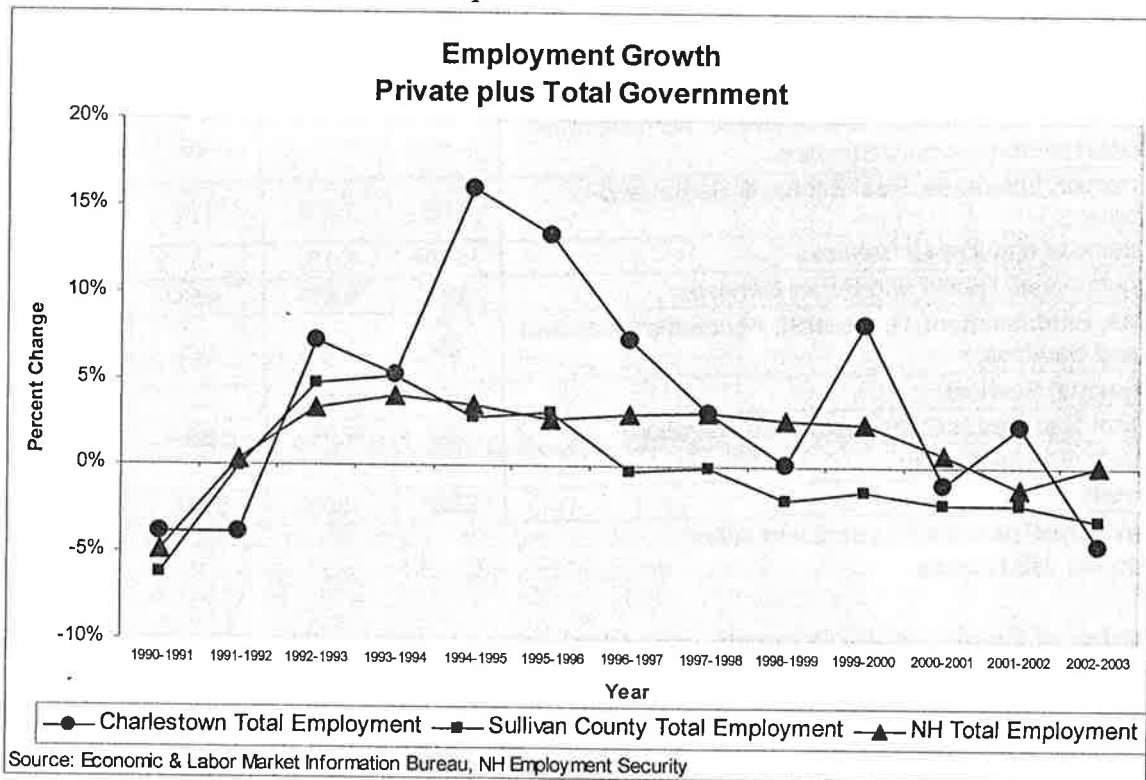
- Overall job growth
- Unemployment rate
- Income growth
- Poverty rates

Overall job growth

Charlestown and the Claremont Labor Market Area (LMA)* in general have experienced slow job growth in the last couple of decades, largely due to the loss of manufacturing jobs. Figure 2 depicts the percentage employment change trend for Charlestown, Sullivan County and the State. The decline in the machine tool industry in Springfield and Windsor, VT in particular has had an impact on Charlestown. However, the Sullivan County workforce is considered fully employed, with unemployment rates consistently between 2 and 3 percent. In 2003, Charlestown's unemployment rate was 3.1 percent, compared to 3.3 percent for Claremont, 2.8 percent for Sullivan County as a whole and 4.3 percent for New Hampshire. The unemployment rate fell sharply in Charlestown in the last decade, from 7.1 percent in 1993 to 3.1 percent in 2003. The unemployment rate is defined as the percentage of the labor force that is jobless and actively seeking work. However, this provides incomplete information about the labor market, as many people settle for part-time employment and/or hold jobs that do not offer a livable wage.

* Includes: Charlestown, Claremont, Croydon, Goshen, Lempster, New London, Newbury, Newport, Springfield, Sunapee, Sutton, Unity, Wilnot.

Figure 2: Employment Growth Comparison



Manufacturing employment accounts for 24 percent of Charlestown's total employment, followed by educational, health and social services (18.6 %, up from 9.8 % in 1990), retail trade (14.1 %), and construction (9.1 %) (Table 1). The most notable changes in distribution between 1990 and 2000 were the increase in employed residents in both the construction and educational, health, and social services industries. Sullivan County as a whole has the second lowest share of the State's total employment, yet has the highest share of manufacturing employment among all other NH counties. This heavy emphasis on manufacturing industries is contributing to a slow economic adjustment period. Many of these manufacturing jobs have been replaced with lower-paying, unskilled service-oriented employment.

Table 1: Distribution of Employed Charlestown Residents* by Type of Industry 1990 and 2000

Type of Industry	1990		2000	
	#	%	#	%
Agriculture, Forestry, Fishing and Hunting, & Mining	135	5.8%	69	2.8%
Construction	108	4.6%	221	9.1%
Manufacturing	682	29.3%	603	24.8%
Wholesale Trade	99	4.3%	120	4.9%
Retail Trade	396	17.0%	343	14.1%
Transportation and Warehousing, & Utilities	93	4.0%	98	4.0%
Information	--	--	37	1.5%
Professional, Scientific, Management, Administrative, & Waste Management Services	--	--	96	4.0%
Finance, Insurance, Real Estate, & Rental and Leasing	168	7.2%	111	4.5%
Business and Repair Services	118	5.1%	--	--
Educational, Health and Social Services	229	9.8%	451	18.6%
Arts, Entertainment, Recreation, Accommodation and Food Services	39	1.7%	121	5.0%
Personal Services	57	2.4%	--	--
Other Services (except public administration)	152	6.5%	89	3.7%
Public Administration	51	2.2%	71	2.9%
Totals	2327	100%	2430	100%

*Employed persons 16 years and older

Source: US Census

Number of Employees by Occupations in Charlestown

As shown in Table 2, the number of employees in Charlestown in the Managerial and Professional category rose significantly in the period 1990-2000. The other category that saw a significant increase was Production, Transportation, and Material Moving. The Service category also rose slightly. All other occupational categories saw a decrease in the number of employees between 1990-2000. Figures 3 through 5 compare the breakdown of occupations (by percentage) between Charlestown, Sullivan County and NH.

