WINDHAM MASTER PLAN 2005



Windham Planning Board
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Existing Conditions and Analysis – October 2004

VOLUME I of II

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Acknowledgements

This Master Plan was developed over the term of two Planning Boards:

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Special thanks to Alfred Turner and Rebecca Way

And sincere thanks to all who participated in the planning process, including:

James Adams, Bruce Anderson, Al Barlow, Earl Bartlett, Dana Call, Greg Cappiello, Alan Carpenter, Margaret Crisler, Jennifer Colvin, Kevin Cyr, Ronald Cyr, Eric DeLong, Anthony DiFruscia, Kara DiFruscia, Bev Donovan, Chris Doyle, Karl Dubay, Elizabeth (Betty) Dunn, Diana Fallon, Barry Goldman, Lynn Goldman, Peter Griffin, Leo Hart, Carl Heidenblad, Nicole Hirsch, Roger Hohenberger, Mike Joanis, Susan Jortberg, John Kelly, John LaRochelle, Fred Linnemann, Lisa Linowes, Margo Logan, Brian McNamara, Tom McPhereson, John Mangan, Jack McCartney, Charles McMahon, Don Messier, Bruce Moeckel, Wayne Morris, Kathy Narkewich, Eric Nickerson, Chris Nickerson, Rex Norman, Dave Poulson, Carol Pynn, Dennis Root, Marc Samsel, Pat Schena, Tim Schreiner, Dennis Senibaldi, Thomas Seniow, Galen Stearns, Miriam Stolz, Dave Sullivan, Dennis Tremblay, Joan Tuck, Mary Lee Underhill, Ralph Valentine, Joseph Vinhais, Bill Wallace, Kevin Waterhouse, Carolyn Webber, Joyce Wong, Pat Yatsevich, and Glen Yergeau.

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Envisioning Windham's Future

Planning for Sustainable Growth

One of New Hampshire's premier residential communities, the Town of Windham has been discovered – offering its residents a peaceful, rural sense of place, the Town seeks to preserve its open spaces and small town charm amid growth that has more than quadrupled its population over the past three decades. Managing and shaping this growth to preserve and complement Windham's existing character is a central challenge for its local government.

Likewise, Windham's town governance strives to provide "the highest quality public service through professionalism dedicated to excellence."[1] Identifying ways to maintain and improve service while fixed costs increase at higher rates than revenues is equally challenging to town officials and staff.

The Town has done an admirable job of planning for and responding to new development. Through the creation of a new Master Plan and a Strategic Plan, Windham is continuing its diligent effort to ensure the community and its future generations will enjoy an enduring high quality of life. Its mission is rooted in the principle of sustainability in its most basic sense: that is, to meet today's needs in a manner that does not compromise the ability of tomorrow's residents to meet their own needs.

The Process – Windham's Assets and Liabilities

One of the two required components of a Master Plan, per State statute, is a vision statement. The reasoning behind this mandate is well founded – numerous studies have proven that goals and objectives have a significantly increased chance of being achieved when people can see them, and can imagine the steps needed to take en route to success.

> A vision section that serves to direct the other sections of the plan. This section shall contain a set of statements which articulate the desires of the citizens affected by the master plan, not only for their locality but for the region and the whole state. It shall contain a set of guiding principles and priorities to implement that vision.
> NH RSA Chapter 674:2

[1] Town's Mission statement.

The evening of May 12, 2004 brought together a cross section of community members to share and discuss the Town's future. Following a general introduction to the Master Plan process, people broke into small groups to address three main questions:

1. What do you like best about Windham? What should be preserved?

2. What do you like least about Windham? What should change?

3. What would you like to see happen in Windham? Taking into account these strengths and weaknesses, what are the key changes that could make Windham a better community in the next 10 to 20 years?

Participants enthusiastically offered their opinion on hundreds of topics. The main issues discussed generally reflected a great deal of consensus.

There was universal agreement that people love living in Windham. Residents are passionate about protecting the characteristics that have made this such a pleasant place to live:

- family-oriented
- conservation land/ open spaces/ natural beauty / lakes, streams, ponds
- accessible town government
- no "big box" retail
- sense of community/small town, "country" character
- recreational programs and opportunities
- great schools
- convenient location

There were, however, a number of items that residents thought could be improved to make Windham an even better place. Among the most-often cited examples were:

- vehicular traffic
- more transportation options
- lack of street & path connectivity/ lack of pedestrian & bicycle amenities
- no village center/ lack of retail options
- need for additional recreation facilities, programs, and organization
- need to improve water supply protection efforts
- new economic development to keep tax rate reasonable
- need to identify a permanent high school for Windham students

Windham Today / Windham Tomorrow

The visioning session was followed by three meetings on subsequent weeks to encourage focused discussion on specific topics. Meetings were advertised by posters that were distributed around town, via mailed invitations, and on the Town's web site. Participants at these sessions were asked to think about the qualities that make up present-day Windham, what types of changes are occurring, and how might Windham act in order to achieve its vision for tomorrow. Following are brief snapshots of each discussion to illustrate some of the ideas brought forward:

Natural and Cultural Resources and Recreation: May 20, 2004

- Preserve the Town's remaining agricultural and open space lands, and offer strategies for continued protection of key parcels and the creation of linkages between open lands;
- Water quality, pollution concerns, and water supply adequacy;
- Trail development, recreational programs, facilities, and field maintenance; and
- Potential threats to historic properties and methods of protection

Economic Development and Transportation: May 26, 2004

- The need to consider the topic of economic development through a larger prism that carefully assesses the associated costs (re: infrastructure, environment, etc.) and benefits (actual revenue increase) of commercial use; the desire to address local needs, and the potential for strengthening the community. Regulatory and non-regulatory obstacles to economic development were cited.
- Solutions to vehicle traffic on Route 111 and Interstate-93 must be a priority. Street connections, bike paths, public transit, and sidewalks were suggested. Impacts of roadway changes should be carefully weighed.

Land Use and Housing: June 6, 2004

- Attract uses that will generate positive tax revenue. Locate them appropriately.
- Road connections must be made to alleviate Route 111 congestion.
- Wetlands and watershed protection ordinances have been very successful in preserving open space, but perhaps should be fine-tuned to allow flexibility on a site-by-site basis for desired development.
- Remaining farms are important to the town's character.
- Scenic views and roadways could be better protected, without unduly impacting private property rights.

- Street trees and usable open space from cluster subdivisions should be addressed in subdivision regulations.
- Housing types should allow for additional elderly options, a mixed-use village center is highly desirable.

Community Facilities and Utilities: August 11, 2004

- Need to better plan for adequate parking at Town facilities – Police station, Griffin Park, Nashua Road recreation area, and schools need additional parking.

- Police may grow by 4-6 people in the future, highway may add up to 10 employees. Maybe an opportunity to consolidate public works near Transfer Station (13 acres) except salt shed relocation may be problematic.

- Town Center development would require a safe crossing to Fellows Road, a bridge/wetlands crossing, change in road network, and reuse plan for town center properties. Village center properties have recently sold and mixed use development is likely to occur soon.

- Need a long range plan for Open Space and Conservation Lands management. Can conservation and/or Wetland and Watershed Protection District (WWPD) land be used to fulfill additional community needs?

- Public Health is growing issue – immunizations, medical issues.

- Traffic is biggest threat to quality of life. Alternatives to Route 111 must be developed. Exit 3 redesign should accommodate future growth.

- Identify true costs/benefits of limited water sewer before consideration. Proceed with great caution, but see if there is an opportunity for economic development without creating a domino effect.

Recreation: September 22, 2004

- Playing fields are in very, very high demand. Maintenance is difficult amid overuse. Soccer is popular.
- A Recreation Director is needed, particularly for scheduling.
- Additional parking at Griffin Park is needed; development of safe walking routes to recreational facilities (Griffin, Nashua Rd.) should be a priority.
- Bike lanes should be targeted for major roadways – in many instances, widths can support a painted lane.
- Integrate high school planning with community recreational needs.
- Ampitheatre, outdoor skating, non-athletic programs for younger children, town pool, appropriate hunting areas, and trail signage are desired.

Old Values New Horizons ✂ Vision Statement

Source www.windhamnewhampshire.com

One of the first observations Windham residents will make when asked to describe the town is that Windham is a great place to live. Embodying the best of old-fashioned Yankee conservatism, residents enjoy a strong sense of community, complimented by a volunteer spirit that prompts neighbors to lend helping hands to each other and to civic government. Above all, the people of Windham value this shared sense of responsibility, cooperation, and friendship, and seek to ensure this ethic continues to define the Town amid future changes in population and land use. Windham's recently adopted motto of "Old Values, New Horizons" celebrates the community's respect for the past, and its optimistic outlook towards the future.

Source: www.windhambaseball.org

Windham residents also retain a close relationship to the land, its open spaces, lakes, ponds, streams, and forests. Although recent growth may cause some to observe that Windham is no longer "rural" in nature, the Town takes pride in conserving its environmental resources and natural beauty. Future development should be shaped to preserve scenic landscapes, allow for contiguous habitats and recreational trails, and protect water quality.

Source: www.windamcommunityband.org

Growth has brought a major challenge to town in the form of traffic congestion. Relatively few of Windham's paved streets pre-date the 1950's, when a rural pattern of development still characterized land uses. Subdivision development since then has resulted in many new cul de sacs without the paralleled construction of through routes to provide alternatives to the Town's main arterials. There is currently no public transit available to residents. Consequently, traffic congestion is a serious threat to the community's quality of life, and is an obstacle to the Town's emergency response capabilities. The Interstate 93 widening project promises to exacerbate conditions in the near term, and permanent relief of Route 111 traffic will require creative solutions in order to avoid negatively impacting the Town's character. Improving overall circulation to, from, and across Town is critical to Windham's future.

Economic development is another key issue brought into sharp focus by growth. Although residents are grateful that strip development has been successfully discouraged thus far, there is a desire for additional retail options to be conveniently located in Town, such as a drug store or grocery store[2]. The primary thrust, however, behind the clarion call for an increase in commercial uses relates to the town's tax base, and the strong will to moderate the tax burden on residents while meeting the community's growing needs for high quality public services. Attracting new and expanded commercial enterprise, encouraging uses

[2] Subsequent to the visioning session, final approval has been given to a new Shaw's supermarket to be located in Windham.

that fulfill local needs, managing their contribution to the built environment through complementary siting and design, and fostering long-term business investment that is in Windham's best interest are important components of the town's vision. At a minimum, some of these new uses should promote the evolution of a mixed-use, pedestrian-friendly village center, a widely supported amenity.

Natives and newcomers alike support excellence in Windham's schools, and are interested in meeting the challenge of educating the Town's high school students as they pursue an alternative to their expiring Authorized Regional Enrollment Area (AREA) agreement with Salem High. Continued support for top notch educational institutions is integral to sustaining the community's prosperity.

Recreational programs and facilities enjoy heavy participation by Windham residents, and play an important role in knitting the community together. Griffin Park hosts much of this activity, and has recently undergone major improvements. Trails and access to lakes and ponds are extremely popular recreational outlets as well. Ensuring that Windham's recreational programs address users of all ages and abilities, managing the use and proper maintenance of existing facilities, and planning for expanded future capacity is of high priority.

Residents are generally pleased with the Town's high property values, and seek to maintain this standard. Providing appropriate housing options and continuing care facilities for the town's senior citizens and allowing for the market-driven provision of multifamily housing affordable to people of mixed incomes are key components of the town's housing planning activity. In addition, the trend in conversion of seasonal homes to year-round occupancy provides both a unique avenue into the Windham market, as well an opportunity for the Town to work cooperatively with home owners to address environmental and infrastructure issues.

Preserving the Town's historical resources, including homes, landscapes, cemeteries, and archaeological sites is vital. Local historical districts should be augmented as necessary to protect pieces of Windham's heritage that exist outside district boundaries. Continuing to share the stories that make up the town's legacy is another way residents build and sustain their sense of place and community.

Windham to date has struck a prudent balance between fiscal restraint and a commitment to providing excellent public services and infrastructure that are forward-thinking, efficient, and responsive. Windham will meet the increasing demands of its growing population by supporting the work of its dedicated administrators, and ensuring that public investment continues to be guided by long range planning, innovation, and fiscal conservatism.

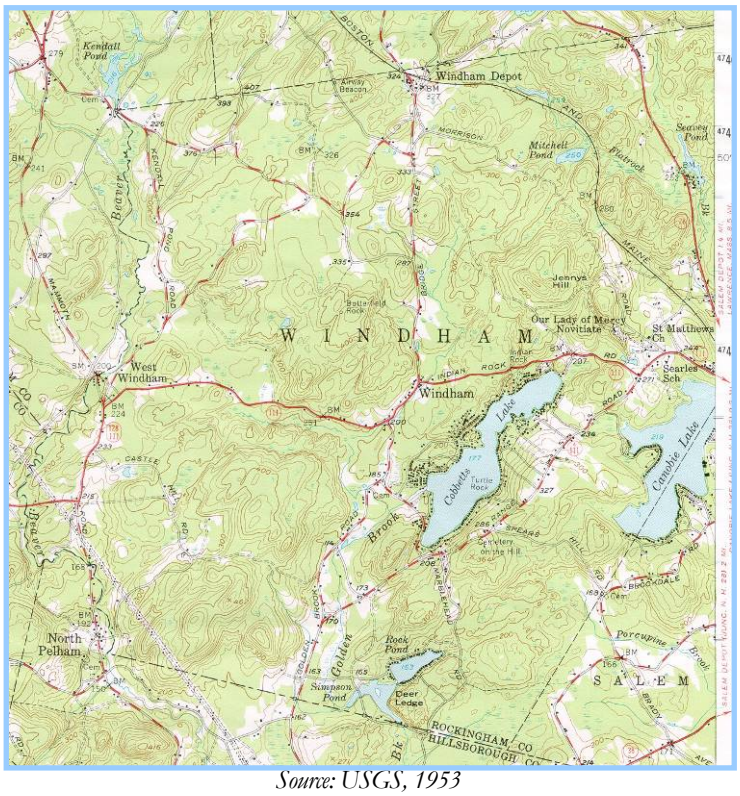
Priorities for Action

Although the Windham Master Plan is a comprehensive guidance document for Town policies and actions, there are clearly a few specific issues that have the potential to substantially affect the community's ability to realize its vision for the future. Public discussion that took place during the visioning process repeatedly centered around these inter-related topics, which represent the major challenges Windham will face during the next several years. In an effort to frame the pages to follow, these themes are presented at the start of this document.

Alleviating Traffic and Improving Transportation Options

Without question, traffic congestion in Windham is a serious threat to the quality of life enjoyed by residents of this formerly rural community. Roadway construction that has occurred since the completion of Interstate 93 in 1962 has fundamentally altered the Town's character, from one with few country roads cutting across town (see Figure 1) to a more complex system of collectors, subdivision streets and cul de sacs, all ultimately feeding in to these historic roadways.

Figure 1: Topographic Map of Windham, 1953



Source: USGS, 1953

Route 111

As further detailed in the Transportation chapter, peak hour delays experienced on Route 111 are causing widespread discontent among Windham commuters, and have resulted in unacceptable emergency response times in certain areas of town. Few alternative east-west routes exist, with only 3 opportunities (Route 111, 111A, and Lowell Road) to cross Interstate 93. The perpetuation of cul de sacs exacerbates pressure on existing collector roads that lead to Route 111 access, such as Lowell/North Lowell Road.

A fundamental question facing Windham involves how Route 111, west of the Interstate 93 interchange, will move people through Town into the future. Presently a two-lane layout with turning lanes, Route 111 is designed to serve vehicular traffic, without sidewalks or bicycles lanes. Its wide pavement lends the roadway an expansive appearance that divides Town in half.. It is relatively difficult to travel across Route 111 unless in a car. When discussing congestion on this roadway, the question asked repeatedly is "to widen or not to widen?" As part of the Master Planning process, however, answers to the broader questions of how the Town envisions a future Route 111 fitting into the community's character, and how future land use along the corridor will affect Route 111, should be considered as a precursor to decision-making regarding potential solutions to traffic backups.

Windham's 2000 Master Plan recommended that the Town strongly advocate for the road to remain a Limited Access route, and that existing access points be consolidated to achieve the goal of no more than 7 or 8 signalized intersections along its length in Windham. This certainly continues to be an appropriate recommendation, but may be enhanced by several additional factors, for example:

- Continued encouragement of the creation of a Village Center, which may provide some services which are presently only accessible by traveling to Salem or Derry via Routes 111 and 28;
- Consideration of bicycle lanes, parallel travel paths between developments, and/or sidewalks in targeted locations to allow for non-vehicular travel between destinations;
- Introduction of street trees with all new development;
- Strict control/discouragement of additional roadside signage.

Route 111 will continue to serve as Windham's main east-west travel corridor, and for this reason, planning for its future should remain a top priority. Though Route 111 is ultimately under the State of New Hampshire's control, the Town may want to explore with the DOT a future vision for the roadway corridor prior to addressing any obvious defects. This type of pre-planning effort is becoming more common in recognition of the larger role such prominent roadway corridors play in relation to community character and economic development, as well as transportation. Londonderry, for

example, has applied a Performance Overlay District to Route 102 (and Route 28) in an attempt to minimize traffic impacts, preserve rural character, and promote high quality economic development.

Windham has similarly enacted an Access Management Overlay to Route 28, and is advanced in its thinking about the role corridors play in the community. It has already implemented village center zoning along 111, and seeks to encourage parallel service roads where appropriate. Given the degree to which Route 111 continues to be debated in public discussions, and the high likelihood of it undergoing construction in the not too distant future, it is important that the Town build consensus for this corridor's future profile.

Interstate 93

The proposed expansion of Interstate 93 promises to have both short and long term implications for Windham. Town officials have been consulting with the State Department of Transportation regarding this project since 2000, and will remain involved as it is scheduled to move towards a 2010 completion date.

The estimated $440 million project is expected to be 6 years in construction. Traffic congestion on Interstate 93 at present causes regular cut through traffic on Windham roadways, which is expected to worsen as construction commences. Anticipated pressure on Routes 111 and Route 28 is the subject of pre-planning efforts, particularly with regard to emergency response strategies. At a minimum, Windham should continue to communicate with Salem and Derry to maximize traffic management opportunities.

Windham will experience a wide range of direct and secondary impacts from the project. Regular monitoring of water resources within the project impact area will be needed to ensure that planned detention basins and grassed swales are operating as intended to filter runoff and prevent flooding. Although construction of wetlands and the purchase of additional land for conservation will help to lessen impacts overall, the loss of approximately $6-8 million in Windham properties, mainly commercial, will be an issue that the Town will be left to address with private developers as the reconstruction of Exit 3 proceeds forward.

Town leaders have re-zoned this gateway area to entice projects that will redefine this primary entry point with well-designed commercial uses that incorporate multi-modal transit into their facilities (bike paths and racks, sidewalks, etc.). Guarding against uses such as fast food chains, drive-through establishments, and large-scale, free-standing signage will be critical to preventing this exit from resembling any other along the Interstate. In addition, the landscaping and site plans of these future uses can signal to drivers the need to slow their speed as they exit the highway environment and enter into Town. Consideration of design and use at gateway areas should remain at the forefront of Town officials' minds as they seek to replace the lost tax base at this location.

Expanding Transportation Options

In order to realize improvements to its traffic condition, Windham needs to remain mindful that roadway widening alone is unlikely to yield desirable results, and that expanding its options for travel to, from, and throughout Town is critical to achieving long term success.

Windham's 2000 Master Plan called for several strategies to encourage both non-vehicular travel and improved automobile circulation. These recommendations included:

- Expansion of bicycle and walking routes on heavily traveled corridors;
- Active support of mass transit and public transportation, especially for elderly and handicapped persons;
- Requiring key connector streets be constructed in conjunction with subdivision and site plan approvals, without traversing large tracts of open space.

While progress on these items is on-going, this Master Plan must set forth specific steps, define measurable goals, and assign responsible parties to accelerate the achievement of the advisable, yet at times elusive, goal of expanding non-vehicular travel options.

Growth Management: Maintaining High Quality Public Services and Facilities

The Vision Statement reflects a strong appreciation in the Windham community for living amid the Town's scenic natural areas, its high quality public services and facilities, and fairly stable tax rate. A repeated theme from the 2000 Master Plan highlighted the need to protect conservation land of high value, and the Town's Conservation Commission has responded to this need through outright purchases, attracting gifts, and working with the Planning Board to support open space subdivisions. And, to a large extent, Windham seems to be fairly satisfied with the quality and appearance of it new developments. As a result, the term "growth management" is used here to reference the relationship between growth and public services – as NH Statutes would state, it is a matter of avoiding "scattered and premature" development by planning for staff, programs, and facilities that will meet the needs of a growing community.

One of the main thrusts of this plan will be to address how the Town can continue to be highly responsive to the needs of its residents and businesses while avoiding burdensome residential tax bills. To a large degree, this question is central to all fast-growing communities, and easy answers are non-existent.

The proposed Fire Substation to be located along Route 28 is a good example of how growth in Windham highlights the need for additional public services that go beyond planning for school children. Windham's response times to this area have failed to meet recommended standards as traffic congestion on Route 111 has increased. In

addition, subdivision development is proceeding rapidly in this area of Town. Although developers have contributed towards the construction of a new facility, the Town's Capital Improvement Program (CIP) has not recommended to appropriate needed funding for this project to the Board of Selectmen. Early discussion in the 2005 CIP process indicates the need for a closer analysis of the project, including accurate response times. Should the facility eventually move forward, it will represent a relatively substantial new investment that promises to have a long-term impact on the Town's operational budget.

In simple terms, the Town has two fundamental options to address a growing gap between services and the ability to pay for them: raise revenue or cut costs. Complex, however, are the myriad of consequences associated with both options, and acceptable solutions may ultimately require constant assessment and adjustment. While this happens annually during preparation of the Town's budget, the Master Plan must take a longer view and provide both information and direction for future decision-makers.

Town officials appear to stretch resources, staff, and facilities wherever possible – an in-depth analysis of operational practices is being discussed by the Board of Selectmen. The intent of such a study would be, in part, to maximize efficiencies and identify any cost recovery opportunities.

From a land use perspective, cutting costs that result from particular uses is a challenge. Commonly-held notions suggest that residential uses typically result in net losses to town budgets, as home owner taxes do not fully cover the costs to serve families (especially those with children who attend public school). In contrast, non-residential uses are typically regarded as net benefits to the tax base. Open space, as some studies assert, can be tax base neutral, or can be indirectly positive, as the intrinsic value of open land may raise the value of properties throughout the community. All of these assumptions, however, warrant rigorous testing should Windham desire to further explore a true "cost of community services" study. And, this type of study can never stand alone without the context of existing reality to ground it – in other words, there is no optimal proportion of land uses that are present in most desirable communities with reasonable tax rates. Extreme scenarios prove that cost/benefit analyses must weigh their conclusions carefully – e.g. in a community that is 100% residential, homes do "pay for themselves."

That said, however, the public discussion that has centered on the option of raising revenues through additional economic development is an important one. Residents who support additional commercial use do so with an understanding that the Town will benefit from new tax revenue. Those who question the need to attract new business are suspect that the new revenue will outweigh the potential impacts (environmental, traffic, aesthetic, etc.) that may accompany the uses. The Economic Development chapter of the plan thoroughly explores both sides of this issue. In addition, new businesses can enhance Windham's overall desirability, providing convenient stores, employment, and public gathering spaces. Properly located, they

also hold the potential of improving traffic congestion by reducing the distances traveled in pursuit of goods and services.

Ironically, phased development/building permit cap ordinances, while aimed at slowing the rate of increasing demand for public services, would have the unintended consequence of slowing the collection of new tax revenues. The recent years of high residential growth have enabled the Town to fund needed improvements to several of its public facilities; there seems to be an overall sense, however, that there is a demand for services that needs to be addressed before additional growth can be accommodated. This services gap appears to apply to several areas, from highway maintenance to recreation, and from affordable housing to the transfer/recycling operation.

Ensuring Long-term Water Quality and Supply Protection and Wastewater Treatment

Windham's water resources are important considerations for community planning. There are numerous lakes, ponds, brooks and streams as well as freshwater wetlands. There are also substantial groundwater resources particularly associated with the Windham-Cobbetts Pond Aquifer.

Cognizant of the value of these resources, the town has undertaken a program of water resource protection involving land use regulation, water quality monitoring and conservation land acquisition. Specific efforts, such as the Wetland and Watershed Protection and Aquifer Protection districts to the Board of Health Regulations and water quality monitoring are discussed in detail in the Utilities and Natural Resources elements. Master Plan discussions have placed high priority on the need for the Town and it residents to be vigilant and creative as they work to protect Windham's water resources in step with a shared desire to support both residential and commercial development. Ultimately, Windham seeks to ensure that it can rely on its own water resources to provide private drinking water supplies into the foreseeable future.

Like many New Hampshire communities, the town provides neither municipal water nor sewer to the community, opting instead to accommodate development through the use of soil-based lot sizing, and private and community wells. As residential development continues to increase and seasonal homes are converted to year round occupancy, Master Plan discussions have raised the question as to whether the Town's policy should be modified to respond to a) the desire to attract additional commercial uses in order to offset rising tax rates and b) potential water quality issues, especially in the Cobbetts Pond and Canobie Lake areas. Based on such hydrogeological studies as the 1992 US Geologic Survey, the community has concluded that adequate groundwater resources exist, and in a number of instances, the Town has allowed for Pennichuck to provide water to homes that are unable to sufficiently draw upon groundwater resources on their properties. Windham could continue to rely on local water resources for community supplies or reach agreement with Salem to allow it to

expand into Windham. At present, the Town has been reluctant to pursue the latter course because of the potential expense.

The issue of allowing or providing for sewage to targeted areas to support commercial development has frequently been raised as large-scale septic can be both expensive and requires active monitoring to ensure against groundwater contamination. It has been Windham's experience that lack of sewer availability can be a major obstacle to attracting desirable business uses to town.

Windham has a standing agreement with the Greater Lawrence Sanitary District which would allow the Town to send approximately 300,000 gallons of wastewater/day via pipes that would connect through Salem. This availability makes the possibility of limited sewer a reality, even though the construction of a connection to Salem would involve substantial investment[3]. In addition, if water is withdrawn from Windham and discharged into a regional sewer system, a source of groundwater recharge to Windham's aquifers will be eliminated. Alternatives to this traditional approach exist as well, including the use of shared systems and small waste water treatment plants. These issues keep the debate open as to whether Windham should consider municipal sewer.

To another degree, water quality protection in Windham's densest neighborhoods is an on-going concern. While testing has not indicated serious long term problems stemming from residential septic system failures, the conversion of seasonal to year-round homes in these areas pose questions as to whether the cumulative effect of multiple septic systems on fairly small lot sizes will provide safe separation from the wells for on-going use. The Town of Salem has concluded that it is not sustainable to continue to allow septic systems in the areas around Canobie Lake, Millville Lake, and Arlington Pond; consequently it is implementing a $71 million infrastructure program to deliver sewer service to these property owners, with an optional connection to public water as well. As Salem designed this project, they planned for the possibility of connecting Windham residents near Canobie Lake to their system.

Windham has valid, practical concerns about how to properly and justifiably make a public policy decision to allow for limited sewage. Its concerns relate to the loss of its rural heritage in the face of potentially unleashed development, establishing a fair process to decide which areas would and would not be able to connect into any new system, what the financial investment would be, and whether there would be a long-term impact on water supply. At a minimum, it may be advisable for the Town to consider forming a committee of residents and Town officials to further investigate these issues and make recommendations.

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[3] In past discussions with the Planning Board, developers have expressed interest in the idea of an upgrade to the current system along Route 28 as well as construction of a new system to support commercial development in the Exit 3 area. No commitment, however, has been made.

Land Use

Land use changes in Windham have been occurring at a brisk rate in order to respond to a growing population. Windham is not alone in its evolution – it is amid a region of Southern New Hampshire experiencing tremendous growth and change. Throughout this Plan, Windham's condition will be compared to a set of eight adjacent and similar communities in order to provide context for evaluation. In some instances, comparisons to Rockingham County, the State of New Hampshire, and other relevant regional or national examples will also serve as useful measures.

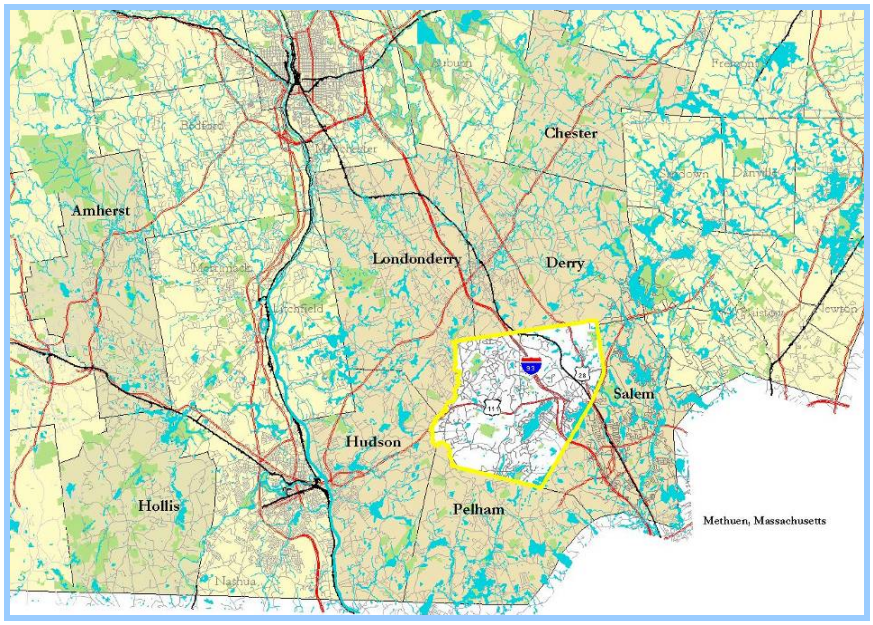
The following table features basic information about these eight comparison communities. It is sorted by population, and Windham falls in the middle of the group, with four communities of lesser population and four substantially greater.

Table 1: Profile of Windham vs. the Surrounding Towns

Municipality	Land Area (sq. mi.)	2003 Population	Median Household Income (1999)
Chester	26.0	4,491	$68,571
Hollis	31.8	7,489	$44,936
Amherst	33.9	11,413	$35,531
Pelham	26.3	11,986	$68,608
Windham	26.7	12,205	$94,794
Hudson	28.5	23,839	$64,169
Londonderry	42.0	24,201	$70,501
Salem	24.8	29,115	$58,090
Derry	35.4	34,471	$54,634

Source: NH Economic and Labor Information Bureau

Figure 2: Windham and Surrounding Communities



Source: GRANIT & the Town of Windham

Land Use Trends

Residential

Windham has been adding roughly 104 housing units, on average, to its housing supply each year over the past 10 years. Since 1998, average growth has been closer to 125 units/year, a large increase from the previous 5 years (83/year). However, variability is reflected in a steady decline over the past 4 years. Most are single-family homes, although recent years have witnessed an increase in multi-family developments targeted for elderly housing.

Table 2: Residential Building Permits

Year	Single-family	Accessory Units	Multi-family Units	Total
1994	62	3		65
1995	72	3		75
1996	65	4		69
1997	81	4		85
1998	120	2		122
1999	107	3		110
2000	139	4	3	146
2001	121	11	4	136
2002	89	5	22	116
2003	52	6	62	120
			Ten Year Total	**1,044**
			Ten Year Average	**104**

Source: Town of Windham, Town Reports

Commercial & Industrial Development

According to Windham Town Reports, the 8 years spanning 1994-2001 saw the Planning Board review an average of nearly 10 commercial site plans per year. As of June 2004, two site plans were approved for construction by the Planning Board, and another 7 are in the approval process.

Table 3: Approved and Proposed Site Plans as of June 2004

Approved Site Plans
Bowes
Motorcycle Shop
Proposed Site Plans
Freda Hardware
Supermarket
Veterinary Clinic
Carr Landscaping
Cobbetts Pond Plaza
Armco Flooring Expansion
Castleton

Source: Department of Planning & Development

Subdivisions

Developers continue to submit proposals for housing subdivisions at a brisk pace. As of June 2004, there were 510 lots approved and in various stages of development. The same timeframe saw proposals for up to another 322 lots. Seen in Table 4, this number of units in the process of development represents, on average, the equivalent of close to 8 years of development in Windham.

As Windham becomes increasingly built out, the trend in subdivisions tends to move towards land that has historically been more difficult to develop. Subdivisions of the mid-1990's tended to be concentrated at the northwest quadrant of Town. More recent and current projects are expanding into the northeast portion of Town (see Figure 3), where wetlands impact, access and circulation issues, and emergency response tend to be important elements in the permitting discussions.

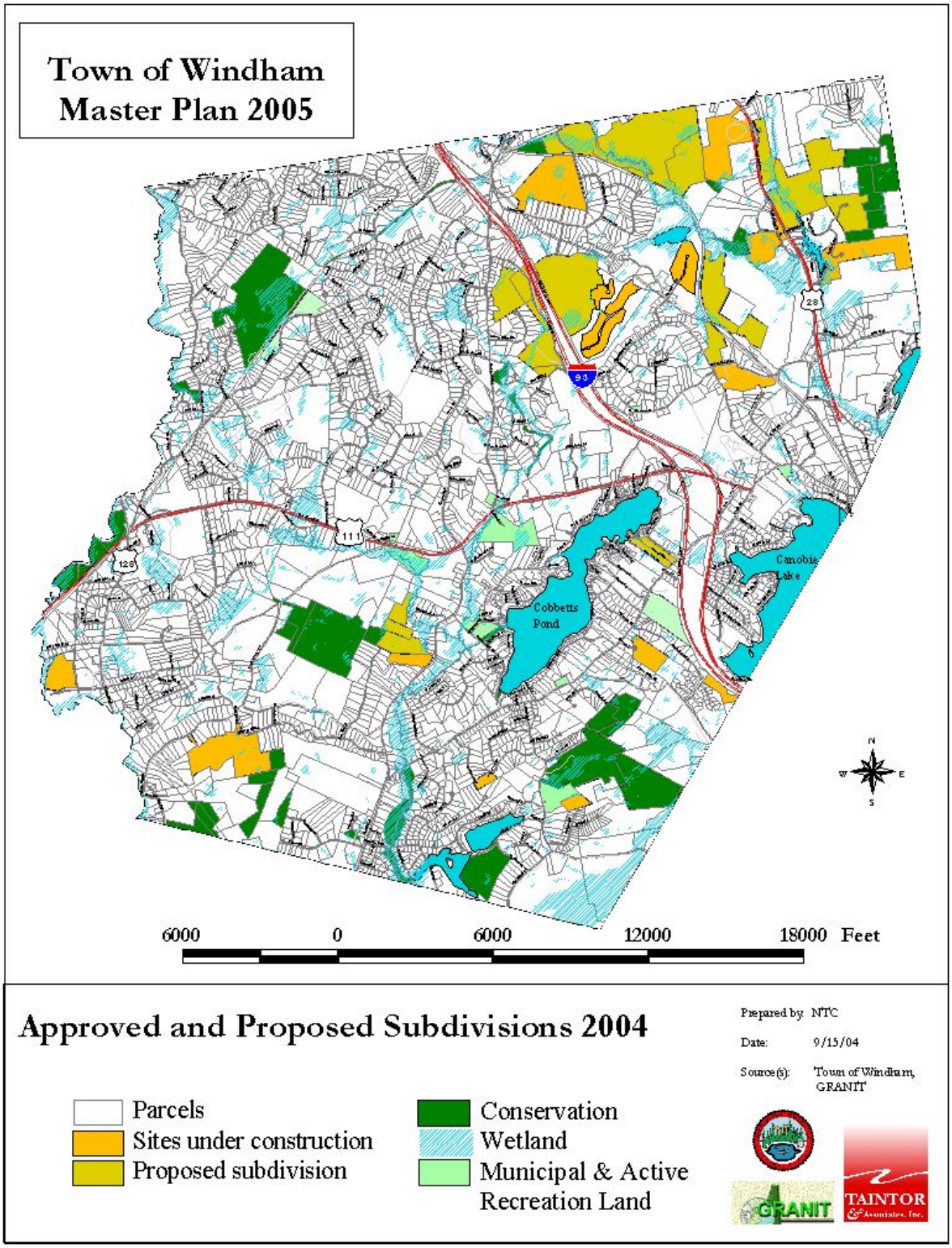
Table 4: Projects under Construction and Proposed Development as of June 2004

Approved Projects		**Proposed Projects**	
Name	**# Lots/ Units**	**Name**	**# Lots/ Units**
Castle Reach Phase 2	50	Pawtucket Estates	4
Fox Crossing	30	Forty Acres Subdivision	3
Hadleigh Woods	62	Bear Hill Extension	21
Jenny Hill Road	8	Butterfield Subdivision	37
Lamplighter Village	60	Lake View Farm Subdivision	24
McIntosh Hollow	17	Villages of Windham	37
Spruce Pond Phase 1	48	Water's Edge Condos	5
Heritage Acres	33	Orchard Blossom Estates	18

Approved Projects		**Proposed Projects**	
Windham Meadows Phase I	60	Spruce Pond Phase II	85
Fletcher Road	3	Clarke Farm	38
Tremblay Subdivision	4	Rolling Meadows	15
Christy Road	10	Gendron Subdivision	2
Castle Reach Phase III	55	Flat Rock Subdivision	2
Outlook Estates	6	Great Mountain View	31
Squire Armour Extension	6		
Windham Meadows Phase II	58		
Total Units	***510***	***Total Units***	***322***

Source: Department of Planning & Development

Figure 3: Recent and Current Subdivisions



This volume of subdivision activity places an extremely high burden on the Town's Planning Board, Planning and Development Department, and others, to administer applications, review technical information, and monitor construction.

Current Use Land

Pursuant to NH State Statute, property owners who preserve their land in an open state are assessed taxes based on their property being valued as open land ("current use"); thus, tax policy encourages owners to conserve land, rather than being forced, through using "highest and best use" criteria in property valuations, to develop their land in order to cover the tax payments on it. Owners who take advantage of this program and later decide to remove their land from it are required to pay a 10% penalty at the time of conversion, which, in Windham, is directed to the Land Conservation Fund operated by the Conservation Commission.

Reflective of the general pressure of residential growth, land enrolled in the current use program has been declining, and will likely continue this trend should land values maintain their upward movement. According to the 2000 Master Plan, 2,810 acres were in current use at that time; the Department of Revenue reported 2,424 acres in the program in 2003. Town and State purchases of current use land, and the removal of a 100+ acre Castle Reach parcel from the program will undoubtedly cause a further decline in Windham's current use inventory, which will drop to near 2,214 acres by the close of 2004.[4]

A decline in the current use program, however, is not necessarily indicative of a decline in open space. Further discussed in the Natural Resources element, conservation land is increasing in Windham as a result of Conservation Commission purchases, donated land, and privately-owned land set aside as part of Open Space Subdivisions and Elderly Housing developments. Rather, it is useful to examine current use parcels as a) land under pressure for development, b) a decreasing revenue stream for conservation commission purchases, and c) places that may be integral to Windham's historic rural and agricultural heritage.

Land Use Analysis

Windham's current land use planning regulations consist of its zoning ordinance, subdivision rules and regulations, and historic district ordinance. Its Planning Board, Zoning Board, and Historic District Commission (HDC) administer these. In addition, the Conservation Commission reviews development proposals pursuant to the State Wetlands Act, and comments on applications before the Planning and Zoning Boards.

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[4] Per discussion with Rex Norman, Windham's Assessor. This is an estimate, based upon a total of 1,563.39 acres in agricultural and "potentially developable residential land (1310)," plus an additional approximate 650 acres in residential uses (codes 1010 and 1013).

Windham's Zoning Ordinance divides the town into 12 primary districts plus four overlays (Aquifer Protection, Open Space Residential, Elderly Housing, and Route 28 Access Management). The Rural and Residence A, B, and C districts are designed to allow residential development; The Open Space Residential Overlay applies to all these residential districts and Residence A, B, and C also are subject to the Elderly Housing Overlay. Business Uses (commercial and industrial) are directed to seven different zones that together amount to approximately 7.6% of Windham's zoned land. These zones are largely concentrated along Routes 28 and 111, with small neighborhood business pockets at the Depot and in West Windham. The Historic Districts regulate just under 12 acres of land, and most of the structures subject to HDC review are Town-owned.

