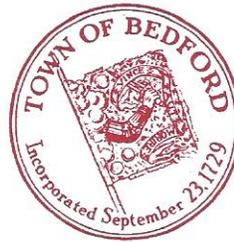




THE BEDFORD WE WANT: SHAPING OUR FUTURE COMPREHENSIVE PLAN

**Bedford Planning Board
December 2013**

TOWN OF BEDFORD
BEDFORD, MASSACHUSETTS 01730



www.bedfordma.gov

Planning Board

Jeffrey Cohen, *Chair*
Shawn Hanegan, *Clerk* Sandra Hackman
Amy Lloyd Lisa Mustapich
Glenn Garber, *Planning Director*
Catherine Perry, *Assistant Planner*

TOWN HALL—10 Mudge Way
BEDFORD, MASSACHUSETTS 01730
TEL 781-275-1548
FAX 781-271-0537

November 26, 2013

TO THE CITIZENS OF BEDFORD:

It is with great pleasure that the Planning Board conveys this new Comprehensive Plan to residents and other stakeholders of Bedford. The Plan is a periodic self-examination by the community of where it stands, where it wants to go, and how it plans to get there.

The last Plan was issued in 2002. Bedford implemented most of the initiatives proposed in that document. Meanwhile much has changed in the Town and region. That is why the Planning Board—charged under state law with lead responsibility for creating a Comprehensive Plan—committed at Annual Town Meeting in 2011 to developing a new one.

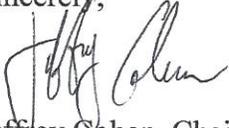
The Board began that participatory process through dialogues with town boards, committees, departments, and private groups that spring, and later held public workshops. Work on preparing the actual Plan began in summer 2012, based on chapters drafted by staff and consultants and in-depth review by the Planning Board and a broad-based Ad Hoc Advisory Committee.

Participants came to see Bedford as a mature suburb facing new challenges: expansion of its jobs and business base to stabilize the residential tax burden and ensure enough revenue to sustain high-quality services and facilities; overburdened roadways with few quick fixes; growing stresses on natural resources; and an aging built infrastructure. These challenges make the coming years an era of *redevelopment*—requiring creative long-term approaches.

This Plan outlines Bedford's numerous strengths as well as those challenges in six key areas: Land Use; Natural and Cultural Resources; Economic Development; Transportation; Housing Needs; and Services, Facilities, Recreation and Energy. The Plan also proposes a menu of actions designed to preserve the Town's strengths while tackling the challenges in the years to come.

Residents and other stakeholders will have numerous opportunities to become meaningfully involved in shaping the Bedford we want through those initiatives. We look forward to working with you on those. We also welcome written comments on the Plan; all such commentary will appear in an appendix to this document. After incorporating those comments, the Board will formally adopt the Plan in early 2014. Please feel free to contact the Planning Board and staff with comments and ideas.

Sincerely,

A handwritten signature in black ink, appearing to read "Jeffrey Cohen". The signature is written in a cursive style with a large initial "J" and "C".

Jeffrey Cohen, Chair

FOR THE BEDFORD PLANNING BOARD

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CREDITS

BEDFORD PLANNING BOARD

Present Members:

Jeffrey Cohen
Sandra Hackman
Shawn Hanegan
Amy Lloyd
Lisa Mustapich

Past Members:

Margot Fleischman
Janet Powers
Jonathan Silver

AD HOC ADVISORY COMMITTEE

Brian O'Donnell, Carla Olsen, David Cormier, Amy Hamilton, Jaci Edwards, Mike Oleksinski, Sam Petrecca, Stephen Carluccio, Suzanne Koller, Suzy Enos, Terry Gleason, and Tom Kinzer. Mark Siegenthaler, Selectmen, Planning Board liaison.

BEDFORD PLANNING DEPARTMENT (PLAN CONTENT & DATA)

Glenn Garber, AICP, Planning Director
Catherine Perry, Assistant Planner
Cathy Silvestrone, Administrative Assistant

BEDFORD PUBLIC WORKS DEPARTMENT (MAPPING)

Christopher Nelson, GIS Analyst

LARRY KOFF & ASSOCIATES W/ MADDEN PLANNING GROUP (EDITING & COORDINATION)

Lawrence Koff, Principal
Kathryn Madden, Principal
Roberta Cameron, Project Planner (Koff)

TOWN DEPARTMENTS

The staff is also grateful for the helpfulness of the following Town department heads and members of their staff, who were interviewed on one or more occasions and/or who provided valuable information and data:

Town Manager Richard Reed
Assistant Town Manager Jessica Porter
Code Enforcement Dir. Christopher Laskey
Facilities Dir. Richard Jones
Fire Chief David Grunes
Board of Health Dir. Heidi Porter

Library Dir. Richard Callaghan
Police Chief Robert Bongiorno
Public Works Dir. (former) Richard Warrington
Recreation Dir. Amy Hamilton
Youth/Family Serv. Dir., Susan Baldauf

COMPREHENSIVE PLAN PARTICIPATION SUMMARY

ONE- ON-ONE COMMITTEE AND BOARD DIALOGUE AND COMMUNICATIONS

The Planning Board met with the following Committees/Boards to discuss initial thoughts, concerns, and ideas in conjunction with the update of the Comprehensive Plan):

April 12, 2011	BARC	Bedford Arbor Resource Committee
May 3, 2011	BAC	Bicycle Advisory Committee (discussed draft notes)
June 7, 2011	TAC	Transportation Advisory Committee
June 28, 2011	BAC	Bicycle Advisory Committee (discussed primary thoughts and ideas)
September 7, 2011	CofC	Chamber of Commerce
August 16, 2011	BOH	Board of Health
October 18, 2011	ETF	Energy Task Force
October 18, 2011	YFS	Youth and Family Services
December 6, 2011	HPC	Historic Preservation Commission

Below is a list of committees /boards and organizations that were also invited to meet with the Planning Board to share initial, thoughts, concerns, and ideas in conjunction with the update of the Comprehensive Plan. Some of these committees shared written reports with the Board, but didn't meet in person: 1) **Bedford Housing Partnership**, 2) **HDC (Historic District Commission)**, 3) **Selectmen**, 4) **School Committee**, 5) **Conservation Commission**, 6) **Trails Committee**, and 7) **Recreation Commission**

OPEN PUBLIC WORKSHOPS: (HELD ON SATURDAYS)

WORKSHOP #1: MARCH 3, 2012 – INTRO TO THE CP UPDATE, ECONOMIC DEVELOPMENT, LAND USE, TRANSPORTATION AND HOUSING

Attendees: William Moonan, Selectman; Steve Shetler, at large; Harley Haynes, at large; Nancy Haynes, at large; Pam Brown, Chamber of Commerce; Brian O'Donnell, Bicycle Committee; Nancy Forrest, at large; Leah Archibald, at large; Dan Archibald, at large; Mildred Seaborn, at large; Catherine Perry, at large; Bruce Wisentaner, at large; Chris Gittins, Arbor Resources; Charles Mustapich, at large; Susan Grieb, Energy Task Force; Art Smith, Conservation and Trails Committee; Dave Enos, at large; Suzy Enos, Energy Task Force; Advisory Committee; Rita Fardy, at large; Jess Iandiorio, at large; Cales Iandiorio, at large; Tom Pinney, Youth and Family Services ; Shawn Hanegan, at large; D.J. Perez, at large; Sue Baldauf, Youth and Family Services; A. Vaghar, at large; R. Sawyer, at large; Steve Steele, Finance Committee; Maggie Debbie, at large; Terry Gleason, Bicycle Committee; Bea Brunkhurst, Board of Health; Carol Reynolds, at large; Catherine Cordes, Selectman; Tom Kinzer, Board of Health; Laurie Gleason, at large; Allan Chertok, at large; Vito LaMura, Community Preservation; Frances Bigda-Peyton, at large; Robert Kalantari, Energy Task Force; Jeff Cohen, Zoning Board of Appeals; Kathryn Rifkin, at

large; Kim Siebert, at large; Mary Mady, at large; Ken Prescott, Bedford Arbor Resources; John Lobosco, at large; Roy Watson, Chamber of Commerce; Lorrie Dunham, Historic Preservation and Historic District Committee; Kristina Philipson, at large; Carol Amick, Volunteer Coordinating Committee; John Peterson, Chamber of Commerce.

WORKSHOP #2: MAY 12, 2012 SERVICES/FACILITIES & RECREATION, NATURAL RESOURCES AND OPEN SPACE; CULTURAL AND HISTORIC RESOURCES AND ENERGY

Attendees: Sam Petrecca, at large; Myles McDonough, at large; Suzy Enos, Energy Task Force; Stephen Steele, Finance Committee; Harley Haynes, at large; Robert Kalantari, Energy Task Force; Bob Dorer, at large; Nancy Haynes, at large; Tom Kinzer, Board of Health; Tom Pinney, Youth and Family Services Advisory Committee; Nancy Asbedian, at large; Catherine Perry, at large; Pam Brown, Chamber of Commerce; Kim Siebert, at large; Michelle Saber, at large; Vito LaMura, Community Preservation; Maggie Debbie, at large; Ken Prescott, Bedford Arbor Resources; Terry Gleason, Bicycle Committee; Frances Bigda-Peyton, at large; Tom Bigda-Peyton, at large; Bill Moonan, Selectman; Lorna Hyland, at large; Millie Seaborn, at large; Mary Firestone, at large; Sue Baldauf, Youth and Family Services; Jeff Cohen, Zoning Board of Appeals; Aubrey Jaffer, at large; John Peterson, Chamber of Commerce; Julie Turner, BCAT; Jaci Edwards, Bedford Arbor Resources; Brenda Kelly, Energy Task Force; Bob Slechta, Historic Preservation Committee; Laurie Gleason, at large; Carol Benoit-Reynolds, at large; Amy Hamilton, Recreation Director; Catherine Cordes, Selectman.

COMPREHENSIVE PLAN PUBLIC WORK SESSIONS W/ CP AD HOC ADVISORY COMMITTEE:

FIRST ROUND DRAFT ELEMENT DISCUSSIONS:

September 12, 2012	Natural and Cultural Resources Element (Outline & Prototype) presentation and discussion
October 16, 2012	Transportation Element presentation and discussion
November 27, 2012	Economic Development Element presentation and discussion
January 9, 2013	Housing Element discussion
February 26, 2013	Services and Facilities Element discussion
June 4, 2013	Land Use Element discussion

SECOND ROUND DRAFT ELEMENT DISCUSSIONS:

July 30, 2013	Natural/Cultural Element, Action Matrix, Revised Town-Wide Vision
August 27, 2013	Economic Development Element and Action Matrix & Land Use Element and Action Matrix
September 24, 2013	Housing Element and Actions & Transportation Element and Actions
October 15, 2013	Services and Facilities Element and Actions

[NOTE: Adam Schwartz, Pamela Brown, Town Manager Richard Reed, Christine Wilgren and several other citizens also were active participants in various sessions where Plan Elements were publicly reviewed.]

PLANNING BOARD MEMBERS WHO WERE PART OF THE COMPREHENSIVE PLAN PROCESS:

PRESENT MEMBERS:

Jeffrey Cohen
Sandra Hackman
Shawn Hanegan
Amy Lloyd
Lisa Mustapich

PAST MEMBERS:

Margot Fleischman
Janet Powers
Jonathan Silver

COMPREHENSIVE PLAN AD HOC ADVISORY COMMITTEE MEMBERS

APPOINTMENT STARTING IN AUGUST 2012

Brian O'Donnell, Transportation Advisory Committee
Carla Olsen, Healthy Bedford
David Cormier, Chamber of Commerce
Amy Hamilton, Recreation Director
Jaci Edwards, Arbor Recourses Committee
Mike Oleksinski, At-Large
Sam Petrecca, At Large
Stephen Carluccio, Finance Committee
Suzanne Koller, Chamber of Commerce
Suzy Enos, Energy Task Force
Terry Gleason, Bicycle Advisory Committee
Tom Kinzer, Board of Health
Mark Siegenthaler, Selectmen, Planning Board liaison.

OTHER COMPREHENSIVE PLAN DISCUSSIONS

(Posted on agendas for public and board discussion)

July 19, 2011, August 2, 2011, August 16, 2011, September 7, 2011, September 20, 2011, October 4, 2011, November 2, 2011, November 15, 2011, December 6, 2011, January 3, 2012, February 15, 2012, February 25, 2012, March 8, 2012, April 10, 2012, May 1, 2012, May 8, 2012, June 5, 2012, July 9, 2012 July 17, 2012, August 29, 2012, October 9, 2013, October 30, 2013 and November 4, 2013.

On numerous occasions, the Planning Board discussed a wide variety of substantive Comprehensive Plan matters at additional public meetings with the agenda item posted in advance of the meeting date. These discussions covered the full spectrum of project management, planning and policy issues and upcoming meetings and workshops.

See GLOSSARY in the rear of the document
starting on page G-1 for numerous
helpful definitions, acronyms, agency and
organizational names

1. EXECUTIVE SUMMARY



THE PURPOSE OF A COMPREHENSIVE PLAN

A Comprehensive Plan is the result of a periodic self-evaluation by a community. Stakeholders examine nearly every aspect of local life, documenting where their Town is now, where they want it to go in the next 10 to 20 years, and how to work toward that desired future. In so doing, they seek to translate the Town's values into action.

Bedford adopted its last Comprehensive Plan in 2002. The Planning Board committed to creating a new one at Annual Town Meeting in 2011.

State law gives the Planning Board lead responsibility for developing a Comprehensive Plan, but the effort involves contributions from numerous boards, committees, departments, private groups, businesses, citizens at large, and local institutions. Thus the Plan should not be seen as a study or report that professional staff or consultants prepare and submit. Rather, the guidance offered here is a product of an intensive participatory process.

This document represents the culmination of that multi-year effort. The Plan is organized around six topical elements: Land Use; Natural and Cultural Resources; Economic Development; Transportation; Housing Needs; and Services, Facilities, Recreation and Energy. Each element—or chapter—begins with a Snapshot of that arena, as well as maps portraying changes that have occurred in Bedford since the last Plan. Each element also outlines a Vision for the future, summarizes and explores the Issues that test that Vision, proposes overall Goals for fulfilling the Vision, and suggests more specific Strategies for moving forward.

Each element also includes an Action Plan: a slate of initiatives and tools to implement the Plan. Each action item suggests which boards, committees, departments, and private groups could collaborate to pursue each initiative, and a timeline for doing so. (Because the six elements interact, some action items appear in more than one. The appendices include more detailed information and discussion.) Together the six Action Plans serve as a guide to shaping Bedford's future.

A BRIEF HISTORY OF BEDFORD AND SNAPSHOT OF THE TOWN TODAY

Bedford's population totaled about 5,000 immediately after World War II, concentrated mostly in what would now be considered the Town's older neighborhoods. Large parts of the Town remained in agricultural use: Bedford then had only a small amount of industry and commerce.

From 1950 to 1970 the Town grew from a rural community into its familiar suburban form, facilitated by the construction of Route 128 and the widening and extension of Route 3. By

1970 the number of residents had reached 13,513—nearly the present population of 14,000. The Town also saw the development of significant amounts of industry and a thriving retail corridor. Examples of the “new economy” include high tech and bio-tech companies such as Instrumentation Laboratories, I-Robot, Data Direct Technologies, Progress Software, Medica and Toxicon. The defense industry is well established, with Mitre being the largest employer in Bedford. The town also has smaller employers, which are well-connected to the community in the Depot Park, Great Road and North Road areas.

The Town built much of its inventory of playing fields, playgrounds, tennis and basketball courts, bicycle trails, and other active recreation facilities during this period. The era also saw the creation of a local historic district, restoration of a dozen historic buildings and sites, and designation of five National Register districts.

This period also brought major institutions to Bedford, including the Edith Nourse Rogers Memorial Veterans Hospital and Middlesex Community College—adding to the existing Hanscom Air Force Base and the Massport-run Hanscom Field. These institutions—which the Town does not control—occupy more than one-fifth of its 13.7 square miles.

Today Bedford is a flourishing community with an outstanding public school system, stable property values, prudent fiscal management, and robust public services and private amenities. A high percentage of residents also work in Town—accounting for some 35% of the 16,000-plus full-time jobs in Bedford.

Other key characteristics of Bedford and changes since the last Plan include these:

- In FY 13, the business sector generated about 37% of the Town’s \$53 million in tax revenues, with the residential sector accounting for the rest. FY 13 tax rates were \$33.80 for business properties and \$15.37 for residential. The business share of tax revenues has declined in recent years.
- At least 17,000 commuting vehicles traverse Bedford’s streets each work day—of which at least 88% are single-occupancy.
- Construction occurred on parcels totaling about 525 acres since the 2002 Plan—close to 6% of Bedford’s land area.
- The Town-controlled inventory of open space has expanded by about 200 acres since the 2002 Plan.
- Developers have built some 800 dwelling units since the 2002 Plan—more than 90% of those multifamily or attached townhouse units. These homes occurred largely through a

wave of Chapter 40B projects (under the Massachusetts Comprehensive Permit Act), which pushed the Town’s state-certified subsidized housing inventory substantially over the requisite 10%.

- Bedford is aging: half of all residents are over age 55, up from 45% in 2000—although the Town continues to see a small but steady influx of young families and single-headed households.

After more than six decades of growth, Bedford is now a built-out community—about 95% developed. Most new development will occur through further subdivision or assembly of adjacent parcels. Governmental and private protection of more than 2,000 acres—nearly a quarter of the Town’s land—has somewhat balanced the construction of more than 5 ¼ million square feet of floor area in a mix of industrial, commercial, R&D, and general office uses. These and other efforts have helped achieve some kind of equilibrium in the community’s growth.

However, as a mature suburb, Bedford faces new challenges. Its employment and business base still needs to expand to stabilize the residential tax burden and ensure enough revenue to sustain high-quality services and facilities. Roadways are overburdened with traffic, and short-term options for relieving this congestion are few. Natural resources face growing stressors. The built infrastructure is aging and faces new pressures from environmental change. These challenges make the coming years *an era of redevelopment*—and are why Bedford must plan for the future.

SHAPING BEDFORD’S ERA OF REDEVELOPMENT

A complete reading of this Plan reveals core concerns facing the Town as it enters this era of redevelopment.

TOWN-WIDE CHALLENGES

Revitalizing the Business Sector. A strong employment base and property tax revenues from businesses are essential to sustaining Bedford’s good schools, public infrastructure, and Town services. While most business areas in Bedford are still doing well financially, most are also more than 50 years old and in serious need of rejuvenation. The Town can help by improving its zoning incentives, making strategic capital investments, and forging public/private partnerships to encourage smart and sustainable redevelopment.

Expanding Transportation Options: Traffic congestion is a constant complaint from nearly everyone, and public transit options within Bedford—as well as to and from surrounding communities—are limited. Sporadic MBTA bus service and transportation demand

management efforts by private businesses help, but have not yet made much impact. However, the Town has begun efforts to create an alternative Infrastructure to enable people to reach jobs, shopping, schools and other civic and recreational destinations on foot or by bicycle—bolstering their health in the process. A new focus on Complete Streets can ensure that roadways accommodate pedestrians and bicyclists as well as drivers. Efforts such as Healthy Bedford, the pending Bicycle Master Plan, public and private capital investment, and initiatives to expand the Town’s trail system and public and private transit options are also critical.

Ensuring a Healthy Environment. Natural resources are under growing pressure from severe weather and higher flood levels owing to climate change. These storms damage roads, utilities and telecommunications, degrade water quality, stress trees and other vegetation, harm public and private property, and undermine public health. At the same time, wetlands are becoming more important in managing stormwater. Yet encroaching redevelopment, dwindling opportunities for land acquisition, and a lack of robust regulatory tools undermine efforts to protect natural resources. Incorporating those tools into zoning bylaws could help. Bedford can also build on its strong record of reducing municipal energy use by siting alternative power sources and expanding public awareness of options for conserving energy.

Responding to Specific Housing Needs. Bedford has a record of achieving more diversity in housing types and costs than most communities in the region. Housing, however, is more than a matter of affordability. The Town can better identify the needs of underserved sectors, such as empty nesters who would like to downsize in Bedford but have few choices, younger employees who must now commute long distances from other Towns and cities to work in Bedford’s businesses, and the sons and daughters of Bedford residents who would like to reside here but cannot.

Strengthening the Character of the Built Environment. Challenges in this arena include making the Town’s streetscape and retail and industrial areas more attractive and distinctive, highlighting the Town’s cultural and historic resources, and encouraging better architecture and site design during redevelopment. The tool kit for accomplishing these goals includes making targeted public and private capital investments, improving zoning bylaws and permitting processes, working with businesses and developers, and coordinating the work of organizations involved in historic preservation and maintaining other aspects of Bedford’s quality of life.

Meeting Demand for Recreation and Enrichment. Demand for organized athletics, adult education, youth support and other programs is growing every year, straining the capacity of municipal, private, and institutional providers as well as facilities such as fields. Better coordination and more integrated decision making among Town departments, Town

committees and volunteers can optimize efforts to respond to this demand and guide capital investment, given finite resources.

CHALLENGES IN SPECIFIC CORRIDORS AND NODES

Sharpening the Vision for Village Centers and Industrial Mixed Use. From 2002 to 2007, the Town approved overlay zoning for Depot Park and North Road, and industrial areas such as Middlesex Turnpike. These overlays are designed to encourage more coherent and visionary village and industrial mixed-use development. Practical experience has since pointed to the need to sharpen these tools—and distinguish the different overlay zones—by further defining what stakeholders do and do not want to see in those locations, and amending the zoning bylaws accordingly.

Invigorating Bedford’s Main Street. The Great Road hosts the historic Town center, municipal complex and extensive retail options, as well as residential neighborhoods. This artery also carries some 23,000 motor vehicle trips per day. The 2011–12 Great Road Master Plan applies a Complete Streets concept to a significant segment of this roadway, to create a more attractive and bike- and pedestrian-friendly environment, through state and local funding. Extending this Master Plan to the entire length of The Great Road would encourage more enduring design options than the prevalent strip mall environment while providing more and healthier transportation options.

THE PARTICIPATORY PROCESS USED TO DEVELOP THIS PLAN

To elicit these challenges and options for tackling them, the Planning Board began the Comprehensive Plan process by conducting one-on-one dialogues with key Town boards, committees, departments and community groups from April to December 2011. Each group also submitted detailed written documents outlining its view of Bedford’s needs and opportunities. Then, to solicit wider input, the Planning Board and staff held public workshops organized around the plan’s six elements on two Saturdays in March and May 2012, attended by 70 participants.

That summer the Planning Department began producing the first drafts of each Plan element, based on this extensive public input and in-depth research and data gathering. The Planning Board and department hired consultants to help structure and edit the plan, and facilitate meetings on it. And the Board appointed a broad-based Ad Hoc Advisory Committee; see the section Participation Summary for the members and other participants.

The Board, ad hoc committee, staff, and consultants discussed the first drafts of the six Plan elements that fall, and continued through winter and spring 2013. These participants then reviewed second drafts of all six elements in summer and fall.