Figure 3: Charlestown Occupations

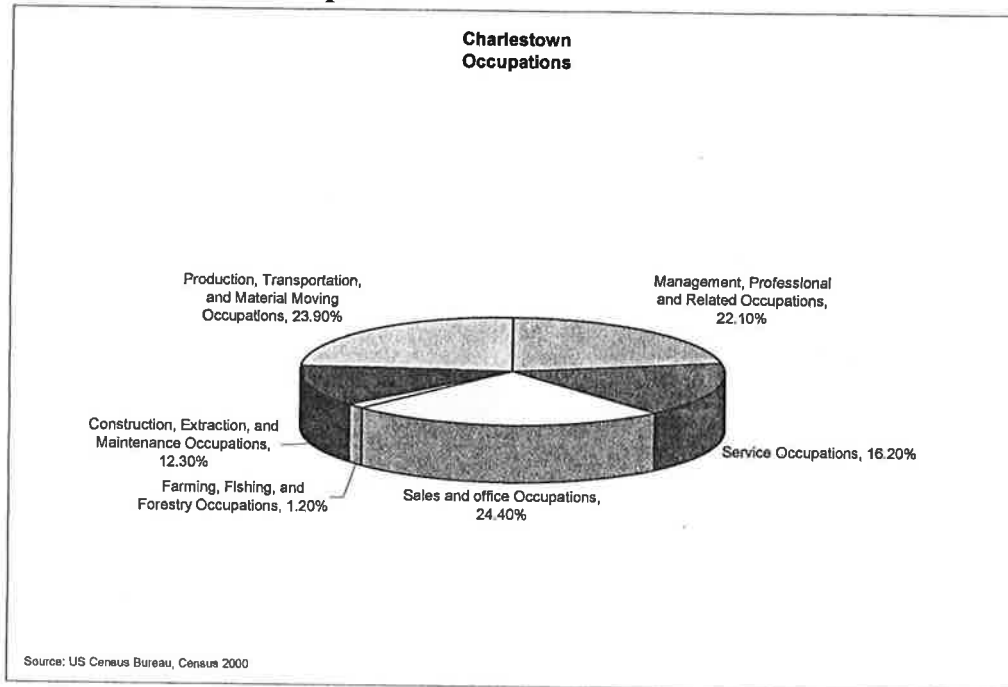


Figure 4: Sullivan County Occupations

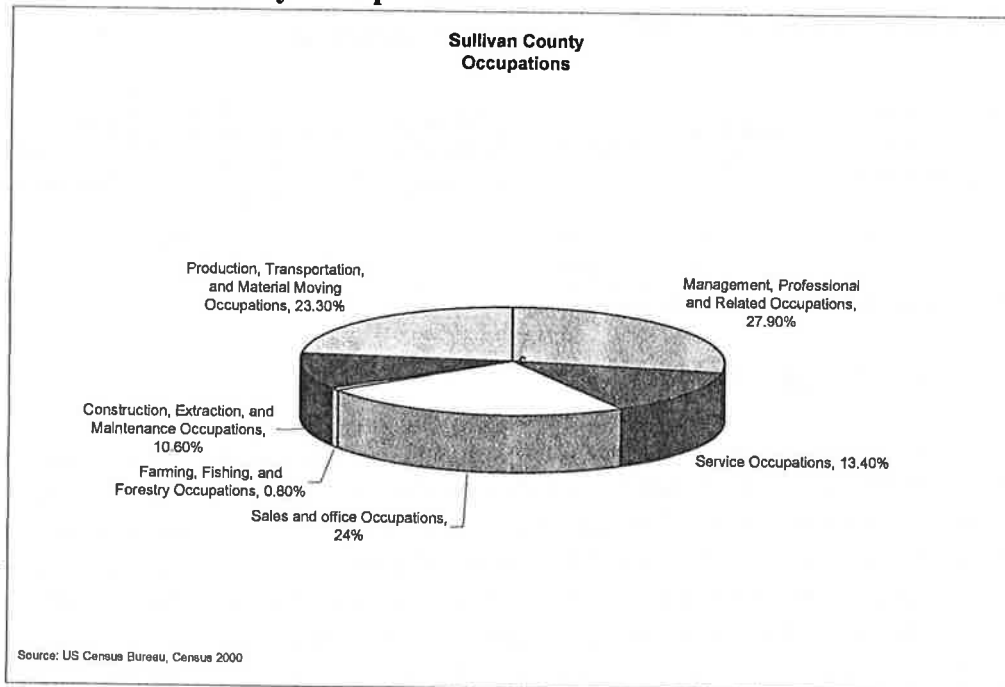


Figure 4: New Hampshire Occupations

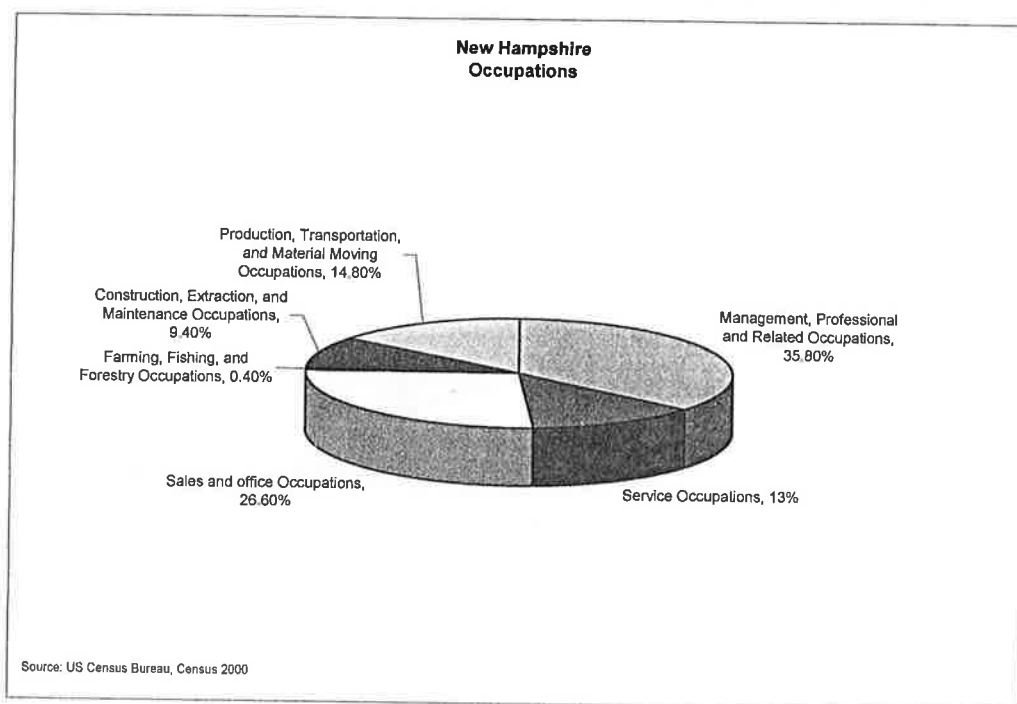


Table 2: Number of Employees by Occupation, Charlestown

	Management, Professional & Related	Sales & Office	Service	Farming, Fishing & Forestry	Production, Transportation, & Material Moving	Construction, Extraction, & Maintenance
1990	282	720	274	96	316	439
2000	536	594	393	29	580	298

*NH Department of Employment Security

Workplace of Charlestown Residents

The majority of Charlestown's residents are employed within their own community' or another community within the Claremont Labor Market Area (LMA). A high percentage (32 percent) of Charlestown residents are employed in Charlestown. The second largest workplace for Charlestown residents is Claremont (24 percent), and Springfield, Vermont is the third largest with eight percent of residents employed there. Also notable, only three percent work in Lebanon and two percent in Keene. Overall, 32 percent of Charlestown residents work in Charlestown, 48 percent commute to another NH community, and 20 percent commute out-of-state. The mean travel time to work is 21.4 minutes.

Residency of People Working in Charlestown

Fifty percent of people working in Charlestown reside in Charlestown. The second largest group is 17 percent that live in Claremont. Rockingham and Springfield, Vermont residents make up four percent each of people working in Charlestown. The largest employers in town are shown in Table 3.

Table 3: Largest employers in Charlestown

Largest Employers	Product/Service	Employees
Whelen Engineering	Emergency lights	395
Fall Mountain Regional School District	Education	125
Design Standards, Inc.	Medical instruments	93
Student Conservation Association	Nonprofit youth conservation agency	84
Bomar, Inc.	Marine Hardware	80
Merriam Graves Corp.	Welding equipment, industrial & medical gases	60
Teleflex Aerospace Manufacturing Group NH	Aircraft engineering parts	55
Connecticut River Bank	Banking	45

Source: 2006 Economic and Labor Market Information Bureau, NH Employment Security and Town of Charlestown Administrator, Verbal Communication

Average Weekly Wages

The average weekly wages represent what employers in the respective towns are paying their workers. The workers reside in any municipality. The average weekly wages for people working in Charlestown in 2003 was \$608.90, compared with \$717.94 in NH and \$577.41 in Sullivan County. While wage comparisons are helpful, they do not directly address the economic condition of Charlestown residents.

Income Growth

Per capita incomes are helpful to measure any disparity within towns in a county. The income is what the wage-earners from the respective towns bring home prior to taxes, and is total income divided by the number of individuals within the community or region. Median household income is defined as the earnings derived by all members of the household. Charlestown's per capita and median household incomes are lower than that of both Sullivan County and NH as a whole (Table 4).

Table 4: Annual Income - 1999

	Charlestown	Sullivan County	New Hampshire
Per capita income	\$18,654	\$21,319	\$23,844
Median household income	\$38,024	\$40,938	\$49,467
Median earnings, full-time, year-round workers			
Male	\$31,010	\$32,185	\$39,689
Female	\$22,986	\$24,615	\$27,488

Source: US Census, 2000

Poverty Rates

The US Census Bureau uses money and income thresholds by family size and composition to determine if an individual is "poor." If a family's total income is less than that family's defined threshold, then every individual in that family is considered poor. These thresholds are adjusted annually for inflation. Charlestown's percentage of its population below poverty level is equal to that of NH as a whole but a good deal lower than Sullivan County.

Table 5: Percentages of Population Below Poverty Level

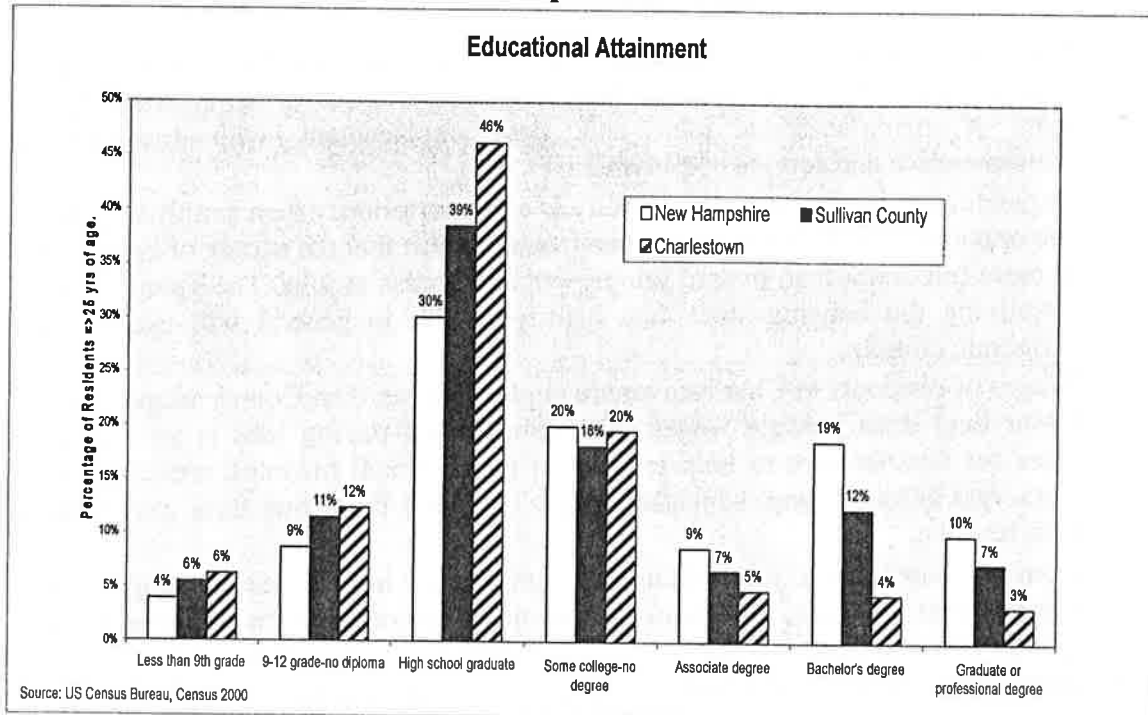
	1980	1990	2000
New Hampshire	8.2	6.4	6.5
Sullivan County	10.4	9.8	8.5
Charlestown	7.2	7.3	6.5

Source: US Census

Educational Attainment

The percentage of Charlestown residents who have obtained a Bachelor's degree or higher is significantly lower than in Sullivan County and NH as a whole (Figure 6). 81.4 percent of Charlestown residents have attained a high school degree or higher, but only 10.8 percent have attained a bachelor's degree or higher. Only 7.5 percent of residents in Charlestown have obtained a Bachelor's degree, compared with 12 percent for Sullivan County and 19 percent for NH residents. For graduate or professional degrees, 3.3 percent of Charlestown residents have obtained one, compared to seven percent for Sullivan County and ten percent for NH.