Figure 4: Zoning Districts by Land Area

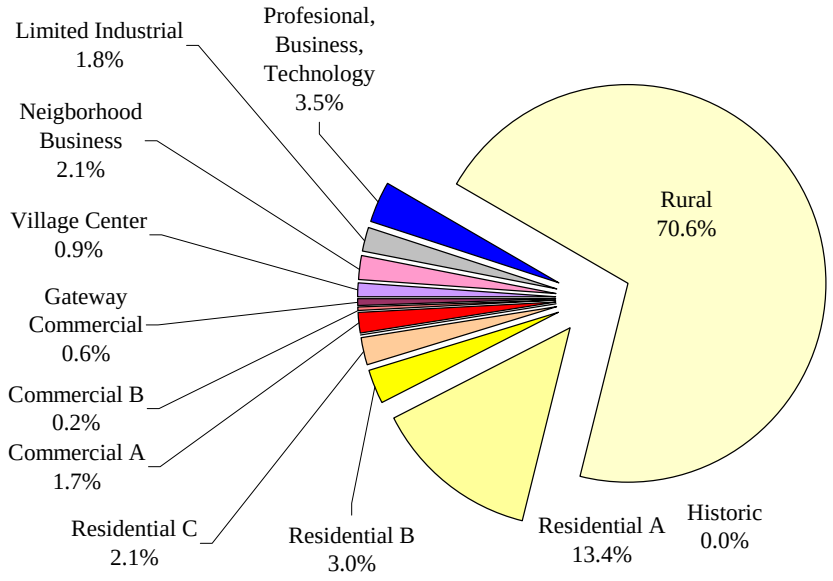
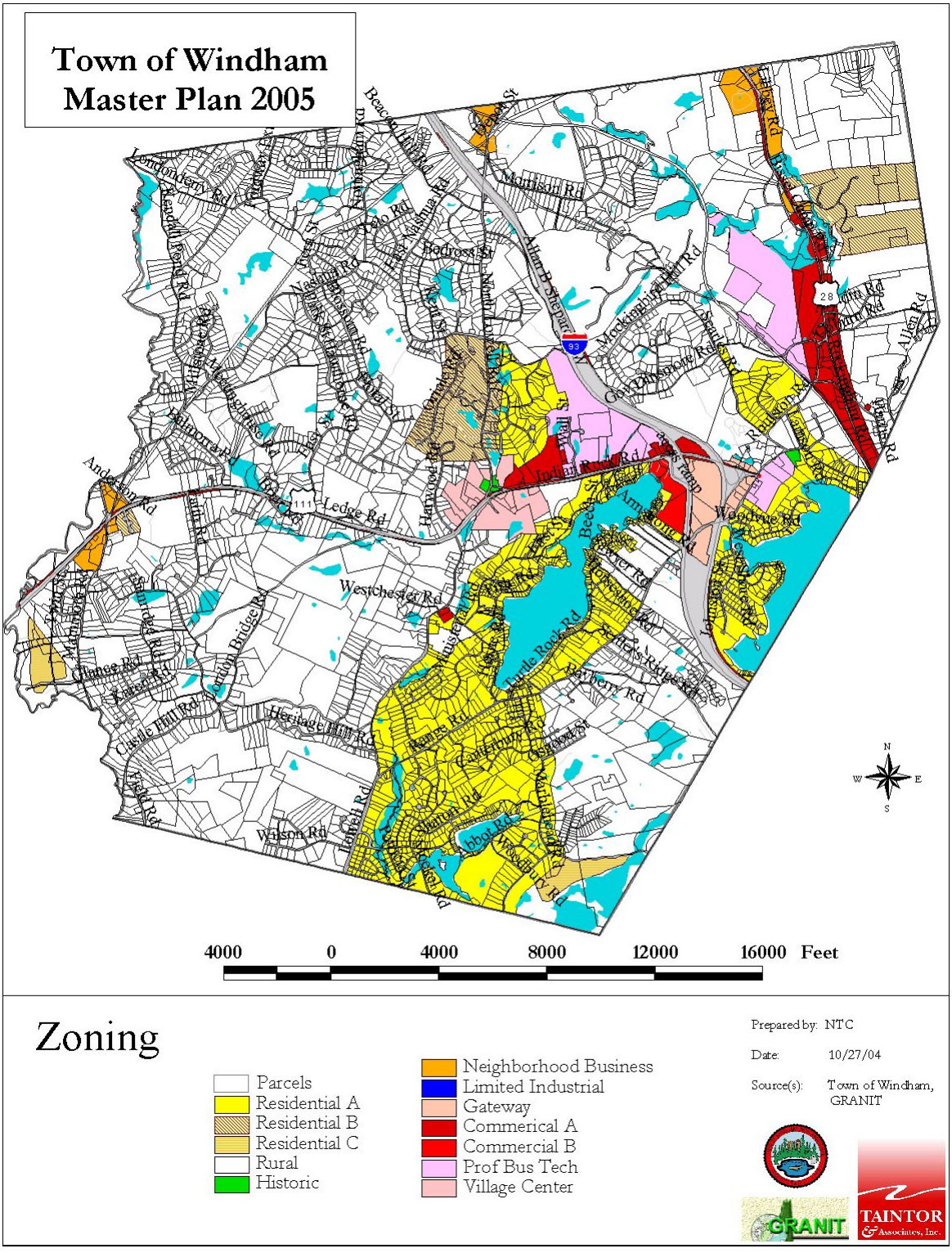


Figure 5: Windham Zoning Districts



Residential Districts

Like many other New Hampshire communities, including all of the communities that surround the Town, [5] Windham incorporates soil-based lot sizing to determine minimum lot areas for development. Minimum lots sizes are 50,000 s.f. with 30,000 s.f. of contiguous area, except in the Village Center and Open Space Residential zones. According to Appendix A-1, "Minimum Lot Area by Soil Type," developments can range from a minimum lot of 50,000 s.f. to 285,000 s.f. (approx. 6.5 acres), depending on soils suitability. In 1998, the average single-family lot size in Windham was 1.1 acres.[6]

Dimensional requirements in all residential districts are identical with the exception of minimum floor area per dwelling unit, which decreases from 1,000 s.f. in the Rural and Residence A zones to 750 s.f. in Residence B, and 600 s.f. in Residence C. Instead, the districts primarily vary according to the uses allowed in each:

> ***Rural:*** Intended as a strictly residential, non-commercial area, Windham is predominantly zoned Rural, which comprises close to 75% of its overall area. Allowed uses include: forestry, tree farming, agriculture, water impoundment and well supplies, drainage ways, wildlife refuge, open space, overnight parking, single-family, boarding/rooming houses for not more than 4 people, home occupations (by special exception, plus child care in the home), and accessory apartments. Special exceptions may also grant the keeping of farmyard animals on properties less than two acres.
>
> ***Residence A:*** While homes in Residence A districts may have a smaller floor area than those in the Rural district, uses are more restricted in this zoned. Allowed uses are limited to single-family homes, fields/woodlots/greenhouses, accessory buildings and uses, outdoor parking of one, two-axle commercial vehicle, and home occupations. The immediate neighborhoods bordering Canobie Lake and Cobbetts Pond are Residence A, in addition to the Sheffield Street/Camelot Road area, the Searles/Roulston/Lamson Roads area, and the Golden Brook/Simpson Pond/Rock Pond area.
>
> ***Residence B:*** Allows all the uses of Residence A, plus permits two-family structures, and up to six units per multi-family building with Site Plan Review. Three comparatively small areas are zoned Residence B, in the vicinity of North Lowell Road/Oriole Road/Hickory Lane, Gordon Mountain Road/south of the Town Forest, and Braemar Road.

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[5] Amherst, Hollis, Derry, Londonderry, Hudson, Chester, Salem and Pelham all incorporate soil-based lot sizing in their zoning ordinance to some degree, varying subject to the availability of public sewer and water.

[6] According to Table 4.12-3, p 4-159 from the Draft EIS, Route I-93 Corridor Expansion Study, Sept. 2002.

Residence C: Allows all the uses of zones A and B, plus mobile home parks. Two very small areas are zoned Residence C: one near Bridle Bridge Road, and the other southeast of Marblehead Road.

Open Space Residential Overlay: Applicable to the Rural and Residence A, B, and C zones, this overlay is designed to "encourage flexibility in the design and development of land in order to provide for the conservation of open space, to plan for a more efficient use of Town services, and to promote the development of balanced residential communities in harmony with natural land features." To date, Windham has permitted 9 developments using this overlay, which has encompassed 345 building lots and preserved 730.76 acres of open space.

Open space developments may be proposed for tracts of land having 10 acres or more. While the number of lots allowed is the same as would be allowed under a traditional subdivision, developers are granted substantial flexibility in dimensional requirements in exchange for setting aside 65% of the total area as open space.

Elderly Housing Overlay: Also applicable to all Rural, and Residence A, B, and C zones, this overlay was developed to encourage the construction of housing units for those 55 years and older in Town. A minimum tract of 4 acres, and 50 feet of road frontage on a Class V or better road are threshold requirements. Allowed density is roughly what it would be under soil-based sizing, and building types are single-family detached, duplex, townhouse, or two-story garden style apartments. Unless permitted by the Planning Board, buildings should have no more than 10 units each, and units no more than two bedrooms each. The Planning Board, at its discretion, is empowered to award several incentives for the provision of rental, affordable, handicapped, and accessible units, as well as for on-site recreational or common facilities. No proposal can contain so many units, which if approved, would exceed 6% of the Town's total housing units.[7]

Commercial Districts

As noted above, approximately 1,300 acres in Windham are zoned for non-residential use. With seven districts occupying this acreage, it is clear that the Town is deliberate in its consideration of where to best encourage commercial uses. Excluding the Gateway Commercial and Village Center districts, dimensional requirements for all other zones require 175 feet of frontage, 30 foot rear setbacks, and 30% maximum lot coverage. Minimum front yards range from 50 to 75 feet, and side yard setbacks are either 20 or 30 feet.

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[7] According to an August 10, 2004 memo by the Office of Planning and Development, the total number of residential units in Windham is 4,673. Using this figure, 280 (6% of total) units of 55+ housing would be allowed, and 226 currently are in existence.

Site plan review applies to any new structure, enlargement of any structure or accessory structure, and any new use or change in use except single and two-family structures/uses. Thus, all commercial development in Windham must receive a site plan permit in addition to satisfying the base zoning requirements.

Professional, Business & Technology (PBT): The PBT district is the town's largest nonresidential district, comprising about one-third of all nonresidentially-zoned land in Windham. It consists of two large areas: a triangular area on the west side of Interstate 93 and north of Route 111, including Wall Street and International Road; and an area on the west side of Route 28 and north of Roulston Road, bounded on the west generally by the railroad right-of-way and on the north by Flat Rock Brook. The PBT district is "intended for use by research laboratories, office buildings, and light industries that are compatible with a low density, low traffic generation, rural residential community." In addition to these uses, the district also allows private schools, health and fitness clubs, wholesale distribution centers, restaurants, and passenger transportation facilities. Retail sales are not permitted except as a subsidiary use in a manufacturing facility.

Neighborhood Business (NBD): Located in four small areas at the edges of Town (Windham Depot, West Windham, along Route 28 at the Derry border, and along Route 28 and Gordon Mountain Road), this zoning district allows uses that will provide goods and service to the immediate area. Retail (that must close by 11 p.m.), business/professional offices and banks, restaurants (no service past 10 p.m.), parking, accessory uses and buildings, signs, assembly hall, kindergarten and nursery schools, a single dwelling unit if accessory to a commercial use and in the same structure, and overnight parking.

Commercial A: The most permissible of all commercial districts, this zone allows all uses that are allowed in the Neighborhood Business District, plus: retail stores and services, restaurants, hotels, motels, lodging houses, gas service stations and repair garages, salesrooms, funeral homes, transportation depots, membership clubs, indoor amusement/museum/ assembly places (including theatres), telephone exchanges, radio/TV stations, and adult entertainment (subject to conditions, in the Route 28 section of the zone). The area covered by this zone is the largest of all commercially-zoned places, and is generally located along the north side of Route 111 between I-93 and the Village Center, and along the east side of Route 28 from the Salem border to just past Hunt Road. The Village Commons and the Town Shoppes are two prominent developments in Commercial A.

Commercial B: Limited to an approximately 44 acre area in between I-93 South and the northeastern tip of Cobbetts Pond, this zone allows uses that provide services to the public. These include hotels, motels, restaurants, membership clubs, accessory buildings and uses, business/professional offices

or banks, telephone exchanges, TV/radio stations, and other utility structures. The major user located in this zone is Castleton Banquet and Conference Center.

Gateway Commercial: There are multiple stated purposes of this district which work together to attract high-quality commercial development to the I-93 interchange at Exit 3, a primary gateway to Windham. Numerous business uses are allowed in this district, but are subject to detailed performance standards that target several elements of sustainable commercial development such as public spaces, pedestrian and bicycle amenities, landscaped buffers, mixed use (retail/office), and underground utilities. This zone has no minimum lot area, and requires 50 feet of frontage on a Class V road or higher.

Limited Industrial: Located in three areas of Windham, one along the southern edge of Roulston Road to the Salem town line, another on Route 111's northern edge roughly in between Harwood and Meetinghouse Roads, and a small area on Lowell Road, this zone encourages "research laboratories, office buildings, and industries which are compatible with a low density, rural residential community." Manufacturing, warehousing, sales, printing, restaurants, and firearms shooting ranges are among the permitted uses in this zone, which also contains performance standards (odor, dust, smoke, storage, etc.) to ensure no adverse impact on nearby uses.

Village Center (VCD): With no minimum lot size, no minimum setbacks (except for Route 111 frontage), 50 foot frontage, and 100% lot coverage allowed, this zone seeks to preserve and build upon the historic pattern laid out by the Town Center buildings and the Historic District. The zone allows a variety of uses, and recommends that the area ideally contain 40% retail and service uses, 40% offices, and 20% residential at its build-out condition.

Route 28 Access Management Overlay: In order to provide for safe, orderly access to uses along the Route 28 corridor, this overlay sets standards for driveway location, width, number, shared parking, interconnecting driveways, and the use of service roads. Plus, a 50 foot setback is required, and shall be a natural buffer, or suitably landscaped, so as to provide a visual barrier between the property and the roadway. So as not to discourage new business dependent on drive by traffic, however, this buffer does not apply to Commercial A or NBD districts.

Protective Districts

In addition to its residential and commercial zones, Windham has codified four districts whose stated purposes, essentially, are to preserve and protect natural and historic resources vital to the community's on-going health. They are the:

- Wetlands and Watershed Protection District (WWPD);

- Flood Plain District;
- Aquifer Protection District; and
- Historic District.[8]

These types of districts can be found in many New Hampshire cities and towns, and may even share common methods of regulating uses. In Windham, the WWPD appears to be the district that has historically been subject to many variance requests, and has elicited some public debate as to its relative merits, especially in light of desired development that is unable to take place due to the WWPD. Therefore, a closer look at this piece of the ordinance may be warranted.

Wetlands and Watershed Protection District: Authorized by NH RSA Section 482-A, Windham's district restricts uses that are within 100 feet of a) wetlands over an acre in size b) smaller wetlands that are contiguous to streams, brooks, or ponds, and c) the normal high water marks of streams and brooks (including their contributory drainage areas of 10 acres or more), and ponds. This zone is increased to 150 feet for Beaver Brook, Golden Brook, and Flat Rock Brook, and uses within 200 feet are regulated when wetlands are a minimum of 100 feet in width or have an upward slope of 12% or more. Notably, Cobbett's Pond, Canobie Lake, Shadow Lake, Rock Pond, and Moekel Pond are exempted from this district – existing development near these areas made the WWPD impracticable, as the majority of properties would be rendered non-conforming.

Allowed uses in the WWPD range from forestry and agriculture to non-commercial recreation. Driveways are allowed subject to certain conditions, and must be designed to minimize any adverse impacts on the area. Special permits may be issued by the Planning Board for allowed uses which require altering the surface configuration of the land (including excavation, filling, draining, stump removal). Uses such as pools, sheds, decks, and lawn areas to be constructed within 50 feet or less of the WWPD must undergo staff review prior to approval. Please see the Natural Resources chapter additional discussion of the WWPD.

Subdivision Regulations

Pursuant to NH RSA 674:35-42, Windham requires the subdivision of land to adhere to regulations that set forth standards for street design, blocks, lot layout, and public sites and open spaces. Throughout the regulations, conformance with the Town's Master Plan is required.

Some of the more absolute standards that characterize subdivision development in Town include:

[8] See Windham Ordinances section 4:04:12:80 for more detail.

- Right of way minimum widths of 100, 60, and 50 feet for major, collector, and secondary streets respectively;

- Cul de sac length of 1,200 feet or less are encouraged, but in no case more than 2,400 feet.;
- Street grades shall not exceed 5% for major streets or 8% for collector and secondary streets;
- Granite curbing for major and collector streets, and granite or bituminous cape cod berm for secondary streets;
- Block lengths are encouraged to be 1,200 feet, but in no case should be less than 600 feet or more than 2,400 feet.

In general, these regulations tend to rely upon Planning Board and staff discretion in determining what may be an appropriate development for Windham. The regulations do not specifically address items such as street trees, sidewalks, or view shed protection.

There is a provision for the Planning Board to require off site improvements to be made by the applicant if the development is determined to be "scattered and premature," a term that originates from NH RSA 675:6 which empowers planning boards to "provide against" such inadvisable development.

…special improvements, on or off site, may be required to address any items of concern. Changes to the plan may be required to mitigate those impacts that caused the subdivision to be declared scattered or premature…Scattered or premature subdivision of land would involve danger or injury to health, safety or prosperity by reason of the lack of water supply, drainage, transportation, schools, fire protection, or other public services, or necessitate the excessive expenditure of public funds for the supply of such services.

Windham Subdivision Control Regulations Section 506

Developers have made contributions to be targeted for off-site facilities or improvements that mitigate the impact of their proposal to the Planning Board. For example, the development of Lamplighter Village committed a total of $60,000, or $1,000/unit, to be used towards improving emergency response times to that area of town. See Capital Facilities Impact Fee discussion below for more information.

In specific, roadway upgrades determined necessary as a result of new subdivisions are to be performed by applicants or a fee be paid to the Town for it to perform the upgrade.

Site Plan Review

Windham's Planning Board administers site plan regulations on all development and changes in developments and/or use, except for single and two family use not located in an Open Space Residential (OSR) Development. Design review also applies to all site plans,

except for residential units in the OSR Developments.

Site plan regulations focus on traffic safety, impact to adjacent residential uses, screening of parking, service/loading areas, drainage, Windham's Master Plan and public improvements. With the exception of some construction requirements, the regulations generally avoid laying forth specific guidelines for development and instead rely upon the Planning Board's full discretion in determining compliance with the intent of the ordinance.

Design review guidelines are applied with the intent "to provide for a harmonious and aesthetically pleasing environment." These regulations tend to be more specific than those seen in site plan review, by encouraging the use of types of building features and materials, attention to a 4-season landscape treatment, reuse of historic structures, etc.

Buildout Projections

In 1998, Scott MacFadden prepared a buildout analysis for the Windham Conservation Commission. Using demographic data, an average housing growth rate (56 SF/yr), average population density (3.2 persons/SF)home, and an average lot size (3.25 acres), MacFadden concluded that:

- Windham's total housing units in 2012 will be 3,972
- Windham's population in 2012 will be 13,685; and
- By 2012, 2730 acres of land will have been converted to residential use, leaving 2,527 acres of undeveloped land remaining.[9]

Alternatively, MacFadden also provides a high growth scenario that projected 3,997 acres developed by 2012, which would leave just 1,260 of undeveloped land. This scenario also projected the population to be 14,936 by 2012.

Windham's actual growth in single family homes from 1998-2003 was 87% higher than the buildout projection, due to an average growth rate of near 104 units per year rather than the 56 used by the 1998 analysis. Using the 1998 methodology and considering just single-family home development (there were 91 multi family units and 31 accessory units constructed during this period as well), the construction of 628 homes would translate into the conversion of 2,041 acres of undeveloped land. Subtracted from the 1998 baseline of 5,257 acres of undeveloped land, Windham would have 3,247 acres of undeveloped land remaining as of 2003. Subtracting out conservation land and land preserved through open space subdivisions, a net remainder of 1,947 of undeveloped land results. Using a growth rate of 104 units per year, this buildout would be achieved by the year 2009.

[9] This calculation uses an undeveloped acreage baseline of 5,257, prepared by Robert Thorndike, former Windham Town Surveyor.

See Table 5 for a summary of this calculation:

Table 5: Update of 1998 Buildout Analysis - Summary

1998 Baseline of Undeveloped Acreage	5,257
Net loss of undeveloped acres 1998-2003 = Actual single-family homes developed 628 x 3.25 acres/unit	(2,041)
Sub-total	3,216
Town-owned conservation land	(538)
Open land Preserved through OS Subdivisions	(731)
Net undeveloped land remaining	1,947
# Units to Buildout (1,947/3.25)	599
Projected year buildout is reached (104 units/year)	2009
Projected Buildout Population (3.2 people/SF unit)*	16,417

* 2003 base population estimated by Town Clerk is 14,500.

Further described in RSA 674:21, these "innovative land use controls" include: Timing incentives; phased development; intensity and use incentive; transfer of development rights; planned unit development.; cluster development; impact zoning; performance standards; flexible and discretionary zoning; environmental characteristics zoning; inclusionary zoning; accessory dwelling unit standards; impact fees; and village plan alternative subdivision.

A look at Windham's tax assessing records, however, suggests that the baseline of 3,216 undeveloped acres may be substantially less than what could actually be available for development. By adding up the acreage coded as "developable and potentially developable residential land" and all land under agricultural use, plus land listed as open space (code 2000), it appears that up to 4,253 acres might be subject to future residential development. If this figure is a more accurate baseline, then up to 1,308 single family homes could be added to Town, which translates into a buildout population of 18,686.

In comparing these numbers to other projections and considering how many housing sites are under construction at the present time, it seems likely that the 1998 update is a closer estimation of the Town's future profile. Still, because the assessing records feature a 1,000 acre difference in the baseline of undeveloped land, it also appears fairly likely that the 1998 update, to some degree, underestimates growth.

In summary, these two scenarios have Windham adding between 599 and 1,308 units to its housing inventory, with a total future population ranging from 16,417 to 18,686, and reaching this buildout condition between 2009 and 2012.

Impact Fees and Growth Management

The State of New Hampshire empowers municipalities with several tools to help manage their growth and development. Windham already employs a number of these provisions to guide its development, but is considering new controls to assist them in: a) responsibly administering local regulations as construction projects proceed; and b)

keeping with public services and facilities that will serve new occupants of this development.

Impact fees are one method available to communities who find themselves challenged to provide timely services and facilities to accommodate a growing population. Proposed development is required to compensate the Town for the increased services/facilities that are necessitated by its construction, much in the same way a subdivision is obliged to build the roadway that services its homes. Impact fees, however, are often used in support of expansion or upgrade of existing facilities and services, and it is thus imperative to ensure that the fee be codified, proportional, and directly related to the need generated by the new development, in order to ensure fairness.

Revisions to RSA 674:21 V(d) have been made in Senate Bill 414 and will take effect June 5, 2005. Other changes related to impact fees were also made to RSA 674:39, 674:36 II, and 674:21 V (j), and took effect upon passage on June 7, 2004. Revisions include the timing of the assessment (which now expressly states that the fees "shall be intended to reflect the effect of development on municipal facilities at the time of issuance of the building permit") and the timing of payment of the fee (which is revised to be "collected at the certificate of occupancy," but may be negotiated to be paid at an earlier time).

School Impact Fee

In 1998, Windham adopted a school impact fee which it applies to the development of all new housing units. The fee in 2004 was $3,400 per dwelling unit. In lieu of payment of the fee, applicants may apply to the Planning Board for a full or partial fee waiver in exchange for an alternative contribution (land value, facility construction, or other) of equal value, and developers of elderly housing units may seek a complete waiver from this provision.

The fee is updated annually by the Planning Board and reviewed by the Board of Selectmen. It is calculated through the use of a variety of demographic, utilization, assessment, and housing data. A complete description of the fee methodology is described in the "Procedure for the Computation of Impact Fees for the Windham Public School District," available on the Town's Web site.

Capital Facilities Impact Fee

Section 718 of Windham's Zoning Ordinance addresses the development of land that leads to an increased or new demand upon the Town's capital facilities. Applicable to subdivisions, change in use or expanded use of existing structures, and new construction, this fee is assessed as "a proportional share of municipal capital improvement costs which is reasonably related to the capital needs created by the development and to the benefits accrued to the development from the capital improvements financed by the fee."

Growth Management

Unlike the majority of its close neighbors, Windham has not yet adopted any form of growth management ordinance which would directly control the rate of growth through the permitting and approval process. The Planning Board held a "findings of fact" public hearing in December 2002 to determine if there was a demonstrated factual basis for proceeding with a proposed Interim Growth Management Ordinance, and found no basis to proceed with such an ordinance, at that time. This discussion has been prompted, in part, by the inadequate emergency response times to the eastern side of Town which indicate an urgent need for a new fire sub-station, and the debate over the proper collection of impact fees for capital facility needs.

Table 6: Impact Fees and Growth Management in Adjacent Communities

Municipality	Growth Mgmt	Impact Fee
Amherst	No	Yes
Chester	Yes	No
Derry	Yes	No
Hollis	No	No
Hudson	Yes	Yes
Londonderry	Yes	Yes
Pelham	No	No
Salem	Yes	Yes
Windham	No	Yes

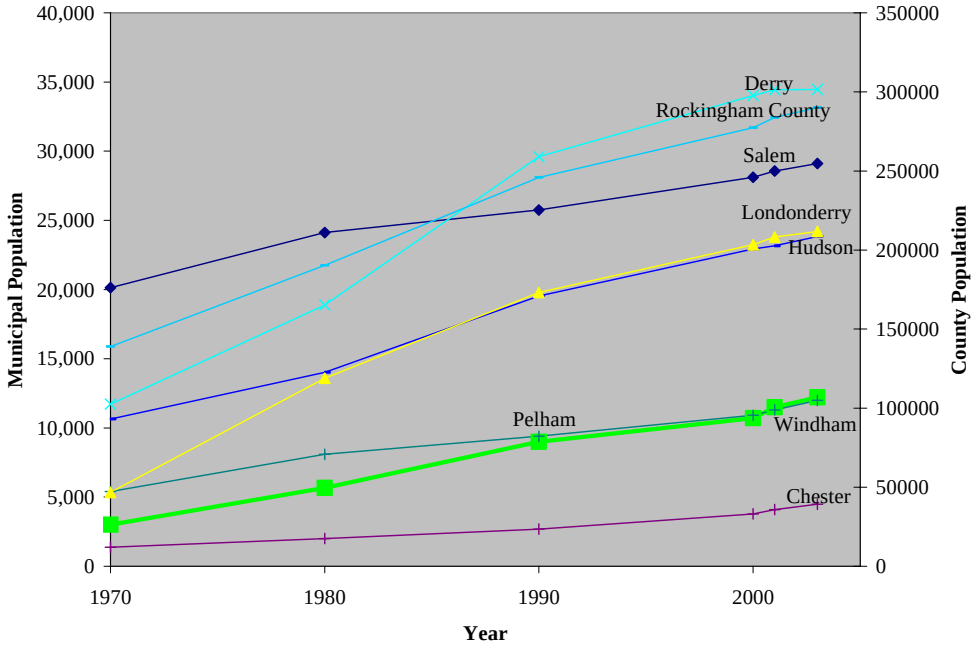
Source: NH Office of State Planning

As outlined in the Priorities for Action, proper growth management will be a central, recurring theme in this Master Plan, and Windham will need to assess a variety of strategies to develop the most appropriate response to the particular issues it faces as a result of growth.

Population & Housing

Windham is one of the fastest growing towns in the rapidly growing region of Southern New Hampshire. Its population has quadrupled over the past three decades, amid a County that increased its population by 96% during the same period. The 2000 Census reported Windham's population to be 10,709. Windham's Town Clerk, however, disputes this number, claiming it to be a serious underestimate of the actual population, and states that previous Censuses similarly undercounted. As of the 2003 Town Report, the clerk reported that the town was home to approximately 14,500 residents.

Table 7: Population Growth, Windham & Surrounds, 1970-2003



Source: U.S. Census & NH Community Profiles

Using the Census planning estimate, Windham was second only to Chester in the rate of population change it experienced from 1990 to 2000, although in absolute numbers it was lower than all but Pelham and Chester.

Table 8: Rate of Population Change, 1970-2001*

Municipality	1970-1980	1980-1990	1990-2000	2000-2001
Windham	88%	59%	19%	7%
Salem	20%	7%	9%	2%
Pelham	50%	16%	16%	4%
Hudson	32%	39%	17%	1%
Londonderry	154%	45%	17%	2%
Derry	61%	57%	15%	1%
Chester	45%	34%	41%	8%
Rockingham County	37%	29%	13%	2%

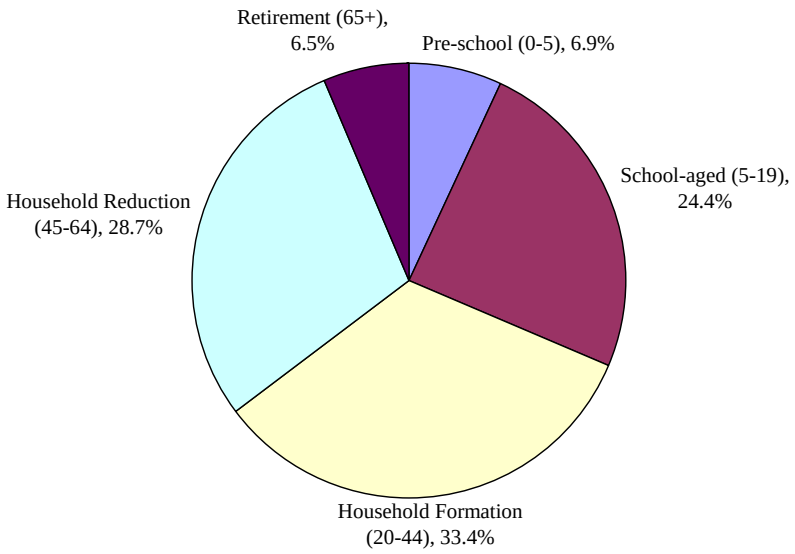
** 2001 data is taken from the NH Office of State Planning*

Source: U.S. Census

Age Distribution

The median age of a Windham resident is 37.8, slightly older than the Rockingham County median (37.2), and the State median (37.1).

Figure 6: Population by Age Group

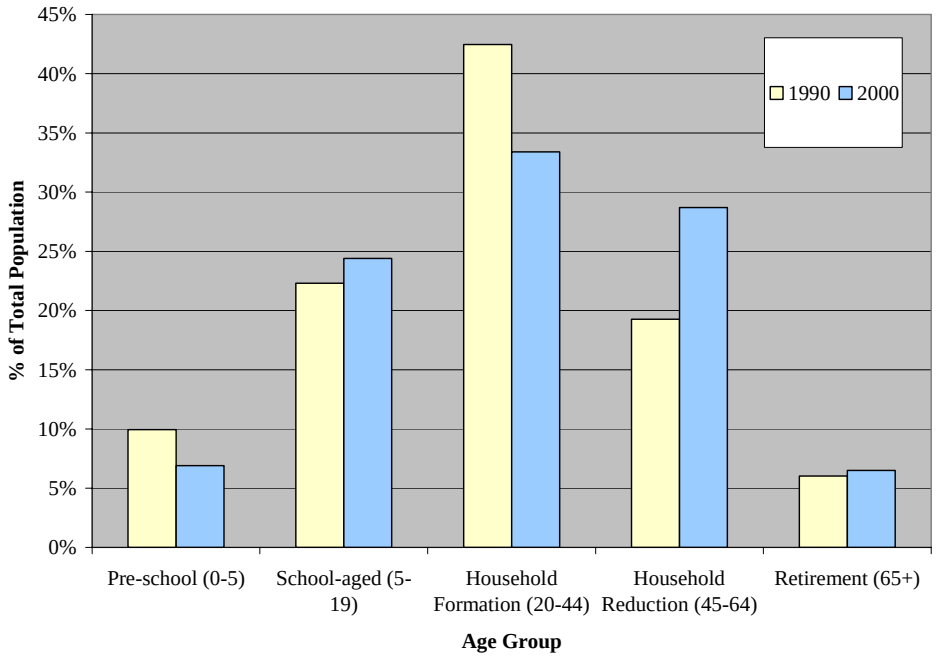


Source: U.S. Census 2000

The decade from 1990 to 2000 saw Windham's population grow primarily in the "household reduction" group which gained 77% in raw numbers. In addition, the "retirement" group expanded by 30%, or 164 people and the "school-aged" group grew by 22%. Both "pre-school" and "household formation" groups experienced overall drops in population.

Windham's growth in population, however, hasn't substantially changed the community's age distribution. Illustrated in Figure 7, Windham in 2000 features a slightly older population than it did in 1990, but this shift is mainly seen amid its adult population from age 20-64; otherwise, there has been a relatively slight proportional decrease in preschool aged children, accompanied by a slight increase in school-aged children, and a minor increase in the town's retirement aged population.

Figure 7: Age of Population, 1990 & 2000



Source: U.S. Census, 1990 & 2000

Race

Windham is 96.9% white, with Asians (1.6%) and Hispanic/Latinos (1%) being the two minority groups having at least 1% representation. There has been a slight increase in diversity since 1990, when 98.4% of the population was categorized as "white."[10] This racial profile is similar to that of Rockingham County as a whole, which is 96.8% white.

Educational Attainment

Compared to nearby communities, Windham's population is ranked third highest in terms of the number of people having a bachelor's degree or higher level of education. Windham is second only to Amherst (by just 0.1%) in the number of high school

[10] Census 2000, however, has incorporated a new methodology to better identify persons of Hispanic or Latino origin. In 1990, 54 people in Windham reported themselves to be "Hispanic origin (of any race)," but this number may be included in any of the race categories – thus, the percentages may not be directly comparable.

graduates in its community. From 1990 to 2000, Windham's level of higher education has increased by just under 10%, when 38.3% of the population had received a bachelor's degree.

	Degree	
Municipality	**High School or higher**	**Bachelor's or higher**
Hollis	95.9%	56.3%
Amherst	96.2%	55.6%
Windham	96.1%	47.8%
Pelham	87.2%	35.9%
Londonderry	93.4%	35.0%
Chester	92.0%	31.1%
Derry	90.9%	26.3%
Hudson	89.7%	25.9%
Salem	87.7%	25.4%

Source: U.S. Census 2000

Income

Windham is distinguished as having the highest median household income in the State of New Hampshire, with $94,794. Notably, there is a large gap between median earnings for males and females, with males making $71,801 and females roughly half that, at $36,153. This is a much greater gap than seen in the County as a whole, in which approximately $17,000 separates the median income of males versus females.

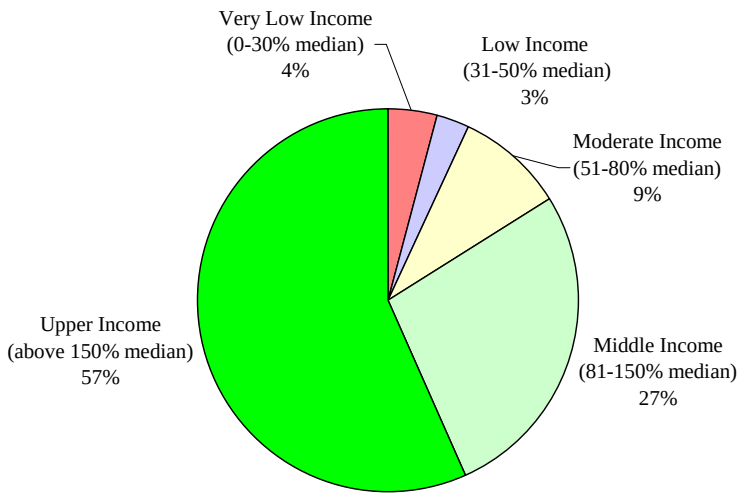
Compared with adjacent communities, Windham's median household income is over $24,000 greater than the next closest in rank, Londonderry, at $70,000. A look at the median income of all nearby communities is seen in Table 1.

In order to determine the need for affordable housing in Windham, it is illustrative to segregate reported incomes into categories typically used by local, state, and federal administrations for program eligibility requirements. For example, subsidized housing, first-time home buyers programs, special financing, and other opportunities are usually limited to households of lower or moderate incomes. These groups are defined as a percentage of the area median income (AMI)[11], and are usually under 80% of AMI.

The median income in Rockingham County is $58,150. Therefore, households earning under $46,520 (80% of $58,150) may be characterized as being of "low to moderate" income. Seen in Figure 8, 16% of Windham's households fall into this category.

[11] AMI can be defined using a variety of geographic areas. Federal programs typically base AMI using "primary metropolitan statistical areas (PMSA)," which may cross county and even state boundaries. Windham is part of the Lawrence-Haverhill, MA-NH PMSA. A number of State programs base AMI in comparison to county figures. We compare Windham to Rockingham County herein.

Figure 8: Household Income Categories*



Source: U.S. Census 2000
** Compared to Rockingham Regional Median HH Income ($58,150)*

As might be inferred, home owners earn more than renters. The median home owner earns $97,208, while the median renter earns less than half that at, $47,405.

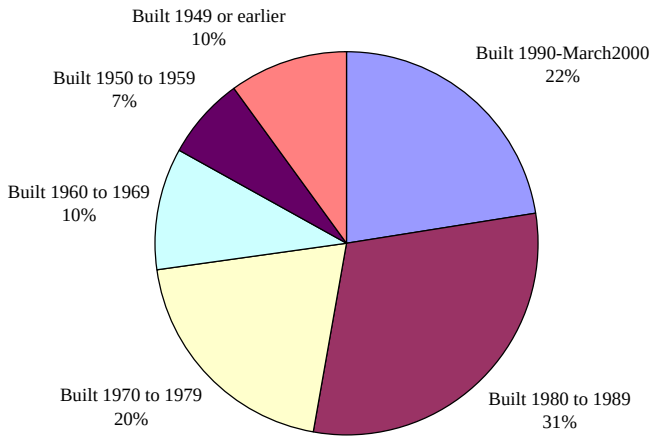
Housing

Alongside its population growth, Windham has witnessed a 17% increase in its total housing units from 1990 to 2000. In fact, the majority of its units have been built since 1950, and there is a trend towards conversion of seasonal properties into year-round residences.

Household Types, Household Size, and Age of Unit

The vast majority of housing units in Windham are single-family homes, with over 92.4% detached units and 4% attached single units. Just 1.5% are two-unit structures, and 2.1% are 3 units or greater or mobile homes (9, total). As referenced above and as illustrated in Figure 9, just 10% of all units in Windham were built before 1950, whereas 53% date to 1980 to 2000.

Figure 9: Housing Units – Year Built (Total Units: 3,906)



Source: U.S. Census 2000

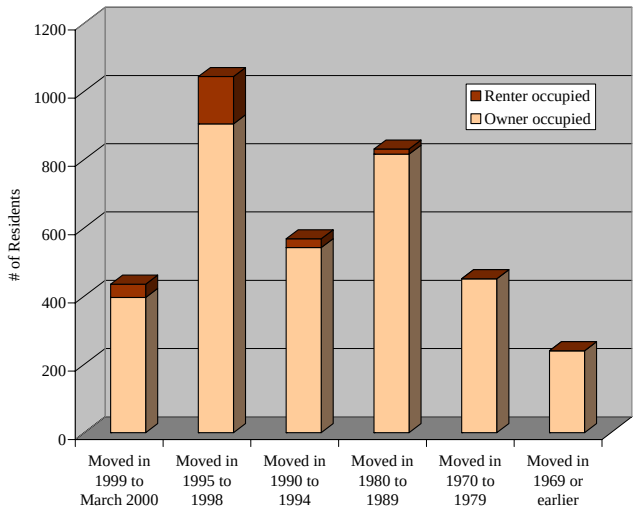
Just 18.4% of Windham's units have 1-2 bedrooms; 77.8% have 3-4 bedrooms, with 3.8% having 5 or more.

According to the Census, the average household in Town is home to 3 people, and the average family household is 3.3 people.

Housing Tenure

Figure 10 illustrates that of the people living in Windham today, 57% moved into their housing unit since 1990. According to the Census, the median year that householders moved into the unit they live in today is 1992, and 39% of residents lived in another community in 1995.

Figure 10: Tenure by Year Householder Moved into Unit



Source: U.S. Census 2000

Cost of Housing

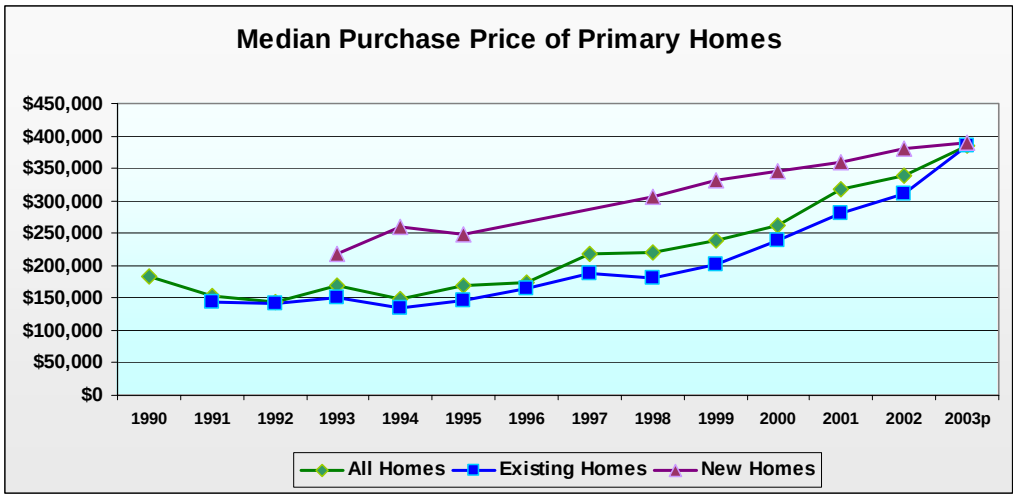
The New Hampshire Housing and Finance Authority (NHHFA) collected data from the NH Department of Revenue Administration to analyze trends in home purchase prices since 1990. Their analysis, seen below, illustrates that housing prices in Windham have risen by 127% since 1995. Rockingham County prices have likewise risen, but by substantially less, at 108.5%. In fact, of the nearby communities, only Pelham's housing prices have risen more than Windham's in this timeframe.

Table 9: % Change in Housing Prices, 1995-2003, Windham & Surrounds

Municipality	% change 1995-2003	2003 Median
Pelham	161	354,933
Windham	127.2	386,055
Londonderry	119.5	250,000
Derry	108.5	220,000
Salem	99.9	269,900
Hudson	86.8	225,922
Amherst	76.3	296,226
Hollis	66.8	362,500
Chester	n/a	339,900

Source: NHHFA Purchase Price Database

Figure 11: Median Home Purchase Prices in Windham, 1990-2003



Source: NHHFA Purchase Price Database

Table 10: Median Home Purchase Prices in Windham, 1990-2003

	All Homes		Existing Homes		New Homes		Non-Condos	
Year	Median Purchase Price	Sample Size	Median Purchase Price	Sample Size	Median Purchase Price	Sample Size	Median Purchase Price	Sample Size
1990	$182,500	54	#N/A	36	#N/A	18	$182,500	52
1991	$152,000	118	$144,381	100	#N/A	18	$160,000	102
1992	$143,048	196	$142,571	158	#N/A	38	$155,048	172
1993	$170,000	242	$150,000	166	$217,900	76	$173,048	220
1994	$148,000	272	$135,000	216	$259,900	56	$157,000	238
1995	$169,900	246	$147,000	180	$247,500	66	$178,000	216
1996	$174,000	116	$165,000	98	#N/A	18	$189,500	96
1997	$219,000	182	$187,000	158	#N/A	24	$221,500	172
1998	$220,300	144	$180,000	94	$307,325	50	$225,000	137
1999	$240,025	191	$202,000	141	$331,000	50	$255,000	170
2000	$261,533	251	$240,000	186	$344,900	65	$279,900	226
2001	$318,000	228	$279,900	136	$359,900	92	$353,800	181
2002	$338,900	250	$310,000	175	$380,000	75	$369,900	210
2003p	$386,055	199	$385,000	129	$389,933	70	$427,500	165

Source: NHHFA Purchase Price Database

Note: Calculations based on a sample size of less than 50 are highly volatile and not considered valid. "p" following a year indicates a preliminary number.