In all, efforts to gather input and feedback and keep the Town apprised of progress on the Plan included:

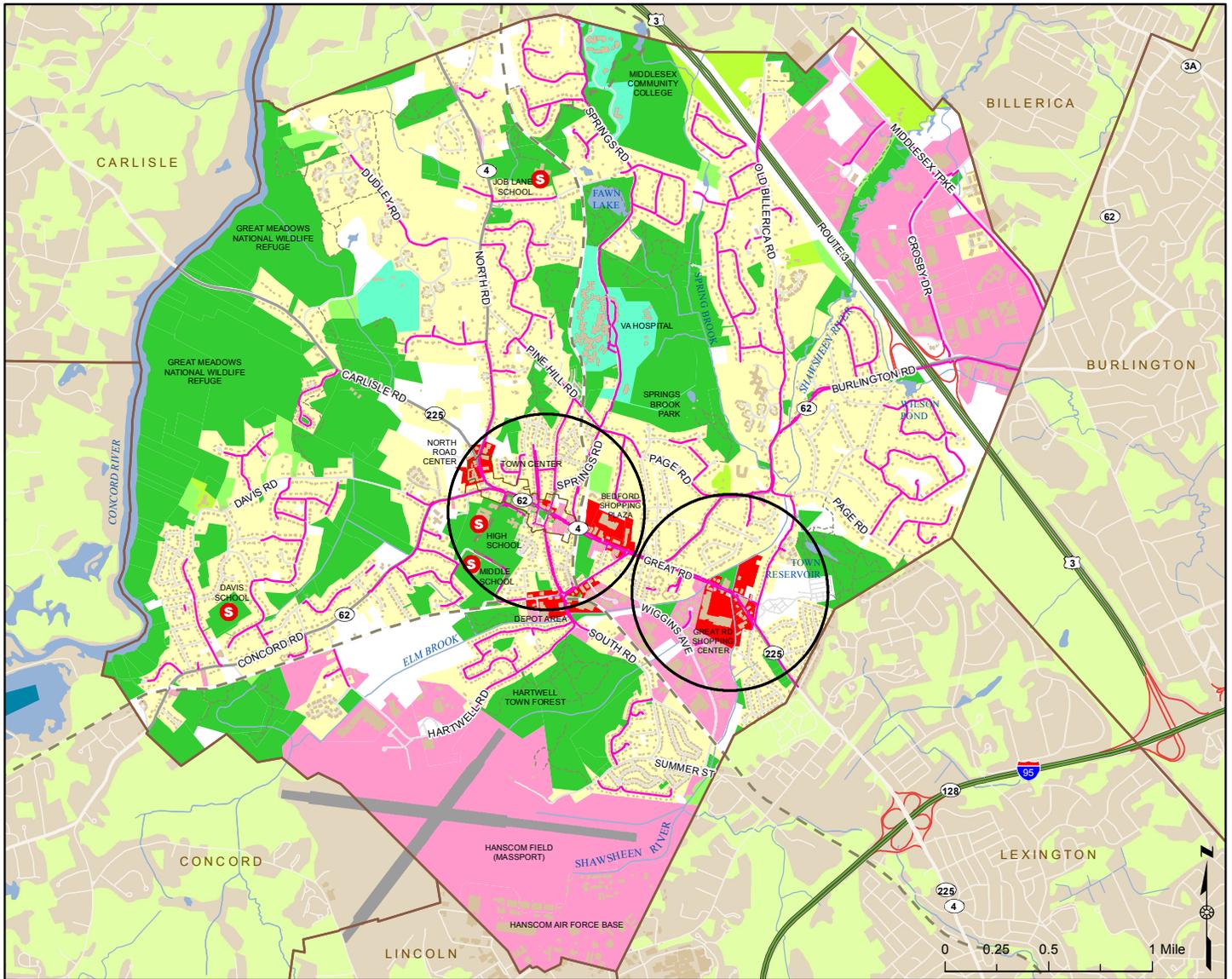
- Discussion at more than a score of public meetings of the Planning Board from 2012 to 2013.
- Summaries of ideas from boards and committees, workshop participants and other stakeholders posted on the Planning website in 2012.
- An overview of the nearly completed Plan presented to special Town meeting on November 4, 2013.
- Discussions during six *Bedford Commons* shows on cable TV in 2012–13, and during one show devoted exclusively to the Comprehensive Plan in December 2013.
- Print and online media coverage throughout the process.

The resulting Plan is only the first step: the hard work of implementing the scores of Action items now begins. The Planning Board encourages all stakeholders to scrutinize the elements and the appendices in this Plan to learn more about their Town, and to participate in efforts during the coming years to shape Bedford's future.

2. LONG RANGE VISION FOR BEDFORD

Bedford realizes its full potential as a well-connected community, providing a healthy living environment with a balance of distinctive commercial, residential, institutional, and governmental centers, linked open spaces, friendly, well-knit neighborhoods, and employment in an expanding new economy. The Town enhances its base of wetlands, streams, habitat and natural resource areas while fostering redevelopment and new growth in appropriate patterns of development.

- Commercial activity intensifies in strategic locations, expanding the employment and tax base through private investment, and ensuring that Bedford citizens have a range of amenities. The commercial segments of the Great Road corridor are transitioning to establish more compact centers with a sense of place. The Town Center is a locus of civic engagement and small-scale commerce, complemented by residential proximity. Other centers, such as the Depot and North Road areas, feature pedestrian friendly activities related to employment, culture, recreation, and diverse housing that attract people and encourage them to remain.
- Bedford’s cultural and historic assets and their design features play a prominent role in defining community identity, pride, and the character of new development.
- Natural resources frame residential development, dominating the landscape, in less developed areas. Residents can safely walk and bike to destinations, as well as to open space, historic and cultural sites, and other neighborhoods.
- Street trees and landscaping, upgraded sidewalks, small pedestrian parks, interpretive features, and other amenities enhance the public domain along The Great Road and other key boulevards.
- Alternative modes of transportation and a balanced mix of uses provide the opportunity to work close to home, reduce the congestion on the roadway network, while traffic calming improvements help mitigate its impacts.
- Housing in Bedford meets the needs of a diverse population, including families, young adults, empty-nesters,” and “down-sizers,” with a variety of housing types that complement the context of each neighborhood. Residential development provides for a labor force presence that supports business growth, while the growing cultural diversity of the population is integrated into Bedford’s civic life and events.



Land Use Structure

Land Use

- Residential
- Commercial / Mixed Use Centers
- Jobs
- Campuses
- Public Open Space
- Private Open Space
- Ch.61/61A: Forest / Agriculture
- Other Unprotected Open Space
- Sidewalk
- Trail
- 10-minute Walk Radius
- S School
- Road
- Town Boundary

NOTE: Boundary of Town Center shown is the extents of the Historic District.

Map by Bedford Public Works
November 2013

The information displayed on this or any other map produced by the Town of Bedford is for reference purposes only. The Town of Bedford does not guarantee the accuracy of the data. Users are responsible for determining the suitability for their own individual needs.

All information is from the Town of Bedford's Geographic Information System (GIS) database. Any questions or concerns should be addressed to the Town GIS Analyst.

DISCUSSION

Bedford was a small town in the mid-20th century, with little industry or commerce, extensive rural areas, and a population of slightly more than 5,200 in 1950. By 1970, the population had reached about 13,500, or 96% of its present population of approximately 14,000. If this twenty year period was Bedford's era of explosive population growth, the overlapping period from 1960 to the early 1970's was the era of even more dramatic growth in the economic base. During this time, the Route 3 corridor (Crosby Drive/Burlington Road/Middlesex Turnpike), Wiggins Avenue, Depot Park/DeAngelo Drive, and the major Great Road shopping areas were all constructed, which helped to underwrite the property tax base and provide jobs. By the mid-1970's, Bedford's non-residential uses had grown from four small-scale commercial nodes to a concentration of 4.5 million square feet of floor area, a figure that has now reached close to 5.8 million square feet. So in one generation, Bedford experienced tremendous growth to reach nearly its present size and scale.

Although some large parcels still exist (principally in the north and west parts of the town and mostly residentially-zoned), Bedford can now be seen as a mostly built-out, mature suburb where *redevelopment* is the issue. The challenges of redevelopment are more complicated than the previous era of community growth, when it was largely a matter of developing plentiful open land with everything connected by unlimited automobile use. Now, with little land left to develop and ever-mounting concerns about traffic impacts, the challenge is to find effective ways to integrate land uses and encourage concentration in limited nodes, as opposed to the traditional patterns of sprawl where shopping, employment, housing and other activities are fully separated and spread out.

A directly related sub-theme is *connectivity*, where pedestrian, bicycle and greenway/trail connections connect neighborhoods, shopping, employment centers, public facilities, parks, fields and conservation/natural resource areas. Such infrastructure is typically insufficient in suburban communities that developed in the post-World War II era of high land consumption and automobile dependency.

In spite of substantial growth pressures in the last 60 years, Bedford has done relatively well in attaining a balance of land uses, development and preservation, although traffic congestion has impacted Bedford for decades. Strengths include mature industrial and office space that is attractive, affordable, and conveniently located near highway interchanges; a large open space resource; a rich historic inventory; bike trails, rivers, and recreation facilities; an array of housing choices; excellent town services; several institutional campuses; and the regional infrastructure of Hanscom airfield. Examples of the "new economy" include high tech and bio-

tech companies such as Instrumentation Laboratories, I-Robot, Data Direct Technologies, Progress Software, Medica and Toxicon. The defense industry is well established, with Mitre being the largest employer in Bedford. The town also has smaller employers, which are well-connected to the community in the Depot Park, Great Road and North Road areas.

Bedford needs appropriate redevelopment and land use management to maintain its balance and remain competitive in the region. Improvements to the pedestrian, bicycle and greenway network are a complementary future strategy, with significant implications for natural resources and open space, transportation, health and wellness and community character.

3. BACKGROUND: DEMOGRAPHICS

Between 2000 and 2010, the population of Bedford increased from 12,595 to 13,320 persons¹. The 2013 annual town census indicates that the town has grown to approximately 14,000 persons. This is a steady but not steep growth rate and was somewhat faster than regional increases included in the table below. Bedford also became a little more racially and ethnically diverse during this decade, with small net numerical gains among African American, Latino and other groups, while the Asian population increased significantly.

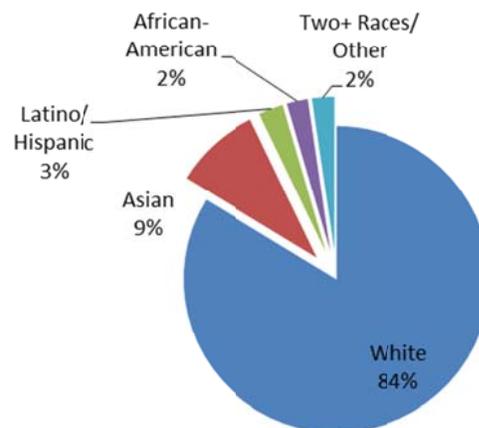
Table 3.1 Town and Region Population

	2000	2010	Change (no.)	Change (%)
Town of Bedford	12,595	13,320	725	5.8%
MAGIC Region	148,941	154,435	5,494	3.7%
MAPC Region	3,066,394	3,161,712	95,318	3.1%
Maturing Suburbs	1,231,842	1,251,848	20,006	1.6%

Table 3.2 Bedford Racial Composition

	2000	2010
White	11,486	11,443
African-American	208	301
Asian	680	1,250
Latino/Hispanic	227	356
Two+ Races	150	246
Other	71	73
TOTAL	12,822	13,669

Town of Bedford Racial Composition 2010



¹ US Census, American Communities Survey, 2010. Other information in this section draws on local and regional sources. Totals may vary due to margins of error involved in survey sampling.

Despite changes in the housing stock between 2000 and 2010, the categories of households and families remained roughly in proportion to the overall growth in the number of households, with one limited exception: in the female-headed category, the numbers increased from 337 in the baseline year to 486 in 2010, which represented a percentage increase from 7% to 10% of all households, where the gain in *total* households for these two years was 7%. The percentage of these female-headed households having children dropped from 50% to 44%, although the actual numbers increased from 168 to 212. Finally, average household and family size decreased but only in the 1% range.

Table 3.3 Bedford Household (HH) Composition

	2000	2010
Total HH	4,621	4,951
HH Alone	1,007	1,096
Non-family HH	1,202	1,239
> 65 Yr. Head	472	513
Family HH	3,419	3,712
Married	2,974	3,108
w/ Children	1,574	1,682
Female Head HH	337	486
w/ Children	168	212

Table 3.4 Bedford Household Size

	2000	2010
Avg. HH Size	2.60	2.55
Avg. Family Size	3.04	2.98

*Note: A **family** consists of two or more people (one of whom is the householder) related by birth, marriage, or adoption residing in the same housing unit. A **household** consists of one or more people who occupy a housing unit regardless of relationship.*

The median age increased between 2000 and 2010 from 42.1 to 45.1 years, primarily due to steady gains in the 55 to 64 years bracket. The top of Bedford’s population curve was filled in 2010 by residents in the early ‘30’s to late ‘50’s age range. Overall, the most significant age trend was in the 25 to 44 years bracket, where there was a steep decline of approximately 640 persons.

Table 3.5 Housing Occupancy Characteristics

	2000		2010	
Owner-occupied	3,705	80%	3,696	72%
Renter-occupied	916	20%	1,434	28%

The percentage of owner-to-renter occupied housing changed from 80/20% to 72/28% between 2000 and 2010.

Bedford’s percentage of college graduates increased from 59% in 2000 to more than 71% in 2010, while those holding a high school diploma or not completing HS dropped from 36% to 28%. The percentage of those with bachelor or associates degrees only increased 2%, likely due to graduate degrees increasing by 10%. Women’s educational attainment rate was generally ahead of males in every category, both in percentage-gain from base year and percentages in 2010, with the exception of 2010 graduate degrees.

Table 3.6 Educational Attainment

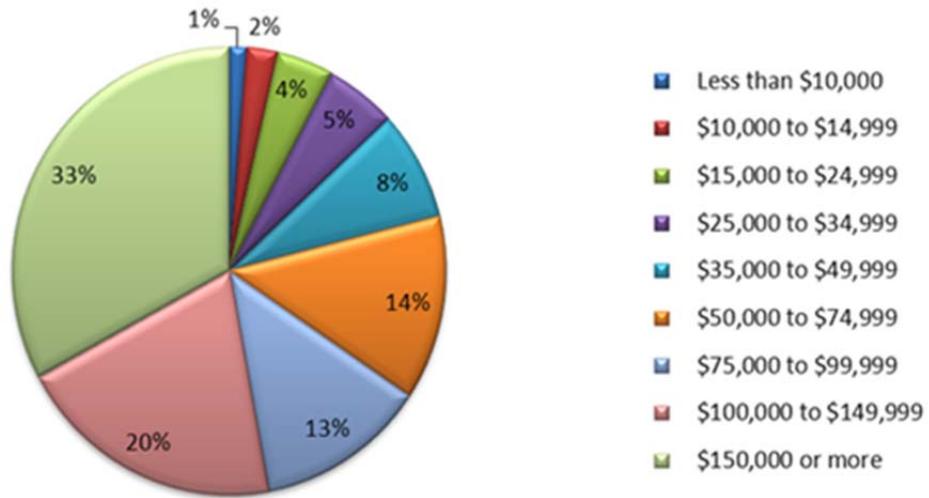
	2000	2010
Pop > 25 Yrs.	9,128	9,182
< HS	5%	3%
HS Diploma	31%	25%
Bachelor’s or Associate	37%	39%
Graduate degree	22%	32%

Table 3.7 Educational Attainment by Gender

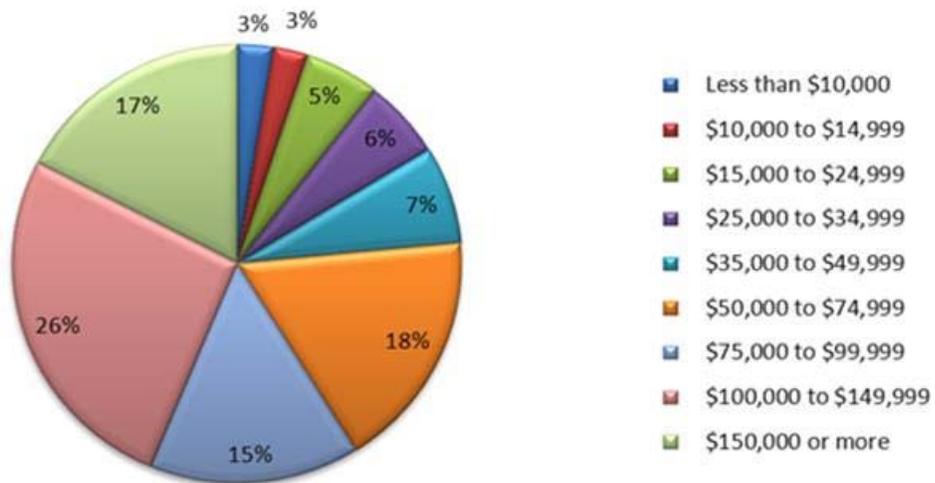
	2000		2010	
	Fem	Male	Fem	Male
< HS	5%	5%	1%	3%
HS Diploma	32%	29%	24%	25%
Bachelor’s or Associate	37%	36%	47%	30%
Graduate degree	22%	22%	28%	39%

Median income rose from \$87,962 in 2000 to \$107,639 in 2010, a 23% gain in absolute dollars, but essentially flat when adjusted for inflation using the Consumer Price Index. The percentage of households earning \$150,000 or more nearly doubled from 17% to 33%. The percentage earning in the \$100,000 to \$149,999 category actually decreased from 26% to 20% between 2000 and 2010, as did the percentage in the \$75,000 to \$99,999 bracket, dropping from 15% to 13%. It is therefore the large earner households that have most changed the income profile in this time period.

Household Income for Bedford Residents 2010



Household Income for Bedford Residents 2000

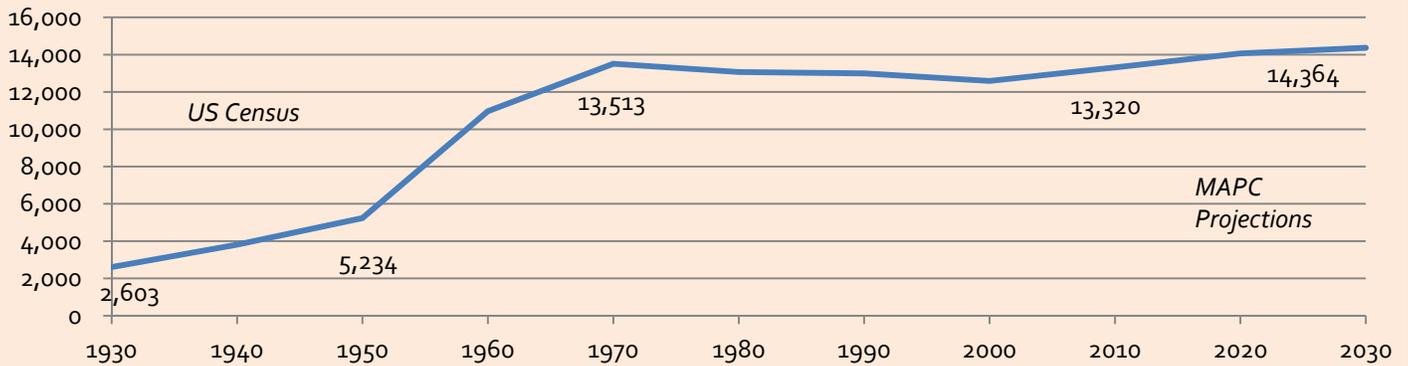


4. LAND USE



LAND USE SNAPSHOT

Bedford Population 1930-2030

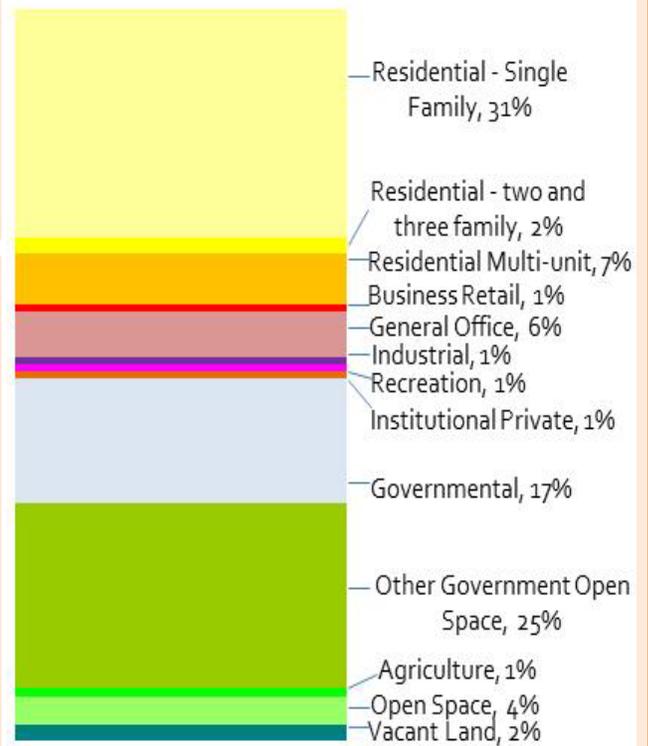


Zoning Summary:

Zoning Summary:	
Residential Districts	1-2 family residences; also PRD and Cluster
Residence R (R)	60,000 s.f. minimum lot
Residence A (R-A)	40,000 s.f.
Residence B (R-B)	30,000 s.f.
Residence C (R-C)	25,000 s.f.
Residence D (R-D)	10 acres, 4 dwellings per acre, multiple attached units
Business Districts	0.5 FAR, 25-37 ft height
Limited Business A (LB)	Residential, mixed use, hotel, small-scale: retail (<2000 s.f.), office, manuf., R&D; The Great Road (TGR) frontage, Albion Rd
General Business B (GB)	Mixed use, hotel, retail, service, office, small-scale: manuf. R&D; TGR plazas, Middlesex Tpk
Commercial (C)	Office, R&D, manuf., auto sales; Loomis St/Depot area
Industrial Districts	0.5 FAR, 42-45 ft. height
Industrial B (I)	Warehouse, manuf., R&D, w/SP: mixed use; Wiggins, Oak Park Dr.
Industrial C (IC)	Warehouse, manuf., research w/SP: hotel, restaurant, mixed use; Crosby Dr.
Industrial Park A (IP)	Same uses as IC district; Hanscom area, Wiggins, Middlesex Tpk
Overlay Districts	
North Road Mixed Use	Balanced mix of residential, small-scale retail, office/R&D uses, design standards, pedestrian amenities
Town Center Mixed Use	
Depot Area Mixed Use	

Land Use 2013

Source: MassGIS



VISION

As a historically significant town of increasing regional importance, Bedford establishes a stronger identity, building on its many assets and creating or restoring more memorable community places that avoid the purely functional suburban uniformity of the past six decades. Distinct interconnected neighborhoods and commercial areas, each with its own unique character and complementary set of land uses, are enhanced by improved coordination at all levels of government, supportive infrastructure investments, and accompanying improvements in the local laws and regulations.

Bedford is a welcoming town with a diverse range of housing, convenient access to employment opportunities, and multiple retail centers. Accessible open space and natural resources contribute to a healthy living environment. Pedestrian and bicycle connections, along with employer trip reduction programs and improved public transportation provide alternatives for individual vehicular use and help Bedford to enhance its health and wellness.

The Great Road functions as the town's "Main Street," with three clearly defined commercial centers that contribute to community character, rather than detract from it. These three centers are linked by an enhanced transportation corridor with greater bicycle and pedestrian opportunities, lively public amenities, and safe pedestrian crossings.

Nearby, the Depot area provides a historic mix of small scale industrial, commercial, and residential uses at the junction of the regional bicycle paths. By contrast Crosby Drive and nearby areas are revitalized by a new generation of private capital investment that reinforces their value as a regional economic asset. The adjacent Middlesex Turnpike is an increasingly important employment corridor with a growing concentration of high technology and life science industries, as well as general office, light industrial, and an emerging complement of restaurants, housing and shops, which are visible and convenient to employees and residents. The North Road locus has a more harmonious and complementary mix of commercial and residential activity, and a more manageable traffic pattern.

The Town actively coordinates with major institutional entities such as the US Air Force and Massport at Hanscom, Middlesex Community College, and the Edith Nourse Rogers VA Hospital, to participate in planning for changes in the future.

SUMMARY OF ISSUES AND OPPORTUNITIES

1. Traffic volume and management: The historic street network is often congested as local vehicles and regional car and truck trips compete with one another on the way to various industrial, office, institutional, and commercial destinations. This congestion frustrates residents and isolates neighborhoods from each other and from other Bedford destinations. There is an opportunity to reduce volumes as well as better manage the flow on town streets.
2. Complementary character and scale: Business and commercial areas, in particular along The Great Road and near Depot Park, lack a consistent and distinct historical and architectural identity or connection with adjacent residential neighborhoods. There is an opportunity over time to make business and commercial areas more in harmony with residential areas.
3. Natural resources as a land use framework: The critical community roles of natural resources and open space areas - such as stormwater retention, flood control, habitat protection, land use buffering and contributors to quality of life - are not adequately recognized or reflected in planning for resource protection or investment in capital improvements and maintenance. In some areas, open space resources are fragmented and unconnected to major destinations and from one another. Outdated zoning does not adequately reflect a vision with distinct, interconnected commercial areas and residential neighborhoods, nor does it provide sufficient market opportunity to drive Bedford's future vision. There is an opportunity to better utilize natural resources and protected open space areas as a green framework or template for Bedford's development and redevelopment.
4. Recognition of 19th and early 20th century neighborhoods: Older, pre-World War II neighborhoods, which defined residential Bedford until the mid-20th century, are not sufficiently recognized for their distinctive character or for their valuable benefit in providing more modestly-priced housing. There is an opportunity to recognize and better protect these places as an asset.
5. Concentration and organization of Town efforts to plan, budget and build strategically: Municipal management of future land use changes, desired development, and capital investment in infrastructure and resources need improved coordination and increased staff support. Similarly, regional issues of transportation, open space protection and institutional redevelopment need more organized and coordinated attention from the Bedford community. There is an opportunity to align these ongoing activities more closely.