Figure 5: Educational Attainment Comparison



Town Tax Rates

An examination of the tax rates also helps to gauge the economic health of a community. Charlestown's full value (equalized) tax rate in 2003 (\$34.00) is comparatively higher than that of surrounding communities of a similar size (Table 6). If the Town wishes to increase its tax base and decrease the tax rate, it should make land use decisions that will increase property values and maintain a suitable quality of life that will attract quality investment. Strong zoning, site plan review, and subdivision regulations are essential to ensure quality development.

Table 6: Equalized Town Tax Rates

Municipality	1990 Equalized Tax Rate (per \$1,000)	1995 Equalized Tax Rate (per \$1,000)	2000 Equalized Tax Rate (per \$1,000)	2001 Equalized Tax Rate (per \$1,000)	2002 Equalized Tax Rate (per \$1,000)	2003 Equalized Tax Rate (per \$1,000)	2004 Equalized Tax Rate (per \$1,000)	2005 Equalized Tax Rate (per \$1,000)
Charlestown	29.4	39.41	28.79	34.76	34.14	34.00	30.46	34.54
Claremont	29.11	40.69	33.71	35.5	33.94	31.53	30.79	35.15
Croydon	12.74	22.79	20.55	27.19	16.97	18.18	14.39	11.80
Goshen	24.41	30.01	28.46	31.93	25.31	24.55	20.88	18.01
Lempster	18.29	30.35	31.79	32.55	24.15	20.23	22.20	22.54
New London	11.14	14.21	18.8	20.05	12.25	12.58	12.30	11.79

Sources: NH Office of Energy and Planning; NH Dept. of Revenue; NH Community Profiles

SUMMARY AND IMPLICATIONS

- Charlestown's job base is quite dependent on manufacturing. Growth in the Claremont LMA in general and Charlestown in particular is characterized by the loss of manufacturing jobs and their replacement with lower-paying administrative and service employment.
- Expanding residents' earnings capacity is a greater priority than simply expanding job opportunities. Low unemployment rates suggest that the supply of *quality* jobs is more important than overall job growth and access to jobs. The Town's goal of improving the housing stock and quality of life in general will improve the economic climate.
- Wages of residents in Charlestown are slightly higher than County wages, but are lower than state average wages. Attracting higher-paying jobs is an important issue for Charlestown to help raise local and regional incomes, reduce poverty rates, and attract young, educated people including those that have grown up in Charlestown.
- Greater education and job training can significantly increase earning capacity for Charlestown residents, and should be promoted in concert with attracting higher-quality jobs.
- Because the majority of Charlestown's residents are employed within their own community or other communities in the Claremont Labor Market Area (LMA), economic conditions within this entire area will have the greatest influence on population growth. If the Claremont LMA experiences an enhancement in the employment climate, Charlestown will compete with other communities for shares of the population and employment growth.

ECONOMIC DEVELOPMENT ASSETS AND OBSTACLES

There are many factors that can significantly influence Charlestown's economic future, including the effects of the regional labor and job market, the creation of new businesses, and Charlestown's land use controls. Although many of these factors are beyond local control, there are ways that the Town can support its existing business community and improve the economic climate.

ECONOMIC DEVELOPMENT ASSETS

The Town will be most successful with development plans that build on existing assets. Critical development assets and strengths are:

- The Connecticut River. The abundant recreational and tourism opportunities, scenic beauty, and biological richness provided by the river have numerous implications for the strength of local economic development, including quality of life issues and recreational and tourism opportunities.
- Scenic resources. A scenic area attracts tourists who contribute to the local and regional economies. A scenic, small-town environment is also an important factor

in new business location and existing business retention. Charlestown's convenient interstate access combined with its scenic landscape make the town doubly attractive.

- The rich history and historical character of the Town, including the presence of The Fort at No. 4 and the many historic buildings on Main Street. These resources, like the Town's natural resources, make Charlestown an attractive place to do business and offer opportunities for heritage tourism and recreational tourism.
- Convenient access to Interstate 91, the busiest north/south corridor, and close proximity to Claremont. Charlestown's equal distance to the Lebanon/Hanover and Keene LMAs and its easy north/south access via I-91 and NH Route 12 make its location desirable as a bedroom community. Proximity to I-91 is a major asset for the Town.
- Likewise, the New England Central Railroad, which runs the entire length of the Town from north to south, may present certain economic development opportunities by making the Town attractive to companies that require railroad access.
- A supply of land available for development that is already zoned for commercial and industrial use. This includes CEDA's Grist Mill property and Charlestown's two industrial zone. Additional land exists along Rt. 12 but is not served by water and sewer and not suitable for development because of a variety of other factors, such as wetland area. *Well-planned* commercial and industrial development typically generates tax revenue in excess of increased service costs, but this may not be the case when new roads and infrastructure are needed to accommodate the development.
- High-quality K-12 education, which also makes Charlestown an attractive bedroom community for working families.
- Strong technical schools in the region, most notably the Howard Dean Education Center in Springfield, VT, the Sugar River Valley Technical Center in Claremont and the Claremont Community Technical College, that can provide workforce training.
- Town government, civic organizations and regional agencies that can provide leadership to address issues on a local and regional level. These organizations, especially Charlestown Economic Development Association (CEDA) and Sullivan County Comprehensive Economic Development Strategies (CEDS) are tremendous assets to the town and region as they facilitate a unified vision and offer a clear and inclusive process to coordinate economic development efforts. CEDA has to date brought over 500 jobs into Charlestown. CEDA is currently involved in CEDS planning in Sullivan County to assist in revitalizing the area's economy and leverage additional funds towards planning and improvements to an area where there is significant need. The State of NH and CEDS Committee is working closely with CEDA to help them recruit businesses that will invest in the community and provide high-paying jobs.
- The Town of Charlestown runs a "tight ship" in terms of town government and services, which makes it attractive for economic investment.

DEVELOPMENT CHALLENGES AND OBSTACLES

- Low wages compared to NH as a whole. The loss of high-paying manufacturing jobs and their replacement with lower-paying service jobs is suspected to be the leading cause of underemployment in the entire County, including Charlestown.
- Low-skilled labor force. More accessible and effective education and training services are key to helping lower-income workers improve skills. Moreover, creating a highly-skilled workforce over time will help attract and retain higher-paying professional and/or technology based firms. A major challenge is to prepare workers with the skills needed to afford them higher-paying jobs. Workforce development and education is a regional issue that involves the K-12 education system, post-secondary education, skills training at trade schools and through nonprofit organizations and services provided by NH Employment Security. The "graying" of the existing workforce with specific technical skills will leave a gap and increase the need for additional training.
- Low educational attainment. Charlestown lags behind both the County as a whole and the State of NH in the number of persons who have completed a bachelor's or professional degree. This is consistent with the many low-skilled, low-wage jobs that are found in the area.
- Limited infrastructure. The Town has spent over four million dollars in the past five years upgrading its water and sewer systems, but significant additional water and sewer improvements are still needed. The storm drainage system in the downtown also needs to be upgraded. As stated before, new development should be planned and located so that the costs of community services and infrastructure don't exceed the tax revenue gained from that development.
- Few employment and social opportunities for the young workforce.
- No public transit services. In a rural community like Charlestown, providing quality transit is costly and transit operators are not allocated adequate and consistent funding to meet the growing demand for services. Without public transportation, employment opportunities in Claremont, Keene and the Hanover-Lebanon job centers are missed, particularly for those unable to commute by automobile (elderly, young, disabled, and low-income).
- The tax structure and school funding system in New Hampshire, while sometimes touted as the "New Hampshire advantage" can also pose special challenges to economic development.

ECONOMIC DEVELOPMENT OPPORTUNITIES

There are three general ways local government may influence economic development (*Sullivan County CEDS, Draft, January 2005*). They are:

1. Infrastructure development (water, sewer, transportation, communications and labor);
2. Development and support of public and private institutions such as development corporations; and
3. Creation of supportive public sector policies related to land use, taxation, and education to name a few.

There are five basic economic development strategies that may be employed. They include:

1. Keeping dollars inside the community or region by supporting the intraregional exchange of goods and services;
2. Supporting existing business by helping them expand and stay in the community;
3. Encourage new business and entrepreneurship within the Region;
4. Recruit outside businesses that are consistent with community-wide economic development goals; and
5. Local and regional planning.

As illustrated in the listing of economic development "assets" above, the Town of Charlestown is employing many of the identified economic development strategies. There are further opportunities outlined below that the Town could take advantage of to improve the economic climate. The Town of Charlestown is in a position to improve the quality of its economic base, but it must decide how much to increase its commercial and industrial base versus supporting development in neighboring communities, e.g. Claremont, that have the existing infrastructure and housing available. The Town should capitalize on its existing assets, address the development challenges, and create an economic climate that is consistent with residents' vision of what Charlestown should be like in the future.

Tourism and Cultural Heritage. The Community Attitude Survey results showed strong support for promoting tourism-related activities and businesses. Forty-four percent of respondents agreed, and twenty-five percent strongly agreed, that the Town should encourage tourism. The Connecticut River Byway program is an example of a partnership that recognizes cultural assets as an integral component of the Region's landscape. The Connecticut River Byway, which was awarded national byway status in 2005 which will enhance the region's national visibility and put the Town in good stead for additional grant opportunities and technical assistance. The Town's cultural assets offer many heritage tourism opportunities for the Region, which is a strong industry. While these are predominantly service jobs, the typical tourist dollar is "new" money that comes from outside the Town and circulates four to ten times before leaving the region. There are recreational opportunities such as waterfront recreation areas or beaches, and lodging, that would also enhance tourism.

The Town's cultural resources also offer opportunities to foster the "creative economy," which is built on cultural and entrepreneurial businesses and ventures such as artist and craftsperson galleries, restaurants, and companies specializing in innovative technologies. This entrepreneurial spirit can be found in such newly-revitalized places as Bellows Falls, VT and Keene, NH. Communities with a traditional agricultural or manufacturing base are finding new opportunities in the creative economy.