Table 11: % Change in Median Purchase Price of Primary Homes in Windham

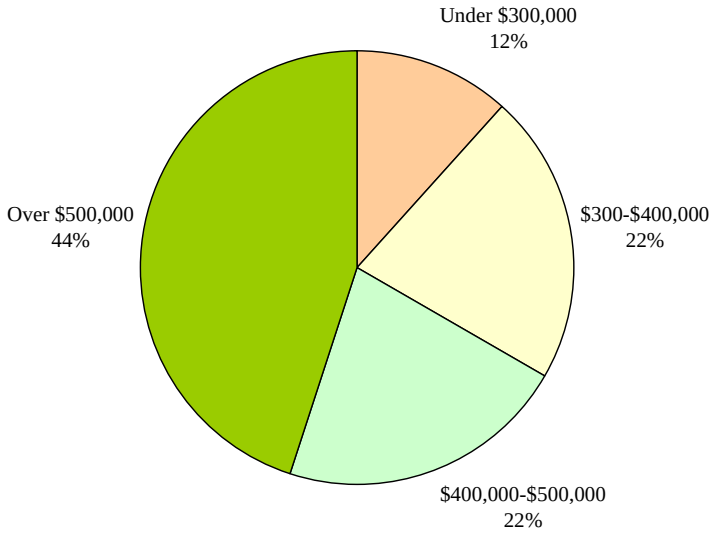
	All Homes	Existing Homes	New Homes	Non-Condominiums
1995 to 2003	127.2%	161.9%	57.5%	140.2%
Average per Year	15.9%	20.2%	7.2%	17.5%

Source: NHHFA Purchase Price Database

As seen in Table 11, the rise in existing home prices has far outpaced the increase in new home pricing, but this is a typical phenomenon in places that are experiencing rapid housing cost appreciation. Some of Windham's more affordable housing options remain in the conversion of smaller, cottage-type vacation homes into year-round housing.

According to reported sales prices listed in the NH Multiple Listing Service (MLS), the period from February 24, 2004 to August 24, 2004 saw 123 single family home sales in Windham, whose average sales prices was $487,979, and whose median was $460,800. This represents close to an 8% increase in the median purchase price of a single family home within the year.

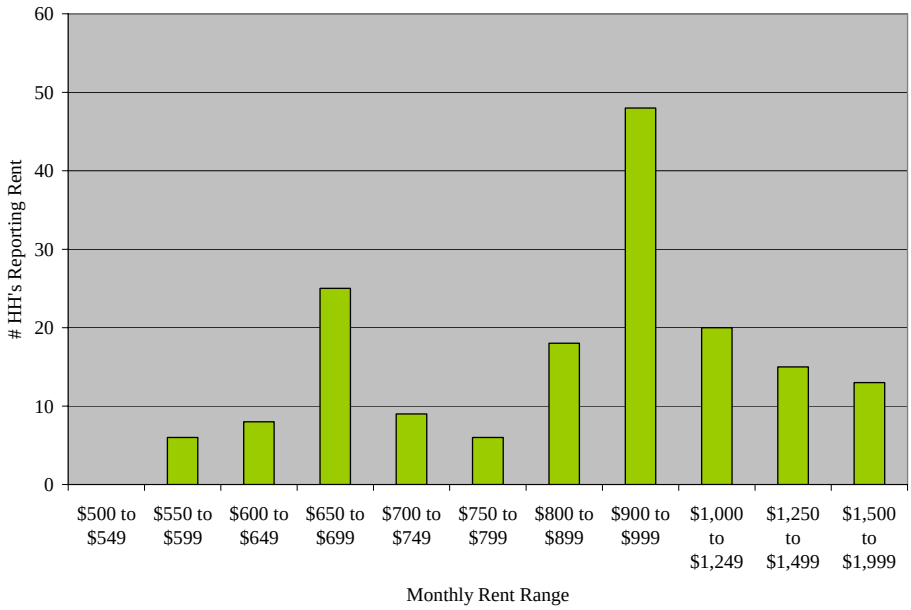
Figure 12: Single Family Home Sales, 2/24/04-8/24/04



Source: Coldwell Banker Hunneman, MLS

According to the 2000 Census, the median gross rent in Windham was $911, which was 27% above the median for Rockingham County ($717). Only 181 households in Windham reported paying a cash rent, of 212 total renter households.

Figure 13: Gross Rent Paid



Source: U.S. Census 2000 (Table H62, SF3)

Subsidized Housing Inventory

The only federally subsidized housing in Windham is located at McAuley Commons, 21 Searles Road. There are 24 units of elderly housing at this location under the management of Windham's Housing Authority.

Table 12: Subsidized Rental Units, Windham and Surrounds

Municipality	Type of Housing			
	Elderly	Special Needs	Family	Total
Derry	173	16	170	359
Salem	158	8	-	166
Pelham	65	-	-	65
Windham	24	-	-	24
Hollis	23	-	-	23
Amherst	-	-	21	21
Londonderry	-	-	-	0
Hudson	-	-	-	0
Chester	-	-	-	0

Source: Directory of Assisted Housing, New Hampshire Housing Finance Authority (NHFFA), June 7,2004

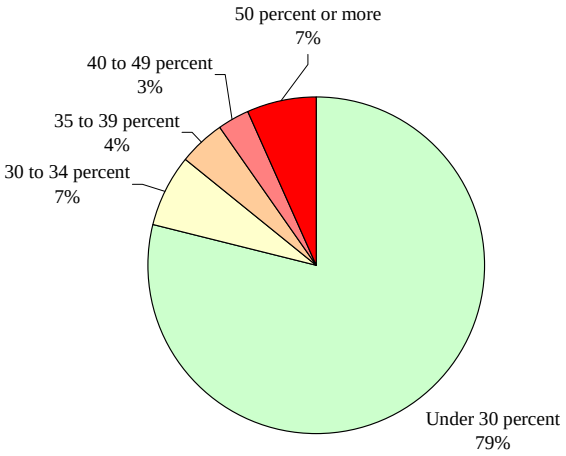
Homeowner Affordability

Of Windham's 3,130 households that own homes, both with and without mortgages, 79% have monthly housing costs that are below 30% of their gross income, a common barometer of overall affordability (see Figure 14). This leaves 21% of home owners in the position of spending more than the recommended amount on housing, with 7% of households paying more than 50% of their income on housing costs. A closer look at these households that exceed 35% of the gross income in home ownership cost indicates that residents aged 65-74 and 74 and above have the highest percentages of all age groups (30% and 24% respectively) shouldering such a relatively high burden. The other group that has a large number of its members paying a high percentage are homeowners aged 25 to 34, 18% of whom pay more than 35% of their gross income on housing. Unlike older residents, however, their incomes are likely to increase over time, and thus this percentage will likely decrease during the life of their mortgages.

In order to afford the average single family home in Windham as advertised in the NH MLS over the past six months ($487,979), a household would need to earn $105,325 per year.[12] Using household income figures from the 2000 Census, approximately 39% of Windham households can not afford this price. Since incomes have likely risen somewhat since then, this figure may overestimate lack of affordability to some degree.

[12] Assuming 10% down payment, 6% interest rate, and 30% of income towards mortgage payment.

Figure 14: Homeowner Monthly Housing Cost as a Percentage of Income



Source: U.S. Census 2000 (H94, SF3)

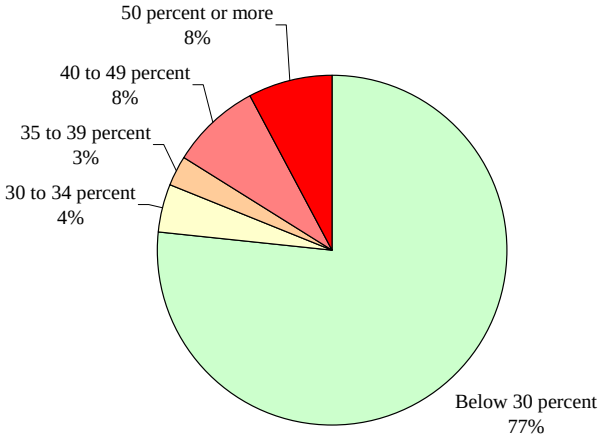
Renter Affordability

Coincidentally, Windham's renters are in a very similar affordability scenario as owners – 77% pay less than 30% of their incomes on housing, with 4% and 3% paying 30-34% and 35-39% respectively, and 16% paying 40% and more (see Figure 15). Rental properties in Town consist of the McAuley Commons, and about 22 properties that contains two or more units, the majority of which are concentrated in the area around Lowell/North Lowell Roads, Locust Road, Rockingham, and Range Roads. In addition, the Manor Motel, located along Route 28, reputedly is home to some long term residents who seek to maintain their home in Windham.

In order to afford the median gross rent reported in the 2000 census ($911), a household would need to earn $36,440.[13] Just under 11% of Windham's households could not afford this rent.

[13] Presuming no more than 30% of gross income paid towards rent.

Figure 15: Renter Monthly Housing Cost as a Percentage of Income



Source: U.S. Census 2000 (H69, SF3)

Population and Housing Issues and Challenges

The NH Office of Energy and Planning (OEP) released population projections for 2005-2025 in March 2003. Using a methodology that depends largely upon trends in Rockingham County's population, OEP appears to underestimate Windham's future growth – it features a 2025 Windham as having 14,750, and the Town Clerk in 2003 estimated there were approximately 14,500 residents. If the number of housing units either "under construction" or "in the approval process" (826) each housed 2.5 people (conservative estimate), then a minimum of another 2,065 people will occupy them.

The demands that an increased population will place on Town facilities, infrastructure, and services is addressed elsewhere in this Plan; instead, it seems prudent to note that it appears likely that Windham's elderly population will grow faster than other age groups, and that future planning should take this into account.

Judging from the number of recent arrivals in Windham, and from public input received throughout the planning process, the relatively high composition of new comers in Windham should be taken into consideration as the Town works to maintain its community's close-knit, volunteer spirit. Dwindling participation in political decision-making, while not unique to Windham, is a threat to the continued success of local government and the historic ethic of cooperative interdependence.

REGIONAL HOUSING NEED/FAIR HOUSING

According to NH RSA 674:2, a local Master Plan that includes an optional housing element should be one which

> "assesses local housing conditions and projects future housing needs of residents of all levels of income and ages in the municipality and the region as identified in the regional housing needs assessment ... and which integrates the

availability of human services with other planning undertaken by the community."

The concept of "fair share" housing supports the notion that local communities play a role in sustaining healthy regional economies by fulfilling housing needs for households of all income levels. A 1991 NH Supreme Court decision (Britton v. Chester) supported this idea by finding that the "general welfare" which is served by local regulations also extends to the region of which the community is a part. As a result, Windham is compelled to consider its housing needs in the context of its surrounding region, and assess its role in addressing these needs.

The Rockingham Regional Planning Commission (RPC) has not yet updated its most recent housing needs assessment, published in 1994. The report analyzes the region, using 1990 Census data and other indicators, to determine where possible imbalances in the distribution of low income housing exists within the County. It does not present mandates for cities and towns as to the number of housing units they should be providing; rather it uses a five-factor formula to redistribute units across the County evenly, and figures what each municipality's proportional share would be. At that time, Windham was estimated to provide 5.1% of its total 1990 housing units towards "fair share" housing needs in the County, or a total of 145 units. According to the Directory of Assisted Housing (see Table 12) published by the New Hampshire Housing Finance Authority, Windham has 24 units of subsidized rental housing at McAuley Common.

SENIOR HOUSING

Windham's 2000 Master Plan recognized the need for housing an aging population. Since then, Windham has implemented an elderly housing overlay in its Zoning Ordinance which has encouraged the development of housing for persons 55 years and older in the Residence A, B, and C districts. The overlay includes a provision for 65% permanent open space, as well as a density bonus for the inclusion of such elderly-oriented considerations as: rental units, affordable units, and handicapped accessible units.

The ordinance presently places a cap on the total number of units that can be developed at one time to 6 % of the overall housing stock (or, approximately 280 units as of October 2004).

SEASONAL CONVERSIONS

Conversions of seasonal structures into year-round residences are creating dense neighborhoods that are not found elsewhere in Windham. The Cobbetts Pond north shore (in the vicinity of Gardner, Bell, and Rocky Ridge roads), in particular, is home to house lots that are typically in the 6,000 s.f. range.

The potential impact this housing may have on water quality is one issue, further discussed in the Natural Resources and Utilities sections of this plan. Briefly,

achieving adequate separation between septic and water supply, and preventing surface water contamination are issues that need to be addressed.

Another consideration might be given to the physical layout of this area should the trend of conversions continue until few seasonal properties remain. Located in the Residence A zone, where dimensional requirements consist of 175 feet of frontage, 50 foot front yard and 30 foot side yard setbacks, and 20% lot coverage, the vast majority of these structures are non-conforming. In order to expand or replace existing buildings, owners must seek a variance from the Zoning Board of Appeals (ZBA), or meet the conditions enumerated under Section 400 of the Zoning Ordinance.

Since the majority of the properties are non-conforming, there may be an opportunity to re-zone certain portions of the Res. A district around Cobbetts Pond and Canobie Lake in order to better guide future development. For example, decisions now must be made on a case by case basis, which may ultimately favor those property owners who build sooner, rather than later, as the area may progress to an even greater density on a building square footage basis.[14] Since Windham's ordinance generally allows the reconstruction of non-conforming buildings[15], the Town may want to consider setting some minimal dimensional guidelines that would serve to prevent conflict between neighboring owners, and provide clarity with regard to replacement structures. For example, this could mean that replacement buildings or additions must have a minimum 15 foot side yard setback, and variances should not be granted for side setbacks in these areas.

[14] For example, these properties can be popular among retirees, who typically will not increase area density in terms of population, but may want to expand cottage-type structures.

[15] Again, subject to certain requirements set forth in Section 400. Replacements "shall wherever possible be made to conform to the setback requirements." But, as mentioned above, the present dimensional controls have little to no chance of being met on 6,000 s.f. lots.

Economic Development

This section presents information on economic development issues, trends and opportunities in the Town of Windham. The term "economic development" relates to the level of economic activity in an area (as measured by the number of jobs, taxable value of businesses, volume of sales, etc.), the mix of businesses (e.g., retail, finance, services, manufacturing, commercial recreation), and the types of nonresidential land uses (office, industrial, warehousing, etc.). In the context of a community master plan, economic development goals and policies must address not only the quantitative aspects of economic development—how much growth do we want?—but also the qualitative aspects—what kind of growth will address our needs and be compatible with our other community goals?

Economic development can serve several public purposes:

- First, the establishment of new businesses, or the expansion of existing businesses, provides job opportunities for local residents (and others).

- Second, the growth of retail and service businesses provides opportunities for local residents to purchase goods and services for which they would otherwise need to travel further to obtain.

- Third, expanding the number and types of businesses in a community can improve the business climate for existing businesses by making it easier for them to obtain inputs into their own business processes, general supplies, and business support services.

- Finally, nonresidential development provides additional tax revenues to support local government services. To the extent that these new revenues exceed the additional costs of municipal services ("tax-positive"), this aspect of economic development reduces the tax burden on residential property owners.

For many communities, the tax base impact is most important. Residents demand a broad range and high quality of services, but also want to minimize the amount of taxes that they pay. Economic development is seen as a means to achieve these competing goals. A challenge for such communities is to determine the amount and type of economic development that will provide desired tax relief without compromising the character of the community and its quality of life.

Windham is primarily a residential community: 93 percent of the local tax base is residential, with commercial and industrial properties representing 6 percent and public utilities another 1 percent. This is a low percentage relative to the surrounding communities and the state of New Hampshire. Many residents believe that this strong

dependence on the residential tax base weakens the town's fiscal position. This dependence on the residential tax base will be increased further as a result of the planned widening of Interstate 93 (including the reconfiguration of Exit 3 and the realignment of Route 111), which will eliminate several existing businesses.

Although Windham currently has a low tax rate relative to other communities in the region, it is facing some significant capital expenditures in the near future, including a new high school. Community leaders are therefore interested in promoting economic development in order to broaden the tax base, increase tax revenues, and reduce the tax burden on individual homeowners.

Windham is also interested in economic development from the perspective of access for residents to shopping and services. The town has established a Village District zone that is designed to promote a compact center in the area surrounding the complex of municipal facilities (town offices, police, fire, and library) on Route 111. Private developers are demonstrating interest in the Village District such that compact mixed-use development in this area can provide shopping and service opportunities for which residents currently have to travel out of town to obtain.

Regional Economic Development Context

Windham today is a residential suburban community, whose residents tend to commute to other areas for employment. This is reflected by the fact that the town is at the meeting point of four Labor Market Areas (LMAs), four regional planning commissions (three in New Hampshire and one in Massachusetts), and two Economic Development Districts:

- Windham is included in the Lawrence (Mass.) LMA, along with Derry and Salem; Pelham is part of the Lowell LMA; Hudson is part of the Nashua LMA; and Londonderry is within the Manchester LMA.

- Windham is served by the Rockingham Planning Commission (RPC) and the Rockingham Economic Development Corporation (REDC), both based in Exeter. Salem is also within the Rockingham planning region, while Pelham and Hudson are served by the Nashua Regional Planning Commission and Derry and Londonderry are members of the Southern New Hampshire Planning Commission. Finally, the Merrimack Valley Planning Commission serves several nearby Massachusetts communities including Methuen and Lawrence.

- Windham is located at the edge of Rockingham County, bordering Hillsborough County on the south and west. Rockingham County is co-terminous with the Rockingham Economic Development District, while the Merrimack Valley Economic Development District encompasses 15 Massachusetts cities and towns including the nearby communities of Dracut, Methuen, Lawrence, and Haverhill.

Regional Economic Development Trends

Windham's economic development opportunities are influenced to a great extent by national and regional trends.

The REDC, assisted by the RPC, prepares a *Comprehensive Economic Development Strategy*[16] (CEDS) covering all of Rockingham County. The planning region includes all 37 cities and towns in Rockingham County. The Western subregion includes Windham and 7 other communities: Auburn, Candia, Chester, Derry, Hampstead, Londonderry, and Salem.

In general, the manufacturing sector of the economy is experiencing a broad decline nationally and regionally. The Rockingham County CEDS projects continued declines in the manufacturing sector's share of total employment (from 20 percent in 1990, to 17 percent in 2000, to a projected 14 percent in 2010). Manufacturing is the only sector that is projected to decline in absolute number of employees from 2000 to 2010. Sub-sectors with the greatest projected job losses include apparel and textile products, furniture, paper and allied products, electronics, and primary metal industries.

In contrast, the largest sectors of the regional economy are projected to increase significantly in both absolute terms and relative to total employment. Retail trade, the largest sector in 1990, grew by 36 percent during the 1990s and is projected to grow another 18 percent from 2000 to 2010.

Employment in the services sector grew by 56 percent from 1990 to 2000, making it the largest sector in the region as of 2000 with 32 percent of total employment. This sector is expected to continue growing both in absolute terms and relative to the total economy: the CEDS projects an increase of 10,573 service sector jobs from 2000 to 2010, representing a 30 percent increase and bringing this sector to 35 percent of all employment in the region. Specific sub-sectors with the greatest projected percentage growth include business services, transportation services, engineering and management services, security and commodity brokers, and "other services."

There is no comparable regional economic development planning process that covers the towns to the west and north of Windham. However, the Merrimack Valley Planning Commission (MVPC) prepares a *Comprehensive Economic Development Strategy*[17] for the fifteen cities and towns in its Economic Development District, which includes the nearby communities of Dracut, Methuen, Lawrence and Haverhill. The Merrimack Valley CEDS incorporates the results of additional regional economic development

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[16] *Comprehensive Economic Development Strategy (CEDS), Rockingham County, NH, Update 2003*, prepared by Rockingham Economic Development Corp., June 2003.

[17] *Comprehensive Economic Development Strategy, 2003*, prepared by Merrimack Valley Planning Commission, May 2003.

studies prepared by MVPC, including the *Economic Development Strategy for the Merrimack Valley* (May 2001) and the *Merrimack Valley Industry Cluster Analysis* (June 2002).

Not surprisingly, the broad economic trends in the region to the south of Windham (the Merrimack Valley in Massachusetts) parallel those in the region to the east (Rockingham County). The manufacturing sector decreased from 27 percent of employment in 1990 to 21 percent in 2000; and is projected to continue declining as a percentage of total employment, to 18 percent in 2010, 15 percent in 2020, and 12 percent in 2030. Meanwhile, service sector employment, which increased from 28 percent to 35 percent of total regional employment during the 1990s, is expected to grow to 41 percent in 2010, 45 percent in 2020, and 48 percent in 2030. Employment in the trade sector (retail and wholesale combined) is more stable as a percentage of overall employment, having increased from 18.9 percent to 19.3 percent during the 1990s, and projected to decline slightly to 18.0 percent in 2010, 17.0 percent in 2020, and 15.9 percent in 2030.

Thus, the outlook for employment growth in the regions surrounding Windham includes:

- Continued decline in manufacturing employment, not only in relation to the overall economy but also in absolute terms;
- Expansion in service sector employment, particularly in business and engineering services;
- Modest expansion in retail trade.

These findings suggest that economic development strategies in Windham should focus on office development, building on the enhanced accessibility that will be created by the expansion of I-93.

Profile of Windham's Economy

Information on Windham's existing businesses has been drawn from three sources. First, the town's tax assessing records provide information on *properties* in the town in various nonresidential categories based on standard land use classification codes. Information available from these records includes the specific land use classification, land area, building floor area, and assessed values of land and buildings. The second source of information on businesses is data compiled by Claritas, a private company that collects, analyzes and publishes business and demographic data. A database of Windham businesses purchased from Claritas includes information on the business sector (using the 6-digit Standard Industrial Classification (SIC) code), location by street address, number of local and total employees, and local and total annual sales. The final source of information is the employment data compiled by the New Hampshire Department of Employment Security (DES).

These three data sources are overlapping, with each subject to limitations as to the source of the information and the universe of businesses covered:

- The assessors data addresses land use on a parcel basis, and as a result does not allow for comprehensive analysis at the level of the individual business for two reasons: it combines all businesses in multi-tenant properties (such as shopping centers or office buildings) into a single record, and it does not reflect businesses that are operated in residential properties (such as home offices of professionals or sales representatives, customary home occupations, home day care centers, etc.). Nevertheless, this database is essential as a source of information on the property tax base.

- For privacy purposes, the state DES database provides only summary data—that is, no information is provided which could identify an individual business. In addition, this database only includes businesses that are subject to unemployment laws, thus excluding (for example) sole proprietorships or partnerships with no employees. The DES database has the advantage of providing longitudinal (year-by-year) data on employment by sector for individual communities throughout the state, and thus allows for both historical trend analysis and comparisons among communities and regions.

- The Claritas database is the most comprehensive source of information on individual businesses. It includes sole proprietorships and partnerships that may not have employees subject to unemployment compensation laws (which would be missed by the DES database), and home-based businesses in residential neighborhoods (which are not included in the assessors database). However, this source has its own limitations—for example, multiple small businesses operated from a single address by an individual would be counted, overstating the number of "employees" that are represented.

Profile of Existing Businesses

Table 13 summarizes Windham's current businesses by 2-digit Standard Industrial Classification (SIC) Code.

Table 13: Existing Businesses in Windham – Number and Employees by 2-Digit SIC Code

SIC Code	Description	Number of businesses	No. of Local Employees	% of Local Employees
07	Agricultural services	7	45	1.6%
15	General building contractors	6	75	2.7%
16	Heavy construction contractors	2	3	0.1%
17	Special trade contractors	20	90	3.3%
20	Food and kindred products	1	7	0.3%
24	Lumber and wood products	1	35	1.3%
26	Paper and allied products	1	25	0.9%
27	Printing and publishing	3	19	0.7%
30	Rubber and miscellaneous plastics products	2	17	0.6%
34	Fabricated metal products	1	5	0.2%
35	Industrial machinery and equipment	4	12	0.4%
36	Electrical and electronic equipment	2	29	1.1%
39	Miscellaneous manufacturing industries	1	4	0.1%
41	Local and interurban passenger transit	3	44	1.6%
42	Motor freight transportation and warehousing	4	26	0.9%
43	U.S. Postal Service	2	31	1.1%
47	Transportation services	4	25	0.9%
49	Electric, gas, and sanitary services	1	1	0.0%
50	**Wholesale trade–durable goods**	**18**	**152**	**5.5%**
51	Wholesale trade–nondurable goods	7	68	2.5%
52	Building materials, hardware, garden supply, & mobile	4	59	2.1%
53	General merchandise stores	1	6	0.2%
54	Food stores	10	47	1.7%
55	Automotive dealers and gasoline service stations	9	37	1.3%
56	Apparel and accessory stores	1	1	0.0%
57	Furniture, home furnishings and equipment stores	14	57	2.1%
58	**Eating and drinking places**	**12**	**179**	**6.5%**
59	Miscellaneous retail	15	77	2.8%
60	Depository institutions	3	26	0.9%
61	Nondepository credit institutions	3	22	0.8%
62	Security, commodity brokers, and services	4	18	0.7%
64	Insurance agents, brokers, and service	8	37	1.3%
65	**Real estate**	**19**	**131**	**4.8%**
70	Hotels, rooming houses, camps, and other lodging places	1	8	0.3%
72	Personal services	19	48	1.7%
73	**Business services**	**29**	**271**	**9.8%**
75	Automotive repair, services, and parking	12	56	2.0%
76	Miscellaneous repair services	3	11	0.4%
78	Motion pictures	2	15	0.5%

SIC Code	Description	Number of businesses	No. of Local Employees	% of Local Employees
79	**Amusement and recreational services**	**13**	**129**	**4.7%**
80	**Health services**	**18**	**178**	**6.5%**
81	Legal services	4	20	0.7%
82	**Educational services**	**7**	**284**	**10.3%**
83	Social services	7	67	2.4%
86	Membership organizations	4	18	0.7%
87	Engineering and management services	14	75	2.7%
91	Executive, legislative, and general government	4	29	1.1%
92	Justice, public order, and safety	4	76	2.8%
93	Finance, taxation, and monetary policy	2	2	0.1%
99	National security and international affairs	5	57	2.1%
	Grand Total	341	2,754	100.0%

Source: Claritas

The major sources of employment in Windham are thus as follows:

Sector	No. of Establishments	Local Employment	Percent of Total Employment	Average No. of Employees per Establishment
Educational services (SIC 82)	7	284	10.3%	40.6
Business services (SIC 73)	29	271	9.8%	9.3
Eating and drinking places (SIC 58)	12	179	6.5%	14.9
Health services (SIC 80)	18	178	6.5%	9.9
Wholesale trade–durable goods (SIC 50)	18	152	5.5%	8.4
Real estate (SIC 65)	19	131	4.8%	6.9
Amusement and recreational services (SIC 79)	13	129	4.7%	9.9
Total in SIC codes 73, 58, 80, 50, 65 & 79	109	1,040	37.8%	9.5

The *educational services* sector includes two small businesses providing private education and training services, but is comprised primarily of the public school system and public library. This explains the high number of employees per "establishment," as the data include all faculty and staff at three public schools and the School Department's administrative offices.

The *business services* sector is thus the largest private sector classification in the local economy: this group includes a broad range of services such as advertising agencies, equipment renting and leasing, personnel services (including temp agencies), and data processing services. In Windham, the largest component of this group consists of computer system design businesses, which represent 11 of the 29 establishments and 80 of the 271 jobs.

Windham has 12 establishments in the *eating and drinking places* group, providing a total of 179 jobs. These businesses range from the Common Man, a full-service restaurant, to pizza places, fast-food franchises, and donut shops, and also include caterers and food service contractors. With an average of nearly 15 employees per establishment, this group provides the highest number of jobs per business of Windham's major business categories; however, the data do not indicate how many of these are part-time versus full-time jobs. This business sector is also typically a low-wage sector.

Health services establishments provide 178 jobs in 12 Windham establishments. This group includes individual doctors, dentists and other health practitioners; group practices; nursing homes; personal care providers, and related businesses. Many of the establishments in this group have fewer than 10 employees, but two nursing homes have a total of 88 employees, bringing the average number of jobs per business up to 9.9.

Windham's *wholesale trade-durable goods* sector includes 18 establishments ranging in size from 1 to 15 employees, with one business employing 30 workers. This sector encompasses a wide range of products—security systems, home furnishings, building materials, various types of machinery, sporting goods and other recreational equipment, and jewelry. Although listed as wholesale trade, many of the individual businesses included in this group also sell directly to the public, and thus have a retail component. Most of these businesses are located east of Interstate 93, in either the Route 28 corridor or along Route 111 or 111A.

As might be expected in a fast-growing residential community, *real estate* is another key sector in Windham. There are 19 establishments in this sector with a total of 131 employees. Most of the businesses are real estate agents and brokers, but the sector also includes a real estate management firm, two title abstract offices, and a development company.

The final key sector in Windham is *amusement and recreation services*. This group includes: golf courses; riding stables; bowling alleys: gymnastics, dance and martial arts studios; fitness centers; and tourist attractions. Windham has 13 such establishments, employing 129 people. The largest individual businesses in this category are the Windham Country Club, Park Place Bowling Lanes, and Gym-Ken Gymnastics.

Geographic Distribution of Existing Businesses

Windham's existing businesses are distributed throughout the town. About 60 percent of the town's private business establishments, and more than two-thirds of the jobs, are concentrated along the Route 28 and Route 111 corridors, but businesses are also located in smaller nodes and scattered in residential neighborhoods. Figure 16: Windham Businesses shows the geographic distribution of establishments in the Claritas database and Table 14 summarizes the general locations of businesses and jobs.

Table 14: Locations of Windham Businesses

Subarea	Establishments Number	Establishments Percent	Employees Number	Employees Percent
Route 28	47	14.6	375	15.8
Route 111, east of I-93	40	12.4	441	18.6
Route 111, west of I-93	98	30.4	798	33.6
Other areas	137	42.6	762	32.1
Total	322	100.0	2,376	100.0

Source: Claritas (excludes public education, religious uses, and public sector uses)

The Route 28 corridor extends north from the Salem municipal boundary to the Derry line. The southern portion of the corridor (south of Aladdin Road) is zoned Business Commercial A; the west side from Aladdin Road north to Flat Rock Brook is in the Professional, Business & Technology district; and several areas to the north are zoned Business Commercial B. This corridor contains about 15 percent of the town's private businesses and 16 percent of its jobs (excluding jobs in public education, religious organizations, and government). The major uses in the corridor are services (36 percent of businesses, 38 percent of jobs) and retail/wholesale trade (36 percent of businesses, 28 percent of jobs), with the largest individual business (in terms of sales and employment) being Cyr Lumber.

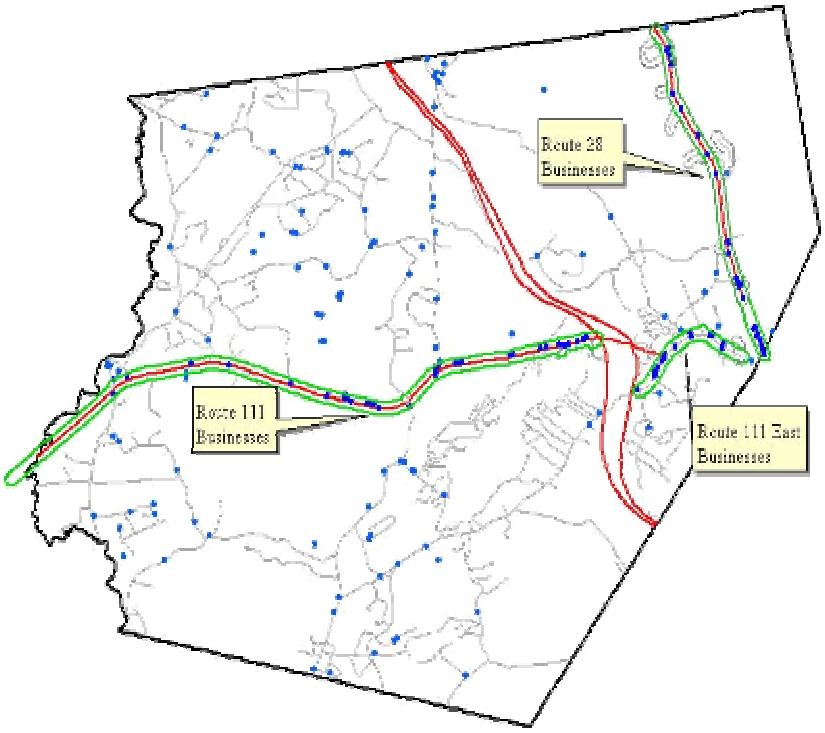
The segments of Route 111 and Route 111A between Route 28 and Interstate 93 are smaller in area than the Route 28 corridor and have fewer business establishments but more employment. The largest individual business categories in this area are Business Services (SIC 73), with 6 establishments and 122 employees (28 percent of the area's total employment); and Wholesale Trade–Durable Goods (SIC 5), with 6 establishments and 48 employees. Most of the establishments have addresses on Range Road (26) or Industrial Drive (13).

Route 111 west of I-93 contains 30 percent of the town's business establishments and 34 percent of the local jobs. This corridor includes the shopping centers on Indian Rock Road east of the municipal center, the industrial area, and West Windham. Wholesale and retail trade is the most significant sector, with 31 establishments (32 percent of the corridor total) and 288 jobs (36 percent of the total). This corridor represents 47 percent of the town's wholesale/retail trade establishments and 62 percent of its employment in this sector.

Areas of Windham outside of the Route 28 and Route 111 corridors contain a significant number of economic activity. More than 40 percent of the town's businesses and more than 30 percent of the town's jobs are located outside the major highway corridors. As Figure 16 shows, these business establishments are spread throughout the town, including areas zoned for residential use. Moreover, a wide distribution of business types is represented. For example, there are 21 building and construction contractors with a total of 87 jobs, and special trade contractors (SIC 17) constituting 90 percent of the town's businesses in this category and 81 percent of the

jobs. Another significant category is health services (SIC 80), with only 8 establishments but 126 jobs (this category includes nursing homes and home health care services as well as offices of doctors, dentists, chiropractors, etc.).

Figure 16: Windham Businesses



Employment and Wages

Growth in Local Employment

Windham's population grew at an average rate of 1.75% per year from 1990 to 2000 (U.S. Census); and the local labor force grew by 1.90% per year over the 1990-2003 period (NH Department of Employment Security). Windham is expected to grow modestly over the next two decades. From its current estimated population of approximately 14,500, the town is expected to reach its buildout population of between 16,000 and 17,000 by 2020, an increase of 10 to 17 percent. This represents a lower population growth rate than during the 1990s, averaging 0.6 to 1.0 percent per year.

The size of the labor force is determined by the total adult population and the labor force participation rate. In Windham, the local labor force grew from 5,260 in 1990 to 6,720 in 2003, representing an average annual increase of 1.90 percent (NH Department of Employment Security).

In 2002, Windham had approximately 330 private businesses employing 2,280 persons. Another 370 persons were employed by public sector entities, primarily by the Town of Windham (including the school department). As indicated in Table 15, the

government share of employment in a community tends to be in inverse proportion to total employment, because a town needs to provide essential local services such as public safety and education for its residents regardless of the existence of private businesses. Windham's ratio of government employment to total employment is consistent with the pattern of nearby communities.

Table 15: Labor Force and Local Employment, 2002

Municipality	Resident Labor Force, 2002	Employment in Windham Establishments, 2002				Local Jobs per Resident Worker
		Private	Government	Total	Govt. %	
Salem	17,440	19,623	1,098	20,721	5%	1.19
Londonderry	14,275	11,330	1,096	12,426	9%	0.87
Hudson	13,584	9,688	785	10,473	7%	0.77
Derry	20,656	6,945	1,031	7,976	13%	0.39
Amherst	6,041	3,766	590	4,356	14%	0.72
Windham	**6,786**	**2,279**	**368**	**2,647**	**14%**	**0.39**
Hollis	3,843	1,635	505	2,140	24%	0.56
Pelham	7,382	1,651	413	2,064	20%	0.28
Chester	2,568	270	135	405	33%	0.16

Sources: New Hampshire Employment Security –

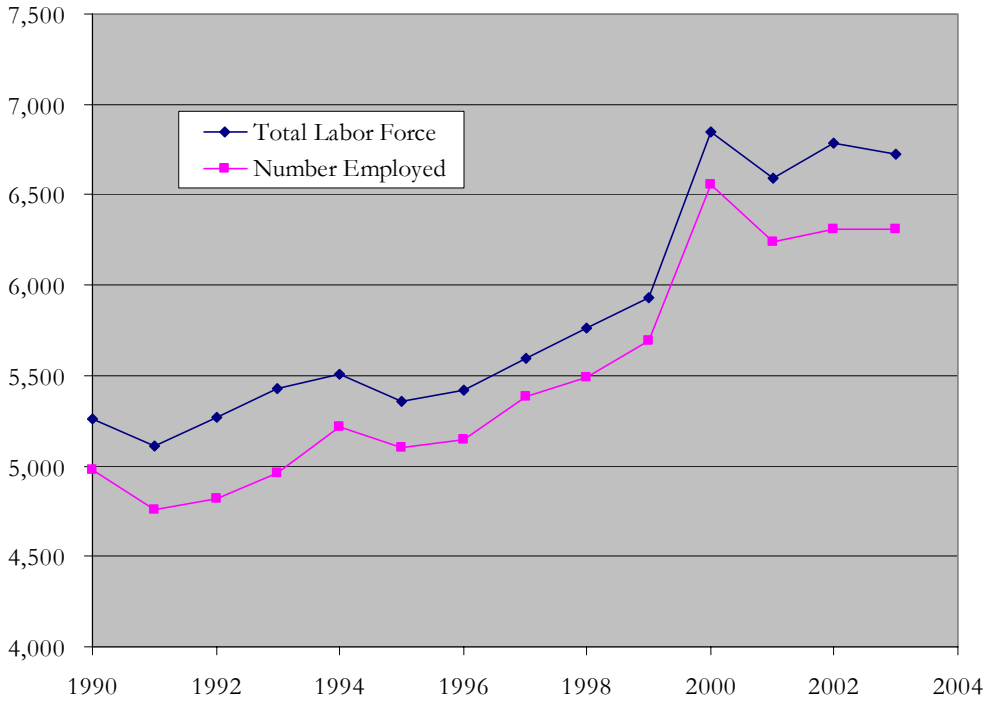
(1) Resident labor force: NHetwork website (http://www.nhes.state.nh.us/elmi/onlinelmidat.htm)

(2) Local employment: "Employment and Wages by City and Town: A Supplement to 2002 New Hampshire County Profile"

Labor Force, Employment and Unemployment

Windham's resident labor force is currently around 6,800 persons (see Figure 17). Since 1990 the labor force has grown at an average annual rate of 1.9 percent, or about 9 percent faster than the 1990-2000 population growth rate of 1.75 percent per year.

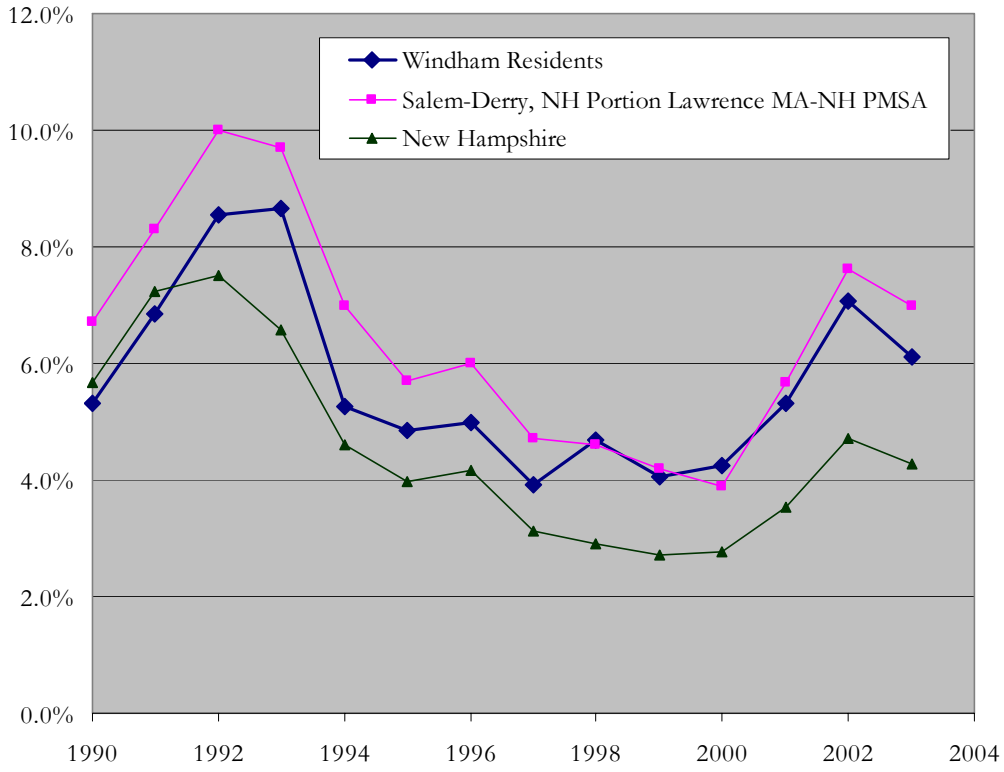
Figure 17: Windham Resident Labor Force and Number Employed, 1990-2003



Source: New Hampshire LAUS Benchmark Data

Windham's resident unemployment rate has tended to be somewhat higher than the average unemployment rate for the state of New Hampshire, but lower than the rest of its labor market area (see Figure 18).

Figure 18: Average Annual Unemployment Rate, 1990-2003



Commuting Patterns

Windham residents tend to commute to jobs outside of the town (see Table 16). In 2000, about 13 percent of local workers worked in Windham, and another 13 percent commuted to Salem. Approximately half of employed Windham residents worked either in the town, in an adjoining community, or in the next ring of communities out (including Nashua, Manchester, Haverhill, and Methuen); and 41 percent worked in Massachusetts, primarily in the Interstate 495 corridor from Amesbury to Westford.

In terms of the reverse commute, 31 percent of those employed in Windham in 2000 (709 out of 2372) were residents of the town. Another 31 percent (717 workers) lived in Salem, Derry, and Londonderry; and 9 percent (193 workers) came from Manchester and Nashua.