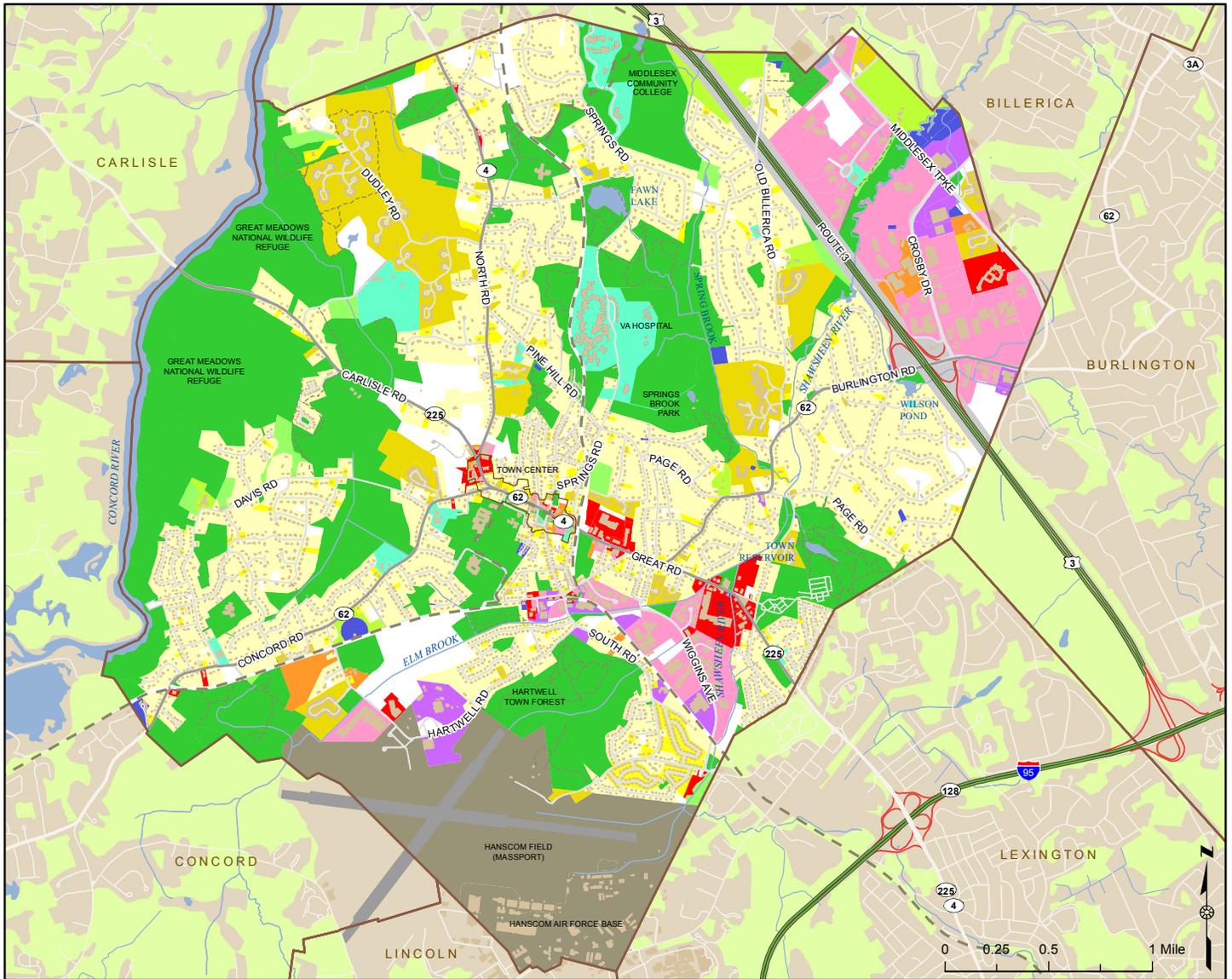
GOALS

1. Update zoning to reinforce the distinct character of each of the varied commercial areas in town and their competitive locations, while providing feasible opportunity to the private market.
2. Invigorate designated redevelopment/mixed use areas in town by sharpening their specific visions and physical form to make the zoning align more closely with realistic market investment scenarios as well as neighborhood concerns.
3. Permit a wider range of housing types in appropriate locations that help meet demonstrably underserved local needs, including senior housing, “starter homes,” and empty-nester/retirement options.
4. Plan for and seek opportunities to expand pedestrian and bicycle connections and facilities and preserve open space and cultural and historic assets, to enhance quality of life, community character, health, and wellness, and generate economic benefit.
5. Institute further improvements to the public realm, both through public and private capital investment and by means of the development permitting process, to beautify Bedford, improve neighborhood and area identity, manage traffic on major roads, and provide opportunities for lively community life. Support regional initiatives in transportation and economic development which enhance the town’s growth vision.
6. Expand community outreach and encourage more involvement in planning the town’s future by continuing to build upon use of the internet and social media, and invigorate recruitment efforts to involve more residents and other stakeholders in civic engagement that furthers community goals.

DISCUSSION

The Land Use element encompasses all other elements in the comprehensive plan, as the concept of how a community uses its land relates to all other community concerns and policy decisions.

Participants in public forums in the master plan process expressed well-justified pride in the quality of Bedford’s existing pattern of development. But with the town nearly built out, the opportunities for growth through major new land consumption are diminishing. It is therefore necessary to think in terms of *redevelopment* in selected areas, employing the best planning,



Land Use

Land Use

- 1 - Res Single Family
- 2 - Res 2-3 Family
- 3 - Res Multi Family
- 4 - Mixed Use
- 5 - Business / Retail
- 6 - Office
- 7 - Industrial
- 8 - Municipal / Public
- Airport
- 9 - Institution / Open
- 10 - Public Open Space
- 11 - Private Open Space
- 12 - Ch.61/61A: Forest / Agriculture
- 13 - Other Unprotected Open Space

- Road
- Trail
- Town Boundary

NOTE: Boundary of Town Center shown is the extents of the Historic District.

Map by Bedford Public Works
November 2013

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zoning and policy strategies to adjust existing land uses to current needs for vehicular and personal circulation, shopping and diverse styles of employment and residential living.

A historical perspective contributes to an understanding of how Bedford uses its land and how it took the physical form to which it has evolved today. In a sense, there have been two broad eras of community growth. In the first 200 years after its incorporation in 1729, Bedford was a rural place with very limited population, industry and commerce. By the 1920's, the population still slightly under 1,500 people. Some areas of concentrated business, governmental, and housing uses existed in historic nodes such as the Town Center and Depot Park, but at a small village scale. Freight and commuter rail lines, which have since been discontinued, spurred some growth in the early 20th century. Although by 1950 the population had grown to 5,200, Bedford was still a small town, with development covering only about 10% of its 13.7 square miles of land area. Today, the town is 95% developed or otherwise unavailable for building. Of the remaining 5%, approximately half is developable (2.3% of the town), while the rest (2.2% of the town) is undevelopable due to factors such as wetlands.

Everything changed dramatically in the 1950's, with the federally-subsidized building of the circumferential highway Route 128, and the southward extension and widening of Route 3 to a new interchange with Route 128. An era of heavy suburban growth followed these massive public works projects, which made Bedford's vacant land exponentially more valuable. The town grew to nearly its present population of 14,000 between 1950 and 1970, the great majority of it in single family homes on relatively large suburban lots. The industrial/office/distribution complexes that now exist in several parts of town began to establish in the 1960's, spurred by new business zoning, investment in local road building and, in some cases, location near highway interchanges. At the same time, retail businesses, banks and restaurants, and larger shopping centers began developing, following residents to the suburbs.

By the 1970's, Bedford looked and felt much like it does now, only less dense. Land use patterns in various parts of town were established in today's familiar form: Wiggins Avenue, Depot Park and DeAngelo Drive, the Route 3 corridor (Crosby Drive-Burlington Road-Middlesex Turnpike), commercial strips along portions of The Great Road, and suburban neighborhoods like the Summer Street/South Road area, Page and Old Billerica Roads, the Concord Road area, the North Bedford subdivisions, and the more wooded northwest quadrant. These places were punctuated by institutional complexes such as the municipal Town Center, the Bedford Veteran's Administration Hospital, Middlesex Community College, and Hanscom Air Force Base capping the southern end of town. The substantial open space and natural resources network was acquired in part in response to heavy growth. Since the 2002 Plan, the Town of Bedford has purchased 201 acres of land for conservation, contributing toward a total of over 2,000 acres of

open space protected at various governmental levels, which represents about 23% of the total town area. Of these newer acquisitions, 94.02 acres have been further protected with state-approved conservation restrictions.

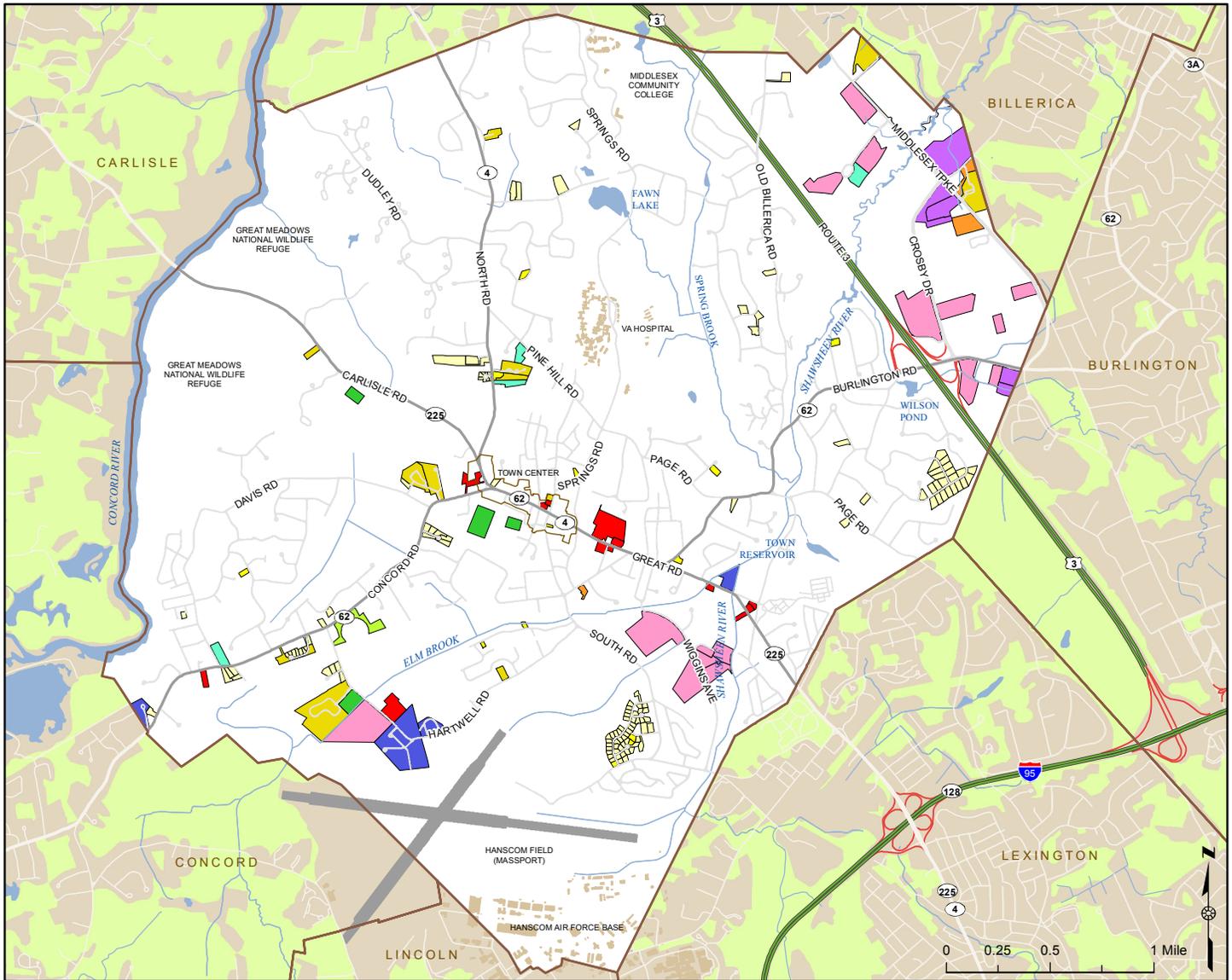
Since the 2002 comprehensive plan, a new trend emerged in the local housing market. Approximately 800 dwelling units were built from 2002 to mid-2013, of which 94% were either multi-family or attached housing, such as townhouses. This was a dramatic departure from the single family detached model which had prevailed in the half century from 1950 to 2000, and has created a more socio-economically diverse Bedford. About 60% of these attached and multifamily units are attributed to the MA Chapter 40B Comprehensive Permit program to expand housing choices and affordability in communities.

The characteristics of suburban growth, in Bedford as elsewhere, could be summarized by the following terms: *heavy land consumption*, and nearly complete *automobile dependency* to move around and between different destinations. By the 1950's, it was the norm for commercial and industrial uses to provide every customer and employee with free on-site parking and for single-family homes to be built on lots typically ranging from one-half to two acres, with some exceptions at the higher end.

The modern suburban era brought with it unprecedented prosperity, employment and shopping opportunities, good schools, town amenities, and a generally safe lifestyle. But after more than 60 years, problems have also emerged in Bedford. Many buildings and sites in commercial areas and employment centers are becoming tired and even functionally obsolete. Societal circumstances are also changing the development patterns everywhere: fewer nuclear families and more single headed households require different housing styles. The increasing costs of operating automobiles and congestion and environmental degradation, along with the demand for more competitive sites for shopping and employment, are providing opportunities for new investment and economic growth.²

Since the town is mostly built-out, change will largely result from redevelopment, infill development, and infrastructure improvements. Zoning and public investment should be used to enhance the town's vision of interconnected neighborhoods, commercial centers, and municipal services, leveraging private investment in support of shared goals.

² The End of the Suburbs, Leigh Gallagher, Portfolio Hardcover, 2013.



**Development Projects
2002-2013**

Land Use

- 1 - Res Single Family
- 2 - Res 2-3 Family
- 3 - Res Multi Family
- 4 - Mixed Use
- 5 - Business / Retail
- 6 - Office
- 7 - Industrial
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AREA VISIONS

The Great Road Corridor and Centers: The Great Road will continue to serve as a corridor for public and non-vehicular transportation, as well as a core of community life. Through new zoning, redevelopment and continued investment in the public domain by the town, state and federal agencies and the private sector, this central corridor will connect a series of clearly defined centers, each with a distinct identity and architectural design that is reminiscent of a traditional New England community. The road itself and its sidewalks and streetscape will show improvements related to “complete streets” concepts, where pedestrian and bicycle movement is afforded safer opportunities, and traffic flow is calmed to reduce public safety hazards.³ Street trees, landscaping and attractive pedestrian spaces will beautify commercial segments of the corridor. Within the two large commercial centers now occupied by the Great Road Shopping Center and the Bedford Plaza (Whole Foods/Marshall’s), gradual redevelopment will take place through coordinated public and private investment. Retail stores, restaurants, service businesses and professional offices will occupy new buildings that have a more pronounced relationship to the street to create a more walkable and intimate environment. Upper floor apartments and/or adjacent compact housing development, where appropriate, will enhance the connection between retail and neighborhood residents. New development will be linked to surrounding neighborhoods, businesses and civic destinations with trails, sidewalks and greenways. The physical form of development will respond to busy street conditions, such as placing the commercial uses in the front and residential uses to the rear.

North Road Center: The North Road Center will support smaller scale, compact, mixed use development. New development will be linked to surrounding neighborhoods, businesses and the Town Center, with trails, sidewalks and greenways. Housing for seniors and/or assisted living complexes will be encouraged. As with Great Road locations, the physical development form will respond to the busy street conditions, which call for placement of commercial uses in the front and residential uses to the rear, with the overall effect of creating a more walkable environment along well-defined streets. Traffic management improvements will better control the heavy traffic volumes and dangerous conditions created by the converging of four major roads in the vicinity, and safer pedestrian crossing will exist to make walking less dangerous.

Depot Area Center (including DeAngelo Drive, parts of Loomis Street, South Road, and Railroad Avenue): This area will support smaller scale, compact, mixed use development that benefits from the bicycle paths traversing this location. Historic context and architectural themes will be reflected in project design, where appropriate. Small shops and food businesses fronting on the

³ American Planning Association, McCann & Rynne, Complete Streets, 2010)

major streets could be accompanied by clustered housing including townhouses and cottage-style development. New development will increasingly occur on assembled parcels that are larger than the currently prevailing lot sizes. At the same time, with a more walkable environment, the existing small commercial and industrial properties might invite new investment and revitalization. The adjacent Wiggins Avenue employment center is nearly invisible from public ways because of intervening neighborhoods, but it contributes significantly to traffic impacts in those areas. Given its established locale, stronger affiliation with appropriate regional transportation and pedestrian connections to nearby commercial centers in Bedford could help to mitigate these problems.

Route Three Corridor/Crosby Drive/Burlington Road Center: This heavy concentration of employment contains a significant proportion of the town’s high-tech, software, biotechnology, and defense industry uses, making Bedford a strong regional player in Greater Boston’s economy. However, the buildings and campuses in this area are now mostly 30 to 50 years old. The structures and sites are “tired” in terms of site amenities, interior layout and features, and exterior facades. In the future, zoning changes and capital improvements will leverage private investment to revitalize buildings, sites and campuses. Involvement in regional transportation management initiatives will increase the availability of alternative modes of transportation. The Town will contribute by means of capital investment in maintenance and upgrading of the roadways and infrastructure, and by adding sidewalks and bicycle trail connections, street routes and lanes, where feasible.

Middlesex Turnpike Corridor: This important sub-set of the Route 3 corridor has its own distinct identity. It will continue to attract corporate headquarters, multi-tenant office buildings and small- to medium-sized companies seeking facilities that feature attractive, efficient site design, well-related to the natural setting. Carefully located retail and restaurant amenities will continue to serve employees and act as destinations for residents in the area. Zoning requirements and incentives will encourage development of pedestrian connections, open space greenway links and transportation alternatives, starting with the new sidewalks along the Turnpike that are part of the current road widening project in Bedford, Burlington and Billerica, and over time accommodating bicycle travel as well. An array of housing choices in this area will provide opportunity for a spectrum of employees, which is important to maintaining Bedford’s position as a regional employment center. Housing areas will contain amenities such as connecting walkways, gathering places and play lots. Zoning will be recalibrated to establish distinct residential objectives in the corridor, while continuing to foster commercial and industrial growth on the balance of this valuable land resource.

Residential Neighborhoods: New development within residential neighborhoods reflects the scale and density of existing development patterns, incorporating natural and historic resources and open space in defining character and providing for community health. A variety of single family and mixed use neighborhoods with a range of unit sizes and ownership types will offer appropriate models of housing to serve residents of all ages, household sizes, and incomes, and to attract a workforce that supports economic growth. Pedestrian and bicycle connections will connect neighborhoods with each other and commercial, employment, and governmental destinations. Bedford residents will have the opportunity to participate in the growing national trend for small scale agricultural production.

STRATEGIES

REGULATORY TOOLS & INCENTIVES

- Replace Cluster and Planned Residential Development sections to foster better open space and natural resources preservation and enhance community character, particularly in less developed residential areas in the northern and western parts of town.
- Update existing industrial/office and business zoning districts, making adjustments to reflect dominant market trends in the region, state and beyond, to attain the most appropriate mix of uses, scale of development, site design standards, and architectural style for each location.
- Revisit all of the mixed use overlay districts and the industrial mixed use (IMU) special permit, to provide more clarity in terms of theme, preferred land uses, form, and scale.
- Consider zoning changes for the major commercial centers along The Great Road, to provide greater incentives for redevelopment that enhances Bedford's identity.

MUNICIPAL AND REGIONAL PLANNING

- Encourage or require major employers and institutions to actively participate in a regional transportation management association, and continue Bedford's strong role in the Boston Metropolitan Planning Organization and Transportation Improvement Program.
- Organize strategic meetings and workshops with regional entities and institutions such as VA Hospital, Hanscom Air Force Base & Massport and Middlesex Community College, to discuss issues of common concern.

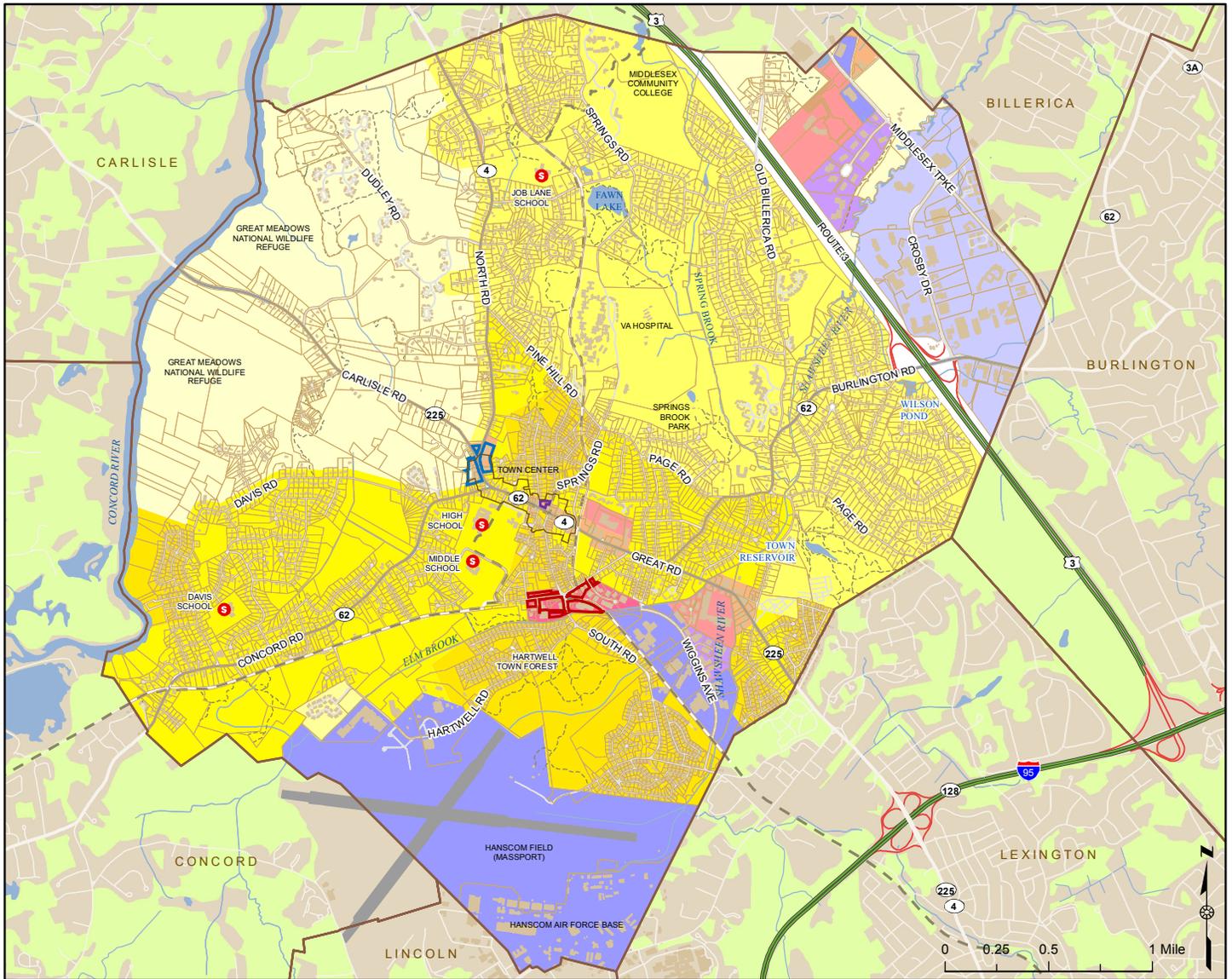
- Develop policy measures and zoning provisions that better protect the character of Bedford’s pre-World War II neighborhoods, considering factors such as mitigating through-traffic, and providing better public information and historic documentation.

CAPITAL INVESTMENT

- Take steps to ensure that the municipal investment in sanitary sewer service, town water supply and other non-transportation aspects of the infrastructure remains sufficient where needed to service the areas of major industrial/office/commercial growth, as well as multifamily housing.
- Plan for capital investment in intersection improvements at locations that are most demonstrably impacted by employment and commercially-generated traffic.

INFORMATION AND PUBLIC OUTREACH

- Find ways to more meaningfully integrate and coordinate the efforts of Town boards and committees and departments, when working on similar matters of development permitting, land planning and transportation.
- Use the Town’s website and possibly other social and electronic media to encourage more interactive communication in charting future land use policies, both disseminating public information and gathering input related to zoning changes, capital investment, and public/private coordination
- Enhance the existing outreach program recruit citizen volunteers to serve on appointed and elected Town boards and committees, by providing better information that will increase and broaden the rate of participation among residents and stakeholders in charting the town’s future.



Zoning

Zoning

- Residential R (R)
- Residential A (R-A)
- Residential B (R-B)
- Residential C (R-C)
- Residential D (R-D)
- Limited Business (LB)
- General Business (GB)
- Commercial (C)
- Industrial (I)
- Industrial Park (IP)
- Industrial C (IC)

- Depot Area MUO
- North Road MUO
- Town Center MUO

- S School
- Road
- Trail
- Town Boundary

NOTE: Boundary of Town Center shown is the extents of the Historic District.