Downtown/Main Street Improvements. Improvements such as safer pedestrian crosswalks, streetscape improvements, and a bike path along Main Street have strong

support from the community survey. The challenges and opportunities inherent in having a major state highway as the town's Main Street suggest that the town has an opportunity to improve the traffic and streetscape environment.

Continue Attracting New Businesses. CEDA and the CEDS Committee can assist the town in attracting and promoting additional small-scale commercial and light industrial development. Survey results show that 60 percent of respondents feel Charlestown should encourage new industry to improve its tax base. Sixty-three percent were against large-scale commercial development, which is very strong support for not allowing "big-box" stores anywhere in town. Sixty-nine percent of respondents agree that the town should attract and promote small, start-up businesses.

Address Zone E. This area could be rezoned or use regulations and/or performance zoning could be implemented to improve the quality of life and better plan for growth and development. Performance zoning would ensure that the types and quality of businesses and residential development would not detract from the town's quality of life and business climate.

GOALS AND RECOMMENDATIONS

- Goal 1: Beautify and promote Main Street as an attractive place to conduct business and also draw tourists.
- Refine and implement downtown and Main Street improvements as recommended in the Main Street Corridor Study.
 - Address the need for significant additional water and sewer improvements.
 - Implement a comprehensive storm drainage upgrade [DE] in the downtown area.
 - Make improvements to and expand municipal building and take advantage of underutilized Town buildings in the downtown.
 - Consider seeking NH Main Street Program "village" designation to secure technical assistance for economic development projects.
- Goal 2: Attract new businesses that can provide quality employment opportunities for residents and enhance the property tax base, to support all municipal and public education services for a growing and under-employed population.
- Promote and market Charlestown's scenic and recreational opportunities and rural character to prospective businesses that are considering relocating to the region.
 - Continue participating in regional economic development programs such as Sullivan County CEDS.
 - Support CEDA in its efforts to promote Charlestown, identify economic development opportunities and recruit businesses for the Grist Mill property and two industrial parks.

- Encourage and support the Greater Claremont Chamber of Commerce in its efforts to serve the needs of the Charlestown business community.
- Actively seek support industries to provide services for business and industry, such as printing, publishing, and accounting services.
- Improve public transportation to link the workforce with jobs.
- Enhance educational opportunities for residents, including support for the development of regional technical education centers.
- Carefully study existing information on costs of community services to better gauge the tax impacts of various forms of development versus open space.
- Rezone "Zone E" or add performance standards or both, to ensure a compatible, sustainable economic climate.

Goal 3: Proactively identify employment opportunities that will attract young, educated people.

- Support CEDA and the CEDS Committee in implementing a marketing campaign targeted to high-tech and professional firms.
- Provide more social opportunities and cultural resources, which will also enhance tourism potential, such as restaurants and a community center.
- Work with the schools to enhance curriculum and guidance services to better train and prepare youth for regional job opportunities.
- Participate in the regional "creative economy" initiative to create new opportunities and attract a youthful workforce.

Goal 4: Identify, promote and maintain the existing business base.

- Assist in the identification of new markets and technologies for long-standing industries.
- Support local innovation and entrepreneurship by supporting the allocation of economic resources on entrepreneurship in emerging industries.
- Maintain sufficient workforce size as the population ages.
- Support agriculture as an important element of the region's working landscape and quality of life.

Goal 5: Capitalize on the Town's natural, recreational and historical assets to foster increased tourism and the creative economy sector.

- Work with the CEDS Committee and other communities in the region, including those in Windsor County, VT, to develop a unified marketing program to better promote the area.
- Develop a plan to better protect natural, recreational and historic resources through zoning changes and a natural resources inventory.
- Participate in the Connecticut River Byway Council to tap into its regional and federal resources.
- Expand recreational opportunities to increase the quality of life and attract tourism.

- Goal 6: Improve the employment skills, earnings capacity and incomes of Charlestown residents.
- Work with the Sullivan County CEDS Committee, local employers and regional technical schools to improve access to and quality of skills training.
 - Work with the local school district to integrate skills training and career guidance into secondary schools.

Conceptual Future Land Use Charlestown, NH



Map created by Upper Valley
Lake Sunapee Regional
Planning Commission,
April, 2006.

Map Sources: The Town of Charlestown
developed this future land use map, as part
of their master planning process, to determine
future growth areas.

DATA SOURCES

The following layers distributed by Complex
Systems Research Center, Durham NH:

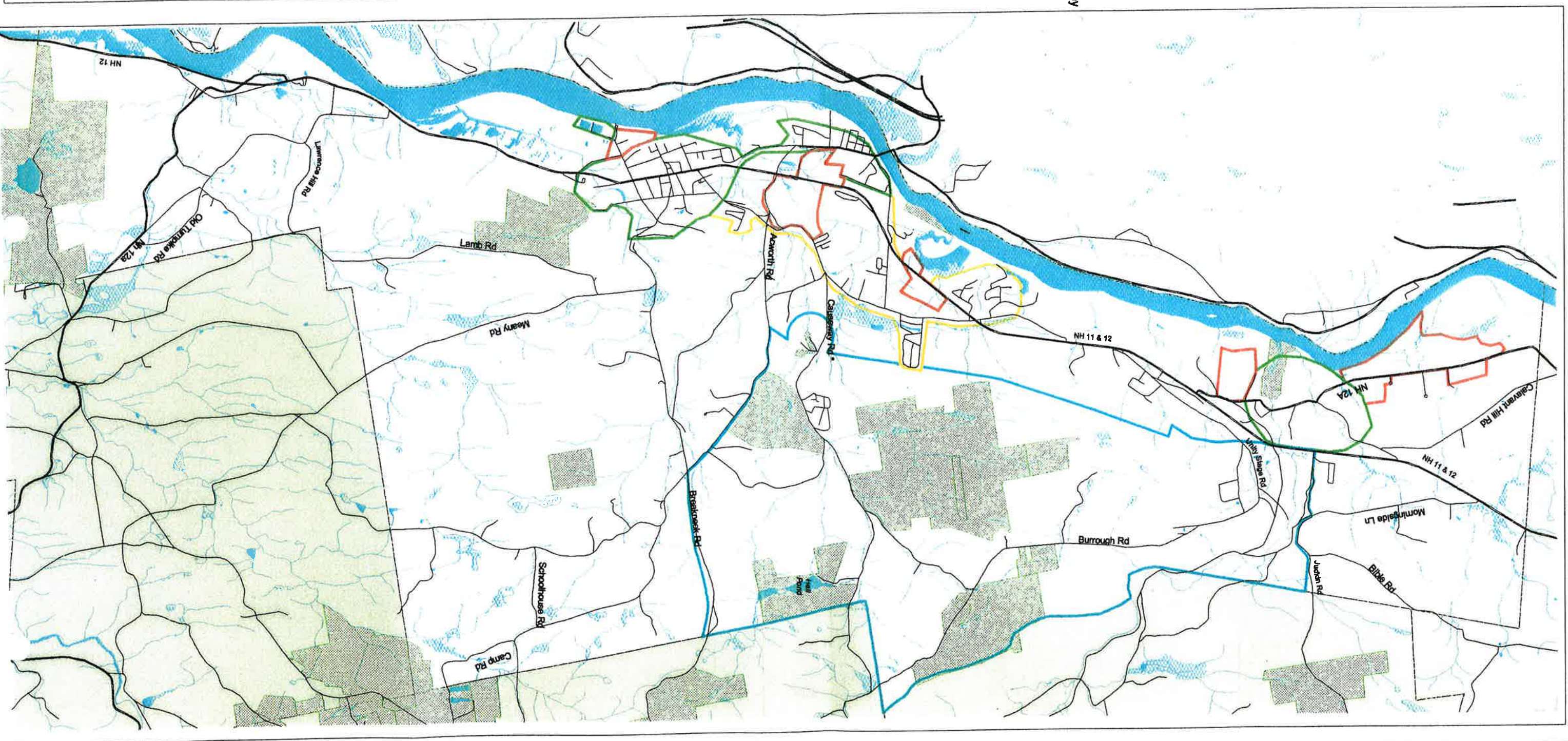
- Base map features from USGS 1:24000 scale
Digital Line Graphs.
- Wetlands from US Fish and Wildlife Service,
National Wetland Inventory, 1/24000 scale
Digital Line Graphs
- Conserved Lands from Complex Systems
Research Center, 1:24000 Scale, 2004.
- Prime agricultural soils from soil types mapped by
USDA Natural Resources Conservation Service
and digitized by Complex Systems Research
Center, Durham, NH; April 2001.



Scale: 1:50000
0.5 0 0.5 Miles

Legend

- Town Boundary
- Roads
 - Interstates and State Highways
 - Other Roads
- Rivers, Lakes and Ponds
- Streams
- Wetlands
- Conserved Lands
- Prime Agricultural Soils
 - Prime farmland
 - Farmland of statewide importance
 - Farmland of local importance
 - Prime farmland if drained
- Conceptual Future Land Use
 - Industrial
 - Moderat Residential
 - Town Center
 - Watershed Protection/
Rural Residential
 - Rural Residential



**Land Use
Chapter 8
Charlestown Master Plan**

INTRODUCTION

Land use both determines and responds to the character of a community. Patterns of existing land use have a substantial impact on the location and type of future growth. The purpose of this chapter is to identify and explore land use trends in Charlestown, discuss how regulations have an impact on these trends, and offer recommendations about what steps to take in the future to meet the growing and changing needs of the community. Land use considerations are closely related to virtually every other facet of planning. All of the chapters of this Master Plan - population, housing, natural resources, community facilities, and economic development – relate in some way to land use. Charlestown's land use chapter is really a synthesis of land use considerations and many of the recommendations that appear elsewhere in this plan.