Table 16: Workplace of Windham Residents

Rank	Workplace Location	Windham Residents Employed	Percent of Employed Residents
1	Salem, Rockingham Co., NH	721	12.9%
2	Windham, Rockingham Co., NH	709	12.7%
3	Boston, Suffolk Co., MA	283	5.1%
4	Andover, Essex Co., MA	251	4.5%
5	Nashua, Hillsborough Co., NH	223	4.0%
6	Londonderry, Rockingham Co., NH	203	3.6%
7	Manchester, Hillsborough Co., NH	200	3.6%
8	Derry, Rockingham Co., NH	195	3.5%
9	Hudson, Hillsborough Co., NH	161	2.9%
10	Lawrence, Essex Co., MA	153	2.7%
11	Lowell, Middlesex Co., MA	148	2.7%
12	North Andover, Essex Co., MA	130	2.3%
13	Haverhill, Essex Co., MA	111	2.0%
14	Methuen, Essex Co., MA	110	2.0%
15	Tewksbury, Middlesex Co., MA	102	1.8%
	Other Massachusetts I-495 corridor	243	4.4%
	Other Hillsborough County	243	4.4%
	Other Rockingham County	181	3.2%
	Other Merrimack County	103	1.8%
	Other New Hampshire	43	0.8%
	Other Massachusetts	1,024	18.4%
	Other States	42	0.8%
	TOTAL	5,579	100.0%
Total I-495 Corridor		1,248	22.4%
Total Rockingham-Hillsborough-Merrimack		2,939	52.7%

Source: 2000 U.S. Census

Table 17 Residence of Windham Workers

Rank	Residence Location	Employed in Windham Businesses	Percent of Windham Workers
1	Windham, Rockingham Co., NH	709	31.2%
2	Salem, Rockingham Co., NH	312	13.7%
3	Derry, Rockingham Co., NH	249	11.0%
4	Londonderry, Rockingham Co., NH	156	6.9%
5	Manchester, Hillsborough Co., NH	126	5.6%
	Other Hillsborough County	249	11.0%
	Other Rockingham County	150	6.6%
	Other New Hampshire	83	3.7%
	Other Massachusetts	210	9.3%
	Maine	19	0.8%
	Other	7	0.3%
	TOTAL	2,270	100.0%

Source: 2000 U.S. Census

These commuting statistics can be used to estimate the level of local job growth that might reduce Windham's unemployment rate to a level comparable to New Hampshire's average jobless rate. In 2003 Windham had an average of 410 persons who were in the labor force and were unemployed, for an unemployment rate of 6.1 percent. To lower Windham's rate to the state's average jobless rate of 4.3 percent would require reducing the number of unemployed residents by 123. Assuming that the percent of local jobs held by local residents stays at 31 percent, this reduction could be achieved by creating 397 new jobs in Windham businesses.

Tax Base

In addition to providing needed jobs and services, commercial and industrial development provides property tax revenues to support local government expenditures on services, facilities, and infrastructure. Towns support economic development as a means of "broadening" the tax base, because business properties are seen as contributing more in revenues than they demand in services. Whether this is true in the long run is a matter of debate (increased commercial and residential development can require communities to spend more on roads and other infrastructure, and on public works and public safety services), but in the short term business development helps to reduce the tax burden on residential property owners.

Windham's 2003 equalized tax rate of $14.91 per $1,000 of valuation was relatively low for New Hampshire communities, as shown in Table 18. The property tax rate reflects the relationship between local government expenditures (including school costs) and total property values in the community. Thus, a low tax rate can mean that local expenditures are low or total property values are high, relative to population.

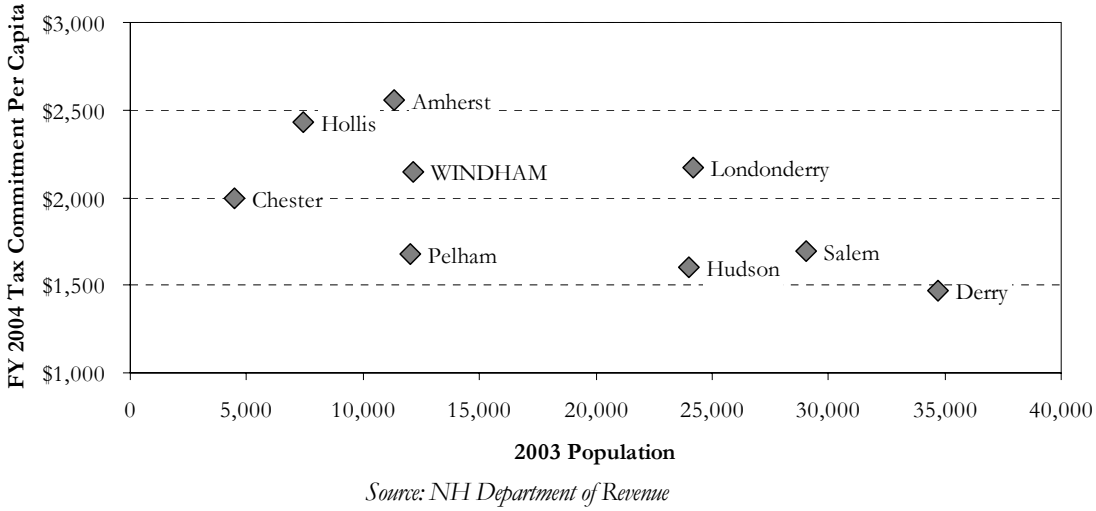
Table 18: Equalized Property Tax Rates, FY 2003

Municipality	2003 Equalized Tax Rate
Salem	$ 12.72
Pelham	$ 14.83
Windham	**$ 14.91**
Hudson	$ 15.52
Hollis	$ 16.37
Londonderry	$ 17.05
Amherst	$ 17.05
Chester	$ 17.75
Derry	$ 21.12
New Hampshire	$ 16.83

Source: NH Department of Revenue

As indicated in Figure 19, Windham's property taxes are relatively high in comparison to the surrounding communities. In fiscal year (FY) 2003 the town collected $2,147 per resident in property taxes, which was 10 percent higher than the average of the 8 surrounding towns, and 26 percent above the statewide average. Of the surrounding communities, only Amherst and Hollis had significantly higher property taxes on a per capita basis. Thus, Windham's low tax *rate* masks a tax *burden* that is high relative to its region and the state.

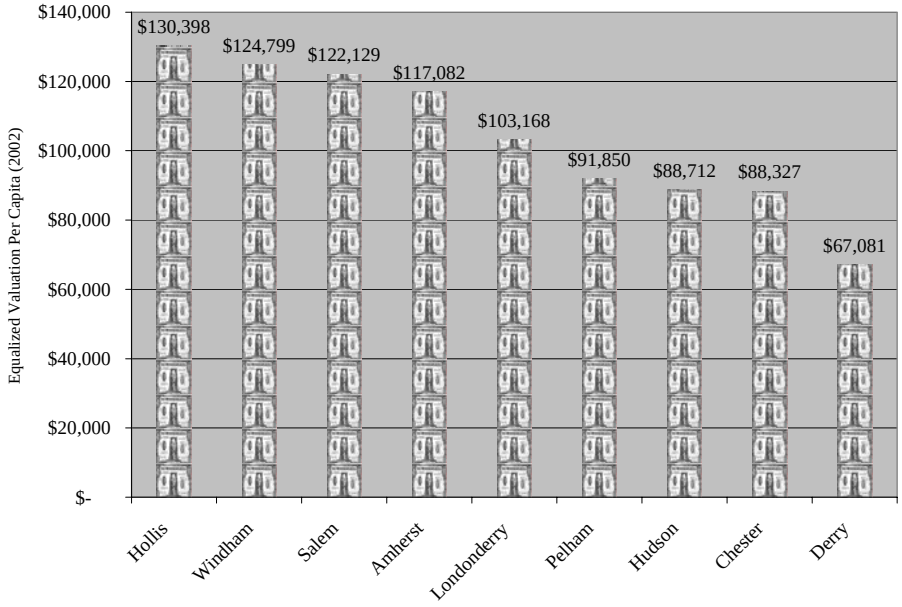
Figure 19: Property Tax Per Capita



Source: NH Department of Revenue

The reason for this finding is that property *values* in Windham are relatively high. A standardized measure of total property values in communities is *equalized valuation per capita* (EQV), defined as the ratio of total property value (at 100% valuation) to population. As shown in Figure 20, Windham has an EQV that is high in comparison to surrounding communities. For example, Windham's FY 2002 EQV of $124,799 was 36 percent higher than Pelham's, although the two communities have roughly the same population. This means (for example) that Windham can generate the same total tax revenue as Pelham with a tax rate that is 26 percent lower.

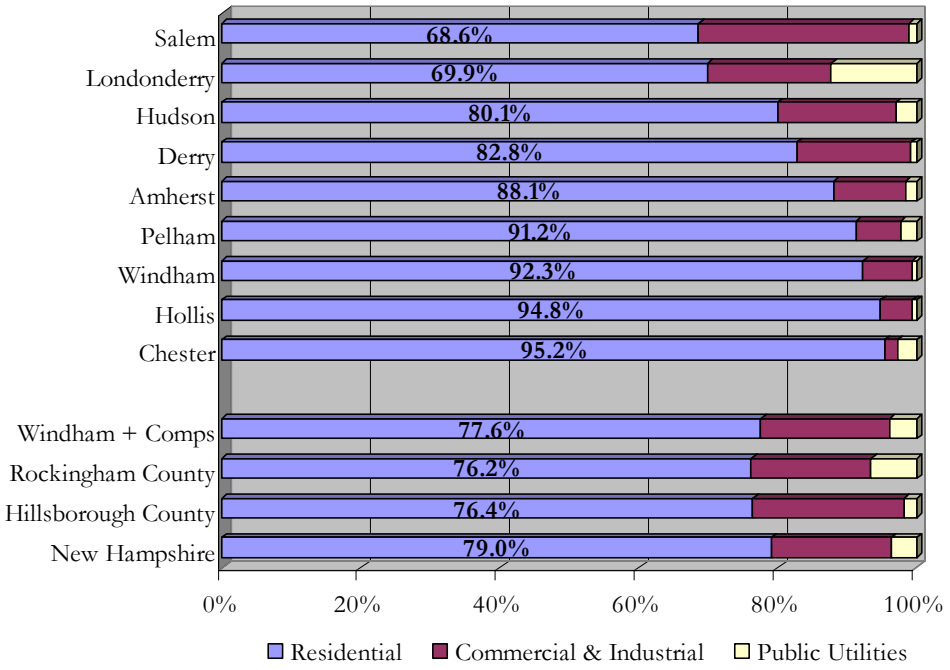
Figure 20: Equalized Valuation Per Capita, Windham & Surrounds, 2002



Source: NH Office of Energy & Planning, Dec. 2003

The next question is, how heavily does that tax burden fall on local residents? The answer depends on how much of the town's total tax revenue is generated from nonresidential properties—in other words, from businesses and utilities. Residential properties represent 92 percent of Windham's taxable valuation, with commercial and industrial properties constituting about 7 percent and public utilities less than 1 percent (Figure 21). This is a higher residential percentage than in any of the comparison communities except the smaller towns of Hollis and Chester. It is also a significantly lower commercial and industrial valuation than in Rockingham or Hillsborough Counties or the state as a whole.

Figure 21: Property Tax Base, FY 2004



Source: New Hampshire Department of Revenue, Equalization Bureau
Note: "Residential" = Residential Land + Residential Buildings + Manufactured Housing

Table 19 lists the 30 nonresidential properties in Windham whose total assessed valuations exceed $1 million. These include:

- 19 commercial properties with a combined valuation of $39.4 million (58 percent of the town's total commercial valuation);
- 5 industrial properties with a combined valuation of $7.3 million (27 percent of the town's total industrial valuation);
- 4 utility properties (including one right-of-way) with a combined valuation of $8.9 million; and
- 2 vacant parcels with a combined valuation of $4.1 million.

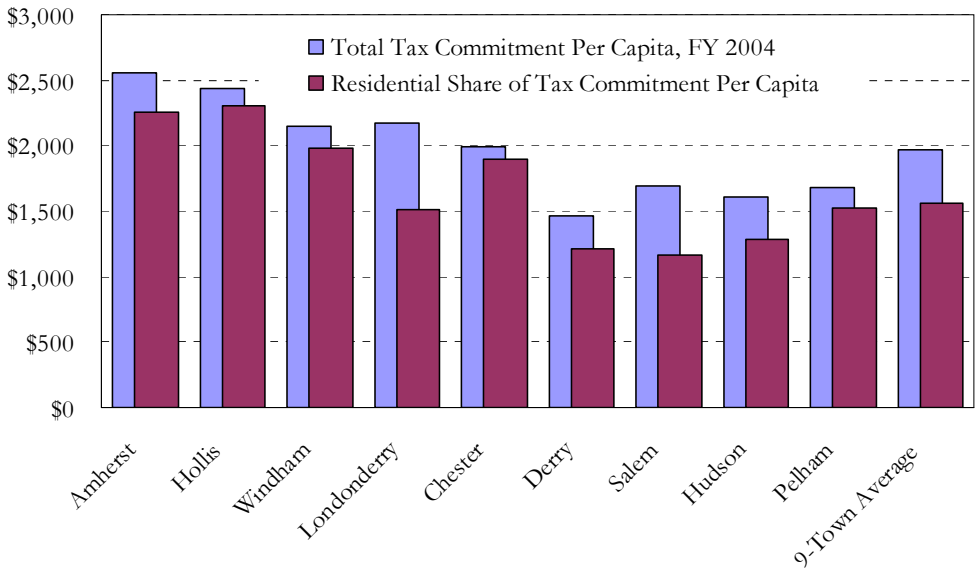
These 30 properties represent 56 percent of the town's commercial and industrial valuation, and 4.1 percent of the town's total assessed valuation.

Table 19: Nonresidential Valuations over $1,000,000, FY 2004

Address	Owner	Parcel Area (acres)	Building Area (sq. ft.)	Assessors Use Classification	Total Value
	Public Service Co of NH	0.01	-	Electric Power Plants	$5,000,000
3 Church Rd	Terrace Communities Windham, LLC	13.35	59,292	Nursing Home	$4,516,000
1 Country Club Rd	Windham Golf Course Realty	154.18	4,000	Golf Courses	$3,874,100
25 Indian Rock Rd	Commons At Windham, Inc	11.76	27,058	Discount Stores	$3,329,100
92 Indian Rock Rd	Castle View Inc	15.41	23,544	Eating & Drinking Estab.	$2,992,700
102 Indian Rock Rd	106 Indian Rock Rd, LLC	37.40	-	Potentially Developable Commercial Land	$2,689,000
33 Indian Rock Rd	Windham Holdings Ltd, Co	7.10	31,904	Shopping Centers/ Malls	$2,347,000
8 Rockingham Rd	Bedrick, Mark S	3.54	51,000	Storage, Warehouses	$2,213,000
60 Rockingham Rd	Rocky Ridge Business Center LLC	7.52	40,000	Storage, Warehouses	$2,129,700
39 Rockingham Rd	RWRL, LLC	12.66	29,798	Facilities providing building materials	$2,084,200
10 Industrial Dr	Kahuna Realty, LLC	5.27	35,956	Office Bldgs for Manufacturing	$2,058,000
58 Range Rd	CMAB Associates, LLC	2.39	26,184	Shopping Centers/ Malls	$1,877,000
7 Wall St	Lot 11-C-700, LLC	4.59	19,448	General Office Bldg	$1,767,000
54 Range Rd	Corner Of New Horizons, LLC	1.75	7,280	Small Retail & Service (<10,000 sq ft)	$1,748,000
16 Rockingham Rd	Sandys Bowling Lanes Inc	4.24	32,565	Bowling	$1,738,900
63 Range Rd	J Bucciarelli, LLC	1.96	14,184	General Office Bldg	$1,718,000
3 International Rd	High Bay Of Windham, LLC	24.77	50,400	Industrial Building	$1,649,000
5 Wall St	Corbett RT 50% &	88.61	-	Industrial Developable Land	$1,457,000
49 Range Rd	Haynes Management Inc	9.40	28,800	Industrial Building	$1,402,000
1 Industrial Dr	CMC RT	5.62	25,536	General Office Bldg	$1,391,000
	Pennichuck East Utility, Inc.	0.01	-	Water Tower	$1,355,000
156 Haverhill Rd	Bedrock Childcare Associates LLC	2.47	8,400	Day Care Center	$1,345,000
36 Roulston Rd	Roulston RT	8.90	11,760	Motels	$1,298,300
	New England Power Co	0.01	-	Electric Power Plants	$1,292,000
Bridle Bridge Rd	Tennessee Gas Pipeline Co	0.01	-	Gas Pipeline Right of Way	$1,235,000
8 Ledge Rd	Radial Properties, LLC	11.00	15,360	Office Bldgs for Manufacturing	$1,078,000
6 Industrial Dr	Nash, Gerald Q	5.27	28,350	Buildings for Manufacturing	$1,067,000
57 Rockingham Rd	Oasis Gas & Mini Mart, LLC	3.32	7,600	Eating & Drinking Estab.	$1,024,600
115 Indian Rock Rd	Dinsmore Rev Tr, Marion L	1.72	7,224	General Office Bldg	$1,021,000
41 Range Rd	New Hampshire, State Of	12.33	12,246	Commercial Greenhouses	$1,000,200

The combination of a high per capita tax commitment with a low fraction of nonresidential valuation means that owners of residential properties in Windham are currently paying relatively high property tax bills. Figure 22 refines the analysis of per capita tax burden by combining the information in Figure 19 and Figure 21. The estimated residential share of Windham's tax commitment per capita is $1,982, which is 31 percent higher than the comparable figure in Londonderry, even though the two communities' *total* tax commitments per capita differ by only about 1 percent.

Figure 22: Residential Share of Tax Commitment, Per Capita, FY 2003



Source: New Hampshire Department of Revenue, Equalization Bureau

Tax Base Diversification

The town anticipates significant capital expenditures in the near future, particularly with respect to the need for new schools and expansion of space for municipal government offices. As a result, townspeople have expressed a desire to expand and broaden the property tax base in order to minimize the burden of these additional costs on residential taxpayers. Thus, diversity in the tax base is a primary economic development concern for the town. Therefore, it makes sense to identify a target level of diversification and to attempt to quantify the quantity and rate of nonresidential development that would be needed to achieve this target.

Residential-nonresidential mix target

Windham's current FY 2004 tax base was 92 percent residential, while the surrounding areas (Rockingham County, Hillsborough County, or selected comparison communities) were approximately 76 to 78 percent residential. Closing this gap would be a significant challenge; therefore, for the purpose of this analysis it is assumed that the Town wishes to increase its nonresidential tax base so that the residential component is reduced to 85 percent.[18] As utilities make up 1 percent of the total, this would mean increasing commercial, industrial, and personal property taxes from their current 7 percent to 14 percent.

[18] This 85 percent target is not intended to suggest an official goal of the Town (which needs to be determined by the Planning Board upon review of the analysis). Rather, it was chosen as a possibly feasible target in order to serve as the basis for the analysis that follows.

Balancing current residential development

The Town's current (2005) total assessed valuation is estimated to be approximately $1.53 billion, of which residential properties represent about $1.40 billion (see Table 20). If no further residential growth occurred, the Town would need a total valuation of $1.65 billion in order to reduce the residential share to 85 percent. This would mean increasing the nonresidential (commercial/industrial) component to $231 million, which represents an increase of $121 million in commercial/industrial assessed valuation over the current levels.

Table 20: Commercial Growth Target to Balance Existing Residential Valuation

Current valuation (est.)	$1,527,000,000
Residential component (est.)	$1,404,800,000
Total valuation to make Residential=85%	$1,653,000,000
Commercial component of target (14%)	$231,420,000
Commercial growth needed to reach 14% target	$121,420,000

Keeping pace with ongoing residential growth

The above computations give a figure for the amount of nonresidential development needed to broaden the tax base in relation to existing residential valuation levels. However, residential development will continue to occur, and thus an additional amount of nonresidential growth would be needed to keep pace with this residential growth. In order to calculate this desired growth in the nonresidential tax base it is necessary to make some assumptions regarding the residential growth rate and the average valuation of new residential development.

Residential growth rate: A build-out analysis prepared in 1998 projected that an average of 56 single family homes would be built each year from 1998 through 2012, based on the average growth rate during the 1990s.[19] In fact, 1998 was the beginning of a housing boom for the town, and the actual number of single-family permits averaged 104 per year from 1998 through 2003 (see Table 2: Residential Building Permits); and these have been supplemented in the last couple of years by a number of multifamily units. However, to be conservative it is assumed that an average of 50 new homes will be built each year over the next 10 years.

Residential valuation: The median purchase price for non-condominium dwellings in Windham was $427,500 in 2003, and had increased at an average annual rate of 17.5 percent per year from 1995 through 2003 (see Table 10: Median Home Purchase Prices in Windham, 1990-2003 and Table 11: % Change in Median Purchase Price of Primary Homes in Windham). Therefore, it is not unreasonable to assume that the current median purchase price for new single-family homes is at least $500,000

[19] *Town of Windham, New Hampshire – Build-Out Projection: A Scenario of How the Town May Evolve Over the Next Fifteen Years*, Submitted to the Windham Conservation Commission, prepared by Scott MacFaden, November 1998.

($427,500 + 17.5% = $502,312). Furthermore, the *average* (i.e., mean) purchase price tends to be somewhat higher than the *median* price. Based on these factors, the following analysis assumes that the average *assessed* valuation of new single-family homes will be $500,000 (in 2004 dollars). Since Windham assesses properties at 85 percent of market value, this represents an average *market* value for new homes of approximately $590,000.

Based on these assumptions, Windham's total assessed residential valuation is projected to increase by $25 million per year. In order to keep pace with this growth at an 85%-15% split between residential and nonresidential valuation, commercial and industrial development must provide $4.1 million in new valuation each year, or $41 million over the next ten years.

Table 21: Commercial Growth Target to Balance Growth in Residential Valuation

Annual residential growth rate	50 homes/year
Average valuation of new single-family home	$500,000
Annual residential valuation increase	$25,000,000
Annual commercial growth at 85-15 split	$4,120,000

Summary: 10-year commercial growth target

Combining the nonresidential growth needed to balance existing residential valuation and projected residential growth, the town would need $163 million in commercial and industrial growth in order to reach the 15 percent valuation target after 10 years. This represents $16 million in new nonresidential development each year.

Table 22: Commercial Growth Target to Balance Existing and Projected Residential Valuation

Balance current residential valuation	$121,420,000
Balance ongoing residential development	$41,200,000
Total	$162,620,000
Annual growth for 10 years	$16,262,000

What would these dollar amounts mean in terms of physical development? Some estimates can be made based on existing development in the town:

- **Industrial.** In FY 2004, the 14 developed properties on Industrial Drive, totaling 21.2 acres of land and 136,342 square feet of building floor area, had a combined assessed valuation of $7,098,000. Thus, one way to reach the target of $16 million per year could be to convert about 49 acres of land per year to industrial park use, and to build – and absorb – about 310,000 square feet of floor area per year. Given the projections for stable or declining manufacturing employment, this is not a particularly likely scenario.

- **Office.** As noted earlier, Windham appears to be well positioned for future office development as a result of projected regional growth in the services sector (particularly in business services and engineering and management services) and the enhanced accessibility of the town due to the widening of Interstate 93. Currently, Windham has about 98,000 square feet of "general office building" space (land use classification 3400) with an assessed building value of $6.2 million. Thus, adding about 256,000 square feet of office space per year would provide the necessary tax base expansion to reach the 15% target for nonresidential valuation in ten years. Given the low densities that are typical in Windham, this would mean developing about 117 acres of land per year for office uses.

  The amount of office floor area development suggested above would translate to adding 1,024 new office jobs per year, or a total of 10,240 jobs in 10 years. By contrast, the Final Environmental Impact Statement (FEIS) for the Interstate 93 Improvements project estimates that Windham can expect to absorb a total of only 1,446 jobs through the year 2020. However, the FEIS projects significant regional employment increases over the same period—including 8,583 jobs in Lawrence, 8,335 in Methuen, 6,009 in Salem, 4,583 in Londonderry, and 2,876 in Derry—so it would seem that Windham's location along the Interstate 93 corridor gives it at least the potential for attracting substantially more office growth than it is experiencing at present.

- **Retail.** Typical shopping center values in Windham are as follows:

Shopping Center	Location	Acres	Floor Area	Assessed Value	Value per Sq. Ft.
The Commons	25 Indian Rock Rd	11.76	27,058	$3,329,100	$123
Windham Town Shoppes	29 Indian Rock Rd	1.06	7,976	$883,000	$111
Windham Village Green	33 Indian Rock Rd	7.10	31,904	$2,347,000	$74
Average		9.96	22,313	$2,186,367	$98

  Assuming that new shopping centers would have similar assessed values, about 7 to 8 shopping centers of the type currently existing on Route 111 near the town center would need to be built each year for 10 years in order to increase commercial valuation to 15 percent of the total ($16,262,000 ÷ $2,186,367 = 7.44).

- **Mixed Development.** The Environmental Impact Statement for the Interstate 93 widening project assumed that future nonresidential employment growth in the region would be comprised of the following mix:

  Manufacturing:.....15%
  Warehouse/distribution/construction/transportation 15%
  Office/R&D/flexible space/finance/government.....20%
  Service/retail 50%

This distribution of land uses was used to generate the growth scenario in Table 23, representing around 176,000 square feet of new floor area and 590 new jobs per year.[20] This scenario presents one way in which the town could increase its nonresidential valuation to comprise 15 percent of total valuation over a period of ten years.

Table 23: Mixed-Use Development Scenario to Increase Nonresidential Tax Base to 15% of Total

	Manufacturing	Warehouse/ distribution/ construction/ transportation	Office/R&D/ flexible space/ finance/ government	Service/retail	TOTAL
% of new floor area	25%	25%	15%	33%	100%
Target floor area (s.f.)	44,000	44,000	29,000	59,000	176,000
Added valuation	$2,860,000	$2,860,000	$3,980,000	$7,080,000	$16,280,000
New jobs created	90	90	115	295	590

As a point of reference, the Final Environmental Impact Statement for the I-93 Improvements addressed commercial and industrial land conversion as a secondary land use impact.[21] The report computed commercial and industrial land conversions for each community in the I-93 corridor study area, based on assumptions concerning the composition of employment generating activities in the corridor and the average employee density per acre for broad groupings of employer types. The analysis concluded that with the increased accessibility provided by the highway project, between 32 and 59 acres of land in Windham could be converted to commercial and industrial use by 2020, providing a total of 1,446 new jobs in the town.

[20] These estimates of floor area, valuation, and job growth also incorporate the following assumptions:

	Floor area per job (square feet)	Estimated valuation per square foot
Manufacturing:	500	$65
Warehouse/distribution/construction/transportation	500	$65
Office/R&D/flexible space/finance/government	250	$120
Service/retail	200	$120

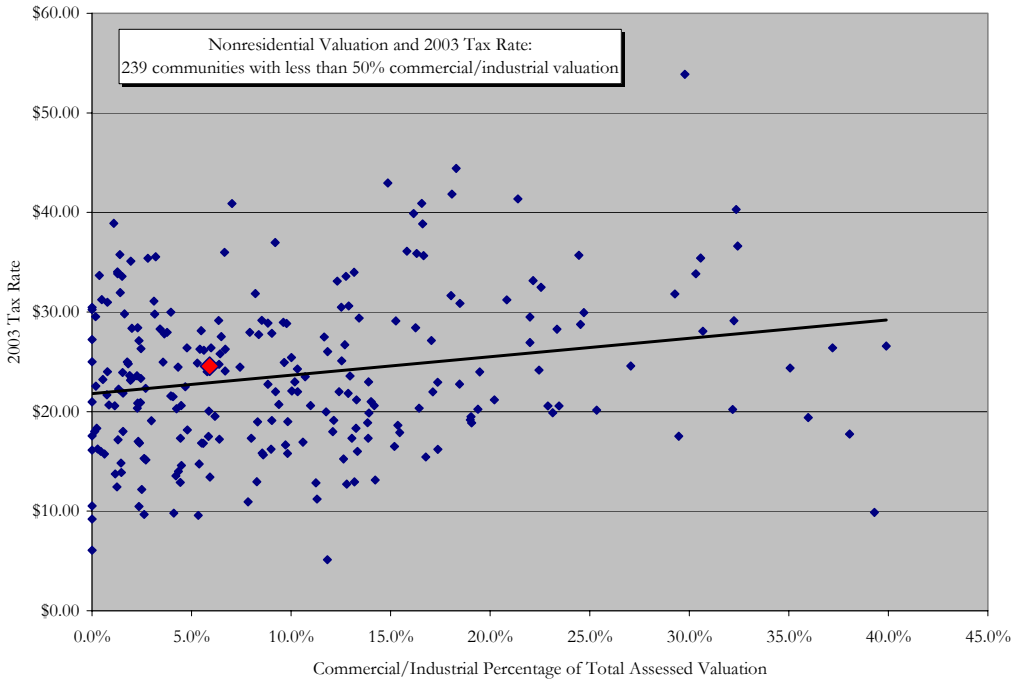
[21] *Interstate 93 Improvements, Salem to Manchester, IM-IR-93-1(174)9, 10418-C – Final Environmental Impact Statement*, April 2004, Prepared for New Hampshire Department of Transportation and Federal Highway Administration; Prepared by VHB/Vanasse Hangen Brustlin, Inc.; section 4.12.6.2, Commercial/Industrial Land Conversion Assumptions, pages 4-197 ff.

The Limitations of Tax Base Diversification

Expanding the nonresidential tax base is clearly a valid strategy for reducing the tax burden on residential property owners in the short term. However, over the long term the benefits are less clear, as indicated by the following series of charts (Figure 23 through Figure 26). Each chart compares the 2003 property tax rate of New Hampshire communities to the percentage of their total assessed valuation represented by commercial and industrial properties. Each data point on the chart represents a single community, with Windham indicated by the large diamond.

The analysis begins with Figure 23, which includes the 239 New Hampshire cities and towns in which less than 50 percent of their total valuation is classified as commercial or industrial.[22] The upward-sloping "trend line" on the chart indicates that percentages of nonresidential valuation have a slight positive correlation with tax rates—that is, communities with more businesses do not have lower tax rates, and may in fact have slightly higher rates. (The outlier communities in the lower right corner of the chart are Portsmouth and Newington, which have very high percentages of nonresidential valuation due to the presence of Pease International Tradeport and a concentration of shopping centers.)

Figure 23: Nonresidential Valuation and 2003 Property Tax Rate for New Hampshire Communities
With Less Than 50% Commercial/Industrial Valuation



[22] This excludes 20 very rural communities in the northern part of the state – 15 with no local property tax rate and 5 with very little residential development. The only other town excluded is Tilton in the Lakes Region.

The next two charts present the same analysis for more focused groups of communities—the 77 New Hampshire cities and towns with total assessed valuations greater than $300 million (Figure 24); and the 44 communities with more than $600 million in assessed valuation (Figure 25). The trend lines for these more limited samples have steeper slopes: a 5 percentage point increase in the nonresidential share of the tax base is correlated with a property tax rate increase of around $1.12 to $1.19.

It is important to stress that this analysis simply presents a *correlation* between two sets of data at a single point in time, and does not *predict* what might happen if a community grows its commercial and industrial tax base. Also, the individual data points are widely scattered above and below the trend line, showing that the correlation, while positive, is not a strong one. Each community is different, and many factors have impacts on the property tax rate, including the level of facilities and services that a particular town provides and whether it has been deferring expenditures or is in a period of investment and expansion. Nevertheless, the correlation raises an important question, because conventional wisdom would suggest that increasing the level of economic development in a community should broaden the base of taxpayers without generating demands for residential services—particularly public education—and thus result in lower property taxes for all taxpayers.

Figure 24: Nonresidential Valuation and 2003 Property Tax Rate for New Hampshire Communities With Total Assessed Valuation Greater Than $300 Million

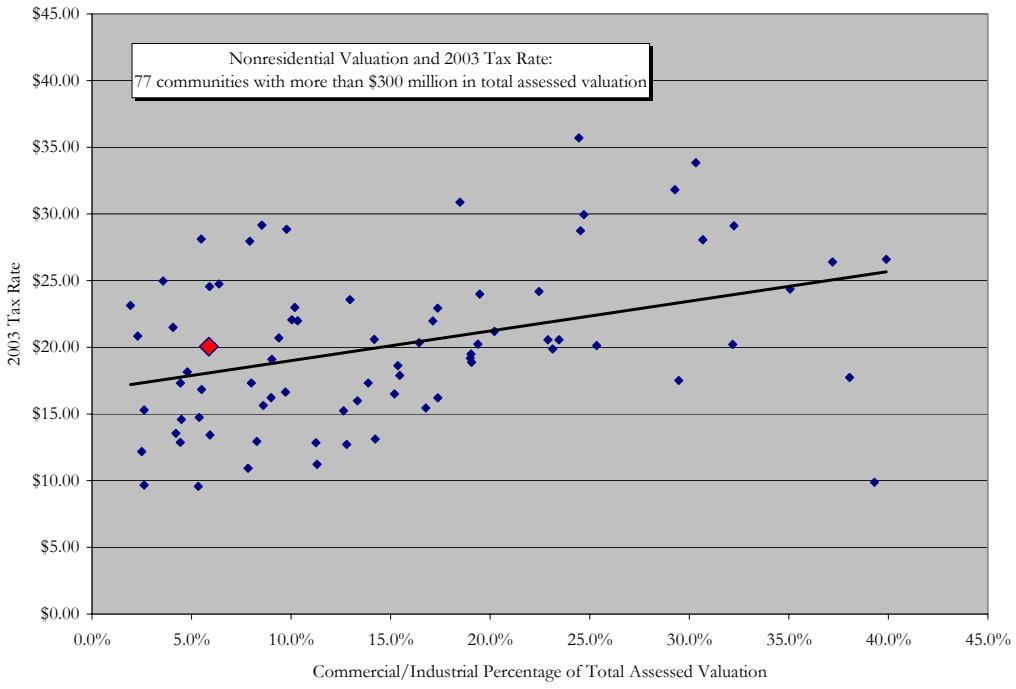
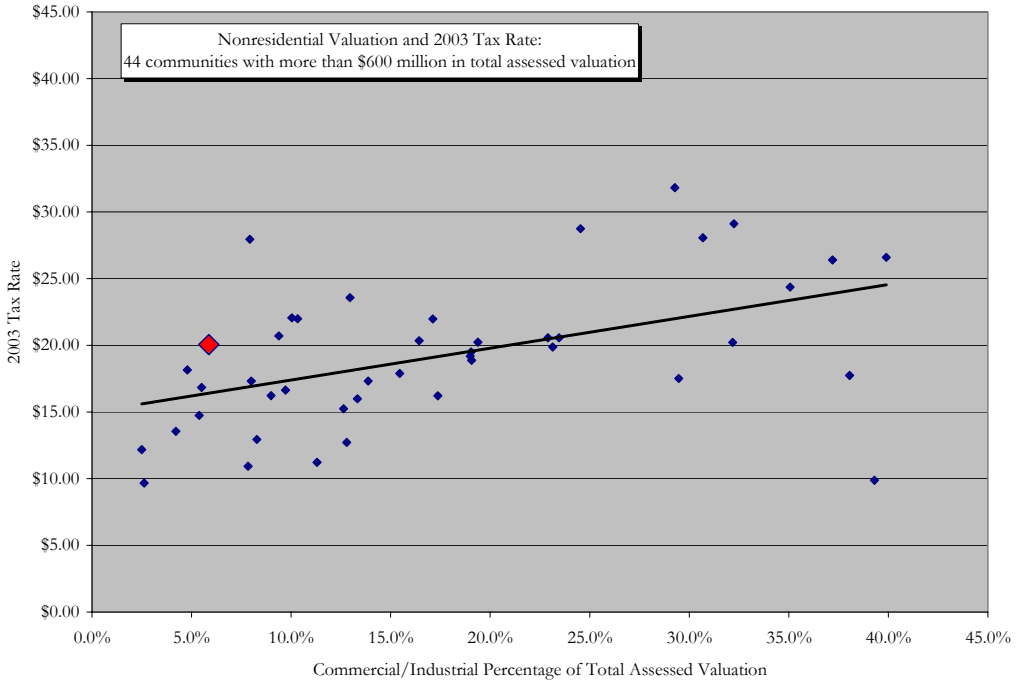


Figure 25: Nonresidential Valuation and 2003 Property Tax Rate for New Hampshire Communities With Total Assessed Valuation Greater Than $600 Million



One explanation for this apparent conflict with the conventional wisdom may have to do with the non-school services that any type of growth requires. In some situations economic development may push a community over a threshold level in one or more service areas—more police officers may be needed to manage increasing traffic; the highway department may have greater demands as new roads are constructed, existing ones widened, and intersections require traffic signals; and so on.

In other cases, the community may already need to increase spending on facilities or services as a result of recent growth, deferred expenditures, or other reasons. In such cases, broadening the tax base can help pay for these costs. Windham is in this situation, facing significant increases in capital and operating expenditures for essential municipal services:

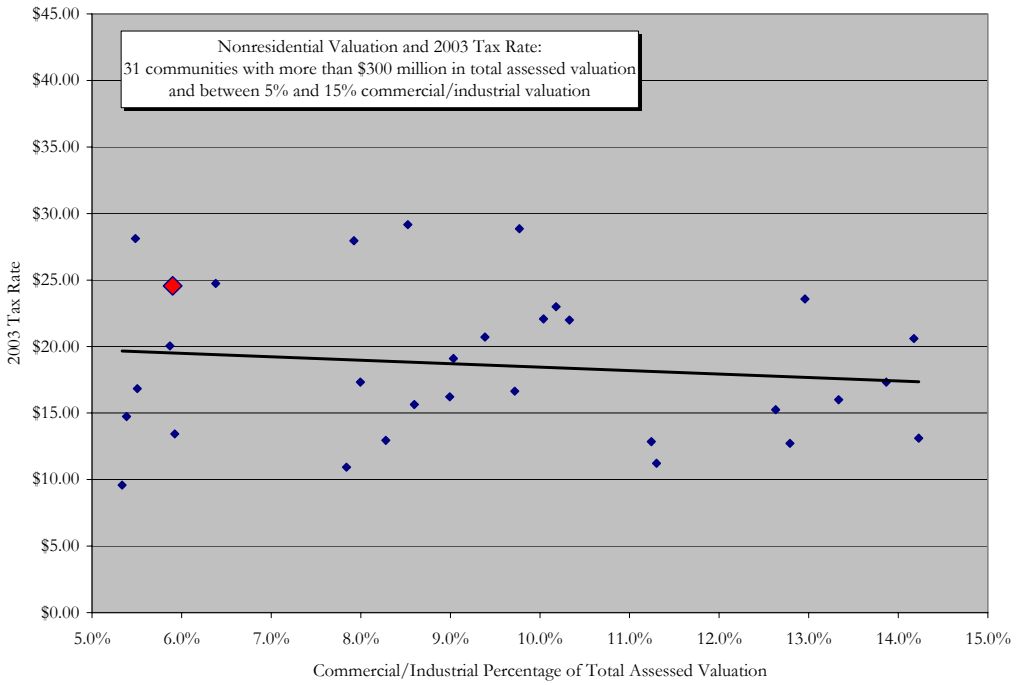
- The construction of a new high school represents significant capital and operating expenses regardless of the amount and type of future growth, so expanding the commercial tax base will ease the burden on current residential property owners.
- Recent and ongoing residential growth to the east of Interstate 93 is creating the need for a new fire station in that area, which will impose both capital and operating costs.

- While the construction of a new elementary school will be largely financed through impact fees rather than property taxes, it too will have an impact on operating expenditures and thereby on the tax rate.

In all three cases, the town will incur budget demands whether or not new economic development occurs, and so economic development will certainly help to pay these costs.

In order to focus in closely on what might be considered Windham's peer communities in terms of size and tax base diversification, Figure 26 presents the relationship between nonresidential property valuation and property tax rates for the 31 communities that have more than $300 million in total assessed valuation *and* have nonresidential valuation equal to between 5 and 15 percent of total assessed valuation. This sample is thus a subset of the sample in Figure 24, further controlled in terms of the tax base mix. The reasoning behind this selection is that communities with a small commercial tax base might be in the best position to benefit from a modest broadening of their tax bases without incurring significant additional service demands. In fact, the trend line for these 31 data points does show a slight negative correlation: a five percentage point increase in the nonresidential valuation correlates with a $1.30 decline in the tax rate.

Figure 26: Nonresidential Valuation and 2003 Property Tax Rate for New Hampshire Communities With Total Assessed Valuation Greater Than $300 Million and Commercial/Industrial Valuation Between 5% and 15% of Total Valuation



Current Economic Development Policies

Windham's economic development policies are expressed in the town's zoning ordinance—specifically, in the locations designated for business and industrial uses and the intensity regulations that apply within those areas. The town has seven zoning districts that support economic development:

- Commercial A and B (1.9 percent of the town's area):
- Gateway Commercial (0.6 percent):
- Village Center (0.9 percent):
- Neighborhood Business (2.1 percent):
- Limited Industrial district (1.8 percent):
- Professional, Business, & Technology (3.5 percent)

The purposes and regulations for each of these districts are described in the Land Use section (see pages 24-26). In addition, the Route 28 Access Management Overlay District applies uniform access management and screening regulations in the various districts along this important highway corridor.

Based on the existing zoning pattern, the town's land use policies can briefly be summarized as follows:

- ***Office and light industrial*** development is encouraged close to Exit 3 of Interstate 93 and in specified areas along Route 28. Highway access is an important consideration for these types of uses.

- ***Industrial*** development is also encouraged in two principal locations—the north side of Route 111 around Ledge Road and Lexington Road, and the Industrial Drive area—as well as a small area on Lowell Road south of Cobbetts Road.

- ***Retail*** development is encouraged along Route 28 close to the Salem town line and in scattered locations further north; and along Route 111 between Route 28 and Interstate 93 and between the Wall Street area and the town center.

- The area surrounding the municipal facilities (around the intersection of Indian Rock Road, North Lowell Street, and Fellows Road) is designated for ***compact, mixed-use development***, including retail, offices, and residences.

- Small-scale ***neighborhood business*** development is encouraged at a few key crossroads: in West Windham, in the Depot area in the northern part of town, and on Lowell Road at Cobbetts Road.

Land Available for Economic Development

According to the Windham Assessors database, the Town currently has about 278 acres of vacant, developable or potentially developable commercial land and 335 acres of vacant, developable or potentially developable industrial land. At the development intensities currently prevailing in the town, and assuming that environmental constraints are typical in comparison to existing developed sites, this available land represents the capacity for approximately 1 million square feet of commercial space and about 800,000 square feet of industrial space.

In addition to development of vacant land, economic growth can also occur through more intensive use of parcels that are currently developed. The amount of potential redevelopment is not known; however, the average existing floor area ratios (gross building s.f./land area s.f.) in Windham are quite low (up to 0.09 for retail and office uses, and up to 0.06 for industrial uses), suggesting the possibility for significant growth.

Economic Development Challenges

Windham has a number of assets for economic development, including favorable land use policies, available appropriately-zoned land, and good access to the regional highway system. However, the town also has some challenges that it must overcome in order to make the best use of these assets.