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5. ECONOMIC DEVELOPMENT



The Route 3 job center is dominated by high tech and defense industries.



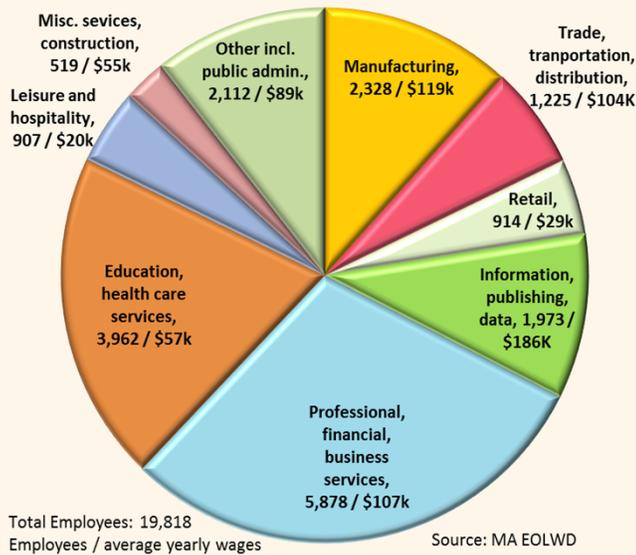
Several retail centers are located along the Great Road.



Smaller scale job centers exist on DeAngelo Drive and Wiggins Avenue.

ECONOMIC DEVELOPMENT SNAPSHOT

Bedford Employment By Industry, 2011



Competitive Advantages Comparison of Sector Share (2011)	Bedford to NECTA*	Bedford to State
23 - Construction	0.43	0.40
31-33 - Manufacturing	1.57	1.48
42 - Wholesale Trade	1.24	1.21
44-45 - Retail Trade	0.47	0.43
48-49 - Transportation and Warehousing	0.51	0.50
51 - Information	3.02	3.54
52 - Finance and Insurance	0.34	0.39
53 - Real Estate and Rental and Leasing	1.09	1.20
54 - Professional and Technical Services	2.37	2.85
55-56 - Mgmt, Admin & Waste Services	0.37	0.40
61 - Educational Services	0.66	0.64
62 - Health Care and Social Assistance	0.83	0.81
71-72 - Leisure, Hospitality, Food Service	0.47	0.46
81 - Other Services, Ex. Public Admin	0.27	0.25

* New England City & Town Area: Boston-Cambridge-Quincy
Index of 1.0 means sector has same share of employment.

Largest Employers	2000	2012
Raytheon	3500	0
US Air Force	2689	
MITRE Corp	2000	1,000-2,000
Rogers VA MC	1400	1,000-5,000
Millipore Corp	1000	
Progress Software	600	500-1000
Data Direct		500-1000
Instrumentation Lab		500-1000
Middlesex CC		500-1000
RSA Security		500-1000

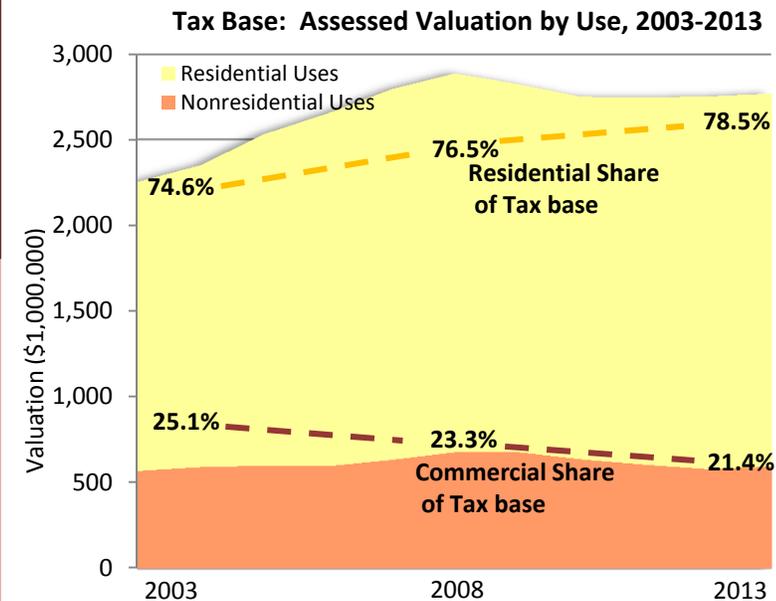
Source: 2012, EOLWD (infogroup, Omaha, NE)

Jobs to Labor Force Ratio, 2011

Bedford jobs	19,818
Bedford resident labor force	6,937
Jobs/Labor Force Ratio	2.86

Occupation of Bedford Residents	2010
Civ. employed pop. 16 years +	6,287
Management, business, science, arts	65%
Service	8%
Sales and office	16%
Natural resources, construction, maintenance	6%
Production, transportation, material moving	5%
Sept. 2012 Unempl. Rate: Bedford (MA)	5.0% (6.4%)

Source: US Census ACS 5-year Est., 2010



Tax rate FY 2013: Commercial - \$33.80/\$1,000 Residential - \$15.37/\$1,000

Commercial Space in Bedford, Square Feet in 2012 (includes vacant space)				
	Route 3 Job Center	The Great Road	Wiggins/ Depot, North Rd., Other	Total
Office Space	1,837,000	-----	40,000	1,877,000
Industrial/R&D/Flex/Distribution	1,004,000	-----	2,297,000	3,301,000
Retail & Service	-----	464,000.	119,000	583,000.
Total	2,841,000	464,000	2,456,000	5,761,000

Source: 2012 Commercial Surveys

VISION

Balancing economic development with a pleasant suburban lifestyle, employment areas in Bedford are energized with new investment, enhancing regionally important research and development, health care, and educational uses. Bedford’s assets offer competitive advantages that attract employment growth, particularly in the biopharmaceutical, information, medical device, software and advanced manufacturing industry clusters. Each employment center features distinct attributes that are matched to different business types and company evolution from start-up to national and international headquarters. The Route 3 job center continues to feature newer large footprint facilities with high visibility and proximity to MITRE, Lincoln Laboratories and Hanscom Air Force Base, while smaller companies invest in suitably-scaled business space in the Wiggins Avenue and DeAngelo Drive area. A series of strong, visually attractive retail centers are magnets for residents, employees, and visitors, including the Depot Area, North Road, and new or reconfigured centers along the Great Road. With planned infrastructure improvements, the Great Road corridor has a series of distinct centers with diverse and complementary uses connected by pedestrian and bicycle amenities, as The Great Road takes on the distinct aspect of a “complete streets” boulevard. Similarly, the Depot area supports a village center with small businesses that serve the surrounding residents, nearby employees, museum and park visitors, and bicycle path users. Home-based businesses also flourish. At the same time, established neighborhoods retain their value and amenities, without undue intrusion from non-residential growth. A highly collaborative environment connects the Town with major and smaller employers – both private, public and institutional– facilitating planning, marketing, and capital investment.

SUMMARY OF ISSUES AND OPPORTUNITIES

1. Balancing the tax burden: Over the last ten years, the burden of property taxation has been gradually shifting toward the residential classification, due to residential growth and appreciation occurring at a faster pace than business growth. There is an opportunity to create a more equitable balance by growing the business sector.
2. Addressing aging buildings and sites: Commercial and industrial properties in some parts of town are becoming functionally obsolete with undersized buildings and sites, aging building configurations, and minimal investment. There is an opportunity to encourage creative, updated redevelopment scenarios.
3. Improving permitting for businesses: The permitting and approval process for new business development and activities such as home-based businesses can be less clear and predictable than is desirable. Zoning tools need adjustment to respond to market

demand and business preferences, balancing civic vision with real estate flexibility. There is an opportunity make the process work more efficiently.

4. Coordinating municipal economic development efforts at every level: A more coordinated and vigorous economic development strategy is needed; both at the longer term policy level and the day-to-day response level, general awareness of Bedford's importance in the regional economy should be increased.
5. Establishing more robust platforms for town and business coordination: Coordination on matters of mutual interest should be strengthened and formalized between employers and local policy makers. The fact that large government employers in town fall outside municipal jurisdiction presents another challenge. There is an opportunity to create something stronger than the sum of the separate parts by using strategies to coordinate town and business interests in taking action together.
6. Improving traffic operations and safety: Business growth triggers additional traffic congestion unless targeted transportation improvements and mitigation strategies are put in place. There is an opportunity to mitigate the worst of these problems over time.

GOALS

1. Retain business and attract new private investment in commercial and industrial/office development consistent with the overall vision to remain regionally competitive, provide quality jobs, and improve the tax base, while maintaining a high quality of life.
2. Match the distinct vision for specific employment areas and reach out to particular business sectors that are the likely occupants of those areas. Over time, improve business location factors such as access, amenities, proximity to peer companies, and community character.
3. Take advantage of state financing and other external tools to complement economic development efforts to attract companies whose needs align with Bedford's unique regional and local assets. Emphasize industries that are part of the "new economy" or the most thriving employment sectors, such as advanced manufacturing applications, biopharmaceuticals, health care, applied scientific research and development, and software.
4. Tailor zoning and other development guidelines, including sign standards, to communicate and promote civic goals, while also reflecting the needs of the private real estate market, and the preferences of businesses.

5. Create forums for ongoing collaborative dialog on strategy and implementation, involving employers, policy makers, regulators, real estate professionals, and landowners in the public, private and institutional sectors.
6. Improve the regional and local transportation infrastructure to serve commercial development needs and to address the impacts of business and commercial growth.

DISCUSSION

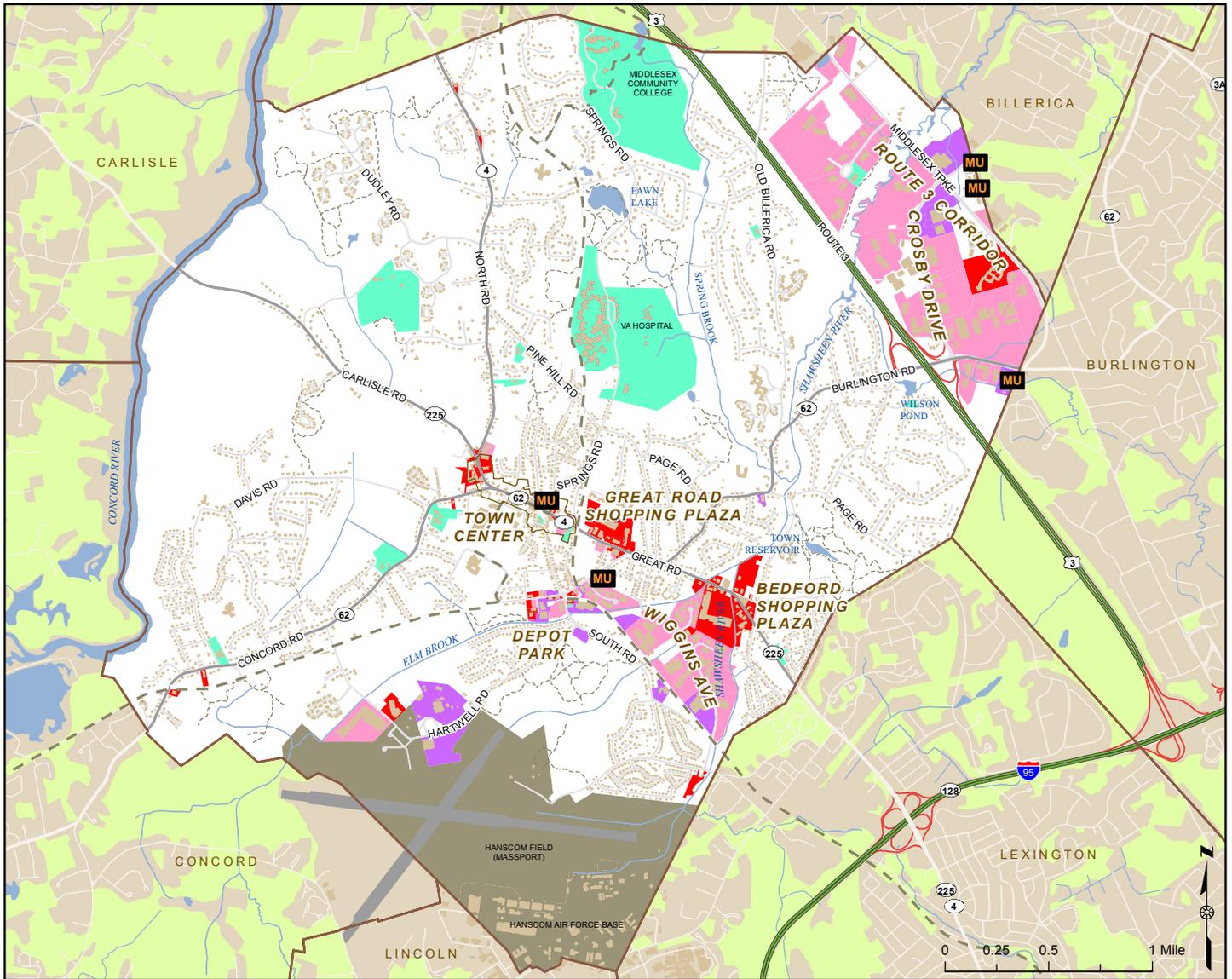
OVERVIEW

More than most towns, Bedford offers substantial opportunities to live and work in the same community, due to its substantial economic base and its array of housing choices.

Bedford has a considerable and regionally important economic base, with more than 5.76 million square feet (sf) of non-residential floor area in the town (the equivalent of 4 ½ Burlington Malls), in a town of only 14,000 people. As with other communities in the Boston region, Bedford benefits from access to a substantial venture capital market, leading research and education centers, a large highly educated workforce, and an international airport (Logan). Local but highly important assets include proximity to the military and related research and development institutions based around Hanscom Airfield, access to collaborators and markets around the Route 128 corridor, and relatively easy commuting from nearby desirable residential suburbs. In spite of all these advantages, Bedford's commercial base is not expanding as rapidly as those of some area towns. Ongoing public and private investment and organizational support will be necessary to maintain its competitive strength and fiscal balance.

Since the 1960s about 36% of Bedford's 13.7 square miles of land area have been zoned for non-residential use, primarily out of fiscal motivation. Nearly half of the commercial and industrial space is located in the "Route 3 job center" encompassing Crosby Drive, Burlington Road and Middlesex Turnpike. A comparable amount of commercial space is located in the Wiggins Avenue/Depot area/DeAngelo Drive complex, when all three of these contiguous sub-areas are added together. The majority of commercial space is located along The Great Road Corridor and at the North Road/Carlisle Road junction. The Hanscom Air Force Base/Massport complex and the adjoining Instrumentation Labs site on Hartwell Road are also zoned for industry, although it is hard to quantify amounts of space in military, related institutional use, commercial or aviation facilities.

Job centers vary widely with respect to visibility, ease of circulation and access. The Route 3 area, located at Route 3 and Route 62, is part of a regional high tech cluster centered on Routes



Major Employment Areas

Land Use

- 5 - Business / Retail
- 6 - Office
- 7 - Industrial
- Airport
- 9 - Institution / Open
- MU Mixed-Use Project

- Road
- Trail
- Town Boundary

NOTE: Boundary of Town Center shown is the extents of the Historic District.

Map by Bedford Public Works
November 2013

The information displayed on this or any other map produced by the Town of Bedford is for reference purposes only. The Town of Bedford does not guarantee the accuracy of the data. Users are responsible for determining the suitability for their own individual needs.

All information is from the Town of Bedford's Geographic Information System (GIS) database. Any questions or concerns should be addressed to the Town GIS Analyst.

3 and 128. The Wiggins/Depot area has less visibility, as it is accessed via local streets and minor collector roads, and there is a higher concentration of businesses which occupy smaller spaces and lots.

There have been discussions in Bedford for fifteen or more years, and even limited feasibility analyses produced in regard to DeAngelo Drive being extended to meet with the north (west) end of Wiggins Avenue, but no further steps have been taken to pursue this. Less frequent discussions have also taken place regarding the concept of a connector road between the end of Wiggins Avenue at Summer Street, and the busy Hartwell Avenue research and development and industrial area. Hartwell Avenue is Lexington's chief emerging economic engine and a large employment locus, but there has been no momentum to move forward with such a project. An important regional transportation demand management program has just begun operations, offering a Hartwell Avenue shuttle bus to Alewife T station.

The employment level within all the town's job centers fluctuates between 15,000 and 20,000, depending upon current economic trends, seasonality and whether or not part-time and contractual employment is counted. A reasonable working estimate of full time employment in 2013 would be approximately 16,000 persons. Approximately 30% of the jobs fall into the Professional, Financial & Businesses Services aggregation. A substantial number of these jobs are in the defense industry, many based at MITRE Corporation's large campus in Bedford. Approximately one job in ten is in the public sector, local, state or federal. Major public sector institutions include the Edith Nourse Rogers Veteran's Administration Hospital, Middlesex Community College, Hanscom Air Force Base, and the Hanscom Civil Airfield and Massport complex. The aggregate weekly payroll of businesses located in Bedford is \$36 million; the average annual wage is \$95,000, with individual wages varying widely among industry categories.

Bedford is a strong competitor in the metropolitan region in terms of office, corporate/managerial, research and development, scientific and light industrial businesses. Location quotients (shown in the Snapshot) indicate industry sectors which have relatively high concentrations in Bedford. The two sectors that stand out are Information, which is three times as heavily represented in Bedford as in the New England City and Town Area (NECTA) and 3 ½ times as heavily as in the state; and Professional and Technical Services, which is at more than twice NECTA and state levels. Other above-the-norm sectors are Manufacturing and Wholesale.

Bedford leads the region in life sciences with 29 companies representing 41 percent of such companies in the Middlesex/Route 3 Corridor (encompassing Bedford, Burlington, Billerica, Chelmsford and Lowell). The Massachusetts Biotechnology Council gives Bedford a "platinum"

rating as a “BioReady” community, having in place infrastructure, zoning options, and available sites to accommodate biotechnology companies.⁴

Of the resident labor force (6,300 in 2010, according to ACS 5-year estimate⁵; 7,000 in 2013 according to state employment data), about 35% work in town, while the remainder find work outside of Bedford. Approximately two out of three residents are employed in management, business, science, or arts occupations.

While the town has felt the effects of the recent national economic recession, Bedford has maintained relatively low unemployment, just over 5% in September, 2012, compared with 6.4% for Massachusetts. Unemployment rates state-wide and locally have declined since a peak in 2009/2010⁶. Also showing signs of improvement in the past year, vacancy rates have fallen into a range of 11 to 14%, down considerably from 2011 rates which were well in excess of 20%. The fall 2012 average for the Route 128 North market segment was 15.6%.⁷ These trends indicate that the town is poised to attract growth as the economic recovery continues; a strategy that addresses zoning, organizational capacity, and infrastructure needs can help to steer new investment to fulfill the town’s vision for economic development.

TAX BASE

The desire to offset the residential tax burden is a driving goal of economic development. Approximately 70% of the town’s FY14 revenue comes from property taxes. The assessed valuation underlying that revenue stream is \$2.77 billion in (FY13, most recent available figure). That valuation is broken down as follows: 79% is Residential, while 21% is classified as Commercial property (“Commercial” as used in this MA Department of Revenue parlance is different from the way the term is used in the rest of the Comprehensive Plan; here, it is shorthand for the full spectrum of *non-residential* real estate taxation). New residential growth has significantly increased the total residential valuation over the past decade, increasing the residential share of the tax burden, in part due to debt exclusion (a special referendum vote to fund a project above the limits of Proposition 2 ½, but only for the life of the debt), but more due to the fact that business growth has not kept pace. In spite of some

⁴ Massachusetts Biotechnology Council, November 2012, http://www.massbio.org/economic_development/bioready_communities

⁵ MA Executive Office of Labor and Workforce Development identifies closer to 7,000 residents in the work force.

⁶ See appendix for additional data.

⁷ According to two 2012 commercial real estate surveys: Richards, Barry, Joyce Partners—Fall, 2012 Route 128 North Market Survey; and Newmark, Grubb, Knight, Frank, summer 2012 Vacancy Survey.

new development particularly in the Crosby Drive area, there has been relatively little investment or appreciation in the value of Commercial real estate overall.

By actual tax revenue generated, the Commercial sector produces about \$20 million (37%), while the Residential classification generates about \$33 million, or 63% of the total.⁸ The tax rate for business is already more than twice that of homes, \$33.80 compared to \$15.37 for FY13, so direct manipulation of tax valuation and rate setting has limited ability to shift the burden to the Commercial classification. The residential tax burden could be reduced, however, by a *net gain* in the value of Commercial property.

Efforts to encourage new business investment, particularly in sectors where Bedford is already strong and/or offers locational advantages, will help to ease the tax burden on homeowners. The Town will need to take the lead in addressing a broad range of issues and opportunities including facilitating public/private partnerships to attract more intensive and higher quality redevelopment of commercial and mixed use development. These efforts will need to address the concerns of permitting; improving the Town's staffing capacity, infrastructure planning and investment, traffic, and environmental impacts.

Tax increment financing or district increment financing can be considered where helpful to the community as well as interested businesses. Tax Increment Financing (TIF) allows a locality to negotiate a specific combination of tax incentives, including a State Investment Tax Credit and an Abandoned Building Tax Deduction along with the possibility of a local Special Tax Assessment, in exchange for private investment in business development or expansion. Although used fairly widely in the state, Bedford has used this program sparingly. District Improvement Financing (DIF) permits the negotiation of similar incentives for business owners located within a specific designated district who will invest in new residential, commercial and industrial activity. Through this program, municipalities are able to fund public works, infrastructure, and development projects by allocating future, incremental tax revenues collected from a predefined district to pay project financing costs. There are also aid programs offered by the MassDevelopment agency, an entity with special development authority and the ability to raise revenue.

⁸ In addition, the Personal Property taxes yield \$2.9 million; the remaining revenue of \$440,000 is in the Open Space category.

ECONOMIC DEVELOPMENT CAPACITY

A dedicated capability is needed to promote business opportunity in the town over a wider area, and to assist prospective or expanding ventures on an individual, day to day basis. Examples would include: building interacting public/private partnerships, working with the new Middlesex 3 regional coalition and interacting with various municipal departments, in addition to soliciting and working closely with individual business prospects. As of December, 2013, the town is interviewing candidates for the part-time economic development coordinator position that was authorized by the 2013 annual town meeting.

STRATEGIC PLANNING

Ongoing strategic thinking is needed to respond to the opportunities and constraints of economic development in Bedford, supported by the input of the non-profit and private sectors and representatives of the real estate community, as well as sound research and data to note trends in the region, state and country. Strategic and long-term policy efforts, including long term planning, zoning, and data analysis, can be carried out by the Planning Department in partnership with dedicated economic development staff, or other interested groups.

Moreover, the town may be impacted by regional factors and large institutional and governmental entities which could generate significant economic changes. The ideal example is offered by the Hanscom Air Force Base, which contributes significant employment across multiple companies within Bedford. In the event of base closure, Bedford needs to participate in developing a reuse plan, as it did in 2005 when this prospect arose. Full involvement through the Hanscom Area Towns (HATS) group is mandatory, to have a voice in determining redevelopment plans and future disposition policies. Dialogue with the Middlesex Community College and Bedford VA Hospital would similarly be desirable, as well as to remain meaningfully involved in regional transportation and land use planning organizations such as Minuteman Advisory Group on Inter-local Coordination (MAGIC), the Metropolitan Area Planning Council (MAPC). As the western suburbs compete within the greater Boston region to attract commercial investment, Bedford will benefit from capacity it provides to support regional planning.

FUNCTIONAL OBSOLESCENCE

Many buildings in some job centers are more than 50 years old. The structures and their systems are starting to wear out. The buildings and sites are often quite small by today's market standards, which can lead to parking and circulation difficulties. Building layouts and features sometimes do not meet the needs of contemporary commercial tenants.

Although there are some instances of obsolescence in the Route 3 and Wiggins Avenue job centers, the most obvious illustration of impending functional obsolescence is in the Depot/DeAngelo Drive area, where many of the buildings and lots date from the 1960's and are small by today's standards. Over time, relative market value declines, the costs of interior fit-out and building systems replacement become less economical, uses and tenants become more marginal, and vacancy rates rise. The Great Road commercial area also faces obsolescence in the strip malls, which are aging in form and function. The approved plan from 2010 to redevelop the Whole Foods/Marshall's plaza has not proceeded due to an inability to obtain financing and other factors, but there is clearly recognition by the owner that new investment is required to stay competitive.

Long term redevelopment strategies can be considered that encourage alternate minimum parcel sizes and dimensional standards, different mixes of uses, and improved layouts. The town took some steps in this direction in 2006 and 2007, but there is increasing recognition that those mixed use overlay districts need to be revisited to make them more realistic and market responsive, perhaps articulating a vision more clearly, while still offering flexibility to interested developers. In the short term, the town could offer greater assistance in keeping buildings occupied in these areas.