Community Goals

At the Community Goals Workshop held in June 2004, participants identified several core principles. These principles were further supported in the results of the Community Attitude Survey, distributed in March 2005 (*Summary below*).

- Maintain small town atmosphere with rural character
- Actively manage growth in the community
- Protect and preserve our scenic, unspoiled environment
- Encourage high-quality housing while accommodating a mix of housing types
- Maintain a strong, diversified local economy
- Keep our Main Street/Village beautiful and vital
- Provide transportation options that aren't automobile-dependent
- Ensure that our greatest resources - our children and our elderly citizens - will be able to continue to live here

Community Survey Results

The community survey responses revealed how respondents felt about current and future land uses in Charlestown. The community response to the survey was an impressive 36% return rate.

Survey respondents indicated that they would like to see additional commercial development located in the following places in Charlestown:

- 58%: CEDA's Grist Mill property opposite the Transfer Station
- 53%: Spread along Route 12
- 30%: Village area (Main Street)
- 23%: Scattered throughout Town

- 16%: North Charlestown Village
- 10%: No further commercial development
- 5%: Other
- 4%: No Response

Respondents indicated that they would like to see additional industrial development located in the following places:

- 68%: In the two industrial zones (CEDA Park area and Saxonville Lumber vicinity)
- 49%: CEDA's Grist Mill property
- 13%: No further industrial development
- 11%: Scattered throughout Town
- 5%: Other
- 6%: No Response

In regards to Zone E, which is designated as all land areas within the Town not otherwise zoned (approximately 75% of the entire Town), respondents were in favor of the following:

- 36%: Regulate impacts instead of uses (e.g. performance zoning regarding setbacks, hours, noise, lighting, etc.)
- 32%: Break Zone E up into smaller "sub-neighborhood" zones that have specific uses
- 26%: Do nothing, leave as is
- 23%: Add common use regulations that apply to the entire Zone E
- 9%: No Response

Regarding housing types and locations, respondents supported single-family dwellings throughout Town and additional elderly housing opportunities, particularly in the Village. Opinions regarding multifamily housing, cluster housing, and manufactured housing in parks were largely unfavorable.

Survey respondents showed very strong support for natural resource preservation. The following natural resources were rated the highest in terms of support for their protection:

- 74%: Connecticut River corridor
- 73%: Areas of important wildlife habitat
- 72%: Groundwater resources
- 72%: Recreational access to the Connecticut River
- 67%: Historic buildings and sites

Although not included in the Community Survey, the Planning Board discussed and added the following list of land uses the community does *not* want to see developed in the future:

- Large commercial landfills accepting waste from other communities;
- Large feedlot farms;
- Race tracks for motorized vehicles;

- Pulp mills;
- Adult entertainment establishments;
- Non-renewable power generating stations; and
- Industries with significant quantities of air/ground/water/noise polluting emissions, or those which, even when located in industrial zones, create noise, shock, or vibration incompatible with other commercial, industrial and residential land uses.

HISTORICAL OVERVIEW

Named in honor of Admiral Sir Charles Knowles of the British Navy, then governor of Jamaica, Charlestown was originally the site of Number Four, the fourth in a line of forts on the Connecticut River border established as trading posts. Charlestown has experienced significant economic changes over the past 40 years, which have changed its land uses. Once an agricultural community, then a bedroom community for the machine tool industry in Claremont and Springfield, Charlestown today has a good supply of land available for development that is already zoned for commercial and industrial use, and the Town's industries employ a fairly high percentage (32 percent) of Charlestown residents.

CURRENT LAND USE

Charlestown contains 2.2 square miles of surface water area. Land use in Charlestown is primarily forested, rural residential and trends indicate this type of development will continue. Seventy-two percent of the 35.8 square miles of land area is forested (narrative about the importance of this forested land can be found in the Natural Resources Chapter). The table below depicts the mix of land uses existing in Charlestown in 2005, updated from a windshield survey based on 1998 orthophoto maps. The rural nature of Charlestown is illustrated by the predominance of undeveloped land, forested and pastures/cropland, which represents 83 percent of the total land area. Of the developed land, single-family residential is the dominant use.

Table 8-1: Current Land Use in Charlestown – 2005

Land Use	Total Acreage	% Of Total Land Area
Forest	17,633	72%
Single Family/Duplex	3,248	13%
Cropland and Pasture	2,770	11%
Industrial	169	<1%
Mobile Home Parks	155	<1%
Commercial & Services	125	<1%
Institutional	99	<1%
Outdoor Recreation	91	<1%
Multi-Family Residential	39	<1%
Cemeteries	15	<1%

Source: UVLSRPC windshield survey, using 1998 Orthophoto maps

CURRENT ZONING DISTRICTS

The current zoning districts in Charlestown consist of the following (*See Table 8-2 & Zoning District Map*):

Table 8-2: Existing Zoning Districts

Zoning Districts	Permitted Uses
Zone A: Town Center Residential/Professional	Detached one- or two-family dwellings churches, schools, libraries, professional uses; 15,000 square feet
Zone A-1: Rural Residential	Same uses as permitted in Zone A
Zone B: Business	Any use permitted in Zone A, plus various commercial uses
Zone C: Fort #4	Fort #4 and incidental agricultural uses
Zone D: Watershed Protection Area	5-acre lots; single family residential, agricultural and forestry uses
Zone E: Mixed-Use	Any use permitted; one-acre minimum for lots not served by municipal water & sewer; ½-acre lots served by either municipal water/sewer
Zone F-1: Industrial/Business	Manufacturing and offices permitted
Zone F-2: Industrial/Business	Same as Zone F-1
Zone G-1: Southwest Street Area	Provides protection for existing residential settlements, while making provision for home occupations, established businesses, commercial and residential buildings and uses that aren't detrimental to the neighborhood.
Zone G-2: Multi-Use Zone	Similar to Zone G-1

NATURAL CONSTRAINTS ON LAND CAPABILITY

The fundamental premise of the land capability concept is that the natural features of the environment vary in their ability to support development. Steep slopes, flood-prone areas, wetland soils, and the presence of bedrock at or near the surface can serve as major constraints to development. While it is sometimes possible to overcome such natural constraints through intensive engineering, this is usually a costly and time-intensive process. Efficient and environmentally sound planning efforts guide growth in areas with adequate natural capability and capacity to support development.

One of the primary factors to consider in assessing land capability is the capacity of the site to treat sewage effluent properly. Inadequate soil capability to absorb and treat septic effluent causes nutrient enrichment of surface waters, and poor site planning can also cause the contamination of private well waters by failed septic systems. The physical

properties of each soil type in Charlestown determine, to a large extent, the capabilities of the land to support development. A number of physical factors are responsible for this determination, including: depth to bedrock, bearing capacity, drainage, and depth to groundwater. Definitions of these soil properties can be found in the Natural Resources Conservation Service's (NRCS) Soil Survey for Sullivan County.

The capability of Charlestown's soils to effectively process septic system effluent has direct implications on the future growth of the Town. If soils are inadequate for effluent processing, that land is not well-suited for development unless served by municipal sewer infrastructure.

SURFACE DRAINAGE

The hydraulic characteristics of a natural watershed and the potential impacts of surface drainage from land use development are important factors for analyzing Charlestown's land use carrying capacity. All of Charlestown is within the Connecticut River watershed. In most of town, surface waters drain into the Little Sugar River, and a small section drains into the Cold River (*See Watershed Boundaries Map*). A watershed is made up of all the land that drains into a body of water. The line that connects all of the highest elevations around the water body defines the boundary of a watershed. As rain and snowmelt travel within this "catch basin" and flow by gravity into the water bodies and ground, they carry various amounts of nutrients and pollutants with them. A watershed approach to water resources planning is critically important, as watersheds are the main units of surface water and groundwater recharge. In addition, the land uses located within a watershed directly impact the water quality.

Charlestown has a sizeable Watershed Zone, approved by the voters in 1981 for the protection of surface and subsurface water supplies in the upper elevations of the northeast part of the Town. The voters approved the Watershed Zone, encompassing nearly 25 percent of the Town's land, to protect sources of drinking water from contamination. The Planning Board has published guidelines for the protection of the Watershed Zone for use when agricultural, forestry or building activities are proposed in the Zone. Through large-lot zoning and employment of the Guidelines for the Watershed Zone, the townspeople have sought to protect their drinking water. (*See Zoning District Map*).

OTHER NATURAL CONSTRAINTS

Wetlands, floodplains, and steep slopes are just some of the other natural constraints that play into decisions about land use development. Approximately ten percent of the Town of Charlestown (2,435 acres) has slopes greater than 15 percent and the majority of town has slopes of eight to fifteen percent. As the slope increases, the more challenging it is to develop the land and the greater the potential to increase erosion and stormwater runoff and exacerbate flooding. Generally, slopes over 25 percent are considered undevelopable. These other natural constraints are discussed in more depth in the Natural Resources chapter and are illustrated in the *Natural Resources, Wetlands, & Steep Slopes Maps*.

LAND USE PATTERNS AND TRENDS

Growth Rate

Charlestown's year-round population increased significantly from 1940 to 1980, and then only slightly between 1980 and 2000. From 1990 to 2000, Charlestown had minimal population growth, increasing by 2.6 percent to 4,749, a total of 119 people. The trend currently projected by the NH Office of Energy and Planning (OEP) indicates an annual growth rate of about 0.9% until 2020. The rate of Charlestown's population growth will be primarily influenced by employment opportunities within the community and its Labor Market Area (LMA). Strong economic conditions in the Upper Valley communities of Lebanon, Hanover and Hartford provide employment opportunities to a small but growing proportion of Charlestown's workforce; in the year 2000 about 5 percent (this figure has increased only about 2.4 percent since 1990). However, with rapidly escalating housing costs in the Upper Valley area, this trend may accelerate; it is possible that Charlestown could become an attractive and affordable residential alternative for the Upper Valley work force; a 30-35 minute commute might well be an acceptable trade-off for more affordable housing. Still, the majority of Charlestown's residents are employed within their own community and the greater Claremont LMA, and economic conditions within this area will have the greatest influence on population growth.