Loss of commercial land base

The widening and realignment of Interstate 93 will have significant impacts on Windham's commercial land base and on a number of Windham businesses. Fourteen parcels on Routes 111 and 111A will be acquired for the project, and several other commercial properties will be affected by the loss of direct access to through traffic as a result of the relocation of Route 111.

The Interstate 93 project takings will include several existing businesses worth an estimated $8 million (2002 values)[23] or approximately 7 percent of the town's commercial and industrial valuation. Although some of these businesses may be reestablished in other locations within Windham, this will require a concerted effort on the part of state and local agencies and the private businesses.

Access to Development Sites

Windham's Professional, Business & Technology districts are located close to the Interstate highway, yet access to sites in these districts is not direct. On the west side of Interstate 93, the planned relocation of Route 111 to the north as a controlled access

[23] *Final Environmental Impact Statement, Interstate 93 Improvements, Salem to Manchester*, Letter from Windham Selectmen, December 6, 2002 (FEIS Volume 3, Appendix I, p. L-2).

highway will complicate access to sites in the Wall Street area. The New Hampshire Department of Transportation has proposed "to grant a single shared access point to the properties north of relocated NH 111",[24] but these parcels will not have access to Wall Street where a new traffic signal will be installed. The town will need to work with landowners in this area to create a workable plan for coordinated access and circulation for these properties.

Several additional businesses and parcels on Route 111 between Wall Street and Interstate 93 will retain access to the portion of existing Route 111 that will become a local road. Although these parcels will not be taken as part of the project, they will lose visibility and direct access to passing traffic as a result of the highway relocation.

To the east of Interstate 93, the Department of Transportation is planning construction of the Route 111 bypass, which will extend the controlled access highway across Route 28 and into Salem. By widening Route 111 and moving it to the north, this project should improve accessibility to the business districts along Route 28, including the PBT district north of Roulston Road, as well as the Limited Industrial district at Industrial Drive.

Route 28 Corridor

Route 28 faces a situation common to many older arterials that parallel newer limited-access highways. Through traffic that used to use this road and support economic pass-by economic activity now bypasses Route 28. As a result, the roadway can no longer support businesses that depend primarily on pass-by traffic.

However, demand for business uses along Route 28 will be enhanced by continuing residential development east of Interstate 93, as well as by the future construction of the Route 111 bypass. A review of the zoning along this corridor should take into account these factors.

Public Infrastructure

The town does not currently have public infrastructure to support large commercial developments, and there is a concern that commercial and industrial development may be hampered by the lack of public water and sewer. As noted earlier, commercial and industrial development intensities in Windham are low, and development potential is limited by the need to protect wetlands, surface water, and groundwater resources. Provision of public sewers might be considered in specific locations as a way to encourage higher density development, but such strategies must also take into account residents' concerns about undermining the town's soil-based lot size requirements and thereby opening the door to more rapid residential growth.

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[24] *Final Environmental Impact Statement, Interstate 93 Improvements, Salem to Manchester*, Report of the Commissioner (FEIS Volume 3, Appendix I), p. 21.

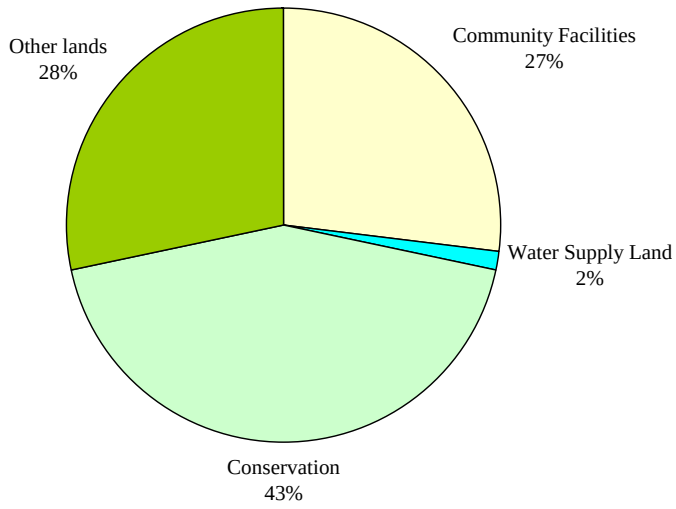
Community Facilities

Perhaps more than any other area, population growth directly and often proportionally impacts the demand for community facilities. Schools, staffing levels and space, recreational fields, water supply, emergency response facilities, etc. all need to receive thorough attention as the Town looks towards its long-range goals. The Windham Planning Board is familiar with these issues, as it prepares a Capital Improvements Program (CIP) each year by the Board of Selectmen as they in turn prepare the Town's budget for consideration at Town Meeting. Further detailed in the following paragraphs, any request of $50,000 or more must be made to the CIP Sub-Committee. As a result, the CIP is a powerful planning tool that stays abreast of near and long - range needs that may have land use implications. By comparison, the Master Plan should chronicle important items featured in the most recent CIP, but generally has a longer-term horizon for its analysis.

Town-owned Property

According to the Town's assessing records, the Town of Windham owns approximately 1,241 acres within its bounds, which amounts to approximately 7.6% of its total assessed land area. This property is broken roughly into four categories of use: community facilities (including schools, recreational parks, and cemeteries), conservation land, water supply land, and miscellaneous land (tax title, gifts, purchases).

Figure 27: Town-owned Property



Source: Windham Assessing Database, 2004

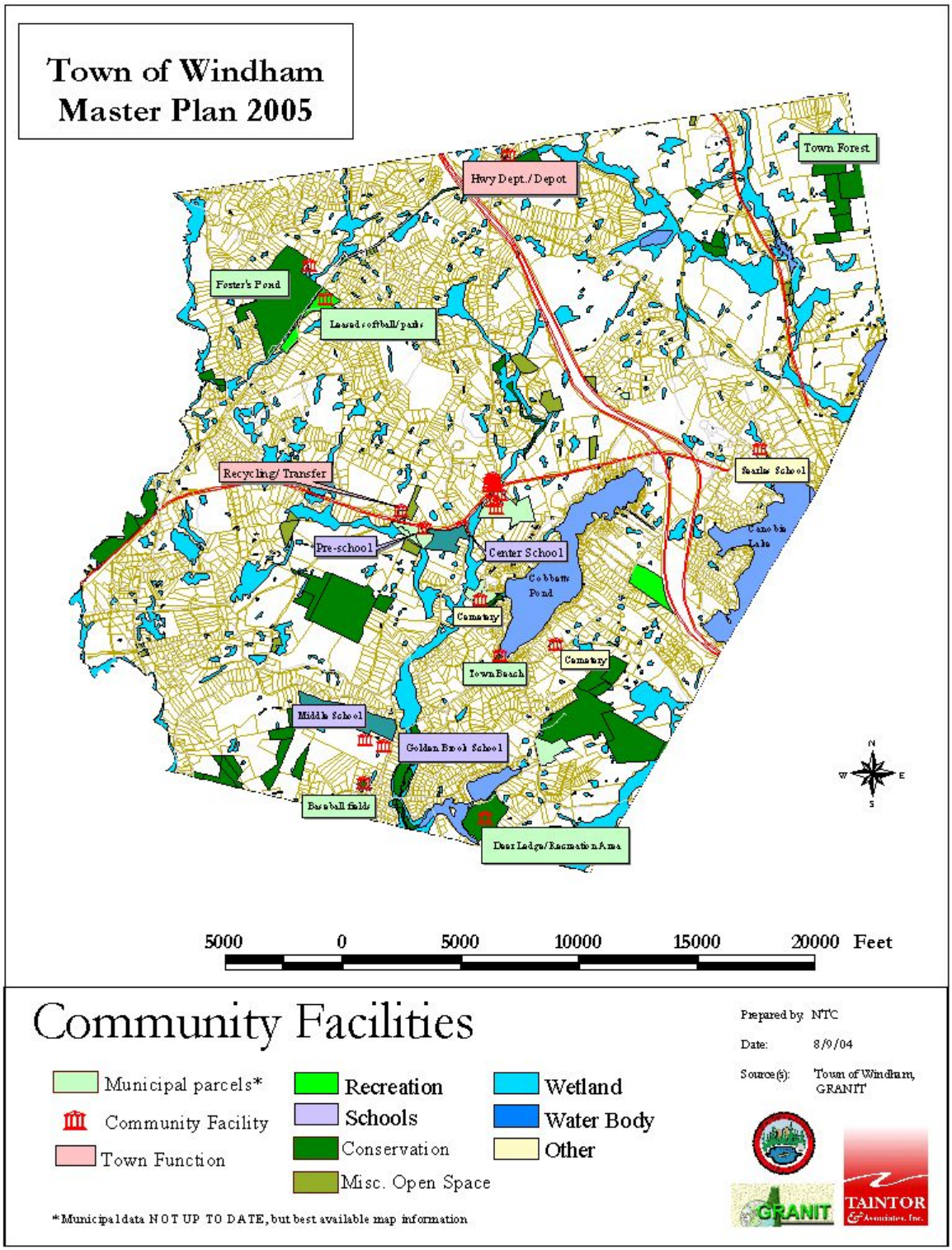
The buildings and land used to serve the public are as follows:

Table 24: Town-owned Property

Map	Block	Lot	Street #	Street Name	Land (acres)	Current Use
11	C	1300	4	No Lowell Rd	1.56	Bartley House
7	A	501		Mockingbird Hill Rd	0.01	Cemetery
21	U	100	0	Range Rd	6.30	Cemetery
21	W	6	0	Cobbetts Pond Rd	8.15	Cemetery
25	R	300	39	Marblehead Rd	22.00	Disposal Site
1	C	2500		Nashua Rd	163.50	Nashua Road Complex
3	A	955		Depot Rd	0.34	Highway Department
3	B	998	8	Depot Rd	0.30	Highway Department
20	D	900	21	Haverhill Rd	0.92	Pre-School
11	A	201	34	Ledge Rd	3.15	Recycling/Transfer Station
20	D	800	2	Lowell Rd	26.00	School
18	L	525	35	Range Rd	4.70	Searles Building
11	C	1200	2	No Lowell Rd	0.57	Senior Center
22	R	900	111	Range Rd	36.19	Griffin Park
24	F	5205	3	Meadow Rd	2.94	Sports Field
21	H	1A	45	Cobbetts Pond Rd	0.97	Town Beach
16	L	100		Fellows Rd	52.30	Town Complex (Library, Police, Fire)
11	A	590	3	No Lowell Rd	3.00	Town Complex (Town Hall, Planning Dept., Armstrong Memorial Building (Cable TV, Town Museum))

Source: Windham Assessing Database & 2003 Town Report

Figure 28: Windham's Community Facilities



Town Hall Complex

This cluster of four buildings consists of the Administrative Services Department (Bartley House), Town Hall, the Planning & Development Department and Maintenance Department (old Fire Station), and the Armstrong Building which houses the Town Museum and the Cable TV station. These structures date to 1856, 1798, 1940s, and 1899 respectively, and are in the Historic District. Each has undergone substantial renovation in recent years:

- The Bartley House was recently renovated to enable the move of the Town Administrator's office, the Finance Director, the Welfare office, and the Selectmen's secretary office from Town Hall, thereby freeing up much-needed space there. Bartley House is scheduled to undergo a second phase of renovation work of about $100,000, which will involve replacement windows, removal of vinyl siding and repair of clapboards, and finishing its 2nd floor for office space. According to the 2004 CIP Committee, "the project would…mitigate the need for a new Town Hall complex."

- The Armstrong Building interior has been restored, and now hosts the Town Museum, in addition to the Cable TV studio.

- With the move of several offices to Bartley House, space in Town Hall has been re-fitted to support an office for the Cemetery Trustees and Supervisor of the Checklist, and a new climate controlled vault has been constructed to properly store Town records.

The previous Master Plan recommended the Town explore the feasibility of constructing a new Town Hall on Fellows Road due to the fact that the present facility lacks sufficient office, meeting, and storage spaces to best serve the public. With continued growth in population, this condition is likely to be exacerbated, as new staff may be required to accommodate increased service demands. In addition, the present configuration that requires town administration to be located in three separate buildings is inconvenient for the public, and detracts from easy communication and teamwork among Town officials. Recent improvements cited above, however, have improved conditions to make this a longer-term, rather than a short-term issue.

Police Station

The Police Station is a new facility, constructed in 1998. It is expected to fulfill the Town's needs through the year 2017. The Police would, however, seek to have an office space near the Route 28 area, should a facility for the Fire Department be constructed there.

Fire Station

Built in 2000, the 16,000 s.f. Fire Station on Fellows Road is projected to meet the needs of the community through the year 2020. Although it is difficult to achieve acceptable response times to various parts of town including but not limited to the Route 28/Goodhue Road/Longmeadow area, it is anticipated that the Windham portion of the Route 111 by-pass project will assist in reducing response times to this area.

Conversely, during the Interstate 93 highway project construction period, accidents are projected to increase by over 400% on Interstate 93, thereby increasing the Department's call volume by 11% and adding more congestion to local streets with travelers seeking alternate routes. However, the Fire Department is part of a 5-town Highway Incident Management Joint Task Force, which cooperates with the Federal Highway Administration (FWHA) and State and local Police to plan for appropriate emergency management during construction.

Highway Department

The Highway Department operates out of the old Fire Station (downstairs), and three historic structures located at Windham Depot. Located on two parcels totaling 0.69 acres, these properties were adopted as a historic district in 2003, and are in need of attention in order to preserve their historical significance. The Department is challenged to meet the growing needs of Windham's roadways, but this issue is more one of appropriate staffing and equipment needs, rather than one rooted in its operational facilities. Critical to its functions, however, is its capacity for salt storage, which partially takes place on State-owned land near the rail trail.

Also essential for the efficient operation of the Highway Department is its central location. Should the Town decide the Depot buildings are better used in a manner that would celebrate their historical significance[25], relocation of the Highway Department would be necessary. Careful consideration of alternative sites should focus on those which are centrally-located and that can provide for salt storage while taking care not to negatively impact the surrounding environment.

Funding for land acquisition, a maintenance facility, and a salt shed has been requested through the Town's Capital Improvement Program. One route to reducing the overall cost is to eliminate the acquisition cost by using Town-owned land for this function, such as behind the Fire Station, next to the

[25] For more discussion of this topic, see the cultural resources section.

Transfer Station, or along Routes 111/28. The Committee recognizes and noted that the Town must monitor storm water requirements that may affect this project's relative urgency.

Recycling/Transfer Station

The Recycling/Transfer Department has submitted various facility and equipment upgrades via the CIP process. This is symptomatic of the Department's effort to properly manage the volume of materials and people that flow to and from the site, located along Route 111. In 2003, the station saw a 7% increase in solid waste, and a 46% increase in demolition waste.[26]

Although the facility was constructed in 1993, it is in need of renovation to keep pace with the service demands placed upon it by the Town's growing population. Facility improvements are planned for and implemented with appropriations through the CIP process. There are approximately 13 acres of Town-owned land adjacent to the Transfer Station site, providing ample opportunity for expansion. The idea of a combined transfer/recycling/and highway/maintenance facility has been part of the public discussion of addressing needs of both departments, but the land at this location purportedly has a restriction that restricts a salt shed from being constructed on the site.

Senior Center

Located across from Town Hall, Windham's Senior Center offers social activities, dancing, exercise, and meals to its clientele. Last year a $100,000 expansion project added a new room, heating system, and some replacement windows to the facility. The Windham Seniors lease this space from the Town at a cost of $1/year. This lease extends to 2006, and is renewable.

The decade from 1990-2000 saw a 30% increase in the number of elderly citizens in Town. Coupled with a 77% jump in citizens aged 45-64 years, Windham must closely monitor and plan for an aging population. While the Senior Center appears to meet current needs, it seems certain that the future will require continued investment to address growing demands. The 2nd floor of the structure at present is not used and could be fitted to serve future needs, but would have to be made universally accessible.

A 1995 Town Center Master Plan laid out a future vision for Town facilities to flank Fellows Road, including a new community center that would house senior citizen programs. This plan can be a resource for prospective expansion efforts.

[26] Source: 2003 Town Report

Nesmith Public Library

Opened in September 1997, this relatively new facility has been a great success, and is a well used resource in the Town. When compared to the old library's usage, circulation has nearly doubled, and the number of patrons has increased by 9% from 2002 to 2003. Internet uses during the same period increased 58%, and other functions such as multipurpose room events, programs, and overall number of visits have all risen.

The Library Trustees have hired Marjorie Judd to perform a Needs Assessment, in light of increasing demands. This report will be available in 2004. According to the Library Director, additional book stacks, quiet study areas, and meeting rooms are observed needs. Should expansion space reach the point of being a critical need, the library site appears able to accommodate additional building space at this location.

Searles Building

Commissioned by multimillionaire Edward Searles, this 1909 school and chapel structure was built and donated to the Town in exchange for a small parcel of land that was the site of the Town's school house #1. The Town uses the building for public functions, and it can be rented out for use by private parties as well. Rules which govern the use of the building are itemized in the Town Ordinances, Sections 3:00:04:97 and 3:00:04:5:97. Maximum capacity of the structure is 250 people.

Recent improvements have been made to the building, and some additional parking has been added to facilitate use of this income-producing facility.

Amphitheatre

To be located in the Village Center district, this proposed facility will provide community gathering and performance space for the community band, outdoor plays, and other functions. This project was part of the 1995 Town Center Master Plan. Funding has been requested through the CIP process. In addition, the Committee suggested the Town pursue private fundraising, as the amphitheatre may be a particularly attractive gift giving opportunity.

Schools

Windham operates three schools: the Golden Brook School (c. 1970) for grades T-2, the Center School (orig. c. 1936) for grades 3-5, and the Middle School (1986) for grades 6-8. At present, high school aged students attend Salem High School, under an Area agreement set to expire in 2008. In addition, the School Administrative Unit #28 operates out of 19 Haverhill Road, a 4,000 s.f. structure built in 1995 which houses offices, a conference room, a training room, and storage space.

The pending expiration of the Town's AREA agreement with Salem requires Windham to identify an alternative arrangement for the education of its high school-aged children. As of September 2004, the possibility of forming a cooperative district with Pelham is no longer an option, having been voted down by Pelham residents. As a result, Windham is left to construct its own high school facility. This project will represent the largest single capital investment the Town has ever made, estimated to cost close to $40 million.

In addition, it appears likely that growth will cause a need for an additional elementary school facility within the next 10 years. Master Plan discussions also revealed a desire for the Town to provide kindergarten classes, which are not presently offered.

Four requests featured in the Capital Improvement Program illustrate the extent of anticipated funding needed to support facility maintenance and construction. Careful financial planning is required to moderate the impact these expenditures will have on individual taxpayers. Pursuant to Section 715 of Windham's Zoning Ordinance, the Planning Board exacts a school impact fee of $3,400/detached single family housing unit. This sum, however, is calculated using elementary school statistics only, as Windham has not previously had a high school facility.

Utilities

With the exception of town-owned community wells that serve Town facilities, all utilities in Windham are fee-based and provided by private or non-Town public services. The subject is included in the Town's Master Plan to a) ensure the Town is properly managing the location and appearance of private utilities through its land use regulations; b) determine if the Town needs to advocate for improved/new services to be provided by others; and c) consider whether future needs will warrant the Town's consideration of providing additional services itself.

Since the 2000 Master Plan, there have been a number of changes with regard to the status of some of these facilities whereas there has been little or no change to others. ***As a result, the inventory that follows is a combination of information taken directly from the 2000 Master Plan, and updated information where appropriate.***

Electricity

Two companies provide electric service to Windham: Granite State Electric, based in Lebanon, NH and Public Service of NH (PSNH), a subsidiary of NEES, based in Berlin, CT. PSNH provides service to the majority of users in Windham, with over 3,500 households and numerous businesses. It supplies power from a 345KV substation in Hudson which has excess capacity to supply electric power to Windham as well as surrounding communities. This high level of voltage is stepped down to supply the level of voltage needed to service the town's residential and commercial/industrial users. This service also has the capability to supply three-phase power as required. Granite State provides service to households near Salem along Range Road to Searles School east of the Interstate 93 interchange and off Mammoth Road adjacent to the Pelham border.

As of 1979, subdivisions have been required to have underground utilities, both for aesthetics and to minimize service disruption.

New Hampshire has among the highest electric rates in the country. To date, deregulation has not provided the expected opportunities for increased competition and cost reduction. Independent power producers continue to seek opportunities to generate electricity in the region by natural gas and other means.

Based on current population projections, Windham will continue to have significant growth and will continue to require additional electric capacity. Based on communication with personnel at Granite State Electric and PSNH, both companies are committed to meeting this additional demand. PSNH will continue to have the capacity to expand its line system to accommodate commercial or industrial demand including the option of three-phase power as needed.

Gas

Windham does not have natural gas service. El Paso Energy Corporation (Houston, TX) has a major pipeline traversing the town; however, there are no plans for this facility to provide service to Windham residents or businesses.

Propane (bottled gas) is used by many households and businesses in town for cooking, heating, etc. There are several private businesses in the area that compete to supply propane to these residents.

Telephone

Local telephone service is provided by Verizon. Long distance service is provided by various carriers who compete to provide this service to residents. Windham does not have a unique telephone exchange, but shares exchange prefixes with adjacent towns. However, all calls within town are billed as local, without a long distance charge.

As a result of greatly expanded Internet use and the proliferation of business conducted from homes, there is an increasing demand for new lines and bandwidth. To meet this increasing demand, Verizon has recently been making a substantial investment in fiber optic cables and hubs. Both analog and digital services are provided. Integrated Services Digital Network (ISDN) service is available, as is Asymmetrical Digital Subscriber Line (ADSL). Both of these services allow for digital data access.

Older neighborhoods and business areas are serviced by above ground utilities. Any new commercial or residential subdivision is served by underground wires.

Internet access is becoming increasingly important to Windham residents. In the 2000 Master Plan Survey, over 60% of the households surveyed already have Internet access. Telecommuting is a reality for a number of residents, as are home-based businesses. These trends are expected to continue. Verizon has upgraded all links and hub points to optical fiber.

Telephone usage is increasing significantly in southern New Hampshire as many households now have multiple lines for voice, fax, and Internet access. New Hampshire is planning for a new area code that should meet this increased need.

Communications

The topography of Windham, with many hills and valleys, has made wireless communication difficult. However, police and fire communications use a "voter system" to provide 95% coverage with portable two-way radios. The primary transmitter/receiver is located on a private tower on Jenny's Hill, with secondary antennas at Golden Brook School and on an industrial building just over the town line in Pelham.

All Windham town departments except the transfer station are connected to the Internet system through a T-1 telephone line connection at the Town Library. In

addition, the town has installed a Private Branch Exchange (PBX) system for the Police Department, Town Hall, Fire Department, Armstrong Building, and Planning/Development Department. The system is connected underground by fiber optic cable to provide for expanded communication requirements. This single system allows for efficiency in communication and cost by using shared outgoing lines. It is also not subject to interference from electrical storms. At present there is one remaining copper line connection that will be replaced by the end of 2004.

The combination of private and public communication systems including from Internet services to public access television, provides the core of a strong communication system in Windham. Although there are some upgrades that would enhance the internal town department communication, the town has in place staff and infrastructure to provide quality communication services. The town will need to continue to upgrade the overall communication system as newer technologies come into the market place. For example, the local cable station WCTV intends to upgrade to a digital system from its current analog system over the next few years.

In addition, the town Information Technology (IT) Department has begun a limited wireless technology system in Town Hall and will continue to expand this technology to other town buildings within its annual budget requirements as computer and communication equipment is upgraded. This technology will allow high speed communication without the requirement for hardwire retrofitting of town buildings and facilities, which may be problematic in some instances.

Communications Towers

Windham has two communication towers. One is located on Jenny's Hill east of Interstate 93 and is owned by Motorola. This tower has cellular, paging, TV relay link and business repeater antennas. Sprint, AT&T, Cell One, and the Town of Windham all lease space on the tower located on Jenny's Hill. The other tower is located in the area between Route 111 and Hardwood Road and consists of a monopole disguised as a pine tree.

Currently, communications towers are restricted in Section 701.3 of the Windham Zoning Regulations. Communications towers are limited to commercial property.

Cable

In 1998, Windham signed a 10-year non-exclusive cable franchise with Harron Communications (now owned by Adelphia Communications). Harron has provided cable service to Windham since 1984, and serves the majority of Windham households. A similar 10-year contract was also signed with MediaOne (now owned by AT&T). AT&T currently serves Windham residents and businesses along and adjacent to Route 28 between Salem and Derry. Both business and residential high speed cable internet service is available.

Windham Community Television (WCTV) is the public access channel for the Town of Windham with 4200 subscribers. Founded in 1987 in a small trailer, the station has

been located since 1998 next to Town Hall in the Armstrong building that includes a 500 square foot studio. The station also has a satellite studio in the town's planning and development building. This studio is used for all government access programming, since all town boards meet in this building. The studio is well-equipped with two digital studio cameras and a new production switcher in the control room. The station also has mini-field cameras and other audio-video equipment, all of which are available to the community of Windham. WCTV also has mobile robotic cameras in Town Hall, which are used for large meetings that may need to meet in this space. WCTV has one full-time employee and numerous volunteers who share video production activities.

WCTV operates three channels. Channel 20 is the government access channel and provides programming of all community board meetings including the Board of Selectmen, Planning Board, Zoning Board of Appeals, and Conservation Commission. Channel 21 is the public access channel, which produces major town events such as Little League Opening Day and the annual Memorial Day Parade and Ceremonies. WCTV 21 also has volunteer-produced public affair shows such as "Focus on the Issues" which deals with topics that directly affect the Windham community, such as the need for new high school for Windham. WCTV21 also produces informational and entertainment shows that cover a wide range of topics including cooking, gardening, books, healthy life styles, music performance, and dog training. Channel 22 is the educational channel. However, WCTV is responsible for programming only Channel 20 and 21. Channel 22's programming originates from Salem High School.

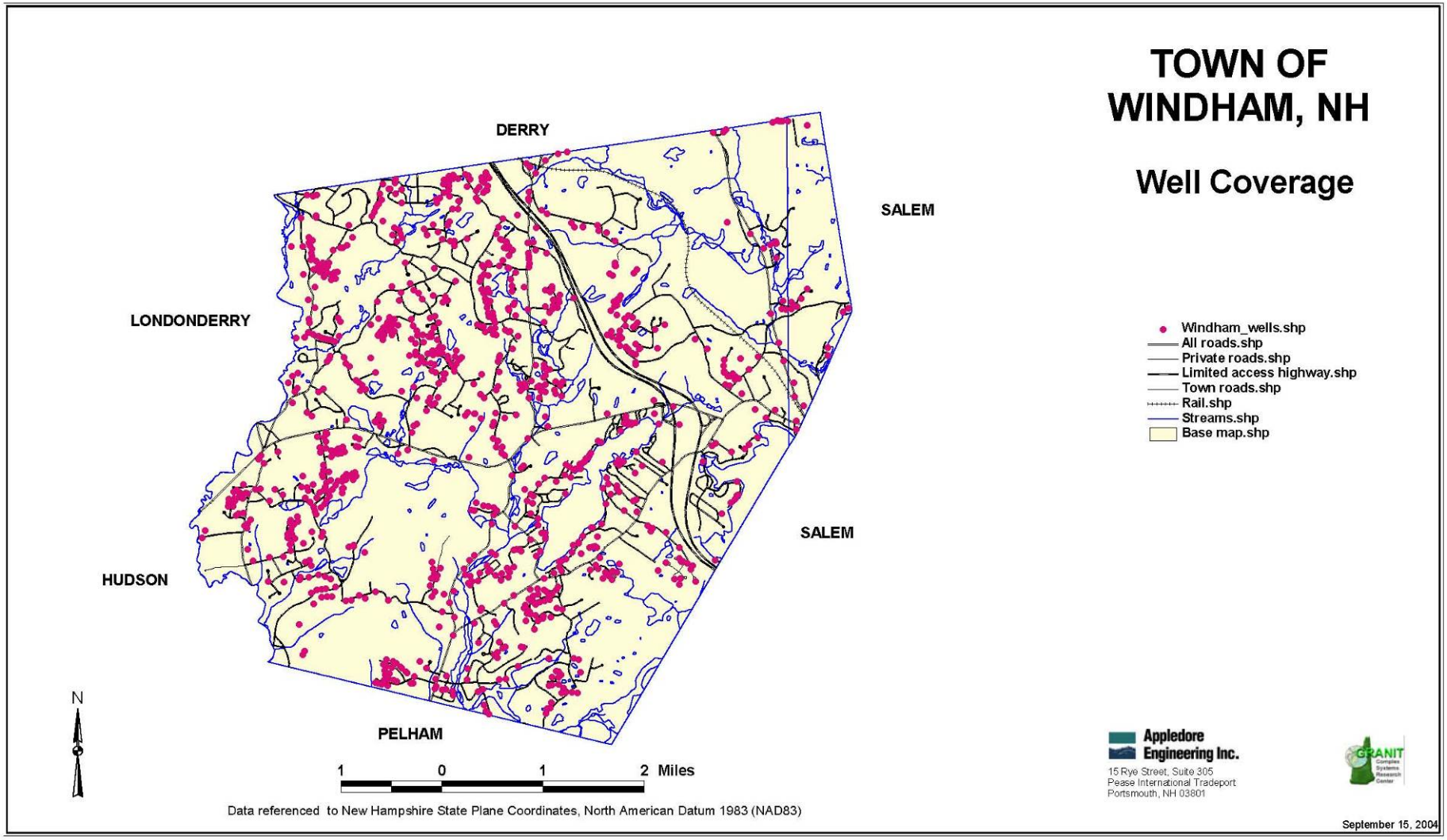
WCTV provides free training to any citizen of Windham and to any non-profit organizations located in Windham. Training includes introduction to studio production, field shooting, studio lighting, field lighting, non-linear editing, and studio shows direction.

Water

The Town of Windham does not provide municipal water. The majority of Windham's households and commercial/industrial establishments have private wells to provide water. These wells draw water from shallow wells in sand/gravel or bedrock. In addition, some homes receive water through a private provider, Pennichuck Water Works. Other homes draw water directly from lakes and ponds.

The New Hampshire Water Well Board has maintained an inventory of all wells, which have been drilled in the state since 1984. The most current records of the Board indicate that 1811 wells have been drilled since the Board began keeping records. The Well Coverage Map illustrates the location of these wells, which tend to be concentrated west of the Interstate 93 corridor.

Figure 29: Well Coverage Map



The Water Supply Engineering Bureau is also responsible for maintaining an inventory of public water supplies. The bureau divides these public wells into three categories based on the type of use. Community Water Supplies have a minimum of ten connections and are used year round. These include single family subdivisions, manufactured housing parks, and public buildings. Non-Transient Water Supplies serve at least 25 of the same people for six months or more during the year. These types of wells service facilities such as schools, industrial operations, or businesses. Transient Well Supplies serve 25 people per day for at least 60 days per year but not necessarily the same people. These include restaurants, motels, golf courses, and campgrounds. Based on the Bureau's most recent records there are 46 public wells. Of these, 13 are community wells, 15 are non-transient, and 18 are transient.

Table 25: Community Wells

	System Name	Population Served	Service Connections	Company Name
Community Wells				
1	Braemar Woods Condos	60	24	Braemar Woods Condo Assoc
2	Castle Reach	95	38	Pennichuck Water Works Inc
3	Fletcher Corner Estates	110	44	Mesiti Development
4	Hadleigh Woods	62	41	H and B Homes Corp
5	Lamplighter Village	55	22	Dunlap Woods Development
6	Mcauley Commons	36	24	Sisters of Mercy of The Americas
7	Peu /Golden Brook	400	124	Pennichuck Water Works Inc
8	Peu /Hardwood Hts Birch Hill	250	40	Pennichuck Water Works Inc
9	Peu/ W And E	470	188	Pennichuck Water Works Inc
10	Sisters Of Mercy	85	1	Sisters of Mercy of The Americas
11	Villages Of Windham	80	32	Villages of Windham Condo Assoc
12	Windham Terrace	110	1	Terrace Communities Windham
13	Wynridge Condos	58	23	Wynridge Condo Assoc
	Subtotal	***1871***	***602***	
Non- Transient Community Wells				
1	Cobbett Professional Park	49	2	Cobbett Professional Park
2	Colley McCoy Co	50	3	Colley McCoy Management Group
3	Early Years Kindergarten	53	1	Early Years Kindergarten
4	Golden Brook School	480	1	SAU 28
5	Gym Ken	232	1	Perception Property Inc
6	Kahuna	23	1	Kahuna Realty Llc

	System Name	Population Served	Service Connections	Company Name
7	Kiddie Academy	138	1	Bedrock Child Care Assoc LLC
8	Semiconductor Circuits Inc	60	1	Haynes Management Inc
9	Strafford Technology	60	1	Lot 11 C 700 LLC
10	Taylors Country Day Care	60	1	
11	The Commons At Windham	25	14	The Commons At Windham Inc
12	Verizon	40	1	
13	Windham Center School	657	1	SAU 28
14	Windham Middle School	605	1	SAU 28
15	Windham Village Green	150	17	Windham Holding
	Subtotal	***2682***	***47***	
Transient Community Wells				
1	Castleton Banquet Facilities	400		Castleton Ltd
2	Go Go Mart	100		Bradford Oil Co Inc
3	Manor Motel/East	73		
4	Nesmith Library	25		Town Of Windham
5	Park Place Lanes	30		Sandys Bowling Lanes Inc
6	Plaza 93	1700		Skip Fern Trust V
7	Rocky Ridge Business Center	30		Rocky Ridge Business Center
8	Senior Citizens Center	25		Town Of Windham
9	St Matthew Parish	200		St Matthew Parish
10	Sunoco A Plus / 0013 0062	75		Sunoco Inc 130062
11	Taylors Bingo Hall	200		
12	Town Hall/ Planning/Dev/TV Stat	25		Town Of Windham
13	Waterhouse Country Store	1700		Waterhouse Country Store Inc
14	Windham Exxon Shop	60		Turnbridge Associates
15	Windham Gas & Mini Mart	550		Windham Gas And Mini Mart
16	Windham Golf Club	50		Bill Flynns Golf Course Mgt
17	Windham Plaza	200		Windham Plaza Trust
18	Yankee Trader	25		Turnbridge Associates
	Subtotal	***5,468***		
	Grand Totals	***10,021***	***649***	

Source: NH Water Supply Engineering Bureau

A commercial water company, Pennichuck Water Works owns and operates eight (8) community water systems in Windham and provides water to approximately 1100 homes. Pennichuck draws its water from wells in the area except in the areas of Carr Hill/Grandview and Hidden Valley, where it is received from the Manchester Water Works by way of the Town of Derry.

To protect its water resources, the town has established a number of rules and regulations. The Planning Board has adopted soil-based lot sizes in the zoning ordinance to ensure safe installation of septic systems to protect water resources. The Board of Health has also adopted regulations consistent with state groundwater well regulations that require a local permit (Board of Health Water Supply Regulations, revised March 11, 2003). Section 2.5 of these regulations requires that "All wells must be a minimum of 100 feet from all leaching fields," be 75 feet from lot lines, and have a minimum yield of 2.5 gallons per minute.

Further, the town protects the quality of surface water wetlands and recharge areas with the Wetland and Watershed Protection District (WWPD) and the Aquifer Protection District. Lot area requirements are doubled in aquifer protection areas. Additional discussion of these regulations is found in the Natural Resources Chapter.

In the past ten years, several households have experienced failing wells due to poor well construction and placement and to the increased use of ground water for lawn irrigation systems. Some areas of town have experienced contamination both by natural occurrence and by human activity. These are isolated cases and are typically handled by well reconstruction or water treatment systems. The town will need to continually assess the amount of contaminated and failing wells to determine whether or not expansion of private community water to these areas will be necessary.

Future water supply needs in Windham can generally be considered in three categories: 1) improving existing community supplies to service current customers; 2) expanding existing public supplies to serve additional areas of Windham; or 3) developing a new source of water either within the town or through an agreement with an adjacent community that has an existing public supply, such as Salem.

Expansion of the existing water system may be possible through Pennichuck Water Works which already has existing water franchises within the town for its eight (8) community systems. Pennichuck's Windham Estates (at West Shore Road) system does not have enough capacity to meet future needs and Pennichuck has opened up discussions with the Town of Salem to withdraw water from Canobie Lake.

The town has also requested that the state DOT include dry conduit(s) for water and other utilities at the reconstructed intersections associated with the Interstate 93 widening project, including the reconstructed Exit 3 interchange. Windham is also considering a similar request for intersections affected by the Route 111 by-pass project. Although there are no current plans to use such conduits, the town would like to have them available to avoid the necessity for tearing up the roadway if such utilities

are installed in the future. As part of the Route 111 by-pass project, the NH DOT has offered to construct a water line within the Route 28 right-of-way from Salem to service businesses along this roadway. This line could be extended to the undeveloped Professional, Business and Technology District.. The town has been reluctant to extend water lines into Windham along Route 28 because Windham would need to pay the additional cost of upgrading existing lines in Salem that would be necessary to meet the additional water supply needs of Windham.

A new source for a community or municipal water supply may also be a possibility. In the Natural Resources chapter of this plan several areas of stratified drift aquifers are identified as potential water sources. The most likely deposit for groundwater withdrawal is in the southwest portion of Windham along Range and Lowell Roads between Cobbetts and Simpsons Pond. The US Geological Survey has determined that these aquifers can produce between 2,000 and 4,000 gallons per day.

The town will need to determine a long-term approach as to how it can best service the residents of Windham with a supply of drinking water. This approach should be based on Windham's future growth, the likely growth areas in the community, the capacity and quality of the current public well system to provide additional development, the potential groundwater supply in Windham and the potential for external supplies.

Storm Water

As rain water runs off from surfaces such as lawns, roofs, roads and parking areas, it picks up pollutants (fertilizers, oil and gas residue, etc.) and eventually may transmit them to surface and ground water resources. As a result, storm water is one of the leading causes of water pollution. Storm water is regulated by the U.S. EPA under the Clean Water Act. As of March 2003, Windham and other New Hampshire Municipalities have been subject to new requirements dealing with storm water management under the Phase II program of the National Pollutant Discharge Elimination System (NPDES).

Municipal Separate Storm Sewer System General Permit

In May 1, 2003 EPA issued a General Permit for Small Municipal Separate Storm Sewer System owners and operators in urbanized areas that included a number of towns in southern New Hampshire, including Windham. Windham was required to apply for coverage under this General Permit to ensure it was in compliance with EPA's storm water regulations and guidelines. Windham had to prepare and submit a storm water program to the EPA that included the following six minimum control measures:

- Public education and outreach on storm water impacts.
- Public involvement/participation during program development.

- Illicit discharge detection and elimination.
- Construction site storm water runoff control.
- Post-construction storm water management in new development and redevelopment.
- Pollution prevention/good housekeeping for municipal operations.

A seventh control measure was added for Canobie Lake which was determined by the EPA to be an impaired water body, because of excess algal blooms. At present there has been informal contact between Salem's storm water management coordinator and Windham's health officer to address Canobie Lake water quality, but more formal interaction is called for as part of Windham's Phase 2 storm water plan, and groups such as the Canobie Lake Association will be involved as well.

Windham appointed a Storm Water Committee which prepared a Storm Water Management Plan and Program addressing each of the seven control measures through a set of Best Management Practices (BMPs). For example, the plan recommends a BMP that calls for identifying outfalls into Canobie Lake and establishing a sampling and monitoring program to determine the potential source of contamination that may be responsible for the algal blooms. Windham has received an approval from the EPA for its Storm Water Management Plan. As part of the NPDES Phase II program, Windham is also required to submit an annual report to the EPA summarizing progress toward implementing the BMPs in the management plan. The first report was submitted in May 2004 summarizing activities for 2003. That report indicated that Windham has made progress in implementing a number of BMPs including adopting amendments to its Subdivision and Site Plan Regulations and undertaking an extensive effort to document all storm water utility structures in the town including outfalls, man holes and catch basins. In addition, a group of six area communities (Salem, Windham, Plaistow, Kingston, Danville, and Hampstead) have formed a storm water management group to coordinate and collaborate on these issues.

Under the auspices of the Storm Water Committee the town will continue to implement and monitor its storm water program and make upgrades to the system as well as its outreach program to citizens as specific needs arise. In particular, the town will need to understand the nature of the algal bloom problem in Canobie Lake and establish a program to minimize the discharge of pollutants into that water body. The town will also need to monitor the storm water impacts from large residential, commercial, and industrial developments.

Sewer

The Town of Windham does not provide municipal sewer service. All sewage disposal is done by private septic systems (including shared systems) or holding tanks.

All systems are subject to approval by the Subsurface Systems Bureau of the New Hampshire Department of Environmental Services (NH DES) under RSA 485-A and its implementing regulations. The purpose of these regulations is to prevent pollution of all public or private water supplies whether underground or surface sources.

The town also regulates the placement of septic systems to protect its water resources. The Board of Health has promulgated regulations requiring local permits for septic systems that are consistent with and expand upon the regulations of the state (Board of Health Regulations Governing Sewage or Waste Disposal Systems). These regulations require that "no soil absorption system shall be located within 100 feet (100') of any drinking water supply", making the requirement consistent with the Board's regulation for placement of groundwater wells. There have been requests of the Board to waive this standard in cases where lakeshore property owners are attempting to convert second homes to year-round use. The requested variances are usually for reductions in the distances between proposed septic systems and existing groundwater wells. Recently, the Board has denied a request. As noted above, the Zoning Ordinance calls for the use of soil-based lot sizing with stringent spacing of septic systems so as to protect water resources and prevent environmental contamination.

All Great Ponds (ponds 10 acres or greater) including Cobbetts Pond and Canobie Lake may have homes with substandard septic systems that may be a potential threat to surface water quality. Although water quality levels in Canobie Lake have remained relatively static for the past several years, there is a documented problem of algal blooms. Contaminants such as phosphorous have increased in Cobbetts Pond. The town will need to monitor water body quality to determine proper strategies for sewage treatment including the option for community subsurface disposal away from the lakes and ponds.

As part of the Greater Lawrence Sewer District's permit with the EPA, Windham has been granted a sewer allocation of approximately 300,000 gallons per day. Even with the possibility of developers paying for the installation of sewer lines, there has been little interest to date by the Town of Windham to have a community sewer system that would discharge into the Lawrence treatment facility. This position may be attributable to the cost of entry by individual users as well as the concern that water withdrawn from the groundwater sources in Windham would be discharged outside the town boundary, thus eliminating a source of recharge to Windham's aquifers and groundwater supplies. Another concern is the potential impact on the Town's pattern of development.