TRAFFIC IMPACTS AND TRANSPORTATION OPTIONS

With further growth comes added traffic. For this reason, transportation needs to be addressed alongside all major development. In addition to requiring traffic management improvements, mitigating traffic impacts should entail identifying opportunities for pedestrian and bicycle trail connectivity (preferably in accordance with a connectivity master plan called for in this Plan), and working with proponents on creating or plugging into existing transportation demand management programs. It also underscores the need to advocate for stronger public transportation (see Transportation Chapter, et. seq.).

Transportation options are important to support access to jobs and training, both for residents looking to the wider area, and for incoming students, interns, and workers. There are strong pools of younger workers in Boston and other urban centers. Facilitating the expansion of alternative transportation modes such as public transit and pedestrian and bicycle routes will help businesses to attract and retain employees and will also be a benefit to residents.

A critical part of Bedford's economic development strategy is to maintain and improve its strong position in the Boston Metropolitan Planning Organization (MPO) and its core mission of creating the annual Transportation Improvement Plan (TIP). Part of achieving this objective is to

create and sustain stronger public and private partnerships on both the town and the regional level, an underutilized strategy in Bedford in the past.

During September, 2013, two important events have been taking place in furtherance of long range bicycle and pedestrian policy objectives. First, the Bicycle Advisory Committee has put together a proposal for consideration by the Selectmen, the Community Preservation Committee and Town Meeting, to make \$40,000 available to hire a consultant to prepare a Bicycle Master Plan for Bedford. Secondly, the Land Acquisition Committee, working closely with the Trails Committee and the Bicycle Advisory Committee, has presented a list of potential easements and connecting segments that would offer a strong start toward the objective of establishing a town-wide, connected network of sidewalks and trails to facilitate pedestrian travel to and from destinations all over Bedford. This study is intended to attain both long term transportation and public health benefits.

INFRASTRUCTURE

With intensification of economic development comes increased pressure on public roads, utility, and communications systems. The MassWorks aid initiative consolidates previously separate programs into a single conduit which embraces everything from new industrial roads, to sewer capacity, to trails into a one-stop source to promote economic development. MassWorks, as well as the State's TIP, could potentially assist in funding key infrastructure for economic development in Bedford, to help offset high capital investment costs. Such efforts, however, require strong projects, competitive applications and political diligence to advocate for funding.

At the same time, municipal capital investment budgeting needs to be carried out in a more strategic and coordinated way, with an eye to attaining community goals for economic development and transportation, rather than just making incremental or short term decisions that are expedient at the moment. That will take greater coordination among stakeholders and active public/private partnerships. Regional approaches to infrastructure improvements involving Bedford and additional towns are also on the table wherever such efforts produce the economies of scale and efficiencies.

PERMITTING

As in many communities, the processes in Bedford for obtaining zoning and other permits are sometimes unclear and hard to predict, and in the worst case, duplicative. While diligent regulation protects community and neighborhood interests, this must be balanced with predictability of permitting, to encourage desirable development.

There are different ways to address the problem. Bedford's Zoning By-Law could be re-codified and restructured to make all procedures clearer and to minimize redundancy in multi-board reviews. This is a formidable and lengthy project, but would be substantially beneficial. Another approach would be to create a MA Chapter 43D-type procedural overlay to assure 180 day review by all boards, with the Selectmen as arbiter. Softer approaches such as a permitting guide document, a staff ombudsman, shared tracking via computerized databases, and joint meetings of boards to discuss permitting timelines could also be helpful.

Other strategies would re-examine the land use regulations within the Zoning By-Law, especially relating to mixed use provisions. Base districts and overlays could be revised to minimize the jurisdictional redundancy that was manifest in the construction of the Blake Block project in the Town Center. All of the commercial/industrial and mixed use districts could be reorganized into a smaller set of districts that articulates a clearer development vision for each district.

ENVIRONMENTAL IMPACTS AND COMPLEMENTARY LAND USES

Intensification of commercial/industrial/office uses may raise issues about impacts on natural resources and residential environments, so careful site design will be needed, with appropriate regulation and advice to encourage best practices. Lifestyle considerations are increasingly important in business location decisions, especially for start-up and intellectually-oriented businesses. This means it will be important to seek or protect supporting land uses such as restaurants and indoor or outdoor recreation facilities and trails, and to encourage the pedestrian character and quality of life benefits afforded by this type of development.

Another concern involves cut-through traffic using local residential streets to reach destinations along Wiggins Avenue, Hartwell Avenue in Lexington and Hanscom Air Force Base/Lincoln Labs. Feasible mitigations need to be explored to channel traffic onto collector roads and to reduce vehicular trips.

STRATEGIES

REGULATORY TOOLS & INCENTIVES

- Improve existing mixed use provisions in the zoning bylaw (ZBL) to provide better market opportunity for business and commercial uses, while at the same time offering a sharper and more specific vision for each district with balanced mixes of allowed uses.

- Update and refine existing industrial zoning to align more closely with the needs of today’s advanced economic sectors such as life sciences/biotechnology, high technology and electronics, software development, alternative energy and applied scientific research and development.
- Evaluate potential improvements to Bedford’s regulatory and permitting system to make outcomes more predictable and timely.

MANAGEMENT CAPACITY AND PARTNERSHIPS

- Establish staff capacity for economic development assistance, promotion and planning.
- Establish a long-term, meaningful structured dialogue between municipal officials and the larger employers in town (private and institutional), to reach consensus on issues and courses of action of mutual interest.
- Establish stronger ties to industry and trade organizations that promote the interests of advanced economic sectors such as life sciences/biotechnology, high technology and electronics, software development, alternative energy and applied scientific research and development, utilizing the involvement of Bedford businesses in such organizations.
- Retain and expand Bedford’s commitment to representation in regional and state entities involved in economic development, transportation and other important business agendas, including but not limited to Minuteman Advisory Group on Interlocal Coordination, Route 128 Business Council, Middlesex 3 Coalition, the Metropolitan Planning Organization and its Advisory Committee, and the Massachusetts Office of Business Development.
- Participate fully in multi-town Hanscom/Massport base reuse planning, as well as any processes established in response to changes at Bedford Veteran’s Administration Hospital, Middlesex Community College or other governmental/institutional uses.
- Make public transit advocacy and establishment and expansion of transportation demand management programs an important part of the economic development agenda to mitigate worsening traffic congestion, approaching the issue as an organized partnership between business, local government and relevant regional organizations.

CAPITAL INVESTMENT

- Channel sufficient municipal capital investment or private resources into the creation of infrastructure to accommodate bicycle and pedestrian commuting and commercial trips, as a means of mitigating worsening traffic congestion.

- Increase funding for improvements at the intersections in the local street system that are most negatively impacted by business development, utilizing public/private partnerships, capital investment planning and supportable exactions within the permitting process for new development.
- Advocate for regional highway and interchange improvement projects impacting Bedford with a united front, employing a public/private partnership among business, government and institutions, when steering a project through the Transportation Improvement Plan process before the Boston Metropolitan Planning Organization.

6. NATURAL AND CULTURAL RESOURCES



Conservation areas have helped to protect the natural and rural open spaces that reflect the Town's history.

BEDFORD'S NATURAL RESOURCES & OPEN SPACE SNAPSHOT

Natural Resources and Open Space

Watercourses and their watersheds sculpt the open space network that provides a backdrop for Bedford's identity. The Concord River and its tributaries form much of the western bound of the town within the federal Great Meadows National Wildlife Refuge. The Shawsheen River lies to the east and north, with its Elm, Vine, and Springs Brooks and other tributaries. Extensive wetlands and rising flood levels need to be taken into account in planning Bedford's land uses (see map).

23.6% of Bedford is protected conservation land.

Protected Conservation Areas	2,075 acres
Great Meadows National Wildlife Refuge	774 acres
Town-owned conservation land	978 acres
Privately-owned with CR	323 acres
Other Open Space Areas	
MCC, VA Hospital, Hanscom, Harvard	
Private parcels with limited protection	318 acres
Town cemeteries, recreation, wells, etc.	105 acres

Major Town-Owned Conservation Parcels

- **Fawn Lake:** Scenic 12 acre pond and 25 acres of woodlands with canoeing/kayaking and trails. Originally a 19th century mineral springs resort.
- **Springs Brook Park:** offers swimming, sprinklered water park, picnic areas, sports facilities and woodlands.
- **Hartwell Forest:** Managed forest with trails; buffers neighborhoods from Hanscom Field.
- **George Jordan conservation area:** Buffer from Hanscom, provides community gardens; Massport is working cooperatively with the town to construct trails.
- **Wilderness Park and Capadonna parcel:** 85.5 acres with trails, wildlife habitat value, and protection along Springs Brook stream bank.
- **Shawsheen River:** 28 acres of open space parcels buffer a major stream system that is heavily encroached upon in other parts of town.

Rail Trails

- **Minuteman Bikeway:** 1 mile in Bedford, goes 10.5 miles to West Cambridge (paved with asphalt)
- **Narrow-gauge Rail Trail:** 3 miles to Billerica town line (paved from Loomis Street to Great Road, stone dust surface from there to Billerica)
- **Reformatory Branch Trail:** 2 miles in Bedford, goes 4 miles to Lowell Road near Concord center (unimproved)

Bay Circuit Trail

This regional trail around Boston has two alternative routes on the northwest side, one of which is dedicated as a trail within Bedford and follows the Reformatory Branch and Narrow-gauge Trails, with connecting portions through the Municipal campus and Middlesex Community College.

Walking Trails

- 16 miles of trails concentrated in the northwest area of town
- More limited trail network on the eastern and southern areas of town

Scenic Roads

- 6 Scenic Road segments, where work affecting stone walls and shade trees is regulated



BEDFORD'S HISTORIC AND CULTURAL RESOURCES SNAPSHOT

Historical Associations

- The Historic Preservation Commission: Historic inventory, National Register nominations, demolition delay bylaw, state Survey & Planning grants, studies and more.
- Historic District Commission: Regulation of physical changes to buildings and settings within local historic district, issuance of certificates of appropriateness.
- Bedford Historical Society: Private non-profit, educational, keeper of documents & artifacts.

Organizations offering cultural/historical opportunities and events:

Middlesex Community College, Bedford Free Public Library, Friends of the Bedford Library, Friends of the Bedford Flag, Art Steering Committee of the Bedford Free Public Library, Bedford Cultural Council, Bedford Minuteman Company, Friends of the Job Lane House, Friends of Depot Park, Bedford Arbor Resources Committee (BARC), Bedford Recreation Commission, Bedford Center for the Arts, Bedford Arts and Crafts Society, Artlinks, Bedford Garden Club, Rotary Club, Bedford Chamber of Commerce and others



Historic Districts

- National Register**
- Old Bedford Center
 - Two Brothers Rocks
 - Old Billerica Road
 - Wilson Mill
 - Bedford Depot

- Local**
- Old Bedford Center

Examples of Historic Assets/Sites

- National Register sites from 17th and 18th centuries**
- Job Lane House, 1713
 - Nathaniel Page House, by 1720
 - Christopher Page House, c. 1730
 - Bacon-Gleason-Blodgett House, c. 1740
 - David Lane House, 1781
 - Shawsheen Cemetery, 1848

Buildings dating from before Bedford's founding in 1729: **7**

Buildings dating from 1729 – 1776: **18**

Historic architecture after 1776: Federal, Victorian and other styles

Remnants of mills, farms, railroads, paths, and spa resort

Public Buildings / Adaptive Reuse

- Old Town Hall
- Town Center Building
- Depot Park: B & B railroad car, Freight House Museum, rail trails.
- Wilson Mill site
- Job Lane House
- Jenks Arboretum nature trail

VISION

The increased impact of development and greater awareness of the importance of the town's natural resources and history lead to a focus on protecting, enhancing and connecting the town's open spaces. Wetlands, parks, conservation areas, institutional campuses, historic sites, and private open spaces, as well as regional and local bicycle trails, function as unifying features and buffers between different land uses. These large areas of open land and wetlands also protect private property and public infrastructure from flooding and mitigate the potential impacts of climate change. Trails and bikeways connect residents with natural resource and recreation areas, centers, and other neighborhoods, as well as a larger regional trail network. A well-managed urban greenbelt is critical to maintaining a healthy citizenry with a high quality of life and contributes to small town character and a healthy environment. Some larger streets serve as multi-purpose corridors with bicycle routes, sidewalks and prominent street trees augmenting traffic function. New residential development incorporates and highlights natural features, particularly in the less developed northern and western parts of town. Cultural and historic assets inform the character of new development, contributing to a strong sense of place as well as providing economic benefits.

SUMMARY OF ISSUES AND OPPORTUNITIES

1. Availability of land: Potential open space resources are dwindling as more land becomes developed, and acquisition prospects must be exercised opportunistically as financially feasible. There is an opportunity to protect the limited remaining natural resources.
2. A Green Framework: The presence and role of Bedford's natural resources - including waterways, wetlands, flood zones and habitat area - are not as well recognized as they should be or reflected in planning and zoning. There is an opportunity both to increase public consciousness of the functional role of natural resources and to define more clearly their value in the town's regulatory structure.
3. Connectivity for non-vehicular modes: Gaps in pedestrian and bicycle facilities (bicycle trails, routes and lanes, bicycle racks, corrals and other improvements, sidewalks, greenway connecting segments) disconnect neighborhoods from each other and from business and governmental areas. There is an opportunity to build greener and more community-enhancing transportation infrastructure, rather than a system structured solely around automotive travel.
4. Balanced use of open land: Open space and natural resources are in increasing demand for active and passive recreation use and other activities, challenging the community to

find a balance between such demands. There is an opportunity to establish policies and site-specific plans which are beneficial to all interests.

5. Protection of community character: Development built in recent decades does not reflect the local history of architectural styles, layouts/settlement patterns, and landmarks, diluting the town's sense of identity and the community's knowledge of its history. There is an opportunity to improve the regulatory structure and other policies to better complement community character.
6. Economic benefits of cultural resources: Cultural and historic buildings and features are underutilized as an economic resource, and as a planning tool in retaining and building community character. There is an opportunity to identify potential economic prospects and encourage their implementation.
7. Dealing with climate change: Future land use planning and policy-making need to consider the practical effects of climate change, such as rising and expanding flood area, stress upon infrastructural capacity and frequent storm damage. There is an opportunity to plan around the powerful effects of weather on the infrastructure and environment.
8. Better design and development techniques: Ecologically beneficial and low-impact development techniques are available to use in town projects and can be encouraged or required in private developments. There is an opportunity make such methods the norm in Bedford projects.

GOALS

1. Create a planned and well-maintained open space system that is connected by greenways with pedestrian paths and bicycle trails, to improve connectivity and access to green areas, rivers, streams and water bodies, and other activity areas.
2. Integrate land development goals with those of natural resources and open space protection in more harmonious and complementary ways.
3. Improve connectivity of Bedford's network of sidewalks, bicycle trails, greenway trails, and urban routes to enhance health and wellness, provide alternative transportation modes, and to foster a more connected community.
4. Establish a better balance in public policy among competing demands for use of open space, whether for natural resources preservation, athletics, trail connections, flood control, alternative energy, or other uses.
5. Devote greater attention to providing better maintenance and improvements to conservation areas, such as trail grooming, removal of invasive plant species and fallen tree limbs, signs and parking.

6. Continue to improve the aesthetic appeal of the existing street network, employing public spaces, street trees, appropriate signage and other elements to protect and enhance community character.
7. Integrate climate change impacts into all capital investment and land use planning deliberations.
8. Craft and strengthen the zoning framework to better organize compact, multi-purpose development around cultural/historic resources.
9. Improve public knowledge of and connectivity between cultural/historic resources to further preserve and enhance the town's character and history.
10. Help to educate residents, business owners and developers about ecologically sound practices.

DISCUSSION

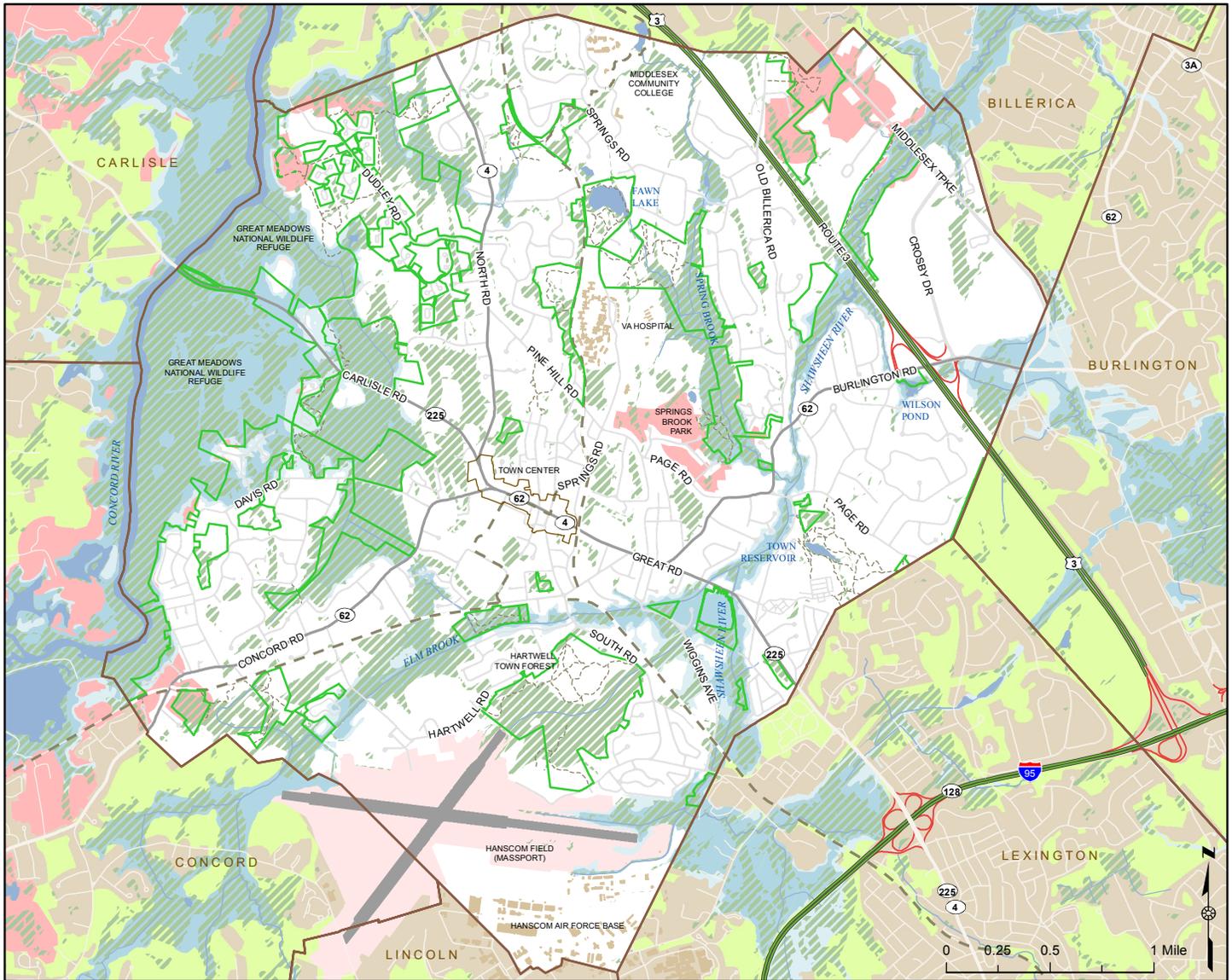
NATURAL RESOURCE AND OPEN SPACE ASSETS

The watersheds of the Concord River and Shawsheen River constitute a natural system that offers flood control, beauty, wildlife and vegetative habitat, recreational opportunities, and open space buffers between developed areas. These watersheds as well as other wetland areas are being impacted by development. Because of the critical role of these areas for the protection of property, infrastructure, wildlife and recreation, Bedford needs to educate the public about their importance as well as to expand and protect these natural resources so as to enhance their environmental, recreational, and aesthetic functions and to increase access.

Prioritizing and Facilitating Open Space Protection

The protection of open space offers quality of life, aesthetic, recreational, public health and even fiscal benefits to help offset the impacts of prolonged and extensive land development. As the land supply dwindles, the urgency of adding to these assets grows. During the first 200 years of its history only 10% of the town had been developed, but since post-World War II suburban development has consumed 2,600 acres or 30% of the total town area.

Most of Bedford's open space acquisition and other preservation activity also occurred during this period of growth, prompted by funding initiatives and special legislation at the state and local level, such as the creation of Conservation Commissions via MGL Chapter 40, section 8C in 1958, the federal/state Land & Water Conservation Fund in 1965, the Community Preservation Act (CPA) in 2000, and other programs.



Natural Resources

Natural Resources

- Wetland
- Protected Open Space
Bedford Conservation Land or Land With Conservation Restriction
- Flood Zones**
 - 1% Annual Chance Flood
 - 0.2% Annual Chance Flood
- NHESP**
 - Estimated Habitats of Rare Wildlife
 - Priority Habitats of Rare Species
- Road
- Trail
- Town Boundary

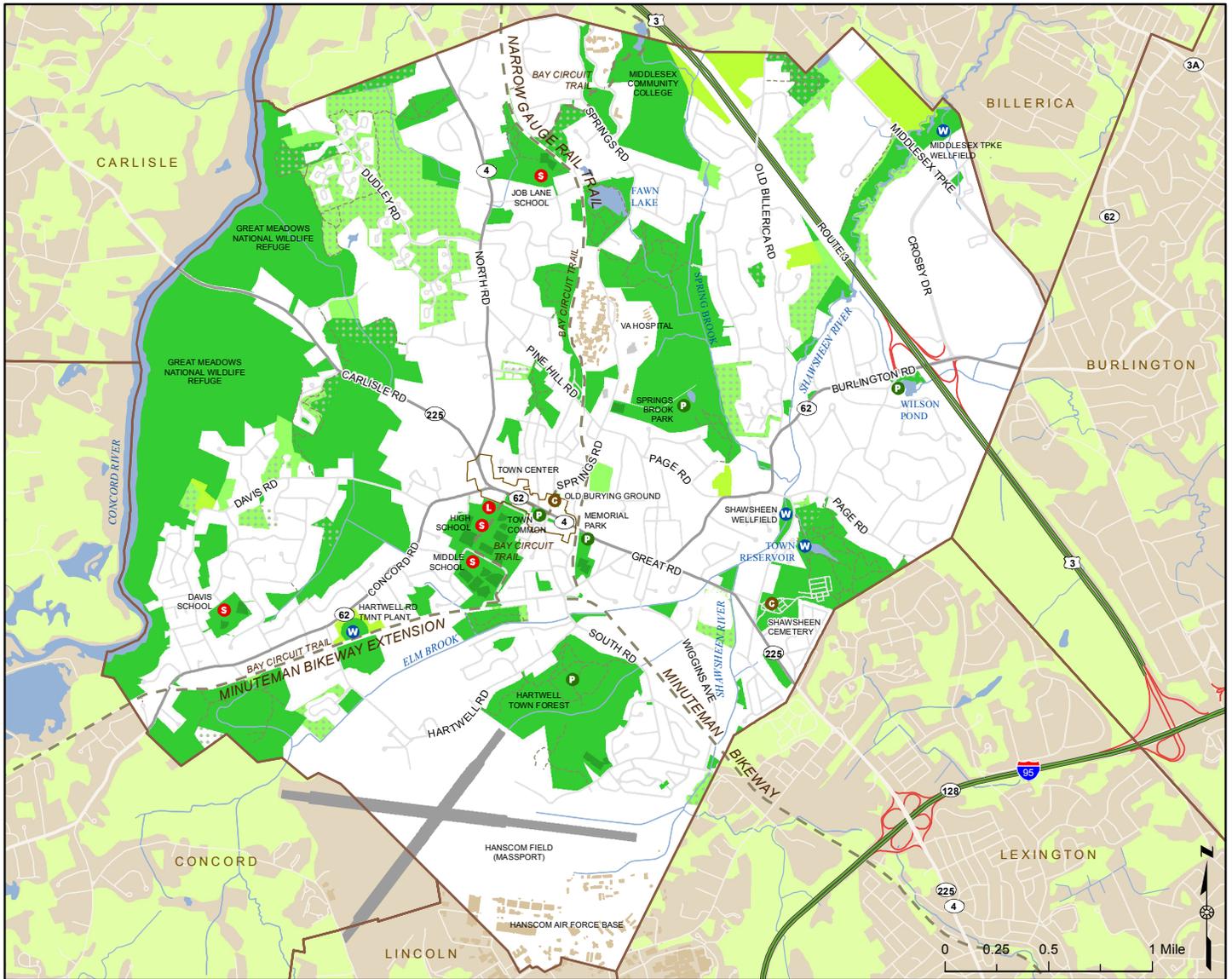
NOTE: Boundary of Town Center shown is the extents of the Historic District.