Population Growth at Build-Out

In September 2004, at the request of the Charlestown Planning Board, UVLSRPC completed a build-out study of the town, in conjunction with the Board's update of the master plan. The build-out analysis is a tool for assessing the compatibility between the community's vision for the future and its current land use regulations. Timing is not relevant to the analysis as it is assumed that time is condensed to allow all possible development to occur today. The purpose of the build-out was to answer questions, such as:

- How many new lots can be developed under existing land use regulations?
- How would this potential growth be distributed throughout town?
- How many dwelling units would these new lots represent?
- How much would the population increase?

The analysis of the potential residential growth associated with undeveloped land in Charlestown indicates that Charlestown has the potential to grow to a year-round population of at least 20,586 on the basis of existing densities permitted by zoning and site plan review regulations. This represents a 300 percent increase over the 4,749 residents counted in the 2000 US Census. An examination of developed land in Charlestown would likely reveal some infill potential which could increase this number further. However this may not reflect a sustainable or viable level of population when resource and infrastructure are taken into account.

FUTURE LAND USE

The primary focus of the Charlestown Master Plan is to direct future land use to preserve the rural character of the Town. As development occurs in the rural areas, it should respect not only the physical limitations imposed by the topography and soil conditions, but be in harmony with the existing landscape and adjoining land uses. Given the hypothetical build-out scenario described above, the town of Charlestown should consider the following future land use vision and implement changes to the Zoning Ordinance and other land use regulations that reflect that vision.

The Future Land Use Map

The Future Land Use Map and Concept is intended to guide future decisions regarding potential zoning and land use changes. It is a broad-brush blueprint for future growth; exact uses and boundaries will be determined during the implementation of the Master Plan.

Types and Densities of Future Land Uses (Proposed)

- Village Center 1 (High Density): 1 dwelling unit per 15,000 square feet
- Village Center 2 (High Density): 1 dwelling unit per half acre
- Moderate Residential (Moderate Density): 1 dwelling per 1 acre
- Rural Residential (Low Density): One dwelling per 5 acres
- Watershed Protection/Conservation District (Very Low Density/Open Space): One dwelling per 20 acres
- Industrial

Village Centers

The Planning Board concurs with the current smart growth planning wisdom that it makes sense to concentrate development in town where infrastructure costs will be minimized. Village centers (current and proposed) contain mixed-use residential, professional, and commercial development, served by public water and sewer. Future growth in Village Center 2 (*as seen on the Conceptual Future Land Use Map*) should be closely related to the supply of safe water and the provision of sewage disposal. As activity increases in these centers, the need for ensuring appropriate traffic patterns, adequate parking, and pedestrian safety also increases.

Moderate Residential

This zone is made up of residential areas within ¼ mile of the Village Centers and served by water and sewer.

Rural Residential

The goal in this zone is to protect the character of Charlestown's rural areas by encouraging low-density development, agricultural and recreational uses, and preservation of scenic views.

- Residential development should be limited to sparse and very low densities in areas that are relatively distant from the current and potential village centers and town services.
- Where possible, development should be clustered to prevent suburban sprawl, protect natural resources, and preserve open space and farms.

Watershed Protection District

Further development should be discouraged in this district. Sustainable agriculture and forestry should be encouraged to make productive use of rural land. The proposal for this district is to increase the minimum lot size to 20 acres to support the rural character and working landscape of this area.

Commercial and Industrial

There is a supply of land available for development that is already zoned for industrial use. This includes CEDA's Grist Mill property and Charlestown's two industrial parks. Additional land exists along Route 12 but is not served by water and sewer and not suitable for development because of a variety of other factors, such as wetland area. *Well-planned* commercial and industrial development typically generates tax revenue in excess of increased service costs, but this may not be the case when new roads and infrastructure are needed to accommodate the development. Industrial development should be carefully reviewed to ensure that the activity would not result in undue or unreasonable adverse impacts on nearby residences and other land uses.

TECHNIQUES TO SHAPE FUTURE LAND USE

RSA 674:21 Innovative Land Use Controls:

The most powerful and creative tools a community can use to shape its future growth is found in this RSA. This enabling legislation allows communities to develop ordinances to protect natural features and to require development to meet specialized standards and criteria.

Performance Zoning

Performance standards establish definite measurements that determine whether the effects of a particular use will have a detrimental impact on the community. In other words, these standards measure the quantifiable "impacts" of each proposed development rather than prohibiting certain classes of land use. This includes standards related to noise, odor, vibration, runoff, illumination, signage, groundwater, road impacts, aesthetics, and school impact. This technique encourages mixed uses and appropriate scale of development, and can benefit rural economies like farming.

Conservation Subdivision Design Development

There is a relatively new approach to subdivision design for rural areas that counteracts the sprawling pattern of development created under conventional cookie cutter subdivisions. This approach is outlined in the book entitled *Conservation Design for*

Subdivisions: A Practical Guide to Creating Open Space Networks, by Randall Arendt. The conventional suburban model is actually a pattern that is at odds with the otherwise traditional rural landscape, while the basic principle of conservation subdivision (historically called “cluster”) development is to group new homes onto part of the development parcel, thereby protecting important resources, and preserve the remainder as unbuilt open space.

Planned Unit Development

Planned Unit Development (PUD) is a technique for establishing guidelines for mixed-use development, typically on large parcels of land. Within a PUD, variations of densities, setbacks and other requirements are allowed. Like open space developments, PUDs enable the protection of a site’s natural features.

Lot-Size Averaging and Feature-Based Density

Feature-based density and flexibility through lot-size averaging can better enable the planning board to ensure that the zoning ordinance and individual subdivision layouts achieve many community goals. These include:

- Conservation of forest, agricultural land, scenic resources, wildlife habitat
- Concentration of development activity close to services
- Provision of a range of building lot prices
- Walkability and linkage between areas
- Reducing the cost of roads and utilities to the developer and the town

For simplicity, the two techniques are presented separately, below. However, they would also work well combined.

Lot Size Averaging

Lot size averaging permits flexibility in lot size on a parcel of land and is particularly effective with smaller parcels. This promotes the most appropriate use of land and the protection of productive agricultural or forestland, scenic views, historic sites, shorelines, wetlands, important habitat areas, or other resources of importance to the community, in accordance with the objectives of the Master Plan. The overall density remains the same. Only the lot sizes vary. Acworth and Lyme, New Hampshire, and Hartland, Vermont all allow lot size averaging. Some are simple lot size averaging approaches and others place restrictions on the percentage of lots that may be reduced in size.

Feature-Based Density

This is a zoning technique where the permissible density is calculated based on a set of factors contained in the ordinance, as opposed to a uniform standard being applied to all of the land in the zoning district. These features might include such things as road condition and distance to the village. Newbury, New Hampshire and Norwich, Vermont have both incorporated feature-based density into their towns’ zoning ordinances.

Steep Slope and Ridgeline Protection

These two closely related regulations usually take different forms: steep slope regulations are frequently based on environmental considerations such as erosion and sedimentation controls, while ridgeline regulations have more emphasis on view protection.

Overlay Districts

Communities often implement overlay districts to apply special regulations to particular resources with definable site-specific characterization (i.e. Can be clearly seen and delineated on a map). The term comes from the practice of drawing the location of the resources of concern on transparent paper and then laying that over the map of the existing zoning. Once resource areas of concern are identified, special regulations are proposed for those resources that are more stringent than the underlying zoning. As Charlestown grows, more desirable development locations, such as those with less restrictive soils and gentler slopes, will be built out. Development pressure will be focused on locations that are more costly and difficult to develop, such as areas with steep slopes.

- Steep Slope Overlay District: Lyme, Enfield, Newbury and New London are examples of communities in our region that have this kind of district. Lyme has both a steep slope and ridgeline protection district.
- Wetlands Overlay: Enfield, Lebanon, Lyme, and Sunapee are just a few communities that have adopted this kind of district.
- Shoreland Overlay: Cornish, Grantham, Newport and Sunapee are just a few examples of communities with local shoreland regulations.
- Agricultural Overlay: Forestry, animal husbandry crop cultivation and related uses.

Site Plan Review

SPR should address conformity of proposed development to the natural topography of the site and with current and future development of adjacent properties, minimizing the alteration of natural drainage patterns, site clearing, and regulating exterior lights and signs. In Charlestown's existing mixed use Zone E, special care must be exercised in assuring that new development does not adversely affect the use and enjoyment of surrounding properties

Subdivision Regulations

Subdivision review should support the working agricultural and forested landscape, preserving attractive vistas, and incorporating important open space areas into and between residential developments. In addition they should assure that new development is adequately served by necessary municipal infrastructure and compatible with surrounding development.

Property Tax Base

Cost of community service studies, such as those done by UNH Cooperative Extension, demonstrate that open space can be an economic asset that contributes to the stability of community tax rates. If land is taken out of open space and converted to housing, it will often cost more than is generated in taxes, because of increased need for community services, roads, landfills and schools. However, there are types of residential development, such as housing for the elderly and recreational/seasonal housing, which do carry their own fiscal weight.

If the Town wishes to raise its tax base and keep its tax rate low, it should make land use decisions which will not cause the depreciation of property values, and which will maintain the quality of life that will help attract quality investment. This can be facilitated by strong zoning, site plan review and subdivision regulations.

GOALS AND RECOMMENDATIONS

The Master Plan is a comprehensive document that discusses all facets of the community. There are eight chapters contained in this Master Plan that outline recommendations related to future land use patterns within Charlestown. Below are some relevant goals and recommendations contained in other Chapters. The complete outline of goals and recommendations can be found in the corresponding Chapters within the Plan.