The NH DES has approved a number of more innovative subsurface wastewater disposal systems that allow for reductions in the size of leach fields through the technologies that provide for biological as well as mechanical treatment of wastewater. These systems allow for more flexibility in designs for development and also provide opportunities for small-scale decentralized package treatment systems for more concentrated development. These systems may provide opportunities for the Town of

Windham to have more compact development in appropriate locations without having to implement more conventional waste water treatment technology. Some technologies can treat up to 1.0 million gallons per day. These systems may also provide discharge and infiltration of treated wastewater to Windham's aquifers.

Natural Resources & Open Space

Windham's water bodies, farmlands, forests, and open spaces distinguish it from other communities, and are among its most highly-valued attributes, contributing heavily to the high quality of life enjoyed by residents. According to a survey conducted for the 2000 Master Plan, over 75% of respondents thought the Town "should preserve open space in lieu of development," and an even greater number (over 85%) favored taking a proactive approach towards watershed and surface water protection. Recent visioning sessions confirmed that support for this conservation ethic remains strong, and may even be more important to the citizens now than it was back then, as the community evolves from its rural landscape to a more suburban layout.

Windham's natural resources are a critical consideration in establishing a proper approach for land management. Understanding natural resource values provides a rational basis for determining which areas of the Town are more appropriate for protection and open space and which areas are more suitable for development. The following is a description and analysis of Windham's natural resource base.

Topography and Geology

Windham lies within the Seaboard Lowland Section of the New England physiographic region, one of the subdivisions of the Appalachian Highlands. Typically existing in this region are low rolling hills that rise between one hundred (100) and three hundred (300) feet above river valleys.

Although Windham's topography generally reflects the underlying bedrock, some areas conform to deep surface deposits that formed during the period of glaciation between 10,000 and one million years ago during the Pleistocene Epoch. The glacier moved from the northwest to the southeast picking up soil, rock and other debris, which were later deposited as glacial drift when the ice sheet melted.

There are four major subdivisions of geologic deposits that influence Windham's topography. These are listed below in reverse order of deposition (starting with the uppermost and therefore youngest of the deposits):

- *River Alluvium and Swamp Deposits* occur in low, poorly drained areas of Windham and cover approximately 25% of the town's land area. These deposits typically contain high water tables and may have water seasonally ponded at the surface. The town's freshwater resources are usually associated with these deposits and are contained within the hydric soil group discussed below. These deposits tend to be

located in areas associated with the brooks and streams of Windham such as Golden, Beaver, and Flatrock Brooks.

- *Ice-Contact Stratified Drift* is composed of fine to medium sands and gravel deposited in proximity to glacial ice. The most significant area of these deposits is along the Golden Brook corridor and its tributaries with other deposits along the Beaver Brook Corridor. Based on studies by the US Geological Survey these areas represent relatively high potential for groundwater yields. On the other hand, wastewater from septic systems in these areas may represent a threat to these potential groundwater resources.

- *Unstratified Drift* or *Glacial Till* is composed of an unsorted mix of sand, silt, clay, gravel, and boulders that overlies much of the bedrock in Windham. These deposits are formed in association with moving glacial ice. These generally poorly permeable glacial deposits may limit percolation for proper siting of underground sewage disposal systems and do not generally hold sizable supplies of groundwater.

- *Bedrock outcrops* in Windham are composed of both igneous and metamorphic rocks. Bedrock or ledge outcrops usually present a constraint to development, primarily where septic systems or foundations are required. Blasting may be necessary for structural foundations and footings.

Soils

The soils in Windham have developed over time from the interaction of climate, vegetation, topography, and surficial materials. Since much of the surface materials of Windham are underlain by marine clays and glacial till, many of the soils tend to be moist and/or stony with areas of high water table, shallow ledge, and ledge outcroppings. Where there is stratified drift, the soils tend to be more sandy, gravely, and better drained. Hydric soils tend to be found in low spots associated with surface water features or in areas underlaid by silt and clay deposits such as the river alluvium noted above and are scattered throughout the town. Soil types are derived from the *Soil Survey of Rockingham County, New Hampshire,* produced by the US Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS).

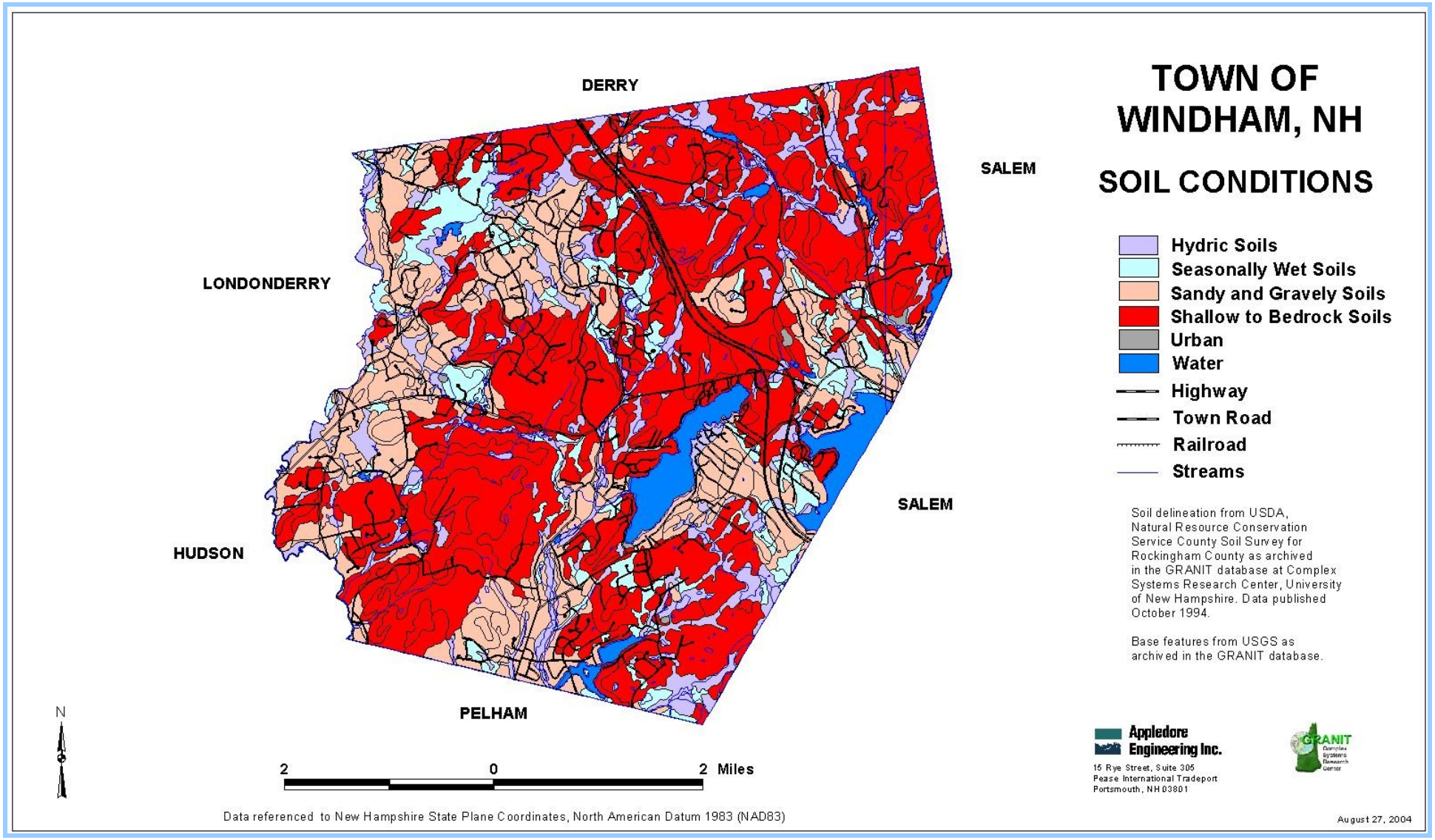
Soil Conditions

Windham's soils are grouped into four (4) broad categories for planning purposes:

Wetland (Hydric) Soils

These include all poorly and very poorly drained soils often associated with silts and clays, including muck, peat, swamps, and marshes, as defined by the NRCS for the State of New Hampshire. These include such soil groups as Scarboro Muck, Greenwood Mucky Peat, and Walpole. The water table is at or near the surface five to nine months of the year. Wetland soils are associated with low lying areas in Windham, such as near Cobbetts Pond, Simpson Pond, Seavey Pond, Mitchell Pond, and along watercourses such as Golden Brook (see Figure 30).

Figure 30: Map of Soil Conditions



These areas are best suited to natural open space or limited development because wetland soils provide several natural functions that are beneficial to the community. These functions include: absorbing excess flood waters and thereby preventing downstream flooding; providing valuable habitat for fish and wildlife; providing groundwater recharge to local aquifers; and trapping sediment and other pollutants, thus acting as a surface water filter.

Hydric soils are a class of soils as defined by the NRCS. These soils are similar to, but may not be precisely the same as, wetlands as defined by the US Army Corps of Engineers under section 404 of the Federal Clean Water Act. Army Corps wetlands are also referred to as "Federal Jurisdictional Wetlands". For regulatory purposes, both the NH Wetlands Bureau and the Corps employ the Corps definition. Further discussion of the town's wetland resources is located in the Water Resources section.

Seasonally Wet Soils

These soils are somewhat better drained than the wetland soils, but typically have a seasonal water table within 2 1/2 to 3 feet of the surface, a perched water table or slowly permeable sub-layer during the wet season. These include such soil groups as Woodbridge and Deerfield fine sandy loam. They tend to be located on the lower slopes of hills and on low knolls associated with streams such as Golden Brook and Flatrock Brook and their tributaries. The town should encourage low density uses and those that are not likely to pollute the groundwater. Flooded basements and submerged leach fields may be expected.

Shallow to Bedrock Soils

This soil group tends to be located on low, knobby hills and ridges that typically have bedrock within 1-3 feet of the surface. They make up well over 50% of the town and tend to be located in a central east-west spine of Windham northwest of Route 111 as well as the northeast portion of the town, as seen in Figure 30. This soil group is made up of the Chatfield-Hollis-Canton and Hollis-Charlton soil complexes. While this group tends to have a shallow to bedrock characteristic, there will be some areas that do have deeper soils.

Sandy and Gravelly Soils

Sandy and gravelly soils are excessively well-drained Hinckley and Canton fine sandy gravelly soils that are typically associated with the stratified drift deposits from glacial outwash. These are located along the Golden Brook Corridor, south of Cobbetts Pond and the western portion of Windham that is in part associated with the Beaver Brook Corridor. These soils have good potential for development since there are few limitations for construction. However, these areas may also be associated with significant groundwater supplies. Thus, development density and wastewater discharge must be managed to prevent groundwater pollution from effluent since these soils are very permeable.

Farmland Soil

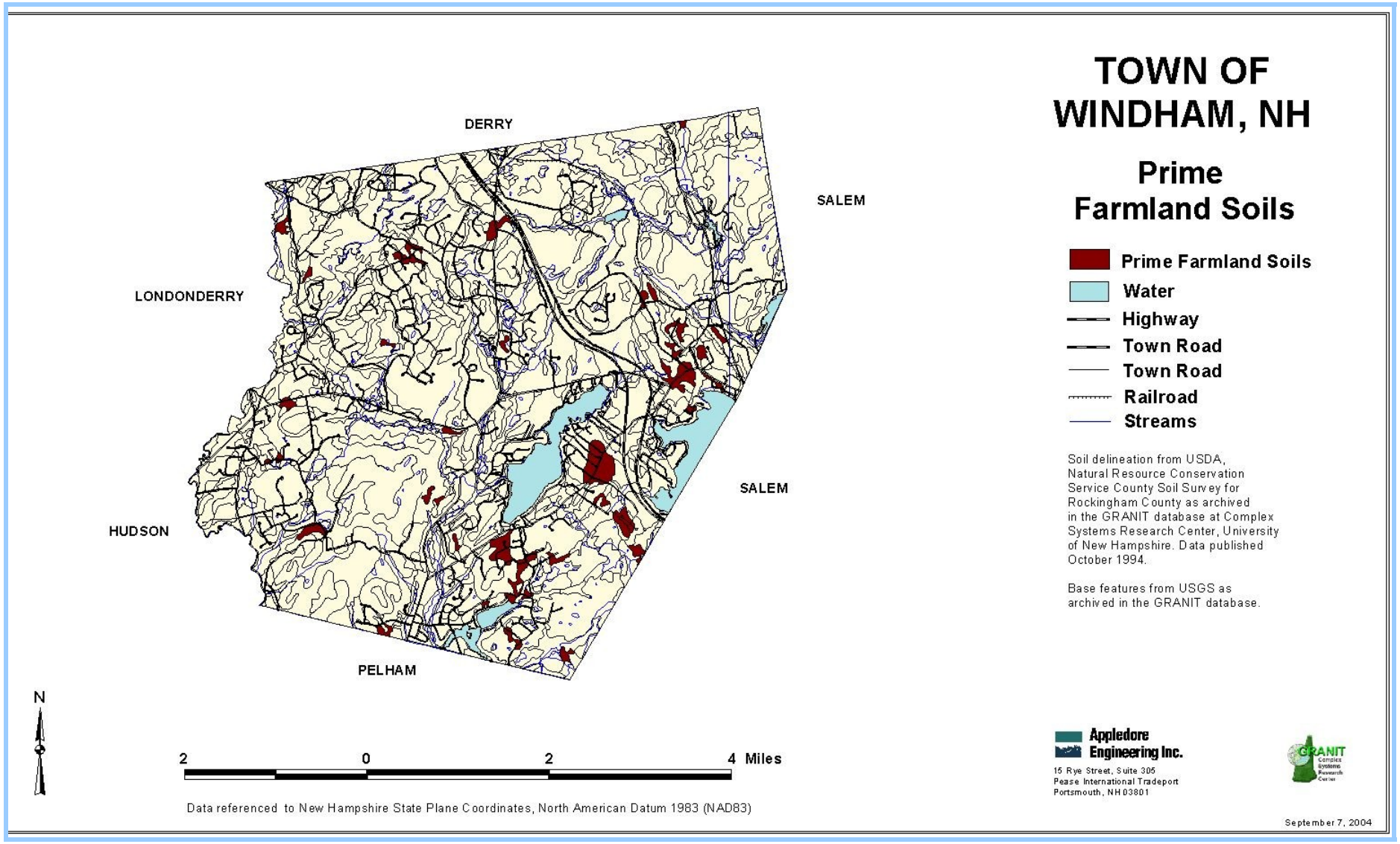
The USDA NRCS has identified three categories of farmland soils in New Hampshire-- prime farmland soils, soils of statewide importance, and soils of local importance. This classification is based upon the productivity of the soils for food and fiber crops.

Prime farmland soils have the capacity to produce sustained high yields of crops. Soils of statewide significance are deemed to be important for farming in New Hampshire, but are of less value than prime farmlands because the soils are not as fertile and require more erosion control practices. Similarly, soils of local importance may be important for farming in Windham, but are not as valuable as either the prime farmland soils or those of statewide significance. These soils are not as fertile and are usually poorly drained.

Windham has approximately 580 acres that are defined as prime farmland and 700 acres that are of state importance. The greatest concentration of prime soils tends to be south and west of Cobbetts Pond with an additional area north of Canobie Lake (see Figure 31). The encroachment of development on agricultural soils or lands that are currently in agricultural use is an issue of concern for the long-term use of land in Windham. Once converted to more intensive uses, these lands are usually irretrievably lost for agricultural purposes.

Based on the Rockingham County Soil Survey, there are approximately 690 acres that are of local importance. This figure was determined from analysis of the GIS soil data layer for Windham from the GRANIT system.

Figure 31: Map of Prime Farm Land Soils



Slope

For planning and development purposes the slope or steepness of the land is expressed as a percentage that represents the relationship of horizontal and vertical distance between two points. For example, a 20-foot rise within one hundred (100) feet is a 20% slope. As slope increases, the potential for surface water runoff and erosion increases. The soil depth is also thinner as slopes increase, thus decreasing the capacity of the land to filter septic system effluent in areas that lack public sewer. In addition, construction costs for development also increase. Steeper slopes tend to occur along the margins of stream corridors and areas of bedrock such as in southwest Windham.

Slopes from 0-12% are the most suitable for development. The flattest slopes --0-3%-- are suitable for roadways as well as commercial, industrial, and recreational uses. Undulating lands up to 12% are suitable for residential uses and private roads as well as the above uses with increasing limitations as the slopes increase. Land use limitations based on slope begin when the slope is between 12 and 15% and increase as the slope increases. Development on steep slopes is likely to reduce soil stability, causing erosion and sedimentation into brooks, streams, and surface water bodies. Such slopes are usually best left naturally vegetated as part of a community's open space system or to satisfy subdivision open space requirements.

Forest Resources

Although Windham is relatively heavily wooded, most of these areas contain or include second growth deciduous and coniferous species. These forest resources represent a response to a relatively wet climate (42 inches of rain annually) with warm summers and cold winters. Variation in soil and slope will result in a variation in vegetation. Where soils are wet, there may be a preponderance of hardwoods such as red maple and yellow birch. A mixed forest, including white pine and eastern hemlock, will more likely occur on drier sandy/gravelly soils.

At one point in the early part of the 19th century almost all of this area was logged off and in some areas up to 90 % of the land was open. After that point the forested areas recovered, until the middle of the 20th century. According to a statewide study conducted by the Society for the Protection of New Hampshire Forests (SPNHF), Windham's land area is over 60% forested and appears to be more forested than adjacent communities.[27] In addition, much of this tree cover is in large contiguous blocks, especially in the southern, western, and northeastern portions of the town.

Since 1953, the Town of Windham has lost over 4,000 acres of forested land (*Regional Open Space Plan, Rockingham Planning Commission*, March 2000). According to the SPNHF study, this trend is expected to continue with Windham losing another 10% of its forest cover by 2020. At present, there is only one certified tree farm in

[27] New Hampshire's Changing Landscape, The Society for Protection of New Hampshire Forests and the Nature Conservancy, 1999.

Windham—a 63-acre parcel on Kendall Pond Road that is also in Current Use. This designation is based on a long-term forest management program that is certified by the UNH Cooperative Extension Program for Rockingham County. Ensuring a long-term policy toward proper management of the town's forest and tree resources has a number of values: open space and scenic enhancement, recreation, preservation of wildlife habitat, and water quality protection.

Fish and Wildlife Resources

Windham's mixture of undisturbed habitats including forests and woodlands, open fields, wetlands, surface waters, and rivers provides habitat for valuable fish and wildlife resources. The NH Fish and Game Department (NHFG) manages game, fish, and wildlife. Fish harvesting is regulated by State legislation. Fishing regulations adopted by the State of New Hampshire specify the quantity and size of fish that can be kept, the time and season when fishing is allowed, and licensing procedures. The following discussion briefly describes fish and wildlife resources.

Upland and Freshwater Habitat

Windham's upland habitats range from mixed forest lands to wooded swamps to fields and meadows in varying stages of succession as well as freshwater wetlands, ponds, and rivers. This variety of habitat provides for a variety of wildlife to thrive from songbirds to mammals to fish and reptiles. In order to maintain a variety and abundance of wildlife species, maintaining a diverse habitat that is interconnected is necessary.

Fields and forests provide habitat for such songbirds as woodpeckers, nuthatches, ruffed grouse, purple finches, woodcock, thrushes, bluebirds, robins, and warblers. Wetlands are a prime habitat for mammals such as beaver, otter, muskrat, and mink as well as toads, frogs, and salamanders. Heron, black ducks, and loons use wetland areas for nesting. Monitoring and maintaining a wildlife inventory is a means to measure the quality and extent of habitat in Windham.

Mammals

NHFG tracks data for the State's wildlife resources. Much of the data and information is the result of NHFG surveys of game species from hunting records by town for the whole state. Although these records are not based on scientific field surveys, they are indicative of the general numbers of individual species within the town, particularly when compared to other communities. For the most recent year of compiled data for the state and Windham (2003), there were no bears harvested and only one turkey was harvested. By contrast there were 56 deer harvested. These numbers are similar for other communities in Rockingham County where there are many more deer harvested than in the northern counties of the state. By contrast bear and turkey harvests are much larger the further one goes north in the state. For example, Whitefield had only 20 deer harvested while there were 13 turkey and 13 bears harvested in the same year.

The NHFG also tracks coyote, bobcat, fisher, and gray fox. None of these species were trapped or hunted during this time period in Windham according to department records. Although these data are not a substitute for wildlife studies, they may indicate the relative abundance of the various species. In general, it appears that the amount of game hunted or trapped has been on the decline for almost all species, excepting deer which seem to be more prevalent.

Aquatic Habitat

Water bodies in Windham and the surrounding area support both cold water and warm water species. The following species have been found in Canobie Lake: smallmouth bass, largemouth bass, eastern chain pickerel, rainbow trout, yellow perch, white perch, brown bullhead, golden shiner, common sunfish, black crappie, pumpkinseed sunfish, and American eel. Cobbetts Pond contains eastern chain pickerel, yellow perch, brown bullhead, pumpkinseed sunfish, and alewives. Smaller ponds and streams that are located in Windham and surrounding communities provide habitat for one or more of these fish species. Local streams support fish species including brook trout, brown trout, and rainbow trout.

The NHFG has stocked both the Spickett River and Canobie Lake with brook trout as these are the leading sportfish in Rockingham County.

Rare Plants, Rare Animals and Exemplary Natural Communities

The New Hampshire Natural Heritage Bureau, a bureau in the Division of Forest and Lands, finds, tracks, and facilitates the protection of the State's rare plants and exemplary natural communities. The Bureau also tracks rare animal species in cooperation with the Nongame and Endangered Wildlife Program of the NH Fish and Game Department.

In Windham there are over forty (40) rare species of special concern and exemplary natural communities that have been listed by the NH Natural Heritage Inventory (NHI) under the Native Plant Protection Act of 1987 (NH RSA 217-A) and the New Hampshire Endangered Species Conservation Act of 1979 (NH RSA 212-A). Although there are no federally listed endangered species, there are thirteen (13) state endangered plant species and fifteen (15) state threatened plant species. There is one (1) endangered state Invertebrates – Mollusks which is the Brook Floater.

Table 26: Inventory of Rare Plants, Animal, and Exemplary Natural Communities

Level of Importance (high - highest)	Species Name	State Listed*	# reported in last 20 years	
			Town	State
	Natural Communities Terrestrial			
Extremely high	SN dry central hardwood forest on acidic bedrock or till		1	15

Level of Importance (high - highest)	Species Name	State Listed*	# reported in last 20 years	
			Town	State
Extremely high	SN dry rich forest on acidic/circumneutral bedrock or till		2	11
Very High	SN stream bottom forest		1	8
	Natural Communities Palustrine			
High	SN acidic seepage swamp		1	19
Extremely high	SN basin swamp		1	10
	Plants			
	Arethusa (Arethusa bulbosa)	E	Historical	21
	Bird'sfoot Violet (Viola pedata var. lineariloba)	T	Historical	12
	Bluntleaved Milkweed (Asclepias amplexicaulis)	T	Historical	13
	Canada Horsebalm (Collinsonia canadensis)		Historical	2
High	Downy Arrowwood (Viburnum rafinesquianum)	E	1	6
	Downy Falsefoxglove (Aureolaria virginica)	T	Historical	11
	Fringed Gentian (Gentiana crinita)	T	Historical	28
	Hairy Stargrass (Hypoxis hirsuta)	T	Historical	14
	Loesel's Twayblade (Liparis loeselii)	T	Historical	25
	Longfruited Anemone (Anemone cylindrica)		Historical	11
	Meagre Sedge (Carex exilis)	T	Historical	6
	Northern Blazing Star (Liatris borealis)	E	Historical	14
	Orange Horsegentian (Triosteum aurantiacum)	E	Historical	3
	Palmate Violet (Viola palmata)	E	Historical	2
High	Perfoliate Bellwort (Uvularia perfoliata)	E	1	2
	Purple Milkweed (Asclepias purpurascens)		Historical	4
Very High	Rue Anemone (Anemonella thalictroides)	T	1	5
	Scarlet Paintedcup (Castilleja coccinea)		Historical	2
	Sharp Flowered Mannagrass (Glyceria acutiflora)	E	Historical	9
High	Sicklepod (Arabis canadensis)	T	1	7
	Skydrop Aster (Aster patens var. patens)	T	Historical	10
High	Slender flowered Fescue (Festuca octoflora var. tenella)	E	1	3
	Slender Knotweed (Polygonum tenue)	E	Historical	4
	Slenderflowered Muhlenbergia (Muhlenbergia tenuiflora)		Historical	3
Very High	Smoothforked Chickweed (Paronychia canadensis)	T	2	7
	Stiff Ticktrefoil (Desmodium rigidum)	E	Historical	2
Extremely high	Swamp Azalea (Rhododendron viscosum)	T	1	42
	Toothed Ticktrefoil (Desmodium cuspidatum)		Historical	3
	Tubercled Spikerush (leocharis tuberculosa)	E	Historical	3
	Upland Boneset (upatorium sessilifolium)	E	Historical	2
	Walkingfern Spleenwort (Camptosorus rhizophyllus)	E	Historical	6

Level of Importance (high - highest)	Species Name	State Listed*	# reported in last 20 years	
			Town	State
	Whitetopped Aster (Sericocarpus linifolius)	T	Historical	6
	Wild Lupine (Lupinus perennis)	T	Historical	38
	Woodland Hound'stongue (Hackelia virginiana)	T	Historical	20
	Vertebrates Reptiles			
Very High	Blanding's Turtle (mydoidea blandingii)		1	79
	Vertebrates Fish			
Very High	Swamp Darter (theostoma fusiforme)		1	9
	Invertebrates Insects			
Very High	Aureolaria Seed Borer (Rhodoecia aurantiago)		1	1
	Invertebrates Mollusks			
Extremely high	Brook Floater (Alasmidonta varicosa)	E	2	30
Very High	Eastern Pond Mussel (Ligumia nascuta)		1	4

** E = Endangered, T = Threatened*

Source: NH Natural Heritage Bureau, July 2004

In addition to identifying endangered species, the NHI also rates species value by abundance and ranks the species by degrees of importance from highest importance to extremely high, very high, or high importance. Windham has five (5) species that are listed as "extremely high importance" and no species listed as "highest importance."

In an effort to protect these resource areas, the NHI does not identify precise locations. It does publish upon request from a local community a map of the community illustrating general locations.

Agricultural Resources

There are currently four (4) commercial farms in Windham. The majority of the farmland is used for hay, orchards, and nurseries. These include Apple Acres (an orchard), Johnson Highland View Farm on Route 111 (multiple crops, livestock, greenhouse, and farm stand), the Taylor property near Windham Depot (horse pasture), and the Campbell property (haying).

Water Resources

Surface Water and Watershed Assessment

Windham is part of two minor watersheds— Beaver Brook and Spickett River. Both of these are part of the Merrimack River Basin, which occupies a total of 5,010 square miles and is comprised of 203 communities in both New Hampshire and Massachusetts with 75 percent lying in New Hampshire.

The Beaver Brook watershed originates in the town of Chester and comprises approximately 94.66 square miles while the Spickett River watershed, which also originates in Chester, is approximately 77.49 square miles. Within the town of Windham, the Beaver Brook watershed covers approximately nine (9) square miles and the Spickett River watershed covers approximately 18.7 square miles.

Within these greater watersheds, there are a number of smaller watersheds associated with a surface water body or brook.

Rivers/Streams

- *Golden Brook* originates in the center of Windham near Interstate 93 where several small tributaries merge. It flows south and west parallel to Route 111 and eventually discharges into Beaver Brook in Pelham.

- *Beaver Brook* originates in the Town of Chester and forms the western boundary of Windham. It drains the Beaver Brook watershed that encompasses much of the Town.

- *Flatrock Brook* originates near Windham Depot, flowing south through the Town and eventually discharging into Shadow Lake that straddles the border between Windham and Salem.

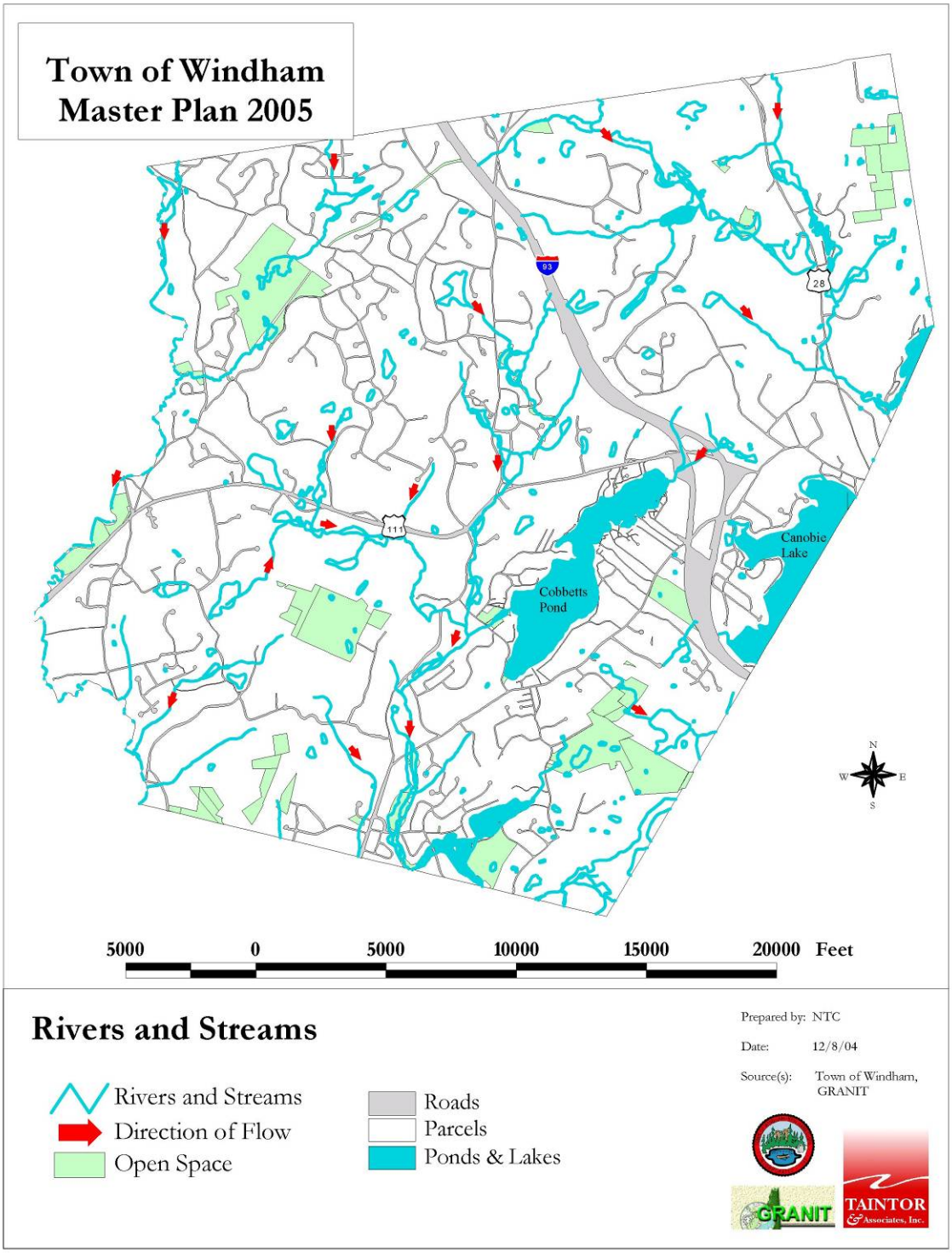
- *Spickett River,* though not physically in Windham, has much of its watershed therein. The watershed area includes a majority of the easterly portion of Windham, most of the land area in Salem, and some portions of the town of Derry. The Spickett River empties into the Merrimack River after going over a dam in Methuen, Massachusetts.

- *Porcupine Brook* originates in the southeast portion of Windham within a large wetland complex just south of Cobbetts Pond. It is fed by groundwater discharge associated with a large stratified-drift aquifer in the area. It has a watershed area of approximately 2,500 acres in size.

- *The North Tributary* to Canobie Lake has an estimated watershed of approximately 160 acres and supports only seasonal, intermittent flow. It drains into a northwest cove of Canobie Lake.

- *Dinsmore Brook* is a northeast tributary to Cobbetts Pond and is the principal surface water input to Cobbetts Pond. Its watershed area is approximately 200 acres.

Figure 32: Rivers and Streams



Ponds and Lakes

Windham has two significant water bodies – Cobbetts Pond and Canobie Lake. These two, along with Rock Pond and Seavey Pond, are monitored for bacteria by the Town and through the State's Volunteer Assessment Program that is sponsored by the New Hampshire Department of Environmental Services (NH DES). Other water bodies include Simpson Pond, Shadow Lake, and Mitchell's Pond. All of these lie on the eastern side of the town. Canobie Lake and Shadow Lake also lie partly in the town of Salem. There are a number of smaller ponds within the town that carry no specific names. All of these ponds provide not only an aesthetic quality to the town, but also significant recreational value for boating and fishing, and conservation value for wildlife habitats.

A summary of the recent assessment of lake and pond water quality testing is described below. While these programs have been successful, the personnel from NH DES have suggested that additional sampling points and a greater frequency of monitoring would be useful for properly assessing water quality trends in each of these water bodies. The monitoring includes testing for a number of water quality parameters such as dissolved oxygen, chlorophyll, transparency, bacteria, pH, phosphorous, and conductivity. For purposes of this discussion only chlorophyll, phosphorous, and bacteria are highlighted since these represent indicators of onshore activities that may affect water quality (e.g., a high level of phosphorous may indicate over-use of lawn fertilizers).

Cobbetts Pond[28]

Located entirely in Windham just west of Interstate 93, Cobbetts Pond has a surface area of approximately 345 acres and a watershed of about 2,050 acres. It is estimated to have a maximum depth of 60 feet. Surface water inputs for Cobbetts Pond are limited to small intermittent streams. Cobbett's Pond is considered a Great Pond, i.e. one greater than 10 acres.

Cobbetts Pond is monitored by the Town annually for bacteria and has been sampled on an annual basis since 1988 as part of the Volunteer Lake Assessment Program, which is a cooperative program between the NHDES, lake residents, and lake associations. Last monitored in 2003, NH DES has rated this lake as mesotrophic (contains moderate nutrients with moderate algae production). Based on the sampling, chlorophyll concentrations are worsening, lake transparency is decreasing, and phosphorous levels are increasing. These trends may be attributed to increasing sedimentation from shoreland areas around the pond as well as use of fertilizers. On the other hand, E.coli bacteria concentration (evidence of human waste—most likely from poorly functioning individual septic systems) was relatively low.

[28] Some of this information is drawn from the Draft Environmental Impact Statement for the Interstate 93 widening project, prepared by Vanasse Hangen Brustlin, Inc., dated September, 2002.

Canobie Lake

Canobie Lake is located on the Windham and Salem town line. It has approximately 373 acres of surface water, a maximum depth of 44 feet, and a watershed area of approximately 1400 acres. The lake is fed mostly from groundwater with limited surface water inputs from two intermittent streams (referred to as the South Tributary and the North Tributary) that drain from the north. The outlet of Canobie Lake is Policy Brook, which is located on the east shore. Canobie Lake is also monitored by the Town and the Volunteer Lake Assessment Program. Last monitored in 2003, NHDES has rated this lake as ologotrophic, indicating low biological production. Sampling was also undertaken for such parameters as phosphorous, lake transparency, and E.coli bacteria. In each instance the levels have remained approximately the same from previous years. Canobie Lake serves as the primary source of water for the Town of Salem and therefore swimming is not allowed in it.

Rock Pond

Rock Pond, located in the southern part of Windham, is approximately 33.3 acres with a shoreline of 5,904 feet. It is monitored by the Town annually for bacteria. The most recent year of sampling (2003) indicates that the water quality parameters continue to remain stable since the initial year of sampling in 1986. The NH DES has rated Rock Pond as mesotrophic (contains moderate nutrients with moderate algae production).

Seavey Pond

Seavey Pond is located near the northeastern part of Windham and is approximately 10.6 acres with a shoreline of 7,005 feet. It is monitored annually by the Town. The NH DES has rated this pond as eutrophic indicating high biological production (nutrient rich). The last year of compiled data was 2002 when there appeared to be an increase in chlorophyll and phosphorous from the previous year.

State Water Quality Assessment

In addition to the volunteer assessment program, the NH DES also has a rigorous water quality assessment program. The state has completely revised the way in which water quality data is categorized and summarized. It now recommends that all surface waters within the state be placed into two standard classifications: Class A or B. All surface waters within the Windham area are designated as Class B except Canobie Lake which is Class A because it is a drinking water supply. Designated uses represent the desired uses that a water body should support.

Classification Designated Uses as Described in RSA 485-A:8

Class A - These are generally of the highest quality and are considered potentially useable for water supply after adequate treatment. Discharge of sewage or wastes is prohibited to waters of this classification.

Class B - Of the second highest quality, these waters are considered acceptable for fishing, swimming, and other recreational purposes, and after adequate treatment, for use as water supplies.

The NH DES is authorized to monitor the water quality of the State's water resources. It assesses each significant water body to determine if it meets the standards of these two classifications. Water bodies are categorized into one of seven categories based on level of consistency with the standard. These range from Category 1 which indicates that a water body is "attaining the water quality standard and no use is threatened" to Category 5 which is "impaired or threatened for one or more designated uses (recreation, fishing, etc.) by a pollutant(s), and requires a TMDL". Category 4 has three sub-categories, thus the total of seven. A TMDL is a water quality assessment to determine the "Total Mean Daily Load" of pollutants that can be accommodated by a water body without being impaired.

Waters that are meeting water quality standards and are not threatened are included in Categories 1 and 2. Category 2 and Category 3 waters require more monitoring before a complete assessment can be made. Impaired waters or threatened waters are included in Categories 4a, 4b, 4c, and 5. A water body may be impaired when its water quality cannot support a particular use such as fish consumption, recreation, or municipal water supply.

Based on the state's assessment all tested water bodies in the Town of Windham have been assessed as Category 5: they are impaired or threatened for one or more designated uses by a pollutant(s) and require a TMDL. Almost all of the water bodies are impaired because of mercury contamination that will not permit safe fish consumption. These include streams such as Beaver Brook, Golden Brook, and Flatrock Brook, and lakes or ponds such as Canobie, Cobbetts, and Seavey. In addition, Canobie Lake tends to have excess algal growth while Beaver Brook has pH problems as well as exotic benthic species[29].

Water Quality Summary

The water bodies of Windham appear to be threatened in part by land uses activities adjacent to these features. Understanding the extent of these watershed area and the direction of flow is useful in determining the impact of development activity on water quality. It would appear that both the Beaver Brook and Spickett River Watersheds are susceptible to water quality impacts from future development. Both of these have areas of their watersheds outside the town and are subject to significant land use

[29] At one sampling station along Beaver Brook in Windham in 2000 there was a slightly acidic result (less than pH 6.5) in the three samples (July, August and October) that were taken. Water quality sampling data is obtained from the NH DES which is responsible for monitoring, compiling and assessing surface water quality data from throughout the state as part of the Section 305 program of the Clean Water Act.

change and environmental impacts beyond Windham's control. Furthermore, these external threats appear to be manifested in atmospheric deposition of mercury. The town will need to consider policies that not only address impacts to local water from local sources, but also polices that address affects occurring from a larger geographic area.

Wetlands

Wetlands form a significant part of Windham's surface water resources. They generally are contiguous with wetland or hydric soils discussed previously in the Soil Section. However, for purposes of this discussion, wetlands also include vegetation and hydrologic characteristics that might not be incorporated into the definition for hydric soils. These areas include shallow ponds, marshes, swamps, bogs, and seasonally flooded lands. Wetlands are usually areas of low topography and poor drainage with standing water for all or part of the year. Wetlands possess a number of major resource values: maintenance of water quality, flood control, groundwater recharge for water supply, wildlife habitat, and vegetative diversity.

The definition and mapping of wetlands varies from agency to agency within New Hampshire and the federal government. The most widely used soil definition used for community planning as delineated by the US NRCS, is the hydric soil category (poorly and very poorly drained soils) as discussed in the Soil Section of this chapter.

Wetland soils in Windham have been mapped by the NRCS and the data is available through the NH GRANIT/GIS system at the University of New Hampshire (UNH) using the hydric soil classification. This classification relies only on soil and does not distinguish between wetland types. By quantifying wetland values, a hierarchy of wetland types can be established and appropriate measures for protection and management can be employed.

Wetlands have also been defined and mapped statewide on the GRANIT System using the criteria of the US Fish and Wildlife Service through the National Wetland Inventory Program. In addition, for purposes of managing and permitting activities in wetlands that are of state interest, the New Hampshire Wetland Bureau has adopted the 1987 US Army Corps of Engineers publication *Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1*. In an attempt to assist local planning boards to determine the appropriate soil and wetland data for development review, the Office of State Planning issued in November, 1998, a guidance document*, Data Requirements for Site Review, Guidance for Planning Boards*. The Town's Zoning Ordinance and Land Use Regulations has a Wetland and Watershed Protection District to regulate the use of wetlands, lands draining into wetlands, brooks, ponds, and water supply areas.

Floodplains

Floodplains are areas adjacent to rivers, streams and surface water bodies, which are susceptible to flooding during periods of excessive storm water runoff. The Federal

Emergency Management Agency (FEMA) has prepared Special Flood Hazard Area maps for Windham for the purpose of identifying the 100-year flood areas within the Town that may be eligible for federally subsidized flood insurance. The FEMA maps were revised on April 15, 1980, as Flood Insurance Rate Maps (FIRM). These 100-year flood boundaries are for the most part associated with Golden and Flatrock Brooks. The Town also has a Floodplain District [§ 607] to regulate development in the flood hazard areas.