Map by Bedford Public Works
November 2013

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Note: Habitat areas are partially obscured by other layers. For complete information, see GIS maps on Town Website.



Open Space

Open Space

- Conservation Restriction
- Public Open Space
- Sports Field
- Private Open Space
- Ch.61/61A: Forest / Agriculture
- Park / Recreational Area
- Cemetery
- Library
- School
- Wellfield

- Road
- Trail
- Town Boundary

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An estimated 47 parcels that contain 5 or more acres remain undeveloped or underdeveloped, with 17 of these having an area of more than 10 acres. While these lands have not all been evaluated thoroughly in terms of their development potential, open space value, or potential availability, the Conservation Commission has begun to maintain a list of properties for potential acquisition. The Commission has so far identified 31 privately owned, unprotected parcels, totaling 412 acres, that offer either intrinsic biodiversity or other environmental value, logical additions of acreage to larger masses of land, or strategic links between open spaces and activity centers.

While the northwest side of town has more contiguous networks of trails and open space, connectivity is lacking, and there are insufficient trails in the eastern portions of Bedford. Increasing access to rivers – including the Shawsheen River – would help enhance connectivity, as well as the functional value of water resources. The Board of Health recognizes that open space buffers and mature trees counter vulnerability to respiratory diseases and cancer from vehicle exhaust and airborne irritants.

Given the town’s vision for open space and resource protection, the Planning Board, Selectmen, Conservation Commission, Community Preservation Committee, Public Works, and Health departments should work together to prioritize and identify protection strategies for the remaining large parcels.

Competing Demands for Use of Open Land

Recent work by the Outdoor Recreation Ad Hoc Study Committee revealed a growing deficit between the needs of Bedford’s child and adult sports leagues and the available capacity of athletic fields and facilities. This subject is mainly covered in the Services & Facilities element, but it is mentioned briefly here as it also overlaps with issues of competition for open space. In 2013, the town voted to invest in the conversion of its main school field, Sabourin Field, to artificial turf which will substantially increase its playing capacity, fulfilling some of the demand for active recreation facilities. However, some shortfall will remain, and the town will have to look toward options which may include use of new land, as well as adjusting the use of existing space.

Some municipalities are expanding their range of activity into initiatives such as Power Purchase Agreements with private energy providers, where large solar arrays might need to be constructed. Other constituencies value open space for passive recreation such as hiking and pet walking, picnicking, community gardens, boat access, buffering from development, and a host of other functions. Although the amount of remaining agricultural land is very small, such use offers a reminder of the town’s history and a makes a contribution to landscape diversity.

Then, too, there is the overriding demand to protect certain conservation areas for their intrinsic biodiversity as wildlife and vegetative habitat. Flood control in the age of climate change also is likely to place further pressure on municipal lands. A good deal of the town's open land is wet, which limits its potential uses, but uplands and flat areas offer a resource to meet a wider variety of needs.

The issue of competing demand for use of open land raises the question of whether such competing use situations are best negotiated on a case-by-case basis with the stakeholders, or if there is a more uniform and consistent approach. The Board of Selectmen or another such board with broad authority could develop an action plan with broad support that addresses holistically a range of trade-offs.

Recognizing and Preparing for the Potential Impacts of Climate Change

Climate change will have significant effects on town development and planning. Areas of flooding are likely to expand, affecting private businesses and residences as well as public infrastructure and facilities. Demands on public and private stormwater management systems can overload capacity. Vegetation, street trees and agriculture can be adversely impacted. Wind damage from more severe and frequent storm events can become more problematic. Pressures on the infrastructure can increase the capital investment burden on taxpayers.

Local planning can play a role in responding to these changes by reducing impacts attributed to climate change and avoiding or mitigating effects of extreme weather events, building on the Conservation Commission's role in protecting wetlands. Open space and natural resource protection can help in mitigating climate change through natural stormwater control, providing pedestrian and bicycle alternatives to vehicular travel, site planning requirements, and increasing groundwater recharge rates by means of low impact development methods. Woodland preservation and street tree planting can help somewhat to offset emissions by absorbing carbon dioxide.

Other Ecologically Sound Practices

There is increasing awareness of the ecological impacts of site development and maintenance practices, for example the effect of untreated runoff on water quality, the effect of piped stormwater systems on hydrology, the problems caused by non-native invasive species and by reliance on single species planting, and the dangers of excessive use of chemicals in landscape maintenance. Alternative methods and best practice resources are increasingly available, and there are opportunities for the Town to apply them in its projects and to encourage their use by others. Examples are the LEED certification program operated by the US Green Building Council,

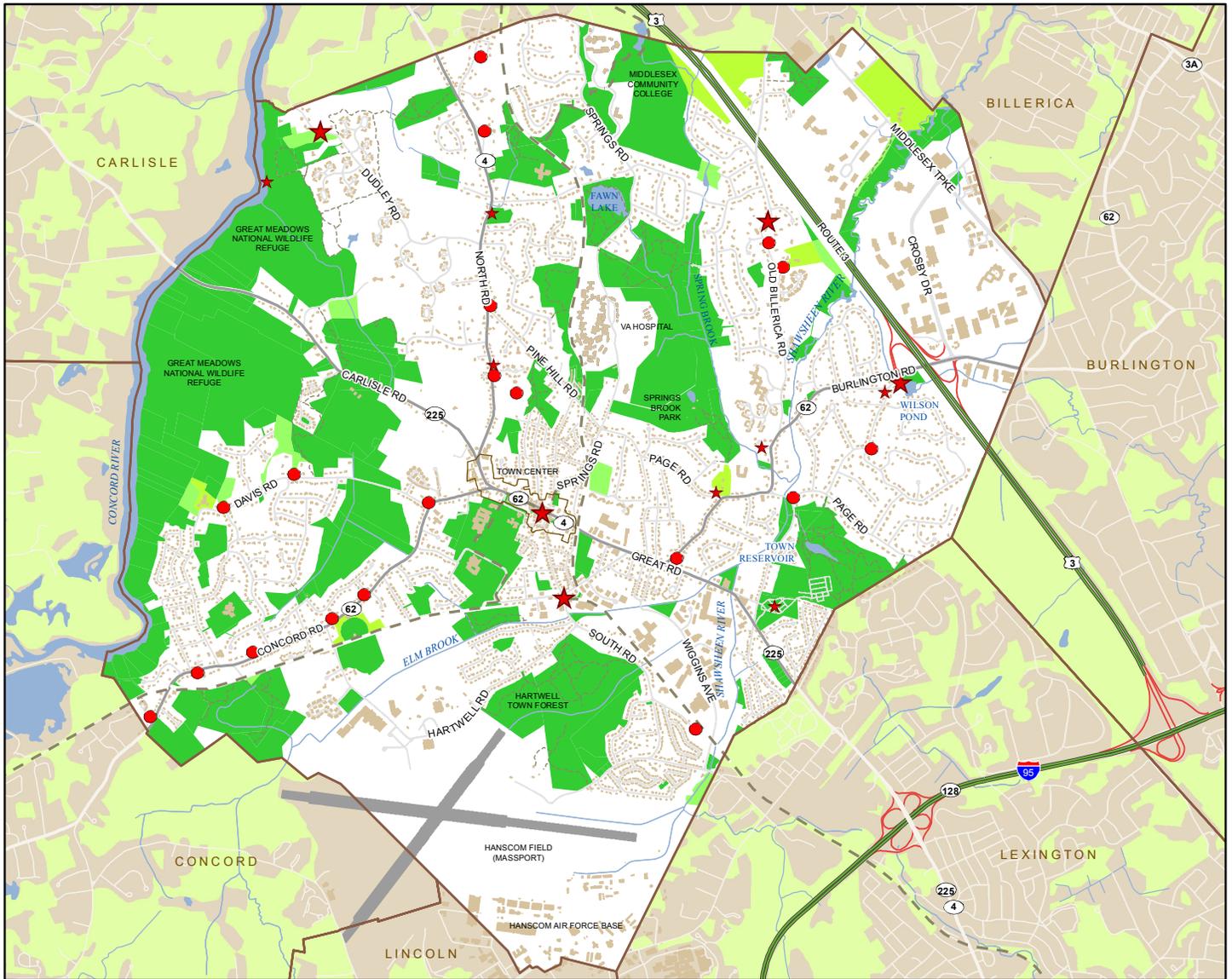
Low Impact Development stormwater management techniques, planting of a variety of native plants and organic gardening.

Challenges

- *Extending the network of greenways and trails to create a connected system.* Connectivity supports both biodiversity and pedestrian circulation, and increases the practical utility of open space for public health and for mitigating the impacts of climate change.
- *Establishing a fair basis for balancing the use of open space resources among multiple public purposes.* A range of community needs including habitat preservation, flood control, passive recreation, public water supply, community character, athletics, pedestrian circulation, alternative energy production, and more, compete for resources and space.
- *Finding more effective regulatory approaches for protecting natural resources and amenities in private development.* Bedford can foster open space connectivity, and value can be generated by offering the private market a better standard for development.
- *Continuing acquisition of natural resources and open space, as the undeveloped land supply dwindles.* Establish strategies to pursue the acquisition of parcels identified as priorities by the Conservation Commission and others.
- *Increasing awareness of the significant resources Bedford possesses.* A greater understanding of the historic and natural resources will enhance Bedford's sense of place and increase support for maintenance and acquisition needs.

HISTORIC/CULTURAL ASSETS

Noteworthy achievements have occurred since the 2002 Comprehensive Plan in adaptive reuse of public buildings and sites, as well as the addition of four sites to the National Register of Historic Places. The Historic Preservation Commission, Historical Society, Historic District Commission, Depot Park Advisory Committee and Friends of Depot Park and other organizations have been the drivers for the town. A nomination to greatly expand the boundaries of the National Register Old Town Center District is currently being submitted to the Massachusetts Historical Commission, the administering agency. The present Old Bedford Center District has 14 contributing buildings and three sites (the Cemetery, Wilson Park and the Town Common); the number of buildings would increase significantly if the nomination were accepted.



Historic Resources

Historic Locations

- ★ Historic Districts on National Register
- ★ Sites on National Register
- Other Buildings before 1790

- Road
- - - Trail
- Town Boundary

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Local historic organizations have placed particular value on Bedford's rich heritage of 18th century buildings and its Revolutionary War history. Yet the town may have further assets worth recognizing and retaining. Bedford's publicized inventory has been short on buildings, sites and districts from the 1800's and early 1900's, as well as Native American heritage. For example, the neighborhoods between the Depot, The Great Road and the Town Center contain many structures from roughly the 1875 to World War I period, including some Victorian notables, as well as vernacular residential architecture of a compatible neighborhood scale.

A consultant conducted a town-wide inventory of historic properties and neighborhoods in 1998, and the proposed expansion of the Old Bedford Center National Register District would pick up some of these assets. Further work is needed to identify historic resources in other areas of town.

Evidence of historic events marking important time periods, together with natural and scenic areas, shape the character of the town and contribute to its quality of life. Landmark features such as a stone wall, a hip roof, a side entrance, historic tree plantings, or a town green, reflect the unique elements of Bedford's history and character which can provide a hedge against rapid change, and are key to local identity. These elements can inspire design guidelines that shape the form and pattern of new growth. Building forms, setbacks, design details, and landscape features that reflect historic traits can reinforce a sense of place.

Beyond buildings, sites and monuments from the past, a community's cultural life also involves events, commemorations, and communication to foster a sense of connection and pride. Community-building events such as Bedford Day, patriotic holiday celebrations, concerts on the common, arts and crafts fairs, community policing outreach events, local cable television forums, and many more activities help unify the town's residents and businesses, and offer continuity in the thread of Bedford's history. The presence of Hanscom Air Force Base has long broadened Bedford's social mix, and important episodes of 20th century military and technological history deserve recognition. Through its cultural resources, the gradually diversifying ethnic and racial population will weave into the fabric of the town.

Challenges

- *Finding opportunities to protect or acquire more properties where almost all are in private ownership.* The community needs to have the capacity to be responsive to both acquisition opportunities and threats to historic properties.
- *Expanding the historic inventory, in particular to capture architectural and district assets beyond the 18th century.* The post-18th century cultural/historic assets of the town are

not identified or given standing as thoroughly as those of the 18th century period; likewise Native American artifacts or stories may deserve more attention.

- *Increasing public awareness of the value of cultural/historic assets and their importance to the community.* People do not know enough about the town’s cultural/historic assets, even with the extensive efforts of the three historical organizations and other groups. More awareness could increase voluntary protection by homeowners and developers (for example, of old stone walls).
- *Linking historic assets through public information.* Although admirable efforts have been made on specific projects, there is little connectivity or interpretive information linking the assets into “readable” pieces.
- *Using cultural/historic assets to help shape and define village centers.* As centers are reshaped through redevelopment and capital improvements, the role of historic and cultural assets in defining central places can be a key focus.

STRATEGIES

REGULATORY TOOLS & INCENTIVES

- Consider state-of-the-art approaches for natural resources-based zoning in selected residential districts.
- Increase opportunities for the market to preserve and improve historic buildings through zoning incentives.
- Provide greater incentives or requirements for employing Low Impact Development techniques for managing stormwater on development sites, especially with aesthetic landscaping features.
- Amend zoning laws and subdivision regulations to respond to climate change impacts on infrastructure, land use and development.
- Improve zoning provisions to encourage compact, multi-purpose development that is organized around, or respectful of cultural and historic architectural resources, landmarks and distinct older neighborhoods.

ACQUISITION

- Develop a more informed and comprehensive approach to acquiring open space and development rights by integrating all funding, regulatory and private initiatives into a coordinated plan & process.

- Update and improve the utility Bedford’s inventory of cultural/historic assets to allow public and private investors to make more informed and strategic decisions about property acquisition.
- Program right-of-way acquisition for bike trails and lanes, sidewalks, and greenway connections into all capital improvement planning, involving relevant committees.

EDUCATION & MARKETING

- Expand public information and marketing in regard to Bedford’s substantial natural resources and open space assets to increase the perceived value and use of these areas, as well as to build support for open space acquisition and management.
- Establish a comprehensive interpretive and instructional system linking Bedford’s cultural and historic resources for the benefit of residents, visitors, and other stakeholders.

PARTNERSHIPS

- Consider creating a new non-profit entity such as a land trust to take the lead in acquiring open space, with whom the Conservation Commission and Community Preservation Committee can partner, to allow for more responsive and faster pursuit of open space opportunities.
- Consider proactive town-and-business partnerships to revitalize and promote appropriate growth initiatives in specific compact growth targets such as the Town Center, Depot and/or North Road areas, as a means of preserving cultural resources.
- Utilize public/private community groups as a resource to support maintenance and upgrading of open space, parks, and trails.

STRATEGIC PLANNING

- Consolidate the town’s information on existing and potential natural and open space resources into user-friendly graphic and written products that are readily available.
- Ensure complementary future land use planning by integrating dialogue on protecting and enhancing natural, cultural, and historic resources with that of compact growth and area-specific redevelopment.
- Identify key elements of the town’s cultural and historic character from early settlements through the present, so they can be incorporated into site planning and

building design of new development, as well as reflected in the town's historic preservation strategies.

- Codify changes to flood elevations and flood control throughout town, and consider climate change in planning and decision-making.
- Identify gaps and opportunities to increase connectivity of open space and natural resources.

CAPITAL INVESTMENT

- Prioritize public investments in natural resource and open space protection by considering overlapping public benefits such as flood control, separating conflicting land uses, preserving the character and health of neighborhoods, providing pedestrian connections, and linking habitats.
- Create a capital investment plan for connectivity involving sidewalks, bike trails and lanes, greenway trails, and related elements, with the intent of working toward a town-wide network.
- On a long-term basis, invest capital funding for public spaces, amenities and landscaping that complement and enhance major roadway corridors, such as The Great Road.
- Budget for ongoing maintenance, site improvements, and signage on trails, historic, and natural resource areas. Consider the best mix and appropriate intensity of uses when planning maintenance and improvements.
- Develop a systematic program to preserve and replace public shade trees and park plantings, and incorporate shade trees and Low Impact Design principles in park and public facilities improvements.

7. TRANSPORTATION



TRANSPORTATION SNAPSHOT

Trip Generation

Jobs Based in Bedford	15,498
Live and work in Bedford	1,519
Work in Bedford, live elsewhere	13,979
Live in Bedford, work elsewhere	4,681
Total Commuters	20,179

Vehicle Traffic on Major Roads and Key Intersections

Location	Avg, Daily Volume	High Peak Hour Count
The Great Rd (TGR), west of Great Road Shopping Center	20,250 (2011)	1,450 (PM)
TGR at Loomis St.	23,260 (2005) 20,275 Saturday	1,675 (PM)
Middlesex T'Pike at Crosby Dr.		1,265 (PM)
North Carlisle Road		1,618 (AM)
Concord Rd at North Rd. & TGR		2,350 (AM)
TGR at Mudge Way		2,160 (PM)
TGR/Fletcher/Elm		2,060 (PM)
TGR/Springs/South		2,070 (AM)
Burlington Rd. E of Rt. 3	20,800 (2001) 21,100 (2008)	

High Accident Locations (2002-2010)

The Great Road & Springs Road	61
The Great Road & Brooksbie Road	51
Burlington Road & Ramp-Rt 62 Eb To Rt 3 Nb	49

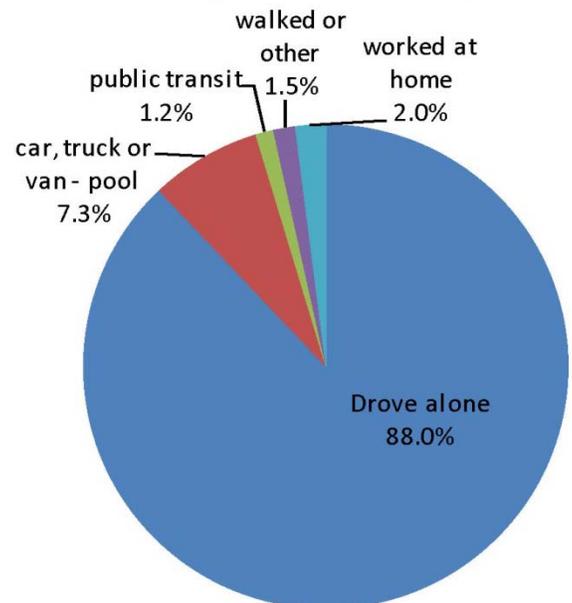
Transit Services

MBTA	Route 62: Alewife – VA Hospital , weekdays only 17+ runs
	Route 76: Alewife – Lincoln Labs and Hanscom , 20+ runs, reduced service Saturdays
	Route 351: Express Alewife/ Bedford Woods /Burlington Mall, stops along Middlesex Tpke, 4 runs each AM/PM
	Route 352: Express Boston/Burlington
LRTA	Route 14: Lowell – Middlesex Tpke , 13 hourly runs
BLT	Fixed routes between shopping destinations within Bedford , Burlington, and Billerica
	On-demand door-to-door service

Pedestrians and Bicyclists

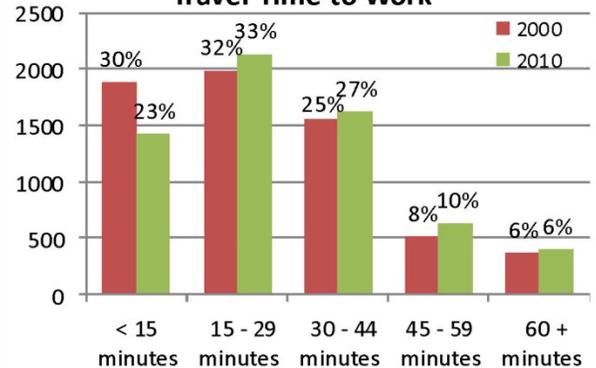
- 41% of roads in Bedford (excluding Route 3) have sidewalks on at least one side.
- 30-80 bicyclists per/hour use the Minuteman Bikeway at peak times, highly dependent on the weather.

Transportation to Work, 2010*



* 20,179 Bedford Commuters (Residents and Employees Combined) Source: ACS

Travel Time to Work



VISION

Improvements in the existing roadway network and the provision of safe, convenient, and affordable transportation options will reduce traffic congestion and improve public health and quality of life in Bedford. Multi-modal transportation alternatives, transportation demand management efforts, and land use changes encourage use of alternative modes of travel. Buses, transit shuttles, and multi-occupancy cars and vans increasingly serve the linear corridors such as The Great Road and Middlesex Turnpike, as well as the job centers such as Crosby Drive, Wiggins Avenue/DeAngelo Drive/Depot Area and the Town Center/Municipal Complex. Connected sidewalks, paths, and bicycle trails and lanes enable residents to walk or ride their bicycles to shopping and employment destinations, as well as for recreation or health. Improvements in roadway design and connectivity reduce travel delays and accidents at major intersections. The corridors safely accommodate drivers, transit riders, walkers and bicyclists. New development projects in the village centers and other locations incorporate a blend of housing, jobs, and amenities such as retail and recreation, with less reliance on motorized vehicle trips.

SUMMARY OF ISSUES AND OPPORTUNITIES

1. Spread-out land use patterns: The established land use patterns of separate and spread out land uses require vehicular trips to connect to one another. There is an opportunity to modify long-established patterns.
2. Motor vehicle dominance: The majority of trips by Bedford residents and employees are by motor vehicle; other modes are very limited in service, less accessible and underutilized. There is an opportunity to reduce trips and shift to other modes.
3. High traffic volumes: Bedford's major job centers and corridors are highly auto-dependent, resulting that heavy traffic volumes diminish quality of life in neighborhoods and ultimately can impede economic development. There is an opportunity to manage, shift and reduce volumes over time.
4. Alternate travel mode infrastructure: The town lacks connectivity and support in its network of sidewalks, and off-road walking trails, as well as bicycle trails and lanes, on-road markings, bike racks, and off-road winter plowing. There is an opportunity to improve infrastructure for alternative modes such as pedestrian and bicycle travel, for commuting, shopping, personal business, and leisure time trips.
5. Highway interchange access: Some of Bedford's job centers have only indirect access to highways and interchanges, limiting their visibility and interconnectivity, while

impacting neighborhoods that share local roads. There is an opportunity to institute programs that offset the access problems at least to some beneficial degree.

6. Local traffic patterns: Configuration of major collector and arterial roads in town favors cut-through traffic, and does not adequately provide for other travelers such as transit riders, bicyclists and pedestrians. There is an opportunity evolve toward a complete streets design philosophy.
7. Large institutional uses: Large governmental and institutional uses such as the Hanscom airfield and base, the E.N. Rogers Veteran's Administration Hospital, and Middlesex Community College, are major traffic generators but offer minimal opportunity for the town to manage impacts or mitigations. There is an opportunity to establish meaningful communication with them on these issues.
8. Transit fragmentation: While most neighborhoods and employment centers are not adequately served by existing transit services, transit system budget cuts such as those on MBTA bus routes could further reduce service, especially in light of the fact that ridership levels are relatively low. Limited service transit systems such as Lowell Regional Transit Authority, Bedford Local Transit, Lexpress and the new Hartwell Avenue Alewife shuttle do not appear to be optimally coordinated. There is an opportunity to advocate for transit as well as to optimize present operations and service connections.
9. Transportation demand management: Trip reduction/transportation demand management (TDM) programs do not exist in sufficient quantity or impact to make a major difference, and regional TDM efforts and services are not well-coordinated. There is an opportunity to become more aggressive about establishing TDM programs.
10. Opportunities for multi-modal network: Regional coordination of roadway projects, transit service, trails, and transportation demand management programs offer opportunities to enhance Bedford's transportation network. There is an opportunity to address transportation issues on a more regional basis.

GOALS

1. Integrate land use, transportation, and capital planning measures identified in the Comprehensive Plan to optimize the traffic operations and safety of the town roadway network for all users.
2. Enhance linkages between Bedford's job centers and corridors and the regional highway and transit systems.
3. Increase connectivity of pedestrian and bicycle network.

4. Improve Bedford's transportation infrastructure; leverage funding from government and private sources.
5. Reduce motorized vehicular trip/travel demand and increase share of trips made by walking, biking, transit, or shared commuting.
6. Use design of streets and adjacent development to reduce impact of traffic on residential and pedestrian environment.