Economic Development Chapter Recommendations

- Carefully study existing information on costs of community services to better gauge the tax impacts of various forms of development versus open space.
- Rezone "Zone E" or add performance measures, or both, to ensure a compatible, sustainable economic climate.
- Support agriculture as an important element of the region's working landscape and quality of life.
- Develop a plan to better protect natural, recreational and historic resources through zoning changes and a natural resources inventory.

Housing Chapter

- Zoning and subdivision regulations' dimensional requirements should be consistent with existing settlement patterns in terms of lot size and coverage, setbacks and road width and design.
- Encourage development where infrastructure already exists. Develop and support zoning that encourages density and mixed-uses in the Town Center area.
- Identify areas for future expansion of the Town Center District.
- Maintain and revive traditional settlement patterns that permit and encourage higher densities.
- Allow lot size averaging and other techniques to encourage the siting of housing to preserve resources and lower development costs.

Transportation Chapter

- Encourage concentrated development in order to minimize the amount of needed road infrastructure and thereby reduce impervious surface.

Natural Resources

- Support state, federal, and private acquisition of land, through donation or conservation easements, to protect the Town's forestry and wildlife resources.
- Work closely with local, state, and federal land protection organizations to preserve agricultural lands through the use of conservation easements or fee simple acquisition.
- Adopt policies that protect prime agricultural lands from development pressures, such as creation of an agricultural overlay zone.
- Use a conservation design approach for the design of subdivisions, particularly within those areas identified as unfragmented.
- Consider creating a Steep Slopes District in order to prohibit development on slopes over 25 percent, and carefully plan and manage development on slopes between 15 and 25 percent.
- Enhance setback requirements within the zoning and subdivision regulations to protect wetlands.

LAND USE GOAL AND RECOMMENDATIONS

Goal: Promote balanced land use that preserves the Town's outlying rural character and directs development toward its current and proposed Village Centers.

- Revise the Zoning Ordinance to reflect the vision illustrated in the *Conceptual Future Land Use Map*:
 - Village Center 1 (High Density): 1 dwelling unit per 15,000 square feet
 - Village Center 2 (High Density): 1 dwelling unit per half acre
 - Moderate Residential (Moderate Density): 1 dwelling per ½ to 1 acre depending on availability of utilities and other infrastructure
 - Rural Residential (Low Density): One dwelling per 2 to 5 acres
 - Watershed Protection/Conservation District (Very Low Density/Open Space): One dwelling per 20 acres
 - Industrial
 - Commercial
- In a future revision of the Zoning Ordinance, the Town should consider adopting performance standards (currently in Site Plan Regulations) for commercial, industrial, and multi-family developments, and make them more comprehensive. This will ensure that contiguous land uses are compatible and overall land use patterns support the community's rural character.
- Use the build-out analysis to plan for balanced growth and match the pace of commercial and residential development.

- Explore creative land use planning techniques that can preserve rural character as well as natural and historic resources. Some alternatives to consider include:
 - Adopt an Open Space Development provision in the Zoning Ordinance to provide the parties involved with a more flexible approach to creating a subdivision while preserving open space resources.
 - Allow lot size averaging to permit flexibility in lot size on a parcel of land.
- Adopt steep slope and/or ridgeline regulations to prevent soil erosion and sedimentation and to protect scenic views.
- Consider overlay districts to protect the community's natural and scenic resources, such as wetlands, shorelands, and agricultural areas.
- Consider revising the Zoning Ordinance, to prohibit the following types of land uses:
 - Large commercial landfills accepting waste from other communities;
 - Large feedlot farms;
 - Race tracks for motorized vehicles;
 - Pulp mills;
 - Adult entertainment establishments;
 - Non-renewable power generating stations;
 - Industries with significant quantities of air/ground/water polluting emissions, or those which, even when located in industrial zones, create noise, shock, or vibration incompatible with other commercial, industrial and residential land uses.
- Mix land uses at proposed future village centers, where it would benefit residents, reduce traffic and encourage more pedestrian circulation and sense of community.
- Preserve open space using a mix of private, municipal and other initiatives; this will have the dual benefit of preserving open space and rural character and minimizing the municipal costs associated with developed land.
- Compact, concentrated development should be promoted by encouraging the use of conservation subdivision design, and by discouraging development of random, scattered subdivision layout without regard to natural features in rural Charlestown.
- To the extent practicable, while preserving affordable housing options, new development should be planned and located so that the costs of community services and infrastructure don't exceed the tax revenue gained from that development.
- Revise zoning, subdivision, highway, site plan and other regulations to more closely reflect the Master Plan.
- Impose limits on commercial business size to preserve town character and reduce pressure on Town services.
- Recognize that land use decisions are predicated on current understandings of population growth and economic development and future land use plans may require adjustment to new information. Thus the Master Plan must be regularly reviewed and updated to assure that it remains reflective of both current and anticipated conditions.

BUILD-OUT ANALYSIS
CHARLESTOWN, NEW HAMPSHIRE

***A Determination of the Maximum Amount
of Future Residential Development
Possible Under Current Land Use Regulations***

Prepared for the
Charlestown Planning Board

by
UPPER VALLEY LAKE SUNAPEE
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Lebanon, New Hampshire 03766

September 2004

INTRODUCTION

The Upper Valley Lake Sunapee Regional Planning Commission (UVLSRPC) performed this build-out analysis at the request of the Charlestown Planning Board in conjunction with the Board's update of the town master plan. The build-out analysis is a tool for assessing the compatibility between the community's vision for the future and its current land use regulations. The term "build-out" is a planning reference to a hypothetical calculation of the maximum development allowed under the town's current zoning and subdivision regulations. The purpose of the build-out is to answer questions such as:

- How many new lots can be developed under existing land use regulations?
- How would this potential growth be distributed throughout town?
- How many dwelling units would these new lots represent?
- How much would the population increase?

The results of a build-out analysis often facilitate further discussion within the context of planning for the community's future, including:

- How will the projected growth affect the community?
- Are there areas projected for development which the community would prefer not to develop or to develop at a lower density?
- Are there areas that the community would prefer to develop at higher densities to concentrate growth where facilities and services will be more efficient and cost effective to provide?
- What additional facilities and services will be required to serve the needs of future residents?
- What steps should the community be initiating in the near future to accommodate future growth?

A build-out analysis is a model for calculating development potential. This build-out analysis estimates potential residential development in Charlestown under current land use controls. It is predicated on certain assumptions which are outlined in this report. A different set of assumptions would result in a different projected population. A build-out analysis, unless performed lot-by-lot, also relies on many generalizations. The underlying assumption is that factors which may bias the numbers in one direction or the other balance out; and that presenting

the numbers aggregated for larger areas of the community also balances out irregularities associated with data collected on smaller geographic areas.

Timing is not relevant to the build-out analysis as it is assumed that time is condensed to allow all possible development to occur today. The build-out analysis holds at today's conditions factors such as demographics, technology, zoning, municipal infrastructure and other variables that may affect development patterns.

METHODOLOGY AND ASSUMPTIONS

The UVLSRPC used its geographic information system (GIS) and data layers provided through GRANIT, the state's GIS system housed at the UNH Complex Systems Research Center, as well as those developed by UVLSRPC and others, to perform much of the analysis. Each of the GIS data layers and other data sources, as well as the assumptions associated with this analysis, is outlined below. The UVLSRPC utilized PC ARC/INFO 3.5.2 and Arcview 3.2 software to perform the GIS analyses. Spreadsheet analysis was performed using Quattro Pro v.11.

The town was analyzed in five study areas based on zoning and other logical dividing lines for study purposes. The five study areas are:

1. North Charlestown - NH 12A and 11/12
2. Watershed Protection Area
3. Village area north to limits of sewer service area
4. Southeast of village area - Acworth Road, Hackett Swamp
5. South Charlestown - NH 12 and 12A

Future residential development was calculated for each of these five sections of town and presented accordingly. The results are shown on Attachment A and on a large colored map available for viewing at the town office.

Zoning

Charlestown's zoning districts provided the foundation for the build-out analysis. These are listed below along with the minimum lot sizes allowed by the Zoning Ordinance.

Zoning District	Minimum Lot Size
A Town Center Residential/Professional	15,000 sq. ft. (0.34 ac)
A-1 Rural Residential	15,000 sq. ft. (0.34 ac)
B Business	No minimum lot size
C Fort #4	No new development
D Watershed Protection Area	5 acres
E-1 Mixed Use (Municipal Water and Sewer)	0.5 acre
E-2 Mixed Use (No Municipal Water or Sewer)	1 acre
F-1 Industrial/Business	80,000 sq. ft. (1.84 ac)
F-2 Industrial/Business	80,000 sq. ft. (1.84 ac)
G-1 Southwest Street Area	No minimum lot size
G-2 Multi-Use Zone	1 acre

UVLSRPC developed a PC ARC/INFO zoning map for Charlestown in 1999. This GIS coverage was updated and adjusted to fit the state's geographically referenced data layers utilized for this analysis rather than the original base developed by the town's tax map contractor in a nonGIS format.

Water and Sewer Service Areas

Properties within the Zone E - Mixed Use zoning district that are served by public water and/or sewer are subject to a smaller minimum lot size than those areas not served by either public water or sewer. Areas currently served by public water and sewer, and those most likely to be served if the systems were expanded in the future, were identified by Charlestown's Director of Public Works and digitized by UVLSRPC.

Surface Water

The area occupied by ponds and the Connecticut River was excluded from the developable land area. Surface water information was based on the USDA NRCS Soil Survey for Sullivan County.

Land Protected From Future Development

Publicly-owned conservation land and privately-owned land protected from development with conservation easements or other development restrictions was deducted from the land area available for future development. The GRANIT conservation land layer developed in 1995 by the Society for the Protection of NH Forests, updated in 2002 by UVLSRPC, was updated and used to identify conservation lands. In addition, land areas protected as a no building zone through power company agreements were also excluded.