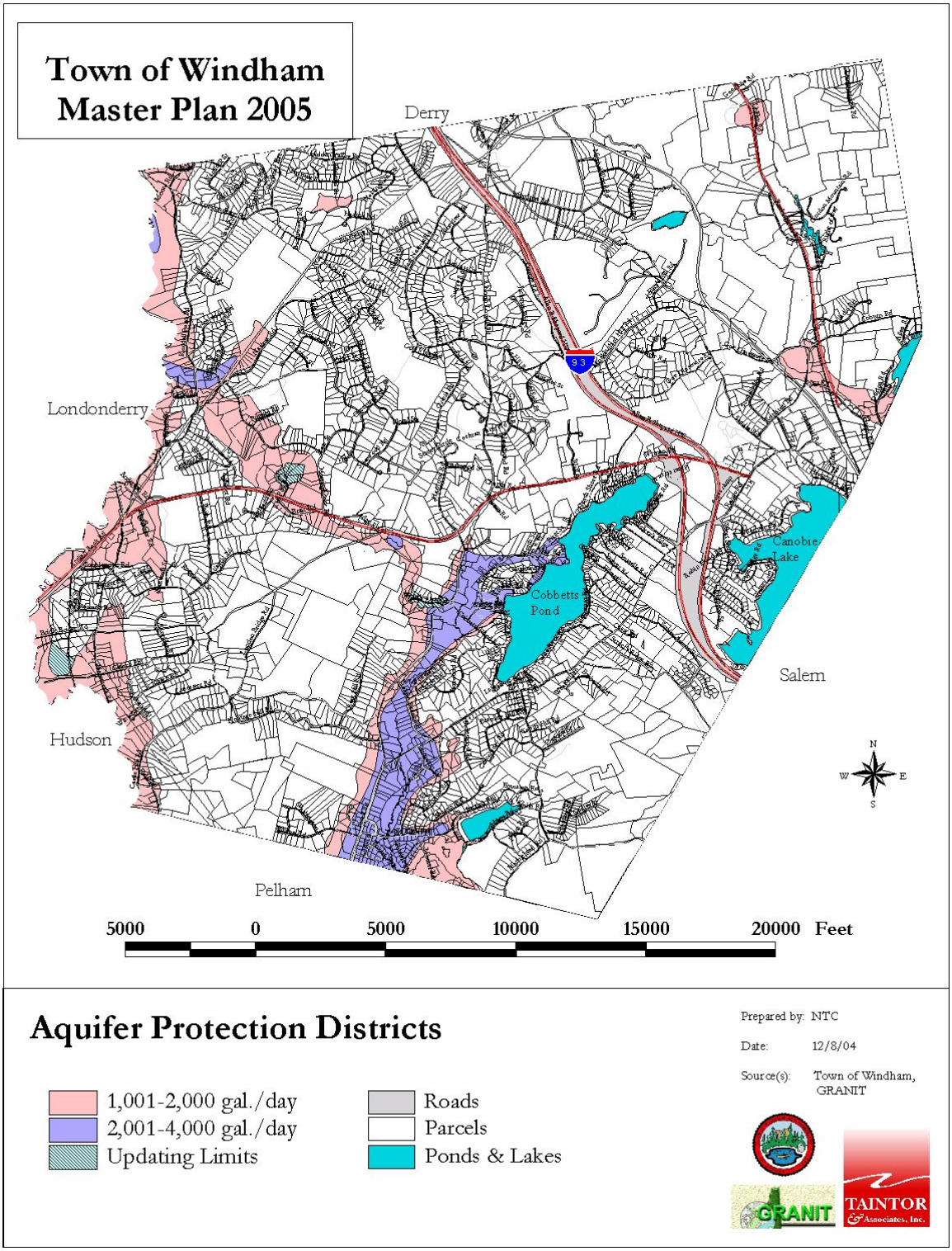
Groundwater Resources

Groundwater occurs in openings in bedrock or pores in surficial materials. Although water can be withdrawn from bedrock, glacial till, or stratified drift deposits, the most significant amounts of groundwater in New Hampshire and Windham are usually found in stratified drift. A 1992 report by the US Geological Survey (USGS) hydrogeologic investigations identified one primary stratified drift aquifer located within Windham. This area is referred to as the Windham-Cobbett's Pond Aquifer, which is located in a narrow area just to the west and south of Cobbetts Pond.

Groundwater yield is rated by the transmissivity of the stratified drift. Transmissivity is measured in feet squared per day and the USGS has classified yield into four categories: less than 1,000, 1,000 to 2,000, 2,000 to 4,000, and greater than 4,000. There is a small area adjacent to Cobbetts Pond that is rated at between 2,000 to 4,000 square feet per day with much of the aquifer rated at 1,000-2,000 square feet per day. This area is equivalent to the area noted on Figure 33 that is rated at yielding 2,001-4,000 gallons per day. There are several isolated pockets of the town's aquifer areas that have similar yields, although the remaining areas are rated at 1,001 to 2,000 square feet per day or gallons per day. These areas are currently regulated through the Town's Zoning Ordinance under the provisions of the Aquifer Protection District.

These areas, particularly the Cobbetts Pond Aquifer, may provide a future groundwater source for community water supplies.

Figure 33: Aquifer Protection Districts Map



Potential Threats to Water Resources

Non-Point Source Pollution

Non-point source pollution is a threat to Windham's surface and groundwater resources where storm water runoff from developments and roadways is not properly managed or treated. This runoff may contain sediment and other pollutants such as fertilizer and herbicides from lawns and gardens, as well as oils, greases, and heavy metals from parking areas which enter the ponds, lakes, streams, and groundwater aquifers of the town. Non-point source contamination may also come from individual septic systems that may discharge E. coli bacteria.

Hazardous Materials

The Bureau of Hazardous Waste in the NHDES maintains a statewide inventory by community of all sites that may have hazardous waste or petroleum products associated with them that may pose a threat to water resources. In Windham, the NH DES has listed numerous such sites, although a number of these are closed and do not pose a problem. A full list of these sites is available on the internet, at http://www.des.state.nh.us/OneStop/ . Some of these are properly registered with the state and do not pose a threat. There are a number of additional sites that are not active and are of low priority to NH DES. These usually involve underground storage tanks or fuel facilities.

Dam Sites

There are currently 26 dam sites in the Town. These sites are permitted and inspected by the New Hampshire Water Resources Board (NHWRB), which has responsibility for regulating all structures in waterways that are four or more feet high. Consequently, many farm/wildlife ponds dams as well as storm water detention ponds in recent developments are included within the NHWRB's jurisdiction.

The list of dams in Table 27 identifies the dams and the potential hazards based upon the most recent inspection. These dams are classified into 3 categories:

- Class AA: a dam failure would not threaten life or property.
- Class A: a dam with low hazard potential, the failure of which would not threaten life and would result in minimal property damage.
- Class B: a dam having significant hazard potential, the failure of which would result in possible loss of lives and damage to property, in some cases major damage.

Table 27: Town of Windham Dam Sites, August 2004

Dam #	Name	River	Status	Class	Owner	Height	Type
256.01	Cobbetts Pond Dam	Cobbetts Pond	Active	A	CPIA, Inc.	5 feet	concrete
256.02	Rock Pond Dam	Rock Pond	Ruins	inactive		3 feet	
256.03	Farm Rock Brook Dam	Flat Rock Brook	Ruins	inactive	James Kachadorian	7 feet	earth
256.04	Golden Brook Dam	Golden Brook	Breached	inactive	Margaret Mailloux	10 feet	concrete/s
256.05	Seavey Pond Outlet Dam	Seavey Pond	Active	A	Paul & Ellen Meuse	8 feet	earth
256.06	Beaver Brook Dam	Beaver Brook	Ruins	inactive			
256.07	Skating Pond Dam	Unnamed Brook	Active	A	Herbert Associates	7.5 feet	earth
256.08	Moeckel Pond Dam	Golden Brook	Active	A	Gertrude Linton	13 feet	masonry
256.09	Cates Pond Dam	Cates Pond	Not built	inactive	Conrad Cates	5 feet	earth
256.10	Labrie Pond Dam	Unnamed Brook	Active	AA	Paul Labrie	4 feet	earth
256.11	Birch Hill Condominium Dam	Unnamed Stream	Active	AA	Birch Hill Weston Ltd Prtn	4.5 feet	earth
256.12	Villages of Windham Det Pond	Runoff	Active	AA	Villages of Windham Associates	9 feet	earth
256.13	Murphy Fire Pond Dam	Unnamed Stream	Exempt	inactive	Joseph Murphy	3.5 feet	earth
256.14	Castle Reach Det Pond Dam	Runoff	Active	AA	Ridgewood Heights	4.5 feet	earth
256.15	Gudek Wildlife Pond Dam	Tr Beaver Brook	Active	AA	Kenneth Gudek	5.5 feet	earth
256.16	Carr Hill Estates Det Basin 4	Runoff	Active	AA	H&B Homes, Inc.	9.5 feet	earth
256.17	Carr Hill Estates Det Basin 2	Runoff	Active	AA	H&B Homes, Inc.	5.25 feet	earth
256.18	Windham Post Office Det Pond	Runoff	Active	AA	Finlay Properties	6 feet	earth
256.19	Seavey Pond Dike Access Road	Flatrock Brook	Active	A	Dunlap Woods Development Co.	10 feet	earth
256.20	Mitchell Pond Rd Det Pond	Runoff	Pending	AA	Fox Crossing Real Estate Dev of Windham	8 feet	earth
256.21	Spruce Pond Estates Det Pond 1	Runoff	Pending	A	H&B Homes, Inc.	7.45 feet	earth
256.22	Spruce Pond Estates Det Pond 2	Runoff	Pending	A	H&B Homes, Inc.	12.1 feet	earth
256.23	Rt 111 Det Pond D1 Dam	Runoff	Pending	AA	NHDOT	14.1 feet	earth
256.24	Rt 111 Det Pond C2 Dam	Runoff	Pending	AA	NHDOT	9.88 feet	earth
256.25	Rt 111 Det Pond C3 Dam	Runoff	Pending	AA	NHDOT	11.8 feet	earth
256.26	Rt 111 Det Pond C4 Dam	Runoff	Pending	AA	NHDOT	16.4 feet	earth

NOTE: ALL DATA SUBJECT TO CONTINUOUS REVIEW AND UPDATE

Open Space

The purpose of this chapter is to assess Windham's open spaces and to recommend strategies for the management and protection of open space parcels, including valuable natural resource features. Open space can be defined as any environmentally sensitive land or water area that has ecological, recreational, or aesthetic value.

Open space in Windham is a mixture of public, semi-public, and private land. However, there is a difference between *protected* and *unprotected* open space. Protection can come through a variety of methods such as acquisition, conservation restrictions, easements, and regulations designed to preserve important resources. While Windham has set aside a number of open space parcels, a significant portion of the town's remaining land could be sold for development. Additional land protection may be necessary to meet the open space objectives of the community as well as to protect and preserve the town's character.

Open Lands Inventory

Community open space can be allocated into four different categories based on the degree of protection for each parcel of land. This approach to defining open space helps to identify those areas where preservation or acquisition efforts can be targeted. The following categories are a useful way to look at the degree of protection:

Protected Conservation Land. This category includes all land that is held in fee simple ownership by a municipal, state, or federal agency expressly for preservation or recreation purposes or by a non-profit conservation agency. These lands are owned and managed specifically for the purpose of conservation and/or recreation as opposed to a municipality which owns land for a future school site, for example.

Restricted Open Land. This category consists primarily of privately-owned land from which development is restricted through a conservation restriction in perpetuity or an agricultural preservation restriction. A conservation restriction placed on a property allows for the development rights to be held by the state, a municipality, or a non-profit agency. It virtually ensures that the land will remain in its natural, open state. At this time, Windham has 63 acres of land that falls under this category.

Moderately Restricted Open Land. This includes private land that is taxed as forest, farm, or recreation land under the "Current Use" category for tax assessment, and land on which development is restricted through a short-term (5-30 years) conservation restriction. These State-wide tax programs are often used to lower taxes until such time as development or sale is economically feasible or desirable and are seldom used on a long-term basis. The purpose of the Current Use assessment program is to encourage the preservation of open space: a penalty equal to ten percent of the market value is paid to the town on

lands that are being converted from open space to development. However, in spite of the intent of this program and the financial penalty imposed on lands that are removed from this tax classification, the lands are quite vulnerable to development because of the high market values of development.

The amount of land in Windham that is in Current Use has been decreasing over the past several years. It has gone from approximately 2,660 acres in 2002 to 2,220 as of 2004, a reduction of 16%. Current Use land is categorized into forest land, farm land ,and unproductive land that includes wetlands. Most of the land in Current Use in 2004 has been categorized as forest land—approximately 1379 acres or 88% of the total. Farmland comprised only 75 acres or just over 3%. Based on the most recent assessor records, approximately 369 acres of the 2004 Current Use lands have plans for development. Most of this is from forest land, although there is one 21-acre parcel categorized as farm land that is proposed for development. If all these development plans are approved, another 16.6% of the town's Current Use lands would be lost.

There is a single parcel in the Current Use category that is a certified tree farm in New Hampshire Tree Farm Program. This 63-acre parcel is located on Kendall Pond Road in the western part of Windham. At present, like other Current Use lands, this tree farm represents protected open land. There is no long-term guarantee or legal restriction to ensure that this area will continue in the Tree Farm Program or remain as open space.

Unprotected Land. Unprotected land can be broken down into two categories: public and private. Included in these is vacant land that is zoned for residential, commercial, and industrial use that has not yet been developed. In addition, this category includes open land associated with major institutions (public or private) where the open space use is secondary to a non-conservation use. Examples include schools, colleges, cemeteries, hospitals, and military installations. It also includes commercial recreational facilities, such as golf courses. These lands are often perceived as being a secure part of the open space network of a community because of the length of time they have existed as such, but often they are not protected from potential development.

According to the Town's assessing records, Windham has approximately 935 acres of conservation land. This represents about 5.5% percent of the town's total land area. Table 28 features this information.

Figure 34: Conservation Land and Trails

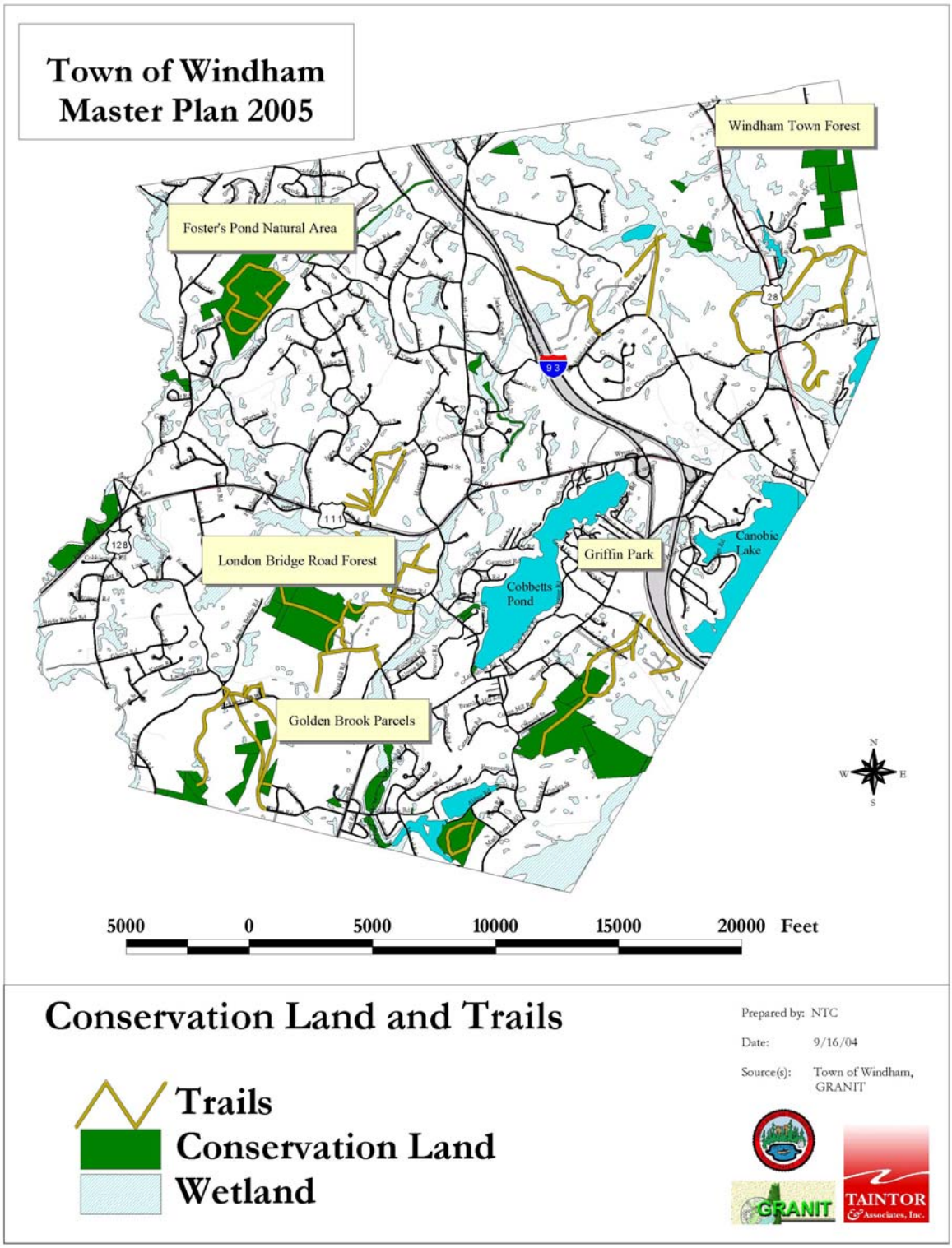


Table 28: Conservation Land In Windham

Map	Block	Lot	Street Name	Land Area (acres)
1	B	1095	LONDONDERRY RD	4.30
1	C	2495	LONDONDERRY RD	12.00
1	C	2500	NASHUA RD	163.50
2	A	250	BEACON HILL RD	2.50
2	B	495	BEACON HILL RD	4.60
3	B	355	FLAT ROCK RD	8.00
3	B	375	ROCKINGHAM RD	8.00
3	B	1500	ROCKINGHAM RD	1.00
3	B	1600	ROCKINGHAM RD	1.70
3	B	290A	ROCKINGHAM RD	8.00
8	B	3900	ROCKINGHAM RD	23.82
8	B	4100	ROCKINGHAM RD	11.00
8	B	4300	ROCKINGHAM RD	14.00
8	B	5800	ROCKINGHAM RD	35.00
8	B	6000	ROCKINGHAM RD	20.00
9	A	1600	KENDALL POND RD	11.00
9	A	1604	KENDALL POND RD	1.51
11	C	1800	CAMELOT RD	4.75
11	C	1801	CAMELOT RD	4.83
11	C	1802	CAMELOT RD	1.50
11	C	3600	PINE HILL RD	5.70
14	A	51	MAMMOTH RD	16.48
14	A	200	HAVERHILL RD	31.70
14	B	2500	LONDONBRIDGE RD	1.00
20	D	1600	LONDONBRIDGE RD	108.00
20	D	1800	LONDONBRIDGE RD	20.00
20	D	2000	LONDONBRIDGE RD	10.00
20	E	350	LOWELL RD	10.00
21	H	1A	COBBETTS POND RD	0.97
21	V	255B	ESTY RD	0.12
21	W	2	COBBETTS POND RD	6.40
21	W	15A	ESTY RD	0.07
22	L	75	W SHORE RD	0.10
22	L	77	W SHORE RD	0.10
22	R	250	SPEAR HILL RD	0.70
24	A	601	ROCK POND RD	3.70
24	D	600	ROCK POND RD	5.60
24	E	100	ROCK POND RD	5.00
24	E	5000	ROCK POND RD	13.00
24	F	500	CASTLE HILL RD	10.00
24	F	501	CASTLE HILL RD	8.60
24	F	800	CASTLE HILL RD	20.00

Map	Block	Lot	Street Name	Land Area (acres)
24	F	900	CASTLE HILL RD	28.00
24	F	950	FIELD RD	3.73
24	F	5205	MEADOW RD	2.94
24	F	6100	LOWELL RD	14.00
24	G	101	RANGE RD	13.00
25	D	2A	ROCK POND RD	0.29
25	E	10	WOODBURY RD	54.15
25	E	481	ABBOTT RD	0.06
25	R	103	OSGOOD ST	79.50
25	R	6500	SPEAR HILL RD	70.00
25	R	7010	BAYBERRY RD	17.00
25	R	7025	SPEAR HILL RD	10.00
25	R	8000	SPEAR HILL RD	19.90
25	R	6000A	BROOKDALE RD	5.00
			TOTAL	**935.82**

Source: Town of Windham

The parcel range in size from a fraction of an acre up to 163.5 acres. As indicated on the map, many of the parcels are adjacent to each other, thus forming larger tracts of contiguous land.

The primary purpose of conservation property is to ensure that land is protected and that it enhances the natural features and ecological systems of the community. These areas may be the home of valuable, rare, or endangered species, which are best left undisturbed, or may be fragile landscapes that would be destroyed by an increase in human traffic (pedestrian, bicycle, etc.). Some areas may not have adjacent parcels, which are not as sensitive and could be used for nature and wildlife observations. Active management of conservation land is necessary to ensure that its quality is maintained.

Trails/Greenways

An important component of an open space plan is to create a network of open lands and parks that provide opportunities to link these amenities to one another when possible rather than existing in isolation. Greenways are open space networks that can be used for preservation, natural corridors, and linkages between destinations such as residential neighborhoods. They can be established along a natural corridor such as a river or stream valley or along man-made corridors such as an old railroad right-of-way, a canal, or a scenic road. These areas become valuable to a community through the multitude of uses that a greenway can provide. They may contain walking trails, bike paths, boat launches, as well as serve as a mechanism for preservation and environmental protection. Greenways can also act as valuable wildlife areas for both land and water based animals providing travel corridors, nesting areas, feeding sites and protective shelter for a great variety of animals.

It may be possible to create a greenway, which connects one part of the community with another by using linear features such as the railroad, Golden Brook, Flatrock Brook, Beaver Brook, or a tributary. The potential also exists to extend the existing trail system to link open space parcels.

Windham has made a concerted effort to establish a trail and greenway network. The community currently has an extensive network of trails that connects various open space. See Figure 34.

Regional Open Space Plan

The Rockingham Planning Commission completed its Regional Open Space Plan in March of 2000. There were three main objectives for the plan. The first objective was to identify large unfragmented areas of undeveloped land ("open space") that are important as natural, scenic, or cultural resources and a priority for protection. The second objective was to identify linkages between open space areas that are possible for protection or can be restored to maintain an interconnected network or wildlife corridors. The third objective was to act as both a regional planning tool and a reference document useful to local planning and conservation officials that can assist them in creating local land conservation strategies and plans.

Each community was given an opportunity to recommend local historical, natural, and cultural resources that are worthy of protection. The sites that the town of Windham recommended are listed in Table 29 and are further discussed under Lands of Interest.

Potentially Developable Lands

Areas that are considered favorable for development are mainly served by public utility systems and have soils with low development costs. Areas that are considered less favorable for development include those with steep slopes, soils with high development costs, small wetlands, and "unofficial conservation land." There are approximately 3,500 acres in the town of Windham that have the potential to be developed. This figure was derived from the Rockingham Planning Commission Regional Open Space Plan. This plan identified and mapped areas of natural resource constraints, existing developed lands and existing conservation lands to determine the remaining areas for potential development. In the 2000 Windham Master Plan using tax maps as a base of information, it was determined that approximately 5,000 acres remain to be developed (see Chapter 8 Land Use Chapter).

Lands of Interest

One of the goals of the Conservation Commission is to acquire land or limit development in certain areas for preservation purposes. As part of the Regional Open Space Plan, town Conservation Commissions were asked to identify general areas within their towns that might be suitable. The name, location, and estimated acreage of each of the twenty sites identified, along with the reason the site is worthy of protection and listed. They range from seven acres up to several hundred acres in size. The

purpose for protecting most of these lands is for river and stream corridor protection, corridor buffers, protection of unfragmented lands, and trail corridors.

Table 29: Lands of Interest, Regional Open Space Plan, 2000

Name	Water	Land	Pubic	Ecology	Historic	Est. Acres	Reason	Source
Off Route 111	Y	Y	Y			800	Riverine System; pond protection; floodplain protection; adjacent/potentially join three protected parcels	Conservation Commission
Off Route 111 Bypass (near Witchhazel Road and Shadow Lake Road)		Y	Y	Y		60	Corridor buffer; protection of unfragmented lands; potential connection to protected lands in Salem	Conservation Commission
Off Route 111 by pass (near Witchhazel Road and Shadow Lake Road)	Y	Y	Y	Y		100	Corridor buffer; protection of unfragmented lands; potential connection to protected lands in Salem; watershed protection	Conservation Commission
Intersection of Kendall Pond and Londonderry Road and near New Road	Y	Y		Y		75	Watershed protection (beaver brook); scenic vistas; prime agricultural lands; farmland protection; adjacent to Londonderry protected lands - threatened and very important	Conservation Commission
Near Depot Road and North Lowell Road		Y	Y	Y		75	Adjacent to Rockingham Recreation Trail; natural heritage protection; farmland protection	Conservation Commission
Near Windham Depot Road		Y	Y		Y	10	Adjacent to Rockingham Recreation Trail; natural heritage protection; historic depot (train station) - Windham Junction Depot; salt storage on grounds; possible ISTEA enhancement funds project	Conservation Commission and Historic District Commission
Near Morrison Road	Y	Y		Y		50	Adjacent to existing conservation easement; part of Michael Pond Estates natural heritage protection area; watershed protection	Conservation Commission
Near Mitchell Pond and Rockingham Recreation Trail		Y	Y	Y		500	Conservation Trail easements desired; greenway development	Conservation Commission
Off of Route 11A (Range Road); Johnson's Farm		Y		Y		120	Farmland and scenic area; habitat protection; large unfragmented lands; designated prime farmland - threatened by development; very important habitat	Conservation Commission

Name	Water	Land	Pubic	Ecology	Historic	Est. Acres	Reason	Source
Southeast Lands; lands in southeastern section of Windham; abutting Salem; Pelham, Route 93 and Marblehead Road	Y	Y	Y	Y		1000	Watershed protection; wildlife habitat; natural heritage habitat; trail development, wetland protection, protection of the Windham Swamp	Conservation Commission and Southeast Lands Conservation Sub Committee
Adjacent to Simpson Road; and existing conservation land - Moeckel Dam and unprotected land	Y	Y	Y	Y		20	Protection for dam; water resource protection; land protection; protection of Natural Heritage; land adjacent to Simpson Pond	Conservation Commission
Adjacent to Kendall Pond Road and within existing historic district	Y	Y	Y		Y	1	Protection of Dam; water resource protection; historic protection	Conservation Commission and Historic District Commission
Adjacent to Lowell Road on Golden Brook	Y	Y	Y			1	Protection for dam; water resource protection; historic protection	Conservation Commission
Near Transmission line and border of Pelham	Y	Y		Y		120	Natural Heritage protection; large unfragmented lands; wildlife habitat protection; riverine protection	Conservation Commission
Adjacent to Lowell Road	y	y	y	y		500	Riverine protection; watershed protection; connection to existing protected lands; wildlife habitat protection; public recreation land	Conservation Commission
Border of Londonderry to Hudson; Beaver Brook	Y	Y		Y		400	Beaver Brook Corridor protection; watershed protection; habitat protection; water resource protection; natural heritage protection; greenway development	Conservation Commission

Source: Rockingham Planning Commission,
Regional Open Space Plan, 2000

Current Regulatory Programs for Natural Resource and Open Space Protection

The Town of Windham's Zoning Ordinance and Land Use Regulations, amended to March 2004, have been reviewed for compliance with current planning standards and practices relative to natural resource and open space protection, including surface and subsurface water quality and quantity, aquifer protection, wetland regulation, and floodplain protection.

Zoning

Section 600. Use Regulations

Under Section 600, the Town of Windham has incorporated the following districts that contribute to natural resource protection: Wetland and Watershed Protection; Flood Plain; Aquifer Protection ,and Open Space Residential Overlay District. Each of these is further discussed below.

Section 601. Wetland and Watershed Protection District

The purpose of this district (WWPD) is to preserve the town's water resource areas as well as to guide use of wetlands, lands draining into wetlands and water supply areas. It not only defines wetland areas as those areas defined by the 1987 Corp of Engineers Wetlands Delineation Manual, but also the extent of the watershed areas. It appears to be a reasonable approach to balancing the need for resource protection and appropriate development activities associated with such resources.

In Section 601.4.1, the district is delineated by multiple distances from the normal high water mark of water bodies with the greatest being 150 feet for Beaver, Flat Rock, and Golden Brooks. Distances for all other water bodies are 100 feet. Other distances, defining the WWPD include distances from wetland areas one acre in size or larger. Consideration might be given to extending these shorter distances under particular circumstances such as a wetland of high value or other critical resource value.

In Section 601.4.4 certain lake/pond areas are excluded from the WWPD such as Canobie and Shadow Lakes and Cobbetts and Rock Ponds.

Shoreline Protection

NHRSA §483-B:8 authorizes municipalities to adopt land use controls which are more stringent that those contained in the referenced statute. While Windham has adopted the WWPD, which contains aspects of Shoreline Protection, the Windham Ordinance has no reference to this regulation. The town may also consider whether or not the state standards are stringent enough.

Section 607: Flood Plain District

This purpose of this ordinance is to protect the public health, safety and welfare in areas that may be subject to flooding as designated on FIRM Maps, prepared by FEMA. Having this regulation in the Zoning Ordinance is appropriate rather than in a

separate section of the Town codes. The ordinance appears to address the necessary considerations that might arise during a flooding situation.

In Section 607.7.2.1, consideration might be given to requiring structures to be above the 100-year elevation rather than at or below such elevation.

Section 609 Aquifer Protection District

The purpose of this district is to protect the public health and general welfare and to protect the aquifers of the Town from contamination. These areas are delineated on an Aquifer Protection District Map. The ordinance defines permitted and prohibited uses as well as provides design guidelines (Section 609.5) for proposed activities in this district.

Section 609.4.1.1 has a reference to Town water and sewer with regard to density, although there is no municipal water and sewer. Section 609.4.2 identifies prohibited uses, although vehicular storage areas are not included. The design guidelines address safeguards, drainage, inspection, and location of uses when the district does not include premises under review that are outside the district. The town may want to consider performance standards for specific pollutants (such as nitrogen) as well as provide further examples of water quality Best Management Practices. Having the Town responsible for inspection of approved uses is not typical in many communities where periodic inspection and maintenance are the responsibility of the owner, who must make reports to the Town of such activities. The Town may derive further protection by requiring all uses within the development parcel to be subject to district standards if any part of the parcel is within the district.

Section 611. Open Space Residential Overlay District

This section of the Zoning Ordinance allows for an alternative design for residential subdivisions to allow potentially higher densities in the Residential and Rural Districts if certain conditions are met to protect resource areas. One of the purposes of this district is to preserve open space, forests, orchards, and wetlands. This regulation requires that a minimum of 65% of the development parcel be dedicated to open space, although there is no provision for useable open space such as for recreational activities. This type of allocation should be considered. .

Recreation & Cultural Resources

Recreational Resources

Under the auspices of a ten-member volunteer committee, Windham offers numerous opportunities for both active and passive recreation. Activities range from organized athletics to hiking and water sports, with residents of all ages participating. The Recreation Committee also organizes and sponsors a variety of cultural and special events, such as a Christmas Tree Lighting and adult educational courses. The Committee actively cooperates with the Conservation Committee, who maintains control and management of trails, and all uses of conservation property.

Just as the State's Statewide Comprehensive Outdoor Program (SCORP) 2003-2007 reveals that the State is experiencing greater participation in recreational activities, due to increases in both popularity and in sheer population, Windham is challenged to meet the increasing needs of the community, from both a management and a facility perspective.

According to the 2003 Town Report, an appropriation of $153,125 was dedicated to recreation that year, which represents 0.5% of the total Town budget. Given the high level of responsibility and workload of the Committee, a minimum of one part-time Town employee is being sought to keep pace with administrative and planning tasks.

As discussed below, there is an identified need to better manage/coordinate use of the Town's existing fields. Overuse has led to maintenance problems, and school properties are currently scheduled separately from other facilities. In addition, the Towns' active trails group envisions a future where most of the trails in Town are connected and well-used, similar to the system Derry has been promoting for several years.

Athletic Programs

While no comprehensive data exist for overall participation in Windham recreational programs, an analysis performed by the Griffin Park Committee in 1997 thoroughly examined the recreational needs of the community and has been instrumental in planning efforts since. Following is a brief description of Windham's current athletic programs – additional detailed information is available via the Town's web site.

- Windham Baseball Softball Leagues offer 12 divisions of participation for boys and girls, with each level fielding multiple teams. In addition, all-star and tournament teams are formed to compete with teams outside of Windham. A batting cage and fifteen fields of varying capacity are put to full use by this organization.

- The Windham Soccer Association reports that over 825 children played soccer in their leagues last year. The Fall 2004 season fielded 12 travel teams (8 boys, 4 girls) in addition to approximately 50 less-competitive, recreational teams. The Association also attracted two summer soccer camps to Windham in 2004. Fields at Griffin Park, Tokanel, Middle School, Nashua Road, and the Searles School support these leagues.

- Youth basketball, lacrosse, tennis, and football/cheerleading (based in Pelham) round out the organized athletics offered by the Town.

- Windham is also home to the privately-owned and operated Windham Country Club, a public golf course offering golf activities for all ages.

Recreational Facilities

Illustrated in Table 30, Windham's recreational facilities are all multi-purpose, and many are on school property. Demand for athletic fields is high, and although the recent improvements to Griffin Park will help relieve the pressure on Windham's athletic fields, there is already a strong sense that additional capacity is needed. The facilities are in varying levels of use, maintenance, and condition.

Table 30: Windham's Recreational Facilities*

Facility	Size (acres)	Parking	Activities						
			Tennis Court	Softball field	Basket-ball Court	Soccer Field	Base-ball	T-ball field	Multi-Use/ Other
Boston/Maine Railroad bed trail	NA	NA							Trail, x-country skiing, horse riding, snowmobile, dirt bikes, hiking
Canobie Lake Boat Ramp	0.1	5							Boat ramp
Deer Leap	54	20							Nature Area
Foster's Pond	163	20							Nature Area, fishing
Gage Lands	108								Nature Area
Golden Brook School	3	100		1	Misc		batting cage		School/playground
Griffin Park**	36	140	6	1	4	2**	2		Trails, skateboard park, volleyball, horse shoes, roller blading, picnicking, lacrosse
Herbert Field	NA	NA		1					
Nashua Road (a.k.a. Edward Herbert Park)**	25	50	2		1	1		1	Lacrosse
Rogers Memorial Field	2	30		3 (joint use w/baseball)	1				Cemetery
Searles School	2	30				1			
Tokanel Field	3	15	1	1		2			

Facility	Size (acres)	Parking	Activities						
			Tennis Court	Softball field	Basket-ball Court	Soccer Field	Base-ball	T-ball field	Multi-Use/ Other
Windham Center School	5	100		1	1		1		School/playground
Windham Middle School*		50				1	1		School, cross-country course
Windham Town Beach	1	75							Swimming, boating, fishing, ice-skating
Windham Wonderland	1	30							Playground
Available Totals	**403.1**	**665**	**9**	**8**	**5**	**4**	**1**	**1**	

* This information is updated from the 2000 Master Plan; no other comprehensive inventory exists.

** 2000 Master Plan indicated expansion potential. Frontage and back spaces are used for 5 additional fields.

Except for the Searles School and Canobie Lake, none of these facilities are located east of Interstate 93.

Griffin Park

With an area of about 36 acres, Griffin Park is the center of Windham's recreation program, and has recently undergone substantial renovation which was intended to fulfill residents needs well into the future. Griffin Park is a mixed-use facility that provides opportunities for a wide range of activities, including: skateboarding, tennis, softball, baseball, basketball, lacrosse, soccer, volleyball, picnicking, walking, etc. Located off Range Road in between Cobbetts Pond and Canobie Lake, south of Route 111, Griffin Park is well-regarded as the Town's central recreational facility.

Renovation notwithstanding, residents who frequent Griffin Park are already pleading for additional parking and expanded facilities. To some degree, Griffin is a "victim of its own success;" as more people use and enjoy it, more services are added (without commensurate parking), and still more people use and enjoy it. The newly-opened skate park is extremely popular. With new users adopting the park as their own, demand for safe, non-vehicular routes to and from the park is very high.

Whether or not Griffin Park can satisfactorily meet Windham's demands and desires into the future needs careful consideration. The idea of satellite neighborhood facilities has been raised, but the relative merits of an enhanced central resource versus smaller, well-distributed ones must be weighed in the context of residential concerns, equal access for all Town residents, maintenance, and a number of other issues (such as parking, lighting, safe routes, etc.). The Recreation Committee has not supported satellite facility development.

Lakes and Ponds

Windham residents, seasonal vacationers, and day visitors have long enjoyed swimming, fishing, boating, and other types of water-based recreation on the Town's

lakes, ponds, and streams. Canobie Lake, Seavey Pond, Rock Pond, Mitchell Pond, Simpson Pond, and Foster's Pond are among the Town's more popular locations for these activities.

Cobbetts Pond has long been a recreation destination, and was a popular summer resort at the turn of the century. The Town operates a public beach at its western end which is overwhelmingly popular. Land around the Pond's shoreline is increasingly expensive, making expansion of the beach or additional parking areas unlikely.

Trails

The Rockingham Rail Trail is a popular multi-use trail located on the former railroad bed of the Boston/Maine line, and is part of the planned Salem to Concord rail trail. Hiking, cross-country skiing, horse riding, and snowmobiling are common activities that occur along the trail, which stretches for over 4 miles. In 2003, Windham applied for an $800,000 Congestion Mitigation Air Quality (CMAQ) grant to support an estimated project of $1.03 million to improve the path with paving, and to integrate the rehabilitation and reuse of the Depot into the rail trail facility. While this request went unfunded, the Windham Rail Trail Alliance was founded at the start of 2004 to continue to pursue realization of this project, and re-submitted the grant request in May 2004. The Planning Board supported this grant.

Conservation properties such as Deer Leap, the Gage Lands, and Foster's Pond also have trails throughout. Enforcement of passive recreational use such as trail hiking is an issue the Recreation Committee and Conservation Commission grapple with, as hunters and ATV users have been observed to ignore posted regulations. Allowing for multi-use recreation and designating particular areas for specific uses is an issue that continue to be debated in the community.

New trails have been created through the open space subdivision process, yet remain underutilized due to the lack of signage demarking their existence. A Town-wide trail map is near the top of the desire-list for trail users. Future planning should keep trail connectivity at the forefront of projects, and additional thought about appropriate trail materials (paved vs. non-paved, surfacing appropriate for elderly, handicapped, and people with strollers, etc.) needs to be considered.

Other Recreational Needs

In addition to facility improvements and new field construction, residents have identified desires for:

- Outdoor skating;
- Swimming pool (indoor);
- Indoor tennis;

- Non-athletic recreational programs for young children (e.g. arts & crafts);
- Lighted fields; and
- Bicycle lanes on main routes (most major streets have been designed to accommodate a striped lane).

These needs should be evaluated in the context of an overall Recreation Plan, but are included here to identify the potential need for additional land to accommodate them.

Cultural Resources

An assessment of cultural resources within the Town is made in order to determine their relationship, if any, to the Town's physical resources, and to identify any future demand that may have land use and/or community facility implications. The Windham Museum and the town's Community Band are two such resources.

Approximately 60 residents take part in the Community Band, which is comprised of three performing groups: the concert band, the swing band, and the flute ensemble. The Band practices in the Middle School during the school year and Town Hall during the summer. This arrangement meets their present and foreseeable future needs.

The Town Museum is newly established in the recently restored Armstrong building. Overseen by three Museum Trustees, the museum houses Windham-related artifacts.

Referenced in the Recreation and Capital Facilities chapters, there is a desire for an Ampitheatre which will enable outdoor performances to take place. Proposed to be located near the Nesmith Library, the Ampitheatre project is part of the long term plan to create a village center where residents can congregate and socialize.

Historic Resources

Like many New England communities, Windham is rich in historic resources that reveal the Town's relationship to pre-history, as well as to the years since its European settlement in the 1720's. Roughly four eras provide context for interpretation of Windham's evolution, which has encompassed its change from a subsistence agricultural community to a farming town that attracted seasonal vacationers, to the more suburban pattern of development that is seen today.

- Settlement to 1849 (prior to the arrival of the -Boston and Maine railroad)
- 1849-1930s (Great Depression)
- 1930s – 1970s (including construction of I-93 in 1961)
- 1970s to present

Windham's Historic District Commission (HDC), which also serves as the Windham Heritage Commission, is charged with the preservation and protection of the Town's historic resources.

Archaeology

Archaeological resources are an important contributor to history, revealing truths about periods of history often unknown or unexplored through other methods of historical research.

The Town maintains an inventory of archaeological sites and structures that featured 118 listings as of 1999. The list contains information on sites formerly occupied by historic structures, foundations, and places where artifacts have been previously uncovered (including one site that produced arrowheads estimated to date from 2-5,000 BC). In addition, the Draft Environmental Impact Statement (DEIS) prepared for the Interstate 93 project evaluated several areas of potential archaeological significance and/or sensitivity. Locations within the median, along the highway shoulders, and along the project corridor were investigated, and in some instances, received further testing. These sites are repeated here to provide ready access to information that will be critical to monitoring project impacts as the work begins.

Table 31 consolidates information pertinent to Windham from the DEIS:

Table 31: Potentially Impacted Archeological Resources Identified in DEIS for the Interstate 93 Project

Table 3.10-1: Potentially significant archaeological sites identified within the Median of the I-93 during Phase 1B Testing by Bunker, Potter, and Green (1990)

Site No.	Name/Type	Description	Recommendations
27 Rk 8	County Rd. Dugout Site I	Cellar hole with partially collapsed wall and collapsed chimney base.	Phase II Evaluation if avoidance is not possible.
27 Rk 9	County Rd. Dugout Site II	Similar to 27 Rk 8. Part of multiple resource County Road complex.	Phase II Evaluation if avoidance is not possible.
27 Rk 7	John Dinsmore Site	Foundation remains of a house, rectangular depression of outbuilding, and well. Other features include stone cellar stairway, possible cistern, granite doorsteps, and large stone chimney. Part of the multiple resource County Road complex.	Phase II Evaluation if avoidance is not possible.
27 Rk 316	Barlow Site	Found through an interview with the landowner, the site contained small quartz points and a steatite pip.	Complete Phases I and II if avoidance is not possible.

Table 3.10-2**:** Archaeological sensitivity areas along the I-93 shoulders receiving supplemental Phase 1A testing by Public Archaeology Laboratory in 1992 and partially updated in 1998 and 2001 and requiring further investigations at the Phase 1B level.