DISCUSSION

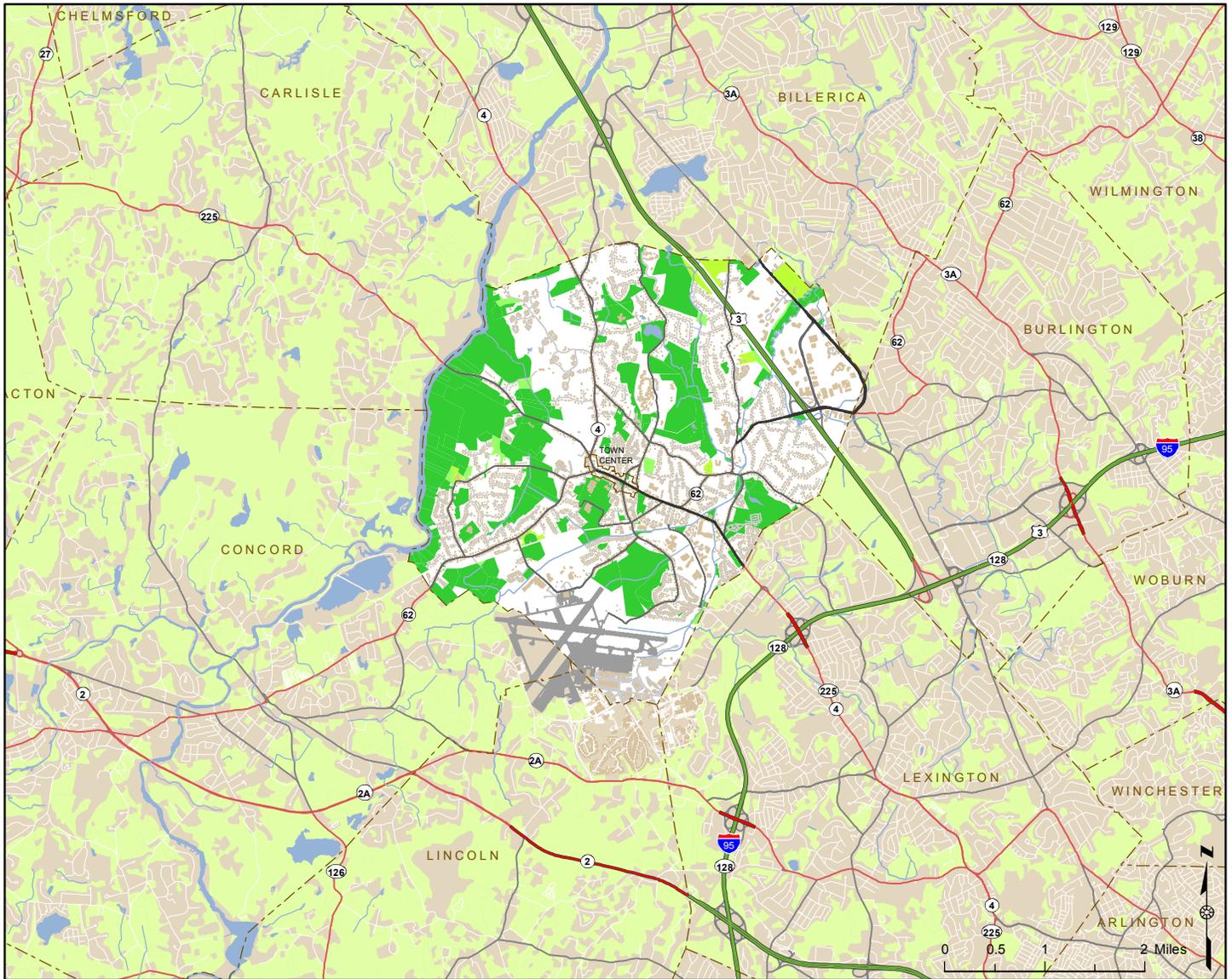
OVERVIEW

Bedford's large employment areas, its variety of housing choices, and its strong schools, services and community amenities make it a popular and prosperous choice for residents, employers and employees. The downside of this success has been a steadily growing traffic problem.

Approximately 23,000 vehicles pass through The Great Road (TGR)/Loomis Street intersection each day (24 hour volume, both directions). The corresponding figure for Burlington Road-Route 62 just east of the Route 3 interchange is 21,000 vehicles. About 2,350 vehicles queue at the Concord Road/TGR/North Road intersection during morning peak hours (all directions and movements), and 1,752 at the Great Road Shopping Center, 2,160 at TGR & Mudge Way, and 1,265 at Middlesex Turnpike and Crosby Drive all during the afternoon peak. There are also commuter-clogged local streets such as Summer Street and South Road leading to the Hartwell Avenue/Hanscom Air Force Base/Lincoln Labs complex on the Lexington-Bedford border.

Available traffic counts are extremely limited. They tend to be taken only when a major capital improvement project or large real estate development is planned, or when a special study is commissioned such as the Great Road Master Plan. However, Bedford's significant traffic problem is apparent even without extensive statistical records. While traffic volumes in many cases do not appear to have increased since the 2002 Bedford Comprehensive Plan (likely due to the 2008 recession), trip levels were already problematic then. An unknown proportion of traffic is generated by through-trips between other towns for commuting, shopping or other purposes, but many trips have origins or destinations (or both) within Bedford. It is important to note that the vast majority of trips are made in single-occupancy vehicles.

Bedford's transportation network evolved from Bedford's origins as an agricultural community, but now is defined by the town's location with respect to the regional highway network and its intersection with local streets. The town's limited public transit service and pedestrian and



Transportation

Transportation

Outside Bedford

-  Interstate
-  U.S. Highway
-  State Route

Within Bedford

-  Arterial Road
-  Collector Road
-  Local Road

-  Town Boundary

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bicycle infrastructure further contribute to this framework. Regional employers, commercial centers, and institutional uses generate the highest traffic volumes, which impact surrounding areas and raise questions of mitigation.

The traditional single-mode approach of increasing the design capacity of road networks to relieve congestion is becoming less feasible in Bedford as undeveloped land for road widening dwindles, and state, local and federal funding resources become scarce. With these conditions, state transportation agencies and many local communities are adopting a holistic community-wide transportation policy that integrates all modes of travel and tools for traffic management, maintaining both local and regional perspectives. This approach includes concepts such as sidewalk/bike path/trail connectivity, regional transportation demand management (TDM), quality transit service, integration of land uses, and facilitation of live-work opportunities.

FRAMEWORK

Bedford is situated close to a high volume interchange at Route 128/I-95 and Routes 4/225 (Exit 31 in Lexington), while the Route 3/Route 62 interchange (Exit 26) lies entirely within Bedford, close to the Burlington line. The town abuts heavily developed communities with greater populations and significant employment and retail space, especially Lexington, Burlington and Billerica. State Route 4/225 and State Route 62 traverse the town, carrying large volumes of through-traffic headed to other towns, as well as local trips in every geographic direction.

The Great Road (TGR) and Middlesex Turnpike exemplify *Corridors*, where diverse business uses and some residential development locate along a major transportation route. *Centers* include the major employment concentrations such as at Crosby Drive/Middlesex Turnpike/Route 62, the Wiggins Avenue/DeAngelo Drive/Depot Area, the Town Center and municipal complex, and smaller nodes such as the intersection of North and Carlisle Roads. There are also major institutional/governmental employment centers at the Veteran's Administration Hospital and Middlesex Community College, and around the Hanscom Air Force Base/Massport Civil Airfield complex, which were historically sited in more isolated locations. Most residents in Bedford live within 2.5 miles of commercial, municipal, and community amenities concentrated along The Great Road Corridor.

Outside of the corridors, many of Bedford's job centers are hard to reach because of indirect connections to the regional highway network – in particular, Wiggins, Hanscom, and the VA Hospital and Middlesex Community College. Because of their locations away from interchanges, they lack visibility, and traffic must flow through residential areas to reach these destinations. The Middlesex Turnpike area has a highway interchange but is otherwise separated from Route 3. None of these job centers allows for easy walking to shops and restaurants.

Table 7.1 Major Traffic Generators in Bedford

Industrial/Office/Flex Space/ Distribution	4,520,000 SF
Middlesex Turnpike/Crosby Dr./Rt. 62	2,840,000 SF
Wiggins Ave./Depot Area	1,680,000 SF
Retail and Service	584,000 SF
The Great Road retail and service	464,000 SF
Other retail & service	120,000 SF
Institutional/Government Uses	900,000 SF
Middlesex Community College	
Veterans Administration Rogers Medical Center	
Hanscom Air Force Base/ Massport	

TRAFFIC GENERATORS

Workplace commuting is a large component of traffic volume, although shopping, recreation, education, professional, medical, and personal business trips add significantly. Bedford has more than six million square feet of non-residential space served minimally by transit or TDM programs. Commercial vacancy rates in 2012 were estimated to be about 11% town-wide, down from a 2011 real estate survey, which had the vacancies at 21%. The potential for use of all or most of the space remains. Bedford’s retail offerings include some popular major stores such as Whole Foods and Marshall’s that attract customers from nearby towns.

There are approximately 15,500 jobs in Bedford according to state employment data, although the true number is probably in the range of 18,000 to 19,000, when part-time and temporary contractual jobs are included. Bedford’s resident labor force fluctuates between 7,000 and 7,300 workers. Approximately 2,500 live and work in Bedford, while 4,700 commuters live here but work out of town; these commuters would first be traversing municipal streets on their way to their place of employment. According to the American Communities Survey (ACS), about 88% of Bedford commuters travel by single-occupant vehicle. Altogether, commuting data indicates over 17,000 vehicles loaded onto Bedford’s street system each day for work purposes, and that number is probably low. Broken down into vehicle *trips*—one going to work, one leaving—the number would double to 35,000 employment trips made in single occupant vehicles each day.

Of the remaining commuters, approximately 7% arrive by some form of carpool or shuttle, 1% by walking or biking, and 1% by public transportation. Additionally, a growing number of Bedford residents work from home, 6.6% of Bedford's resident work force in 2010 (up from 3% in 2000), or 2% of all commuters. In all, only a little more than 10% of commuters are able or willing to avoid using single occupancy vehicles to get to and from work. Although this number is up slightly from the 2000 Census, the impact of alternative transportation modes is limited. Although the public schools provide a bus service, some students also travel by individual or shared automobile.

Another useful measure of traffic generation is vehicles owned per household, which has been rising for many years. Among Bedford's 6,200 resident workers, more than 85% were in households that had two or more vehicles, with many having more than three. The corresponding figures among all commuters to Bedford were slightly lower. Rising vehicle ownership can be indicative of various demographic trends, but always adds to traffic volume.

COMPLETE STREETS

Traditional road design focuses on getting the most cars moving at the highest possible speed by building more lanes, making them wider and forsaking sidewalks, bus stops and bike lanes. The "Complete Streets" concept balances the automobile with other modes of travel, including non-motorized transport and public transportation.⁹ Roadways are designed and operated so that the entire right of way enables safe access for all users, regardless of age, ability, or mode of transportation. National Household Travel Survey data tells us that 50% of all trips taken are less than three miles, yet 72% of those trips are driven.¹⁰ Encouragement of non-vehicular trips can reduce peak traffic volumes and have health benefits. Traffic calming measures incorporating roadway design elements that reduce travel speeds and enhance the visibility of pedestrians can also improve safety for all roadway users and discourage use of local roads for cut-through traffic.

Exemplifying the complete streets approach, Bedford has in some cases, restriped lanes after road repaving to have an 11-foot lane width in place of 12 feet. A wider shoulder (outside the fog line) helps bicyclists somewhat. Bedford also has an established Safe Routes to Schools program, which identifies and addresses barriers to non-motorized travel to school. Young and casual bicyclists benefit from crosswalks and pedestrian light signals. Improved provision for

⁹ Massachusetts Municipal Association, <http://www.mma.org/economic-a-community-development/5339-complete-streets-policy-available>

¹⁰ Source: Bedford Bicycle Advisory Committee

adult bicyclists, particularly commuters can also help to reduce traffic generation. The complete streets principle is consistent with the goal of Massachusetts Department of Transportation (MassDOT), announced in 2012, to triple the share of travel in Massachusetts by bicycling, transit, and walking.

MOTOR VEHICLE TRAFFIC SAFETY

Following are highlights of traffic accident data (see *Appendix* for further detail).

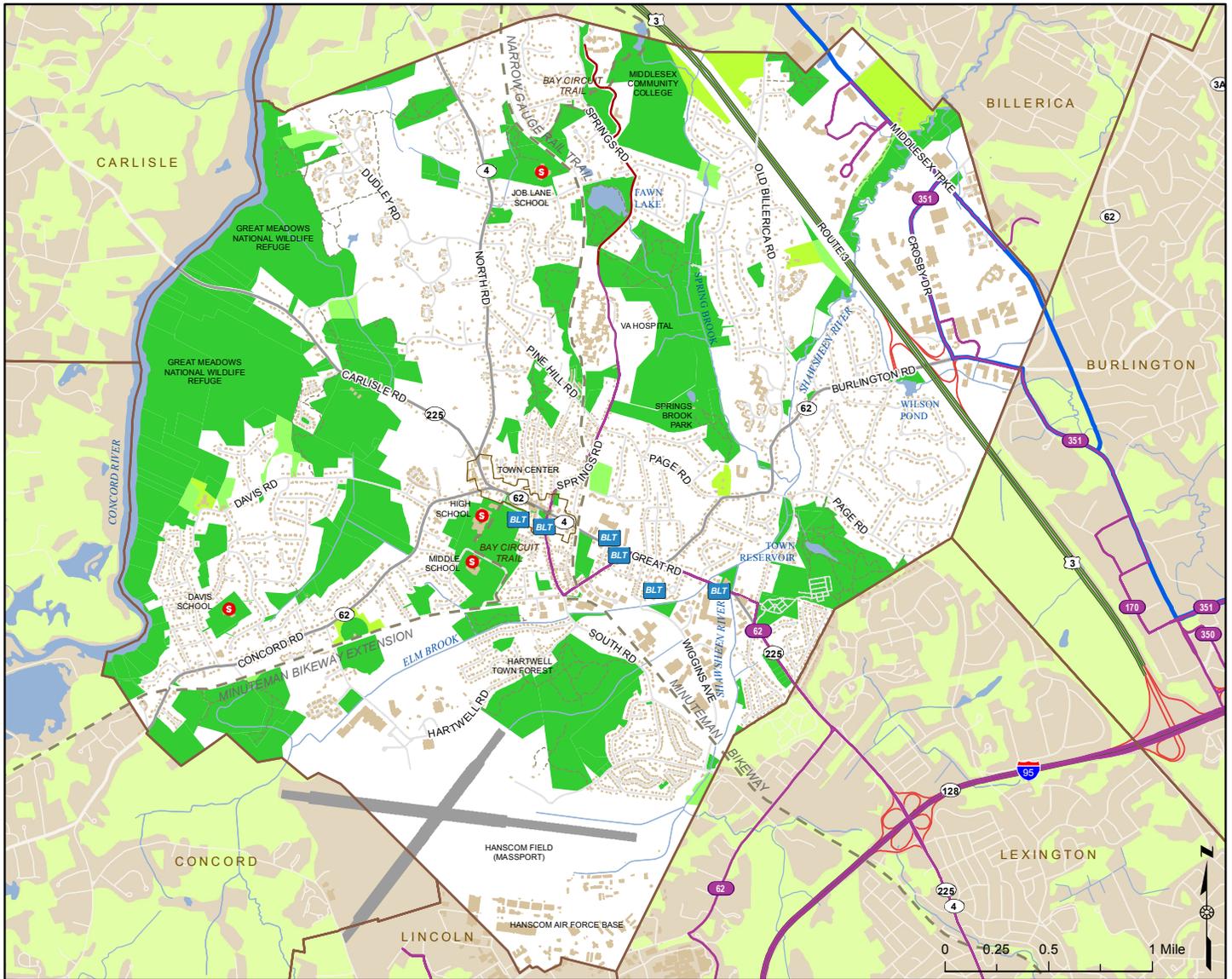
- The Great Road (TGR; Routes 4/225): two of the town's highest accident locations are along The Great Road (TGR) at Springs Road and at Brooksbie Road, with 61 and 51 accidents respectively between 2002 and 2010.
- Route 62 (Burlington Road), at a point just east of the Route 3 interchange: this location experienced 49 accidents between 2001 and 2010.
- Other high accident intersections include North Road at Carlisle Road Rt. 225 and TGR at Ashby Road, with 42 and 41 accidents respectively between 2001 and 2010.
- Overall, traffic accidents declined from a ten-year peak of 725 in 2004 to 361 in 2011; this is likely due to traffic management improvements and better law enforcement.

High vehicular volumes occur at key intersections along The Great Road, Burlington Road, North and Carlisle Roads, Concord Road, Wiggins Avenue and Summer Street, South Road, Page Road and other public ways, as well as at Crosby Drive and Route 62 at the Route 3 interchange. These concentrated volumes have undesirable impacts on the community at large, making roadways less convenient and safe for all modes of travel, diminishing the quality of life in adjacent neighborhoods, creating environmental problems, and even impeding the growth of business, according to area business operators

PUBLIC TRANSIT

Less than 1% of Bedford employees and 2.3% of Bedford's resident work force commute by public transit. According to ACS, only 95 arrive at a Bedford job by bus on the MBTA or LRTA routes, or the limited Bedford Local Transit. No reliable data exist in regard to Bedford residents who drive to the commuter rail stations or to Alewife Station. While transit remains a travel mode of limited significance, it is also important to report that ridership numbers for the three MBTA routes with a Bedford connection increased along their entire length in several towns by a significant 32% between 2002 and 2010, from 1,926 to 2,546 riders.

Public transit in and near Bedford is limited to bus routes serving some of the major corridors and employment areas. The Mass Bay Transit Authority (MBTA), the Lowell Rapid Transit



Transit

Transportation

- Interstate
- U.S. Highway
- State Route
- Local Road
- MBTA Bus Route
- Bedford Local Transit (BLT) Fixed Route Stops
- Lowell Regional Transit Authority (LRTA) Route 14
- MCC Shuttle
- Trail

School

Town Boundary

NOTE: Boundary of Town Center shown is the extents of the Historic District.

Map by Bedford Public Works
November 2013

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Authority (LRTA), and Bedford Local Transit (BLT) all provide limited bus service. Rapid transit is available only by driving or taking a bus to the Red Line from Alewife Station in Cambridge. Direct commuter rail service within Bedford ceased operations in 1977; the nearest stations are located in Concord (West Concord and Concord Depot which has more limited parking, on the Fitchburg line).

In addition to these public transit services, shuttles are provided by Middlesex Community College to connect with the MBTA bus station (Route 62) at VA Hospital throughout the day, and the LRTA bus station (Route 13) from the Billerica Mall, one scheduled round trip each day. The VA Medical Center and Hanscom Air Force Base also provide limited shuttle services for patrons and employees; information on other private shuttle services operating in Bedford is unavailable. Lincoln Labs has an hourly shuttle to the MIT campus, but is replacing its shuttle/bus service to Nashua with a vanpool coordinated through V-ride. The Chamber of Commerce is looking into a shared shuttle service from Alewife to transport interns and employees to Bedford companies, which could be the start of a public/private partnership.

A noteworthy new service has just become operational along the Hartwell Avenue complex in Lexington. The Hartwell/Hanscom /Lincoln Labs research and development/office/industrial complex strongly impacts Bedford traffic and quality of life. A shuttle bus to Alewife began operating at the beginning of September, 2013. In conjunction with the Route 128 Business Council, the new REV Alewife shuttle will have three departure times morning and afternoon. The bus will have a capacity of 15 riders per trip and is free to Route 128 Business Council members but is open to the public for \$3 per trip. One large property owner on Hartwell also owns business property on Wiggins Avenue in Bedford so the shuttle will make a stop at Preston Court, off Wiggins.

Given the concentration of job centers in Bedford and the Route 128 and Route 3 corridors, there is potential for much greater coordination of Transportation Demand Management (TDM) programs facilitating and encouraging the use of public transportation or other alternatives to single occupancy vehicles.

Table 7.2 Transit Services in Bedford

MBTA

Route 62	Weekday bus service from Alewife Station in Cambridge to the VA Hospital. Provides 17-18 runs each way per day, plus 3 in the early morning and evening that go only as far as South Road/The Great Road. In 2010, the daily ridership averaged 1,609 people, with 64 people using only the Bedford stops. This is an increase of 42.6% from 2002.
Route 76	Bus service from Alewife Station to Lincoln Labs in Lexington and the Hanscom Civil Air Terminal. On Saturdays, a reduced service of 12 runs each way operates on a combined Route 62/76. The 2010 daily ridership was 626 people, an increase of 5.2% from 2002.
Route 351	Express bus from Alewife station with several stops in the Middlesex Turnpike/Crosby Drive area, Cambridge Street (Route 3A) in Burlington, and the Burlington Mall. It has 4 runs from Alewife to Bedford in the morning and 4 return runs in the afternoon. In 2010, daily ridership was 246 people, which is an increase of 78.3% from 2002.
Route 352	Express bus for commuters into Boston with three stops along Cambridge Street (Route 3A) in Burlington. Park and Ride lots do not exist to make this transit service more available to Bedford residents.

LRTA

Route 14	Thirteen hourly runs from Lowell every weekday. Route includes stops at Bedford Springs Apartments and the MITRE campus along Middlesex Turnpike in Bedford, and Sun Micro Systems in Burlington. One trip each way diverts along Crosby Drive and Network Drive. In 2010, the average daily ridership was 362 people.
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BLT

Fixed route service	Regular schedule of trips to shopping destinations within Bedford, Burlington, and Billerica. On Monday, Wednesday, and Friday, 5 morning runs and 3 afternoon runs take passengers between Town Center and the Stop and Shop Plaza. Tuesday has a morning run to Market Basket, and an afternoon stop at CVS. Wednesday and Thursday afternoon runs make stops at Whole Foods, the Post Office, and the Library.
On demand service	Door-to-door dial-a-ride service within Bedford throughout each weekday at times when no fixed route runs are scheduled. To arrange a ride, passengers call the BLT between 8 a.m. and 9 a.m. for a ride later that day. Rides for medical appointment may be made up to three days in advance.

SIDEWALKS AND CROSSWALKS

Bedford's sidewalk network has gradually expanded to a current total of 37.8 miles, yet only 41% of roads in Bedford (excluding Route 3) have sidewalks based on information in the Town's Geographic Information System (GIS). In most cases, the sidewalk is only on one side with the main exceptions being the Great Road in the Town Center, and the South Road connection to the Depot area where sidewalks line both sides of the street.

Of Bedford's state numbered routes and arterial roads, the following lack any sidewalks:

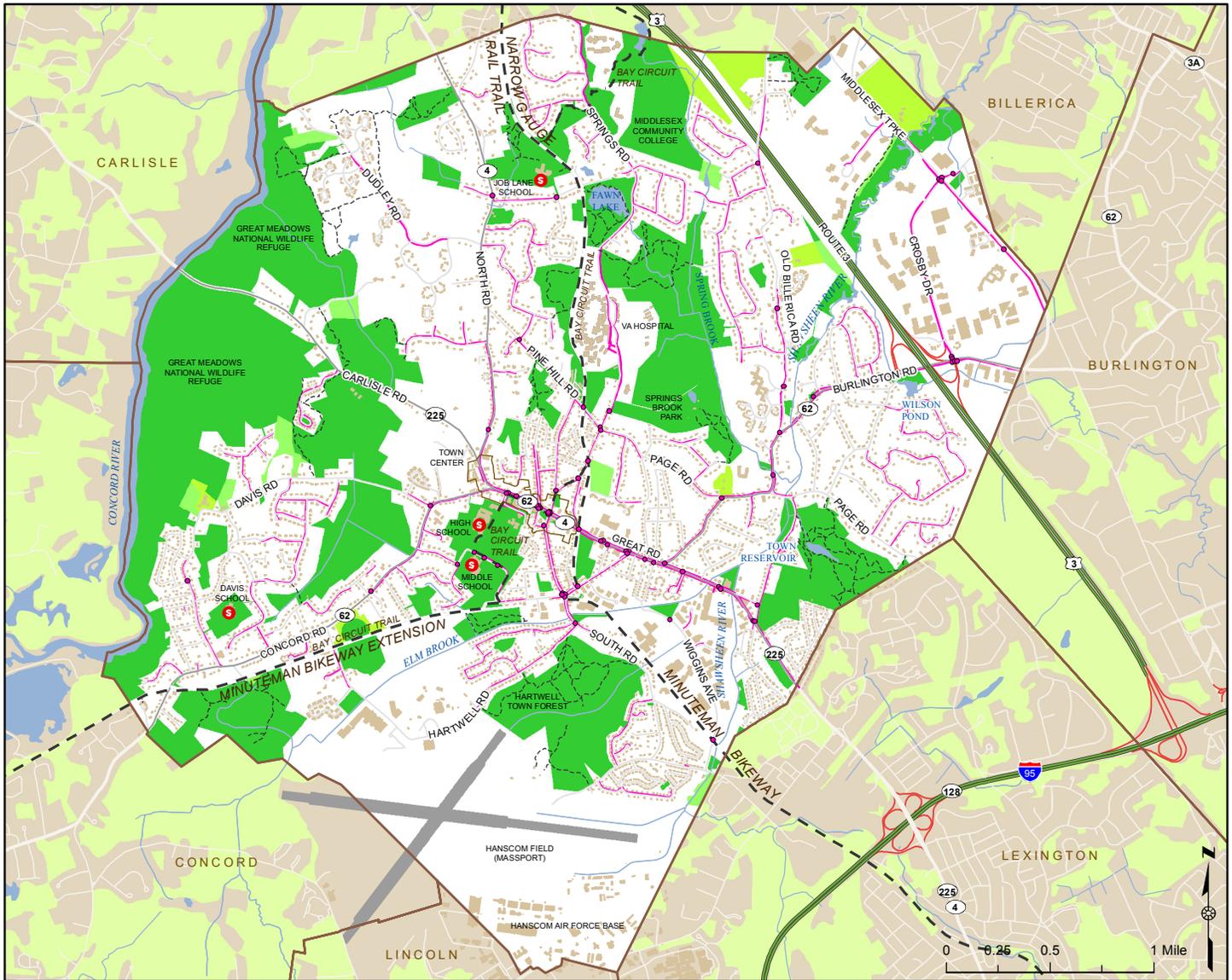
- Route 62: Concord Road from Concord town line to Hardy Road, and short portion of Burlington Road from Meadowbrook Road up nearly to the intersection with Route 3
- Route 225: Carlisle Road from Carlisle town line to North Road
- Route 4: North Road/ Chelmsford Road from Billerica town line to near Carlisle Road (new sidewalk planned for portion from Pine Hill Road to Carlisle Road)
- Middlesex Turnpike from Billerica town line to Shawsheen River (new sidewalk planned in road widening project)

Other collector roads that lack sidewalks are:

- Hartwell Road from Concord Road to Bagley Road
- South Road from Hartwell Road to Hanscom Field
- Wiggins Avenue (and roads that it connects to: Summer Street, Ashby Road and Walsh Road)
- Davis Road from Concord Road (end nearest to the center of town) to Gleason Road
- Page Road from the town line to Shawsheen Road and from Francis Kelley Road to Kingsley Terrace
- Portion of Old Billerica Road from Mitchell Grant Way to Temple Terrace
- Short portion of Springs Road near the town line

The existence of safe places to cross is especially important on roads that are heavily trafficked, multi-lane, close to concentrations of children or elderly people, within retail areas, or where a sidewalk changes sides. Road intersections that have wide radius curbs can make crossing more dangerous. Bedford has a few dozen marked crosswalks and a few signalized intersections with button-operated pedestrian crossing phases, but problem areas remain. Some examples are:

- West end of the Great Road and intersections of Route 4 with Routes 62 and 225



Pedestrian Resources

	Total Length
Sidewalk	37.8 miles
Rail Trail (in Bedford)	5.8 miles
Bay Circuit Trail (in Bedford) (Overlaps Other Trails)	5.9 miles
Other Town Trail	20.2 miles
Crosswalk	
School	
Town Boundary	

NOTE: Boundary of Town Center shown is the extents of the Historic District.