Existing Land Use

Existing land use was identified and digitized by UVLSRPC using 1998 digital orthoquads provided through the NH Department of Transportation. The results were then reviewed by local officials. Lands identified as currently containing the following land uses were excluded from land considered developable:

- Single-family residential
- Multi-family residential
- Manufactured housing
- Industrial
- Commercial/retail, wholesale, services and lodging
- Institutional, government, educational
- Cemetery

Existing Road Rights-of-way

Road centerlines were based on 1:24000 digital line graph data provided through GRANIT. Centerlines were buffered twenty-five feet on either side to approximate

general right-of-way areas. These areas were then excluded from developable land calculations.

Future Roads

The area that would be taken up with future road rights-of-way associated with potential growth was deducted from the land area available to form new lots. The percentage of land needed for roads and other utilities increases with the density of development. Figures used for this analysis were developed by UVLSRPC based on previous sampling in the Region, as well as an examination of the percentage of land used for roads in already built-out areas of Charlestown. Each zoning district was assigned an average road right-of-way deduction based on allowable density as follows:

Minimum Lot Size	Deduction for Rights-of-way for Roads and Other Utilities
Less than 1 Acre	25 %
1 Acre to Less than 5 Acres	18 %
5 Acres	7.5 %

Residential vs. Nonresidential Land Area

The proportion of land area estimated to be developed for nonresidential uses in the future is listed below for each zoning district. These percentages are based primarily on current ratios derived from the GIS land use mapping. Some numbers were adjusted by the Planning Board based on local knowledge of development trends.

Zoning District	% of Development Currently Nonresidential	% of Future Development Assumed to be Nonresidential
A Town Center Residential/Professional	11%	11 %
A-1 Rural Residential	7%	7 %
B Business	60%	70 %
C Fort #4	94%	100 %
D Watershed Protection Area	<1%	1 %
E-1 Mixed Use	12%	25 %
F-1 Industrial/Business	89%	100 %
F-2 Industrial/Business	83%	100 %
G-1 Southwest Street Area	37%	37 %
G-2 Multi-Use Zone	39%	25 %

Wetlands and Steep Slopes

Charlestown's land use regulations do not preclude wetlands and steep slopes from being developed. However, in reality much land in the rural areas of town zoned for one acre density is not suitable for development at that density. To incorporate development limitations associated with the land into the analysis, soil-based lot sizes utilized by NH Department of Environmental Services for reviewing proposed residential subdivisions were used for the build-out analysis of Zone E where neither public water or sewer is available.

RESULTS

It is estimated that 5,747 additional lots could be developed for residential uses in Charlestown under current zoning. The distribution of potential residential development across town is listed below and shown on Attachment A. As shown, the growth potential of the rural areas of town under existing zoning far exceeds that of the village area. In terms of zoning districts, Zone D - Watershed Protection Area and Zone E - Mixed Use account for 5,342 or 93 % of the potential additional residential lots. Rather than concentrating development where facilities and services are available and more cost effective to provide and maintain, the town's land use controls will eventually serve to spread development out throughout the town.

Study Area	Additional Residential Lots Enabled by Existing Zoning
1. North Charlestown - NH 12A and 11/12	1,289
2. Watershed Protection Area	637
3. Village area - north to limits of sewer service area	993
4. Southeast of village area - Acworth Road, Hackett Swamp	2,047
5. South Charlestown - NH 12 and 12A	781
Total	5,747

Type and Occupancy of Housing Units

The next step in determining the potential future population of Charlestown as currently zoned is to calculate the number of dwelling units likely to be built on the potential residential lots. The 2000 U.S. Census estimated that of the 2,067 housing units counted in Charlestown, 4.4 % were in duplexes or other forms of attached single family residences, and 12.7 % were in multifamily buildings. Since multi-family dwellings are allowed on most of Charlestown's developable land area, i.e. as opposed to being limited to nearly built-out village area districts, the build-out analysis assumption that today's breakdown of housing will apply to the future is a feasible one even though development will shift toward the more rural areas of town. Multi-family buildings were assumed to contain an average of four dwelling units as provided in the Zoning Ordinance for the Town Center Residential/Professional and Rural Residential zones. These assumptions result in an estimated 315 % increase in housing units in Charlestown from 2,067 units in 2000 to a possible 8,579 at build-out.

Housing Unit Type	2000 U.S. Census Estimate	% of Units	New Housing Units Possible Under Existing Zoning	Total Units Estimated at Build-out
Single Family, including Mobile Homes	1714	82.9 %	5,396	7,110
Duplex or Attached Single Family	91	4.4 %	288	379
Multi-Family	262	12.7 %	828	1,090
TOTAL	2,067	100 %	6,512	8,579

The next step in calculating a potential future year-round population for Charlestown under current zoning is to estimate the number of these residential units that would be occupied year-round. For the purposes of this analysis, the vacancy rate (4.7%) and percentage of housing units occupied seasonally (2.4%) were assumed to remain constant. These assumptions result in an estimated 7,970 housing units occupied year-round at build-out.

Occupancy Status	Housing Units Counted by 2000 U.S. Census	New Housing Units Possible Under Existing Zoning	Total Units Estimated at Build-out
Year-round occupied	1,920	6,050	7,970
Vacant	98	306	404
For seasonal use	49	156	205
Total housing units	2,067	6,512	8,579

Population

The U.S. Census reported a population of 4,749 for Charlestown in 2000. Assuming an average household size of 2.58 persons per household as reported by the 2000 U.S. Census, the population of Charlestown would increase about 300 % to approximately 20,586 at build-out. For comparison, the Region's largest two communities in 2000 were Claremont with 13,151 residents and Lebanon with 12,568. Across the River in Vermont, Springfield had 9,078 people in 2000. With a population of 22,563 in 2000, Keene is comparable to what Charlestown will be if built-out under existing zoning.

Seasonal dwellings represent an additional segment of the community requiring consideration for services as well. However, the number of seasonal residents or users of seasonal dwellings is difficult to estimate. Household size, length and frequency of stay, turnover of users, all affect the nature of the community's needs relative to these dwelling units.

The U.S. Census counted 1,012 school-age children (ages 5 through 19) in Charlestown in 2000. Assuming the age structure of the population remains the same at build-out, the potential school-age population for Charlestown under current zoning is 4,387. The U.S. Census counted 678 Charlestown residents age 65 or over in 2000. Again assuming the percentage of the total population comprised of older residents remains the same at build-out, the potential population of older adults in Charlestown under current zoning is 2,939. Both of these segments of the population require special considerations when planning for facilities and services needed in the future.

Traffic Generation

Traffic generation estimates are based on factors developed from nation-wide sampling and provided by the Institute of Transportation Engineers (Trip Generation, 6th Edition, ITE, Washington, D.C., 1997). The figure for single-family residences (9.57 trips per day) was applied to all year-round housing in Charlestown as multi-family housing in rural communities without public transit is also autodependent. This results in an estimated 18,374 trips per day associated with today's year-round residents increasing to about 76,273 trips per day at build-out.

Some considerations relative to the magnitude of this potential traffic increase are:

- Current zoning provides for a future in which growth is spread out all over town at relatively high densities, meaning the substantially increased traffic volume associated with this growth has the potential to also be widely distributed, posing a significant maintenance challenge for future local officials.
- The 76,273 figure reflects only locally-generated traffic. Non-local traffic will continue to increase as the regional population grows.
- Traffic generated by commercial and industrial growth can also be expected to grow.

Alternative Scenario

In addition to current conditions, the number of additional lots possible if certain extensions were made to the water and sewer service areas was also calculated. The areas most likely to be considered for future service were identified by town personnel. As shown on Attachment A, these areas were in the Watershed Protection Area, where the minimum lot size does not vary with the type of water supply or wastewater disposal, and in Zone E in the North Charlestown area. In Zone E, a minimum lot size of 1/2 acre is allowed if either public water or sewer are available. These extensions are estimated to increase the potential residential growth in Study Area 1 by 83 lots.

CONCLUSION

This analysis of the potential residential growth associated with undeveloped land in Charlestown indicates that under current zoning Charlestown has the potential to grow to a year-round population of at least 20,586. This represents a 300% increase over the 4,749 residents counted in the 2000 U.S. Census. An examination of developed land in Charlestown would likely reveal some in-fill potential which would increase this number further.

It should be kept in mind that a build-out analysis is a model based on a set of assumptions - a different "crystal ball" will yield different results. Whether the results predict the future with an accuracy of $\pm 0.1\%$ or $\pm 10\%$, they provide a basis for assisting the Planning Board as it continues to strive for a balance among growth, the community's vision for its future, and the municipality's ability to provide facilities and services.

The analysis lays a foundation for easily testing alternative regulatory schemes as part of the master plan process, such as various differentials between the minimum lot sizes of the village area and that required in the rural areas, to evaluate effects on total population and the distribution of population. Used in this way, a build-out analysis can serve not only as a catalyst for change if the impacts associated with the anticipated growth appear inconsistent with the community's desires and capacities, but also as a tool for examining options for affecting a different future.

Attachment A: Build-Out Analysis Results Charlestown, NH



Map created by Upper Valley
Lake Sunapee Regional
Planning Commission,
September 2004.

Base map features from USGS 1:24000
scale Digital Line Graphs, distributed by
Complex Systems Research Center,
Durham NH.

Zoning digitized by UVLSRPC, 1999.


Current and future water and sewer
districts, mapped by the Town of
Charlestown and digitized by
UVLSRPC, February, 2004.



Scale: 1:55000




Legend

 Study Area indicating the
number of additional
residential lots enabled by
existing zoning.


Roads

 Interstates and State Highways
 Other Roads

 Rivers, Lakes and Ponds

 Streams

 Current Water and Sewer


 Future Water and Sewer

Zoning


 Zone A: Town Center Residential/
Professional


 Zone A-1: Rural Residential


 Zone B: Business


 Zone C: Fort No. 4


 Zone D: Watershed Protection Area

 Zone E: Mixed Use

 Zone F-1: Industrial/Business

 Zone F-2: Industrial/Business

 Zone G-1: Southwest Street Area

 Zone G-2: Multi-Use