Site No.	Name/Type	Description	Recommendations
27 Rk 331	Native American	Small locus of activity with five fragments of lithic debitage recovered from four test units. No evidence of features.	Additional testing if avoidance is not possible.
27 Rk 332	Historic Stone-lined Well	Isolated stone-lined well with no historic cultural material recovered during subsurface testing. A limited review of historic maps did not provide identification of the property.	Archival Research and close interval testing if avoidance is not possible.
27 Rk 333	Native American	Small locus of activity with a total of 88 fragments of lithic debitage recovered from two test units. A 22 x 52 m area was tested with 22 test units using a combination of block and array testing.	Additional Phase II testing if avoidance is not possible.
27 Rk 334	Historic Stone Bldg. Foundation	North wall and portions of east and west walls visible. No historic material recovered during subsurface testing. Initial review of historic maps did not provide identification of the property.	Archival Research and close interval testing if avoidance is not possible.
27 Rk 335	Historic Stone Dam	Stone dam associated with small pond. No historic material was recovered during subsurface testing. Initial review of historic maps did not provide an identification of the property.	Archival Research and close interval testing if avoidance is not possible.
27 Rk 336	Native American	Small locus of activity with a total of seven fragments of lithic debitage recovered from four test units. No evidence of features.	Additional testing if avoidance is not possible.
27 Rk 337	Historic Dump Site	Site contained glass, iron, brick, whiteware, creamware, earthenware, red-bodied ware, pearlware, and porcelain. No evidence of structural building remains with initial testing.	Archival Research and close interval testing if avoidance is not possible.

Site No.	Name/Type	Description	Recommendations
27 Rk 343	Indian Rock	A large stone commemorative marker with plaque reputedly used to ground corn.	Found not to be archaeologically sensitive by V. Bunker (May 2002). Site is eligible as a historic site (see section 3.10.4.3).

Table 3.10-3: Archaeological sensitivity areas along the shoulders of the I-93 Project Corridor that were initially identified by Bunker, Potter, and Green (1990) in the Phase 1A and received supplemental, Phase 1A testing by Public Archaeology Laboratory in 1992 and partially updated in 1998/2001

Location		Description	Recommendations
NA 3-25-21		A 30x60 meter area was tested with 42 test units using a combination of block, transect, and array testing. Four Native American artifacts were located.	**Further Phase II testing required.
H 3-30-24		A 37x45 meter area was examined without subsurface archaeological testing. The area contained a disturbed, rubble stone foundation. No artifact deposits were identified to date.	*Phase 1B testing using 8 meter intervals and judgmental testing required to determine if Native American and/or historic subsurface deposits exist. Mapping, photography, and description of foundation and property-specific historical research required.
NA 4-45-30B		A 37x37 meter area was tested with 5 test units in a block. 30B No Native American artifacts were identified to date.	*Further Phase 1B testing to bring the interval to 8 meters required.
H 4-47-33		A 15x15 meter area was examined by placed 4 test units along transects. A historic stone dam was present. No artifact deposits were located to date.	*Phase 1B testing using 8 meter intervals and judgmental testing required to determine if Native American and/or historic subsurface deposits exist. Mapping, photography, and description of stone dam and property-specific historical research required.

Table 3.10-4 Historic architectural remains identified by Bunker, Potter and Green (1990) in the shoulders and median of the I-93 Corridor and renumbered by Public Archaeology Laboratory in the 1998/2001 report.

Location No.	Type	Description	Recommendations for Phase IB/II if impacted
H 3-28/29-13	Transp./ Median/Windham	Old Road Bed (I-93 crossover)	Identify roadway, period of use, and extent of route; place on map; photograph; and describe.
H3-31-17	Agri/ Rte 11A, W of I-93/	Barn Foundation that may be located on the Dinsmoor property (site 27-Rk-7)	Phase II evaluation including close interval testing of all foundation remains and additional historical research as need to interpret site remains (see Table 1)
H3-32-21	Transp./ E and W of I-93/ Windham	Old Rte. 111A Road Bed	Identify roadway, period of use, and extent of route; place on map; photograph; and describe.

Location No.	Type	Description	Recommendations for Phase IB/II if impacted
H 3-33-25	Res/Agri/ E of I-93/Windham	Collapsed structure and barn foundation	Conduct Phase 1B testing including historical research mapping and photography of surface remains description, and shovel testing at 8 m intervals.
H 4-35/36-26	Landscaping/ E of I-93/Windham	Searles Estate stone wall at Searles School	Map, photograph, and describe the affected wall and associate it with the larger National Register eligible area.
H 4-38-27	Res/Agri/ County & Indian Rock Rd./ Windham	2 foundations associated with Robert/John Howard Dinsmoor dating to ca. 1780/1877	Conduct Phase 1B testing including historical research, mapping and photography of surface remains, description, and shovel testing at 8 m intervals.
H 4-38/40/47-28	Transp./ Weave E and W of I-93/ Old County Road/ Windham	Old County Road Bed	Identify roadway, period of use, and extent of route; place on map; photograph; and describe. Testing by trenching across the road to determine construction may be necessary (see 4-38-29).
H 4-38-29	Transp./ Old County Road, W of I-93/ Windham	Stone Bridge Abutments	Identify roadway, period of use, and extent of route; place on map; photograph; and describe (see 4-38/40/47-28).
H 4-42-30	Res/Agri/ E of I-93/Windham	Carriage House Foundation associated with a Dinsmoor property. Now on Brentwood Estate.	Conduct Phase 1B testing including historical research, mapping and photography of surface remains, description, and shovel testing at 8 m intervals.
H 4-43-31	Ind/ E of I-93/	Stone dump	Map, photograph, and describe remains. Attempt to identify source of stones through historical research and examination of surrounding ground surface. Some shovel testing may be necessary.
H 4-48/50-33	Transp./ E and W of I-93/	Old Roadway	Identify roadway, period of use, and extent of route; map; photograph; and describe
H 4-52/54-35	Transp./ W of I-93/Windham & Salem	Abandoned Rail Bed along the B & M line. Extant by the mid-1800s.	Identify the original line and subsequent transfers with periods of use and extent of route; map; photograph; and describe.

Source: DEIS, I-93, Chapter 3 – Affected Environment

As part of its obligation, the State's Office of Historical Resources sponsors an Archeology division. Archeological resources are considered as part of any Section 106 project review, and in certain instances, can be listed on the National Register.

Windham's Historic Districts

Pursuant to NH State Statute, Chapter 674:46, Windham has five historic districts that exist as part of its Zoning Ordinance. A seven-member Historic District Commission (which also serves as the Town's Heritage Commission) has the authority "to accept, review and act upon all residential building permits and to issue certificates of appropriateness for applications other than individual residences that might be located within any historic districts."[30]

The 5 districts represent a relatively tiny portion of Town, occupying approximately 11.7 acres according to the Town's Zoning Map. All of the structures in these districts are Town-owned except for Union Hall and the buildings at the Depot (except for the Town-owned salt shed).

- Town Centre (18th & 19th centuries)
- Searles School and Chapel (1909)
- Union Hall (1880)
- Simpson Cellar Hole (c. 1775)
- Windham Depot

Historic Buildings/Structures/ Landscapes

According to the National Register of Historic Places, only the Searles School and Chapel are listed in its database. Benefits of National Register (NR) designation include a formal recognition of a historic resource's significance, possible eligibility for grant funding, and Section 106 impact review for any projects that involve Federal funding or permitting. In addition, the State of New Hampshire (RSA 227:C-9) has adopted a cooperative directive that commits to implement Section 106-type review for all State-funded, assisted, or permitted projects. A formal determination that a property is eligible to be listed on the National Register will also invoke Section 106 review.

While Windham's National Register listings are quite limited, its identified historic resources are not. The Windham HDC's compilation of 18th, 19th, and 20th century

[30] From the HDC's web site: http://windhamnewhampshire.com/boards/hdc.htm

buildings consists of about 166 properties, 13 of which are indicated as individually eligible for NR listing and 16 as part of an eligible district.[31]

As part of the Interstate 93 project's Draft Environmental Impact Statement (DEIS), historic resources within the project area were carefully examined for potential impacts. Part of this evaluation included formal determinations of NR eligibility for 11 properties in Windham. According to the DEIS, the area examined:

> "… is defined by a band approximately 500 feet on either side of the existing northbound and southbound lanes, with a minimum width of 1,000 feet. At interchanges the area extends to each side of the existing I-93 rights-of-way approximately 2,000 feet along the connecting roadways. New "park and ride" facilities are planned at Exits 2, 3, and 5, and properties in those areas were also surveyed."

The following properties were determined to be eligible for NR listing. A determination of eligibility affords the same protection under Section 106 and usually qualifies properties for similar benefits as actual listing.

NR Eligible Properties: from the Interstate 93 project DEIS:

> ***The George F. Armstrong House (WND0085)*** is located on the north side of Range Road (86 Range Road) between the north and southbound lanes of I-93. The property was determined to be eligible for the National Register of Historic Places under Criterion C in 1992 as one of the best examples of a late 19th century vernacular wood-framed, gable-front dwelling in Windham. It is a significant farm complex including barn, barnyard, and connected sheds. The 1992 eligible boundary encompassed the house and its domestic setting, and extended to parcel 17G/30 to include the Armstrong barn and barnyard, resulting in an eligible parcel of 3.91 acres. Since then, the barn, barnyard, and connected sheds once associated with the house have been converted to a restaurant and extensively altered and expanded. The new boundary of the eligible property now includes only the footprint of the house and its character-defining domestic space (primarily its front and east side yard), but excluding the much-altered barn.
>
> ***The Robert Armstrong House (WND0086)*** is located on the north side of Range Road (88 Range Road), between the north and southbound lanes of I-93. The property is eligible for the National Register under Criterion C as a very fine local example of an early Federal period 2 1/2 story, 5-bay, one room deep dwelling. It is further distinguished by the high quality, integrity and

[31] It is unclear if these properties have been formally submitted to the State Historic Preservation Office as "eligible."

originality of its interior features and finishes. It also retains some historic landscape features, including two large trees which frame the roadside view and define its dooryard. Later 19th century additions to the rear are in the nature of "connected architecture," a reflection of its history as a farmhouse. The eligible boundary for the Armstrong House is limited to the footprint of the dwelling and its domestic space.

Indian Rock (WND0206) is a large natural boulder with a circular depression on top traditionally held to be the site where Native American inhabitants of the Windham area pounded corn. The rock is located in the woods on the north side of Indian Rock Road in Windham, on the old road bed for what is now NH Route 111. The rock was first mentioned in L.A. Morrison's 1883 history of Windham. A preservation committee was formed by the town in 1932 and a bronze commemorative plaque was placed on the rock by the town in 1933. The impetus for commemorating the rock may have been the heavy construction going on along Indian Rock Road at the time. Windham turned Indian Rock Road over to state control in 1932 and several campaigns of road work straightened the route from its original, winding path.

Indian Rock is eligible for the National Register under Criteria Consideration F, representing the early 20th century Colonial Revival movement's interest in colonial history and desire to preserve relicts of that history. The erection of the plaque on the rock is symbolic of the value Windham residents put on the former Native American population of the area. The rock is mentioned as an important historic landmark in every town-wide historical publication since 1883. The eligible boundary for Indian Rock is the immediate setting of the rock between it and Route 111, incorporating the pathway from the road and the wooded surroundings.

The George Dinsmore House (WND0033), located on the south side of Indian Rock Road (82 Indian Rock Road) on the shore of Cobbetts Pond, was determined eligible for the National Register in 1994 under Criterion C as a "distinctive and well-executed local example of the Craftsman Style executed in stone, reflecting the strong influence the construction of Searles Castle had on the architecture of the area." The eligible boundary is limited to a 1.1-acre parcel along Indian Rock Road, which encompasses the dwelling, stone outbuildings, and mature trees that reinforce the historic setting of the property.

The Searles Castle Historic District (WND-D1) was determined eligible for the National Register under Criterion C in 1994. The district is roughly bounded by Searles Road on the east, NH Route 111A on the south, and Indian Rock Road (NH Route 111) and I-93 on the west. The northern boundary runs between Searles Road and I-93 to encompass approximately 95 acres. The Searles Castle Historic District is significant as the best surviving

example of the artistic collaboration between architect Henry Vaughan and his patron, Edward Searles. The pair sought to create an idealized environment, a "kingdom of architecture and landscape," which expressed the qualities of a spiritual and aesthetic retreat through use of the Gothic Revival style. The buildings and structures within the district express an archaeological correctness in the architect's use of Gothic elements, rustic stone construction, and the ecclesiastical qualities of the interiors. The surrounding grounds offer a sense of seclusion and picturesque qualities.

The Town will need to closely monitor the I-93 project for its potential impacts to these historic resources.

Districts that have received some consideration from the HDC in the past include the the Canobie Lake area, and the Searles Castle and grounds.

Public Art/ Outdoor Sculpture

One of Windham's treasures was inventoried in the early 1990's as part of a nationwide effort by the group Save Outdoor Sculpture (SOS). A white painted concrete sculpture, entitled "Our Lady of Fatima, is located at the Sisters of Mercy property , formerly part of the Searles Estate.[32] Installed approximately in 1960, this sculpture contains 6 figures which stand amid a terraced garden.

[32] Taken from the Smithsonian Institute's Inventory of American Painting & Sculpture, available on-line at http://www.siris.si.edu/saam.htm .

Transportation

As Windham grows from a rural community to a small, bedroom community, traffic congestion and drive-alone trips are increasing rapidly. In addition to residential growth within Windham and driving traffic increases, the proposed widening of Interstate 93 is projected to result in more traffic coming to, from, and through Windham to access the Interstate.

Traditional ways to deal with congestion have focused on widening existing roadways, building bypasses, and making operational improvements. In the case of Windham, complaints about congestion are typically focused on Route 111, the Town's main east-west arterial, access to Interstate 93, and inter-community connector for much of southeastern New Hampshire. Congestion is increasing on other roads as well, but Route 111 is the overburdened primary route.

Factors that are contributing to the increasing congestion in Windham include: land use issues; lack of small-scale connector roads; inadequate facilities for bicyclists and pedestrians; lack of public or mass transit alternatives; and regional connectivity issues. Census data show that Windham workers are employed outside of the Town, and 88.7% drive alone to commute to work. Census data also show that auto ownership is higher per household than the regional average, thereby reducing the need to carpool or plan ahead for certain trips, while at the same time contributing towards roadway congestion.

Addressing the full range of factors contributing to congestion is critical. Traditional road widening projects in isolation frequently have not solved congestion problems. Route 111 is a regional highway that is serving both regional travel and local travel. The relatively small amount of commercial activity in the Town forces residents to travel to Salem, Londonderry, or Derry to shop or work. The ability to walk or ride a bike to a store, library, Town Hall, or school is limited due to inadequate facilities for pedestrians or cyclists, a particular hindrance for children and adults without the ability to drive.

Finally, operational improvements at key intersections and access management measures at new and existing developments are essential to study and implement wherever possible. They tend to be relatively inexpensive and can make immediate improvements to traffic flow. Private sector participation can help implement operational improvements quickly and efficiently.

Circulation

Five major highways serve the Town of Windham: Routes 111 and 111A (east-west), and Routes 128, 28, and Interstate 93 (north-south). Route 111 is a limited-access

highway that intersects with Routes 128, I-93, 111A and 28. Two roads off Route 111, Lowell Road and North Lowell Road, connect Windham to Pelham and Derry, respectively. The three highest-volume roadways are described below:

Route 111

Route 111 is an east-west arterial that provides primary access to Interstate 93, and to Nashua and Hudson to the west. The NHDOT plans to reconstruct the easterly portion of Route 111 in Windham including the intersection of Searles Road and Route 111 as a component of the Route 111 Bypass Project scheduled to start in the year 2005. Planned improvements include providing two lanes in each direction, a short left turn pocket for vehicles turning left onto Searles Road and widened shoulders. Completion of this project will relieve heavy congestion along Route 111 at its intersection with Route 28, and will improve access to the northern portion of Route 28.

Interstate 93

Interstate 93 is a major north-south highway that crosses through Windham and provides access to Derry and Manchester to the north and Salem and Massachusetts to the south. NHDOT has recently completed a preliminary design and an environmental evaluation of alternatives and impacts (within the framework of an Environmental Impact Statement (EIS)) on an 18-mile section of I-93, that passes through the communities of Salem, Windham, Derry, Londonderry and Manchester. The result supported the expansion of Interstate 93 to four lanes within the project area which spans from the Massachusetts border to Manchester.

Route 28

Route 28 is a north-south state-numbered route providing access to Manchester to the north and Salem and Massachusetts to the south. The Route 28 Access Management Overlay District supports the area as the Town's main commercial corridor and regulates cross streets and driveways, providing for safe access to land development while conserving the ability to move traffic is a safe, efficient manner. Ordinances applicable to this district reduce the need to build new driveways onto Route 28 and provide for development standards for driveways, setbacks, and parking facilities.

The overall number of miles of town roads in Windham increased 7 percent since 2000, but the number of non-town-maintained roads—those serving new development—has increased by 28 percent. According to Highway Agent Jack McCartney, the Town has been adding an average of 3 additional road miles annually.

Table 32: Classification of Road Mileage

Class	Type	2000 Miles	2004 Miles
I	Trunk Line Highway	9.3	9.3
II	State-Aid Highway	20.4	20.4
III	Rural Highway – Town Road	86.9	92.8
VI	Non-Town-Maintained Roads	12.5	16.0
Total Miles		**129.1**	**138.5**

Source: Town of Windham, Highway Department

Traffic Volumes

The New Hampshire DOT maintains permanent count stations on some of its roadways. Traffic volumes on state roadways in Windham have increased steadily in the last 10 years. In particular, traffic volumes on key roadways such as Interstate 93 And Route 111A have increased more than 10 percent since 1994.

Table 33: New Hampshire Department of Transportation Traffic Volumes

Location	AADT 1994	AADT 1995	AADT 1996	AADT 1997	AADT 1998	AADT 1999	AADT 2000	AADT 2001	AADT 2002	AADT 2003	Percent Change (1994-2003)
NH 28 at Derry Town Line	10,974	11,101	11,052	11,445	11,873	11,609	11,796	11,812	12,062	12,299	12%
I-93 SB at Fordway St. Bridge	58,851	60,021	61,391	63,891	65,142	67,765	70,097	70,263	73,149	72,888	19%
NH 111 East of NH 128	14,000	N/A	N/A	N/A	14,000	N/A	N/A	14,000	N/A	N/A	0%
NH 111 West of I-93	21,000	N/A	N/A	23,000	22,000	N/A	N/A	22,000	N/A	N/A	5%
I-93 SB-NB South of NH Rte. 111 Exits 2-3	75,000	70,000	75,000	78,000	80,000	83,000	85,000	81,000	95,000	84,000	12%
NH 111 East of I-93	17,000	N/A	N/A	19,000	18,000	N/A	N/A	19,000	N/A	N/A	12%
NH 111A South of NH 111	N/A	5,500	N/A	N/A	8,200	N/A	N/A	7,800	N/A	N/A	42%
Cobbetts Pond Road over Golden Brook	1,700	N/A	N/A	N/A	2,600	N/A	N/A	2,600	N/A	N/A	53%

Source: NHDOT, Bureau of Transportation -Planning, Traffic Section, Traffic Report

Traffic volumes on minor roads have also increased significantly since 1994. Table 34 shows traffic volumes for selected minor roads.

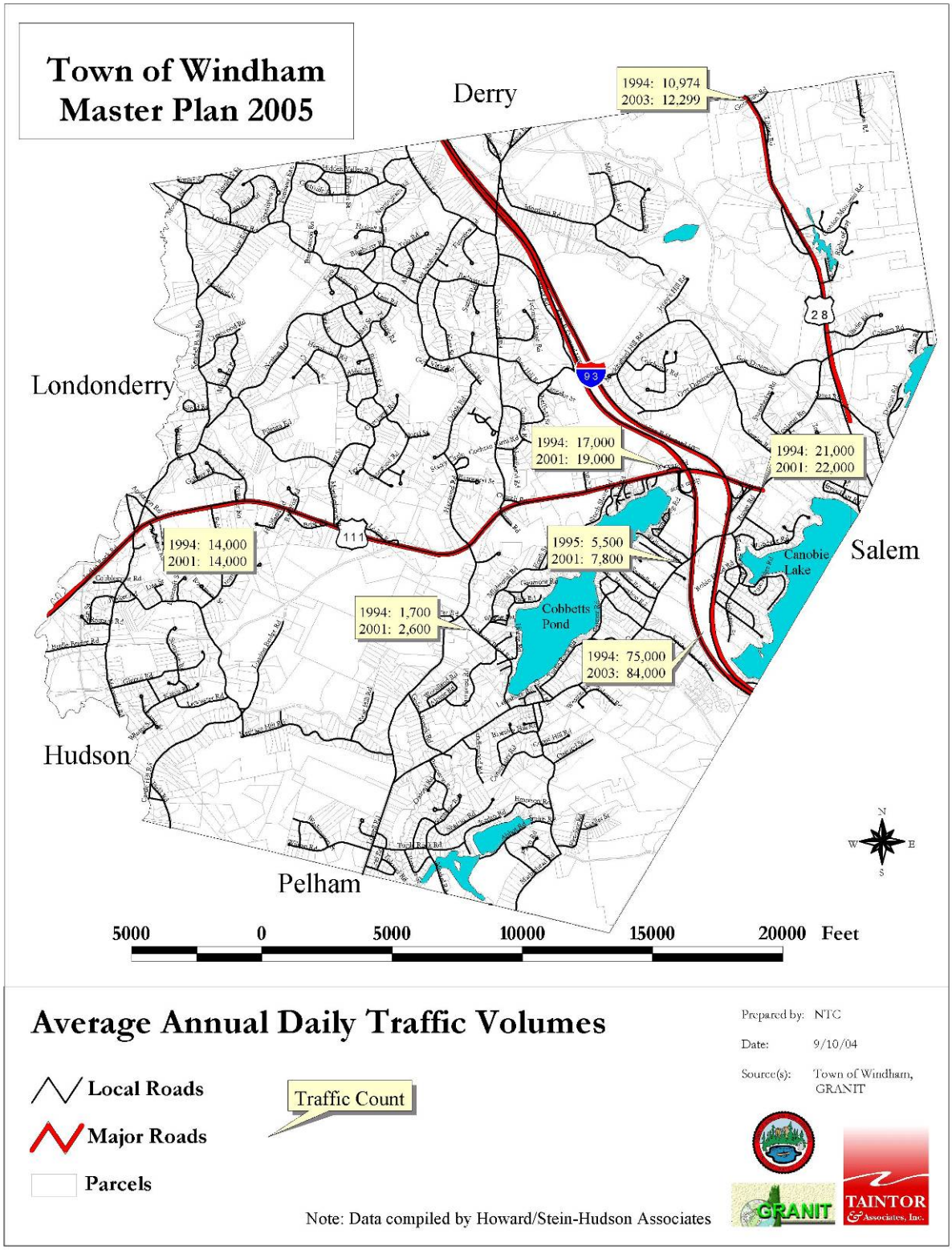
Table 34: Traffic Volumes on Minor Roads

Location	Station #	ADT 2001	ADT 2002
Londonderry Rd. West of Fordway Extension	489056	N/A	1700
Kendall Pond Rd. South of New Rd.	489060	1200	N/A
Marblehead Rd. South of Copps Hill Rd.	489063	N/A	760
Golden Brook Rd. East of Lowell Rd.	489071	330	N/A
Rock Pond Rd. Over Golden Brook	489076	580	N/A
Mockel Road Over Rock Pond	489078	60	N/A

Source: NHDOT, Bureau of Transportation -Planning, Traffic Section, Traffic Report

Figure 35 displays traffic volumes for key roadways in Windham.

Figure 35: Average Daily Traffic Volumes



Accident Data

In order to identify accident trends, safety concerns, and/or roadway deficiencies within the Town, accident data were obtained from the Windham Police Department for the time period between January 1, 2000, through June 30, 2004 (see Table 35). It is important to note that the data received from the Town of Windham did not include information on accident type, severity, time of day, or weather and conditions.

Accident data were provided for 120 intersections in the town of Windham. More than half of all recorded accidents occur at 10 of the 120 intersections. Accident data are summarized below for the ten locations with the most recorded accidents:

Table 35: Top Ten Accident Locations

Intersection	2000	2001	2002	2003	2004*	Total
Indian Rock Road (Route 111)/Route 93 South	0	5	15	13	10	43
Haverhill Road (Route 111)/Mammoth Road (Route 128)	9	6	11	12	4	42
Indian Rock Road (Route 111)/Fellows Road/N. Lowell Road	8	10	4	6	5	33
Indian Rock Road (Route 111)/Route 93 North	0	2	8	11	6	27
Indian Rock Road (Route 111)/Wyman Road	5	4	5	10	2	26
Indian Rock Road (Route 111)/Range Road (Route 111a)	5	5	4	6	5	25
North Policy Street/Range Road (Route 111a)	7	7	3	4	3	24
Range Road (Route 111a)/Searles Road	5	8	2	3	1	19
Indian Rock Road (Route 111)/Route 93	4	7	0	0	0	11
Indian Rock Road (Route 111)/Church Road	3	7	1	0	0	11
Haverhill Road (Route 111)/Meetinghouse Road	1	5	2	2	0	10
Total accidents for top ten intersections	47	66	55	67	36	271
Total accidents for all 120 intersections	101	108	128	130	60	527
Percent accidents occurring at top ten intersections	47%	61%	43%	52%	60%	51%

* Through June 30, 2004

Source: Town of Windham Police Department 2004

Due to high volumes of vehicular traffic, accidents predominantly occur on state or national routes, including Interstate 93 ramps, Indian Rock Road (Route 111), Haverhill Road (Route 111), Mammoth Road (Route 128), and Range Road (Route 111A).

Future Roadway Projects

The RPC's Salem-Plaistow-Windham Metropolitan Planning Organization (MPO) Transportation Improvement Program (TIP) includes several roadway improvement projects for Windham. The TIP includes projects that are consistent with regional and state transportation and air quality objectives.

The following projects are listed on the federal 2003-2005 TIP for the Town of Windham:

- South Lowell Road—Construction of shared roadway bicycle lane – Phase 1.
- Route 111—Signal upgrade at the intersections of Lowell Road, Fellows Avenue/North Lowell Road & Village Green.
- Route 111A & Langdon Road—Intersection improvements.
- Route 111—Bypass construction.
- Route 28 and Route 111—Lake Street intersection improvements.

Resident Travel Patterns

Windham residents primarily do not work in Windham. Only 13 percent of workers in Windham in 2000 were employed in Windham, down from 17 percent in 1990. Compared to nearby communities, Windham employs very few of its residents. In Derry, 20 percent of its workers work in Derry; Londonderry, 22 percent; and Salem, 30 percent of the workers were employed in Salem.

This trend has lead to increasing traffic volumes on Interstate 93, Route 111, and Route 28. In addition, the number of residents commuting to nearby cities and towns such as Salem, Derry, Manchester, and Massachusetts has also increased significantly over the past 10 years.

Table 36: Top Commuting Destination for Windham Residents 2000

	Commute Destination	1990	2000	% Increase
	Total Windham workers	4,726	5,580	18%
1.	Salem	486	721	48%
2.	Windham	804	709	-12%
3.	Boston, MA	315	283	-10%
4.	Andover, MA	226	251	11%
5.	Nashua	199	223	12%
6.	Londonderry	165	203	23%
7.	Manchester	162	200	23%
8.	Derry	160	195	22%
9.	Hudson	N/A	161	-
10.	Lawrence, MA	N/A	153	-

Source: US Census Bureau. Census of Population Data 1990 and 2000

The average commute time for Windham workers is 31.5 minutes, six minutes longer than the regional average. Congestion on regional roadways and distance traveled are both factors. More than half of the communities that Windham residents commute to

for work are accessible from Interstate 93, opening the possibility of coordinated bus and shuttle services from Windham and adjacent communities to destinations in the Interstate 93 corridor.

Windham residents average 2.27 vehicles per household, higher than the regional average of 1.95 vehicles per household. Contributing factors include the fact that Windham's household size is slightly higher than the regional average and that there is a lack of available public transportation services available to residents.

Between the years of 1990 and 2000 the number of residents who drove alone to work increased over 7 percent, despite increasing congestion on regional roadways. Dispersion of places of employment and the lack of alternatives and incentives to carpool contribute to this increase.

Table 37: Means of Transportation to Work – 1990/2000

Mean of Transportation	1990 (%)	2000 (%)
Drove alone	81.8	88.7
Carpooled	11.0	6.5
Public transportation	0.5	0.3
Bicycle or Walked	1.4	0.8
Motorcycle or other means	0.8	0.3
Worked at home	4.4	3.4

Source: US Census Bureau. Census of Population Data 1990 and 2000

As Windham's main east-west travel corridor and feeder to Interstate 93, Route 111 will continue to experience acute peak-hour traffic congestion as the number of single-occupancy vehicles increases. East-west routes are limited due to the location of Interstate 93. Only three east-west corridors exist Route 111, 111A, and Lowell Road.

Public Transportation

Windham residents and workers presently have few options for public transportation. There is no regional transit provider coordinating public transportation in the region, and Windham residents must travel north to Londonderry to take Concord Trailways daily bus service to Boston. The one-way service normally takes between 60 and 75 minutes. The Massachusetts Statewide Travel Options organization, MassRIDES, provides vanpool service daily from the I-93 Exit 3 Park & Ride to and from the Faneuil Hall area. A computerized ridematching service is available to commuters through MassRIDES.

In the year 2000, less than 1 percent of Windham residents commuted to work by public transportation and those who did take public transportation had an average commute time of 120 minutes.

Other public transportation options include senior van service operated by the Town. Service is available to nearby communities for medical and shopping trips by appointment through the Town Hall. The RPC is currently assessing the potential to coordinate a regional van system that would provide increased service to residents and allow vendors to operate more efficiently. Call-up taxi cab service is available from a taxi cab company based in Derry.

Future Public Transportation Projects

The Salem-Plaistow-Windham MPO, the organization that administers the federal transportation planning process for the region, is presently working with municipal representatives to develop and implement a plan to expand public transportation in the region.

In August of 2004, the MPO developed a CMAQ application for funds to develop an integrated employment transportation/trip reduction program that will include a fixed route bus service between Salem and Derry, a Transportation Management Association including major employers in downtown Salem, and some pedestrian connections in the local employment centers. This system would not only provide service to the elderly and disabled, but would reduce vehicle trips in the region. This service could be an asset to Windham and the region.

The Massachusetts Bay Transportation Authority (MBTA) is considering extending the Lowell Commuter Rail Line to Nashua, New Hampshire. The 13-mile extension would include one new station in Massachusetts at North Chelmsford and one or two new stations in New Hampshire. For workers in the growing Chelmsford-Route 495 area, this could be an alternative to driving the entire distance. Construction is contingent on funding by the state of New Hampshire.

Other opportunities for public transportation will be fully investigated by New Hampshire DOT as part of its Route 1nterstate 93 Transit Investment Study. The study will evaluate the feasibility of alternative transportation modes and corridors as a first step towards implementing a full range of transit services for passenger as well as freight transportation from Manchester to Boston and including Windham. Alternatives that will be investigated include rail and bus services in and along the Interstate 93 highway corridor, the abandoned Manchester-Lawrence rail branch, and alternatives connecting Boston and Manchester via existing MBTA service at Lawrence, the Anderson transit facility, or bus-rail combinations.

Pedestrian/Bicycle Paths and Facilities

Windham currently has few accommodations for bicycles. There are no bicycle paths or bicycle lanes and few bicycle parking facilities. The New Hampshire DOT provides bicycle lockers at the Windham Park and Ride area on Route 111 at Interstate 93.

There are however several projects currently in the planning and design stages, that will accommodate pedestrian and bicyclists in and through Windham:

- Lowell Road—Includes the construction of 2.8 miles of four-foot wide bicycle shoulders and related safety improvements to Lowell Road.

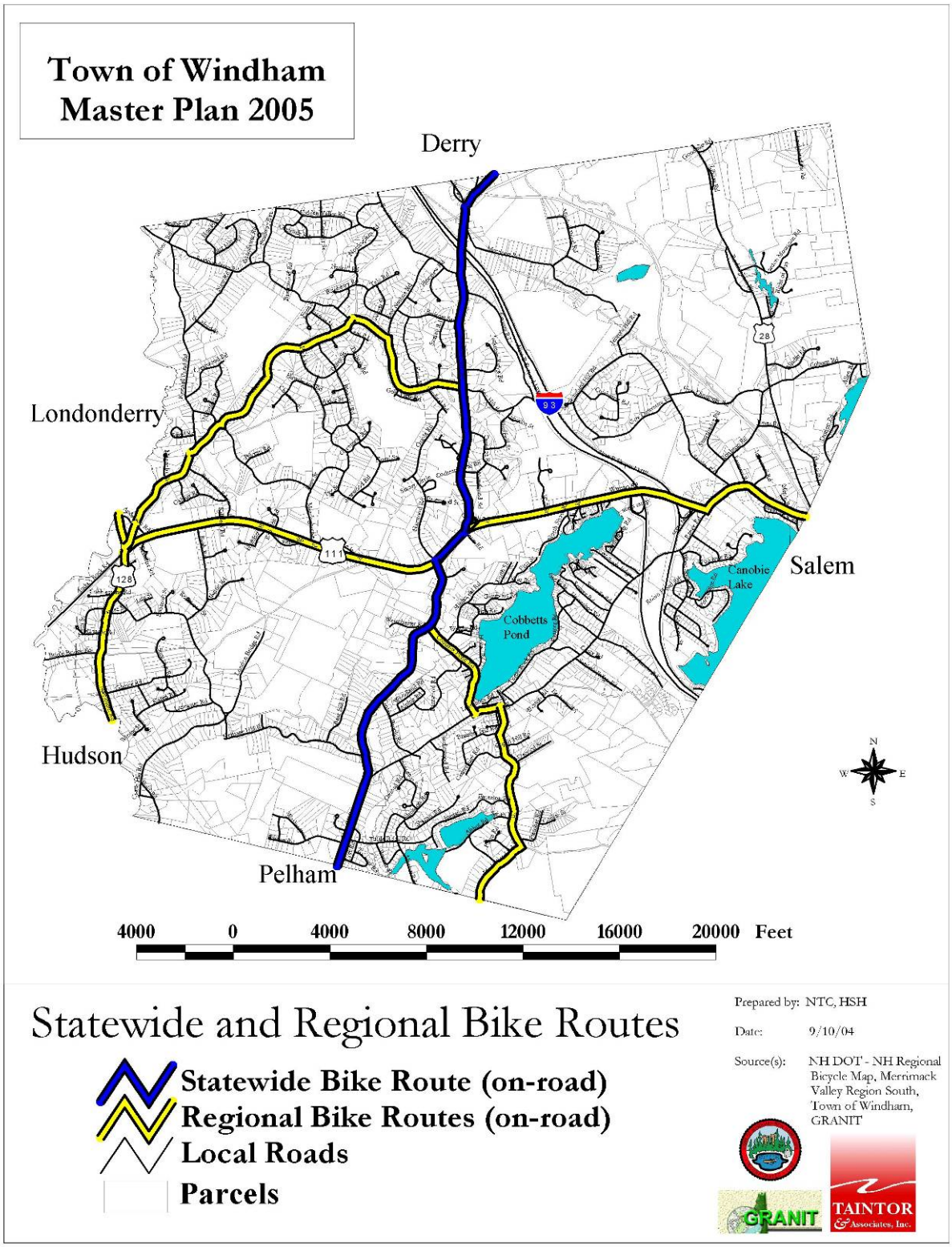
- Salem to Concord Bikeway—NHDOT is working to establish a transportation corridor for bicyclists and pedestrians between Salem and Concord. The proposed Windham segment includes 5.8 miles of pathway beginning at North Policy Street and traveling down Route 111 to North Lowell Road to the rail trail to the Derry line.

- A trail connection on the abandoned Worcester and Rochester Rail corridor that intersects the Manchester and Lawrence corridor at Windham Depot is being considered by the Town as a rail to trail or rail with trail.

- The Town continues to pursue future use of the Worcester and Rochester Rail corridor west of Interstate 93 as part of the Interstate 93 Widening Project.

Windham has several statewide and regional bicycle routes. These are routes that have been identified by NHDOT as the best available routes for bicycling to key destinations throughout the state. The routes are primarily commuting or transportation routes and are not geared to exploring scenic and recreational amenities. Figure 36 identifies statewide and regional bicycle routes in the Town of Windham.

Figure 36: State and Regional Bike Routes



Trails and Discontinued Roads

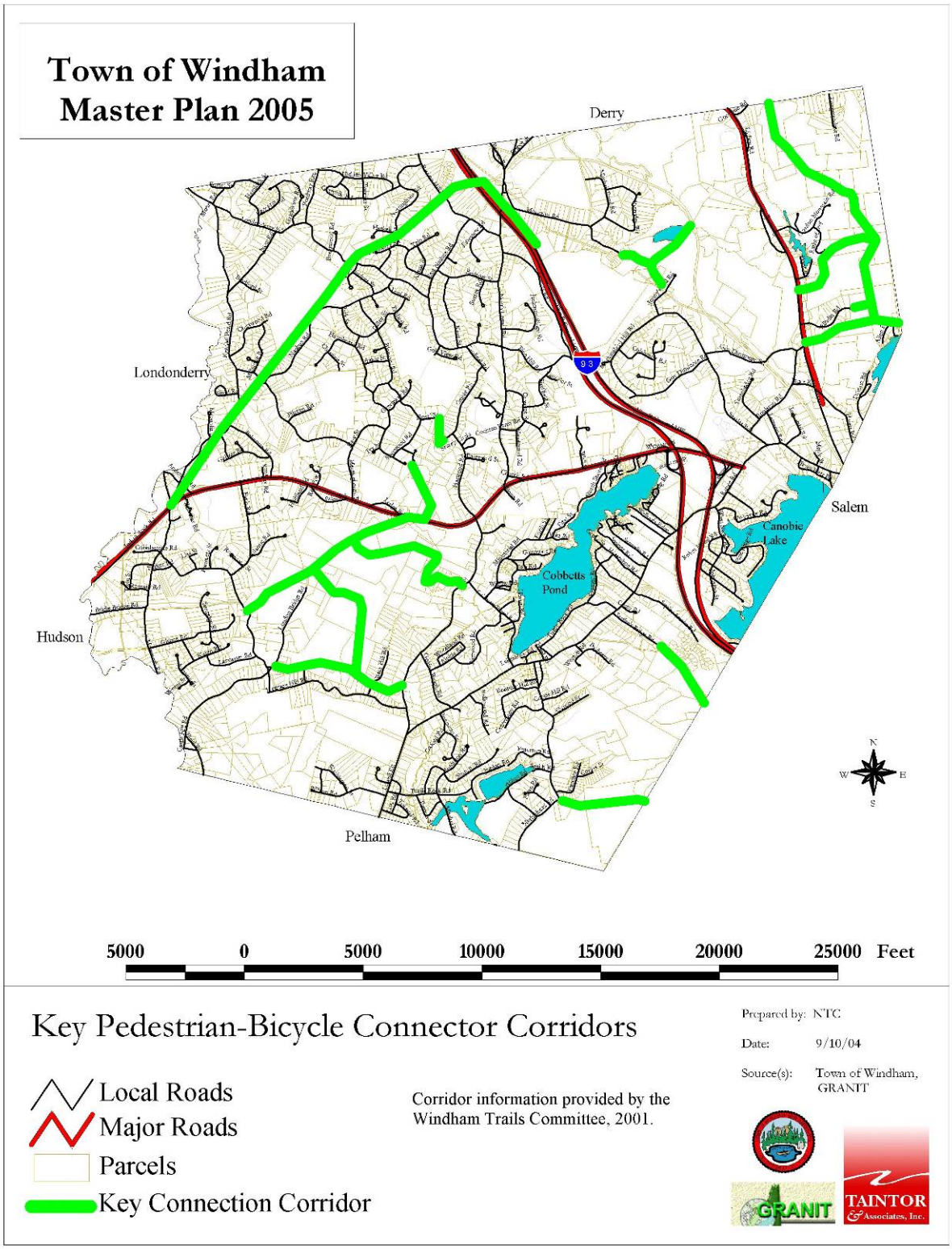
The Windham Trails Sub-Committee of the Planning Board has identified and has started mapping trails and discontinued roads in Town using a GPS device. These trails and discontinued roads could become useful connector paths to provide safe and convenient access to and from different parts of Windham as well as access to neighboring towns. Committee members have taken the data collected and created maps illustrating where trails and discontinued roads are located and if and how they can be accessed though town owned land for public use. Only a partial set of trails and discontinued roads have been identified to date. Maps have been reviewed and posted on the Town website for public access. Maps will be updated as more trails and access points are identified.

Identified discontinued roads available as public rights-of-way:

- London Bridge Road
- Spear Hill Road
- Governor Dinsmore Road
- Bissel Camp Road
- Witch Hazel Road
- Pine Hill Road
- Country Road
- Hopkins Road

Figure 37 identifies key trails/discontinued roadway connectors for transportation purposes.

Figure 37: Key Trails/Discontinued Roadway Connections



Street Connectors

In the Windham 2000 Master Plan, nine areas were identified as potential connection corridors. The majority of the selected areas were located in the northeast and southeast sections of Windham to help alleviate congestion from Route 111, 111A, and 28. None of these proposed connector roads has been built.

Table 38: Nine Proposed Potential Connection Corridors

1.	Timberlane Road with Talent Road
2.	Westchester Road with Bear Hill Road
3.	Ledge Road with Meetinghouse Road and extension of Ledge Road in an easterly direction as a service road
4.	Wall Street with North Lowell & Londonderry Roads
5.	Roulston Road with Gov. Dinsmore Road
6.	Jenny Hill Road with Morrison Road
7.	Parallel access road along Route 28 near the discontinued Bissell Camp Road
8.	Range Road with Brookdale Road Salem, NH

Source: Town of Windham Master Plan 2000

As a result of residential growth and increasing traffic on major roadways in Town emergency response times have become a key concern among residents and local officials. Improving emergency response times of emergency vehicles has been cited as a reason to make these connections along with the potential to alleviate congestion on existing roads.

Implementation of the proposed connection corridors will serve to improve cross-town access, help preserve /enhance (because it will help create communities on a neighborhood scale which is not presently in place) town character, and provide better connectivity between neighborhoods, parks, schools, and businesses.

Parking Requirements

Parking requirements in the Zoning Ordinance generally do not appear to be excessive in prescribing a greater number of spaces than are typically needed by the use(s) they serve. One exception is the requirements for retail establishments. There area only two types of retail identified in the ordinance: "retail and service establishments"; and "retail sales of automobiles, nursery stock, and other such goods." Additional categories of retail might be useful to allow better fine-tuning of parking requirements. As a second exception, one space per 200 square feet of gross floor area (5 per 1,000 g.s.f.) for "retail and service establishments" is too high. Four spaces per 1,000 g.s.f. is sufficient.

Bicycle parking should be included in the section on "Off-Street Parking and Loading Areas.." Bicycle parking for customers, visitors, and employees should be required at

the rate of 5 percent of required automobile parking. In general, this would mean that a minimum of one bike rack for 2 bikes would meet the requirement for a 10,000 s.f. retail store.