Map by Bedford Public Works
November 2013

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- East end of the Great Road
- Middlesex Turnpike
- Crossing of Concord Road by Reformatory Branch Rail Trail (Minuteman Bikeway extension)

Given limited resources, the Town may need to choose priorities, for example, between connecting neighborhoods and putting sidewalks along busy roads. DPW has advocated for a capital improvement plan for sidewalks.

The Healthy Bedford initiative has identified transportation as a primary theme through its Healthy Communities Planning Grant process and, as of September 2013, is applying for an Implementation Grant of up to \$25,000 to research and develop resources for a pedestrian master plan and a local circulator bus.

BICYCLE ROUTES, TRAILS AND FACILITIES

[Note: please refer to Glossary in this Plan for definitions of terms related to bicycle travel.]

Bicycling serves both a transportation and a recreation purpose, uses on-road and off-road infrastructure, and is an activity for people of all ages. The requirements and needs of various bicycle users must be considered when promoting bicycling or designing bicycle infrastructure.

The prospects for dedicated bicycle travel lanes within and along Bedford’s major roadways have not been explored to any great extent, likely due to the practical difficulties presented by large traffic volumes and sometimes by inadequate rights-of-way. But as Bedford moves toward a complete streets philosophy to accommodate multiple modes of travel, the subject should be explored in detail in a master-planned approach.

The town’s bicycle trails and off-road walking trails are described in the Natural and Cultural Resources chapter. While there are many connections to neighborhood roads and sidewalks, there are also physical impediments and missing connections to deal with in striving for connectivity. In some cases, development has taken place without making provision for a public right of way for access. Such development blocks the Minuteman Bikeway Extension alongside Railroad Avenue near the Depot Park and Freight Museum. In other cases residential cul-de-sacs have made no formal provision for a way through to conservation land or other neighborhoods. Other areas where bicycle connection opportunities have been identified include access between the Wiggins Avenue industrial/office area and the Great Road Shopping

Center, connectivity in the Middlesex Turnpike/Crosby Drive area, and connections to neighboring towns.

The Trails Committee, with assistance from the Bicycle Advisory Committee, has done much work to map and investigate potential connections. It has been agreed that the Land Acquisition Committee will have responsibility for making approaches to landowners where easements or purchases of private land are desired, and a working list of desirable easements has been presented to the Selectmen. In some locations where access is physically obstructed there may be the opportunity to negotiate or require connections in future redevelopment.

Variable trail surfaces limit the range of users for whom routes are suitable. A hard smooth surface is desirable for road bikes, wheelchairs and skates. State law requires trails to be open to use by handicapped persons including use of motorized assistance; however none of Bedford's conservation trails are specifically designated, improved, or promoted for this purpose at present.

In September, 2013, the Bicycle Advisory Committee put together a proposal for consideration by Town Meeting, to use \$40,000 of Community Preservation Act funds to hire a consultant to prepare a Bicycle Master Plan for Bedford. This study could be an important step toward attaining both long term transportation and public health benefits.

TRANSPORTATION IMPROVEMENT PROJECTS AND PLANNING

State funding is an important ingredient in achieving transportation projects. Priorities are set through the regional Transportation Improvement Plan (TIP), which is a kind of super-capital improvement plan for all travel modes in the Boston metropolitan area, updated annually. The TIP is allowed to fund a great variety of projects that have any connection to transportation issues. The TIP is created, approved and monitored by the Metropolitan Planning Organization (MPO), an elected regional body mandated by the U.S. Department of Transportation as a requirement for receiving federal transportation subsidies. Bedford has held an elected seat on the MPO for approximately ten years, and although it is by definition regional in perspective, the holding of that seat has helped to secure funding for various projects that impact Bedford and surrounding towns in an environment where the competition for scarce resources is intense and political.

The TIP has funded four major sets of projects in the last 10 to 15 years in Bedford:¹¹

- The Middlesex Turnpike upgrade (widening and realignment), Phases I to III, is a \$24 million project that has been ongoing for a decade or more and will not be completed until 2018, involving work in Billerica, Bedford and Burlington. It was preceded by the upgrade of the interchange between Route 3 and Burlington Road (Route 62), which was a nearly \$7 million project completed in 2002.
- Improvements to design characteristics and safety on Route 3 are being implemented between the years 2012 to 2014, at a cost of \$3.8 million. Widening of Route 3 to add a third travel lane in both directions was completed in the late 1990's.
- The Bedford Depot Park site improvements and Freight House rehabilitation, which were constructed between 2003 and 2009 for a cost of \$1.3 million, were subsidized with state transportation funds.
- The Page Road bridge replacement over the Shawsheen River was completed in 2010 for a cost of \$1.92 million.

In terms of local transportation improvement planning, the Great Road Master Plan (prepared by consultants Vanasse Hangen and Brustlin in 2011) is an ongoing project managed by the Bedford Department of Public Works that creates a vision for the municipally controlled segment of the town's busiest artery. The goals of this plan are to make The Great Road a livelier, safer, more functional and attractive corridor. The multi-faceted strategy integrates traffic management, enhanced pedestrian and bicycle opportunities, and improved amenities in the public realm. TIP status and funding may be sought in the future to help fund this long-term initiative.

TRANSPORTATION POLICY DIRECTIONS

Transportation problems in metropolitan areas were long thought of as a matter of increasing the capacity of highways and interchanges and improving traffic operations on major local roads. It is still important to pursue state and local funding initiatives to build such projects – and will be for the foreseeable future. But adding lanes, widening interchanges, redesigning intersections or retiming signals can only do so much. Due to the fact that traffic flow is improved incrementally with each project, people have an increased incentive to continue using their cars, and the benefits from increased capacity or improved operations are often consumed in short order by additional vehicle trips. A multi-modal strategy is the only way to

¹¹ Due to the fact that such projects take years to design and construct, the time frames are long.

attain even modest net trip reduction and reduce the impacts to the community of high auto-dependency. Land use and zoning strategies also can contribute on a long-term basis to optimizing the operations and safety of the highway and road network.

STRATEGIES

STRATEGIC PLANNING & MULTI-MODAL CONCEPTS

- Building on the Comprehensive Plan recommendations, approach town-wide traffic management from a comprehensive and multi-modal perspective, including bicycle and pedestrian travel and lower- cost traffic management methods such as pavement markings, channelization, and improved signage. Incorporate a complete streets approach to long range planning, where feasible.
- Approach the town-wide issue of bicycle routes and sidewalk connectivity in a holistic and long range way, making it an integral part of the town's long-range capital investment planning and bringing to bear all funding, regulatory, and private investment tools.

TRANSPORTATION PROJECT FUNDING AND PUBLIC/PRIVATE PARTNERSHIPS

- Work more closely with the town's business community and large governmental/ institutional uses to address traffic problems at particular intersections and roadway segments affecting their operations.
- Organize an ad hoc town and business coalition, including employers and representatives of the major governmental and institutional sectors, to advocate for retention and enhancement of regional transit service with Mass DOT and the MBTA.
- Establish a permanent public/private partnership that coordinates and promotes transportation demand management programs within the town and the region.
- Work through MPO/TIP, Central Transportation Planning Staff (CTPS), MassDOT, non-profit bicycling organizations, and other relevant organizations to create a regional bicycling infrastructure with both street lanes and off-road trails as a commuting alternative as well as a healthy leisure time activity.

CAPITAL INVESTMENT

- Channel more town and state capital investment toward a complete streets approach to multi-modal capability in the major corridors such as The Great Road and Middlesex Turnpike, integrating sidewalks (on both sides where possible), signage and markings for

bicycle routes, and possibly fixed route commuter bus service for the length of the corridor.

- Use the annual municipal capital budgeting process to establish a better balance among transportation modes throughout town, allocating resources to provide pedestrian and bicycle connections and traffic calming measures as well as infrastructure renewal and safety improvements.

EDUCATION, MARKETING, & ADVOCACY

- Increase public awareness of the importance of investing in pedestrian and bicycle transportation as an alternate transportation mode and an investment in health and wellness, as underscored by the 2013 Wellness grant community survey. Support advocacy programs like Safe Routes to School and Healthy Living programs for walking and bicycling, and walking groups.
- Significantly raise public consciousness of transportation issues and alternative transportation options through educational venues, the web and social media, news outlets and public information, building upon the work of the Healthy Bedford initiatives.
- Continue Bedford's strong history in working through MPO/TIP, CTPS and MassDOT, to identify and fund necessary traffic management improvements at major intersections, highway interchanges, and along major collector and arterial roads.

REGULATORY TOOLS & INCENTIVES

- Use authority under zoning and subdivision permitting to bring about private improvements for multi-modal traffic mitigation for major development projects.
- Institute stronger zoning incentives to provide connecting segments and related facilities for bicycles and pedestrians, as well as transportation demand management programs where applicable.
- Employ land use and zoning policies that allow for realistic no-commute work options and harmonious blends of industry and employment.

8. HOUSING



HOUSING SNAPSHOT

WHERE WE LIVE

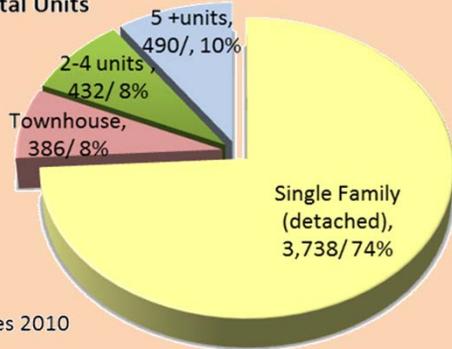
Ownership (Source: 2010 ACS)

- 76% of units owner occupied, including 480 condo units (Bedford Assessor FY13)
- 24% of units renter occupied

Condition & Age

- 85% of Bedford's housing was constructed after 1950.
- Nearly half of Bedford's housing was constructed between 1950 and 1970.
- 739 building permits were issued between 2000 and 2011, averaging 22 single family homes per year.
- 455 multifamily homes were constructed 2005 -2007.

2010: 5,046 Total Units



Source: ACS
5-year Estimates 2010

Housing Size (2011)

- Median single family house size: 2,040 square feet
- Single family size range: 828-6,594 square feet
- Median multifamily condo size: 2,299 square feet

Building Permits, 2008-2012

	2008	2010	2012
New Single Family Construction	21	16	22
Residential Additions/Alterations	125	113	122
Demolitions	7	10	17

HOUSING CONCERNS

Housing Cost

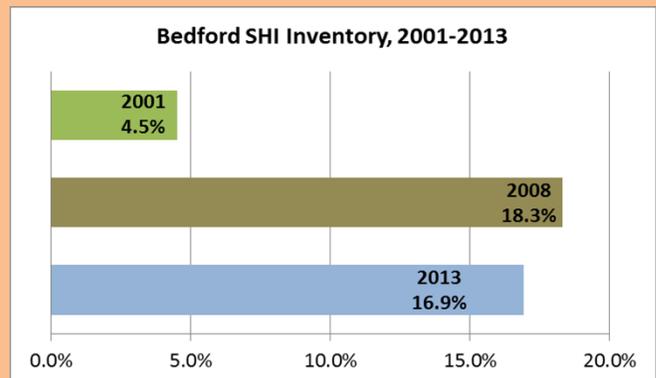
- Median home sale price 2011: \$505,000
- Average single family assessed value, FY13: \$518,000
- Average condo assessed value, FY13: \$408,000

Housing Affordability

- 2000-2010 increase in median value of a single family home: 38%
- Increase in median household income: 22%

Subsidized Housing Inventory (SHI)

- State threshold for Chapter 40B: 532 units (10%)
- Bedford SHI units: 900 units (16.9%), including 862 rental, 38 ownership
- Approximately 488 units are affordable (restricted to low/moderate income households).



Housing Demand/Population Characteristics (2010)

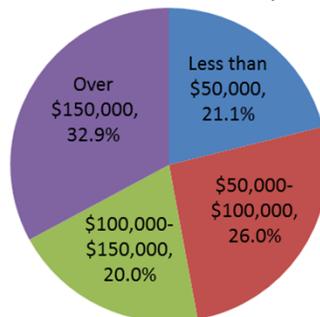
- 19% of Bedford's population are age 65 and over, compared with 13% in Middlesex County.
- 5% of Bedford's population are between the ages of 18 and 25.
- 26% of households in Bedford are people living alone.
- 34% of Bedford households have children under 18.

Bedford Comparison (US Census, ACS)

	Bedford	State
Median age, 2010	45.1	39.1
Median household income	\$101,886	\$65,981
Median single family value	\$537,400	\$343,500
Proportion of SHI units, 2013	16.9%	9.2%
Housing growth 2000-2010	7%	14%

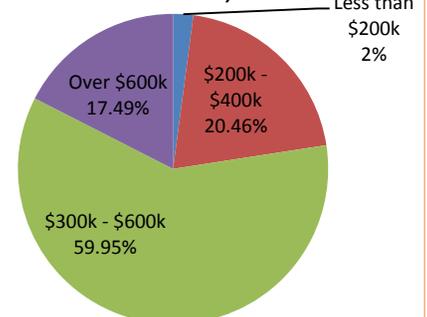
Housing Affordability in Relation to Household Incomes

Bedford Household Incomes, 2010



Source: ACS 5 year Estimates

Bedford Home Values, FY 2013



Source: Bedford Assessor

VISION

Bedford's residential areas provide a balance of housing styles and prices to meet the needs of residents whose work supports economic growth and services in the region. Cohesive neighborhoods are connected by streets, trails and greenways to community amenities, including open space and recreation, schools, retail, and services, to provide families with a healthier, safer environment and access to community life. As market rate and affordable housing is developed, it includes smaller scale ownership and rental units appropriate for a range of incomes and households, with design characteristics and densities compatible with surrounding neighborhoods. Viable mixed use development in designated parts of town offers a complementary blend of residential and business uses appropriate to the context of each location, while also providing improved access to multiple modes of transportation and connection to jobs, retail, and community amenities. Energy efficiency improvements in new and existing homes lower the cost of utilities and provide comfortable and healthy living environments.

SUMMARY OF ISSUES AND OPPORTUNITIES

1. Addressing needs of Bedford residents: The range of available housing stock does not match the widening array of needs among various Bedford household income and age groups, such as younger residents and the empty-nester and senior markets. There is an opportunity to encourage market activity that begins to meet the needs of these sectors.
2. Maintaining Subsidized Housing Inventory performance levels: Compared to nearby suburban communities, Bedford has had the highest percentage of income-qualified units in the Subsidized Housing Inventory under Chapter 40B, but growth in market rate housing, along with expiration of long-term deed restrictions, will reduce the percentage over time. Maintaining Bedford's share of affordable housing will assure continued diverse choices and minimize the imposition of large unplanned developments.
3. Making mixed use zoning more productive: Mixed-use zoning districts have not been widely successful in blending residential with commercial development. There is an opportunity to improve mixed use zoning to promote housing in convenient, walkable locations.

4. Crafting residential uses to promote future vision: Most of the current residential zoning permits a narrow range of housing types that limits market responses to the needs of some current residents and emerging demographic trends.
5. Revisiting challenges with large multi-family complexes: Recent proposals for large multifamily rental developments have raised questions about impacts on community character, traffic and services. Bedford needs to explore the ways in which multifamily housing can meet community needs at acceptable impact levels.
6. Understanding the needs of the most susceptible households residing in town: Needs of vulnerable groups in the community such as the homeless, households with very low incomes, and elderly residents are not well documented or understood. There is an opportunity to learn more about these less visible population sectors and explore ways in which community action might help.
7. Improving residential integration with the community: Housing is not well integrated with, or connected to, commercial areas. Better infrastructure and public amenities, including pedestrian and bicycle connections and greenway trails, are needed to support and connect neighborhoods. Increasing connectivity between destinations will significantly enhance residential life.
8. Maintaining the older housing stock and neighborhood character: Much of Bedford's housing is more than 40 years old and could benefit from renovations, in particular energy efficiency upgrades. Teardown and replacement (usually with larger houses) is becoming common; while this may be a response to market conditions, there is interest in exploring ways to temper the loss of moderate-sized homes and the visual impact of contrasting scale.

GOALS

1. Provide a variety of housing opportunities to meet the needs of Bedford's households and work force with respect to style, size, price points and tenure of units.
2. Remain comfortably above the 10% affordable housing threshold in the Subsidized Housing Inventory, as determined by the MA Division of Housing and Community Development.
3. Increase housing choices for those who have difficulty accessing suitable housing, including younger households, seniors on moderate fixed incomes and very low income households who are struggling to remain in a viable dwelling in town.

5. Improve mixed use zoning provisions to clarify community goals and provide market incentives and practical development alternatives.
6. Provide realistic opportunities for accommodating new forms of residential development such as cottage homes and modern “green” subdivisions.
7. Support infrastructure improvements and common amenities that enhance walking and biking connections between residential neighborhoods and community destinations.
8. Support upgrades such as energy efficiency improvements to older dwellings.
9. Avoid the worst impacts of “mansionization” while recognizing that there may be good reasons for some houses to be torn down and replaced.

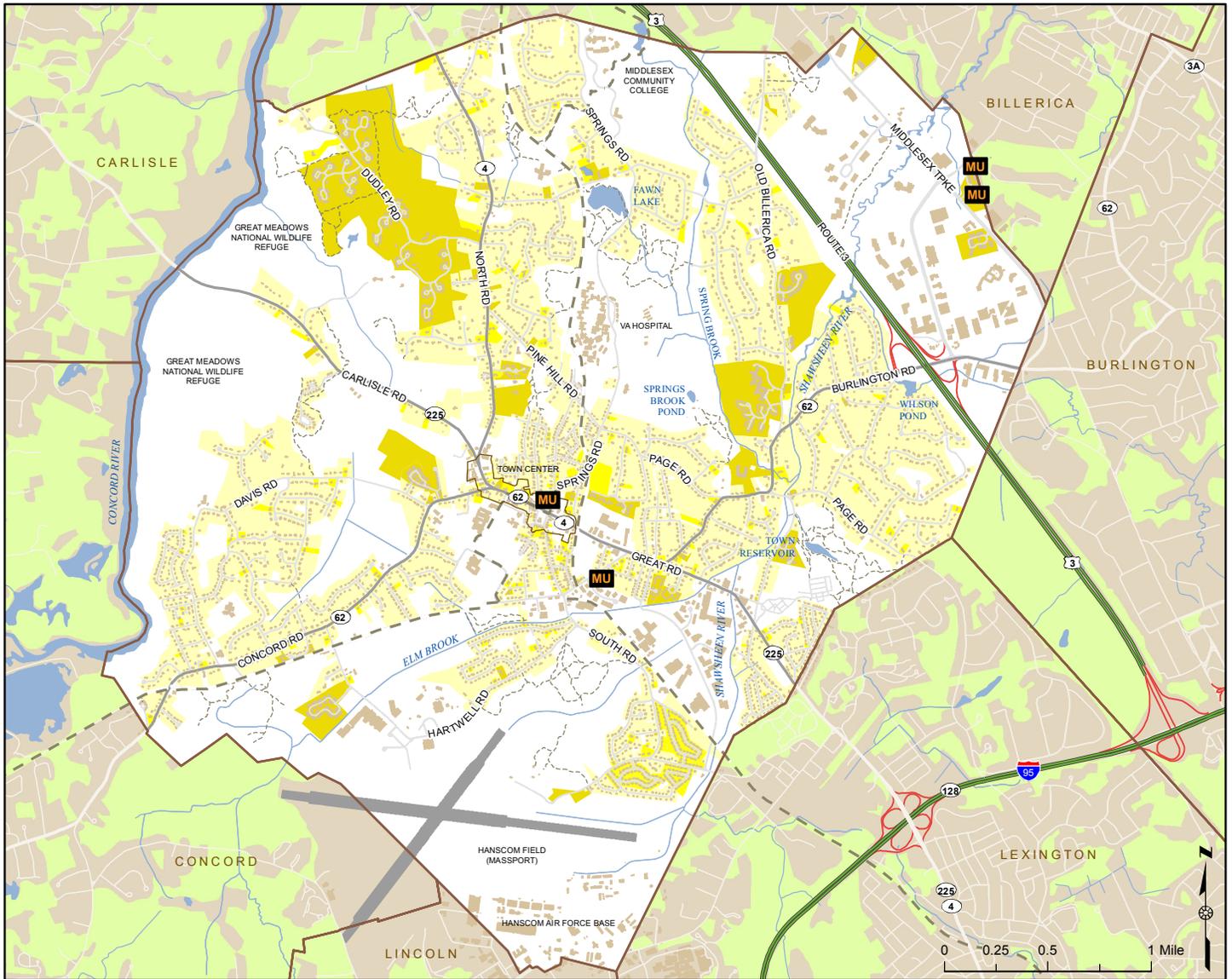
DISCUSSION

OVERVIEW

While Bedford is recognized for offering a range of housing types, the vast majority of the town’s housing units are single family homes constructed in the decades after WW II. During Bedford’s explosive suburban growth from World War II through the 1970’s, most residents were young families seeking a modestly-priced single-family dwelling, an uncongested and safe environment, and good schools. The construction of Routes 128/I-95 and Route 3 and nearby interchanges facilitated this growth, and starting in the 1960’s, businesses and stores followed.

More recently, local zoning and a range of public and private initiatives have facilitated the creation of a significant supply of multifamily housing and a relatively high share of income-qualified “affordable” units for both ownership and rental occupancy – much of which was developed within the past decade. The town has also diversified its housing stock with townhouses, two-family homes, and accessory units.

The drivers of housing demand have changed over the past 60 years, and the housing needs of residents have broadened. Over a span of three generations, Bedford’s population has aged, the community developed and matured, and housing has become expensive. In addition to people coming to Bedford seeking a suburban lifestyle or to find housing near their place of work, there are many long-time residents facing changing needs. Questions arise such as, “Can Bedford’s younger people afford to settle here on a long term basis?” and “Can older residents find a more modest or easily maintained dwelling when it is time to sell the family home?” Also, lifestyle values are evolving, as residents increasingly seek less auto dependence and better pedestrian access to community facilities and services. While there is little data to document changes in consumer housing preferences, there is a great deal of anecdotal evidence, as



Predominant Housing Types by District

Land Use

- 1 - Res Single Family
- 2 - Res 2-3 Family
- 3 - Res Multi Family
- MU Mixed-Use Project

- Road
- Trail
- Town Boundary

NOTE: Boundary of Town Center shown is the extents of the Historic District.

Map by Bedford Public Works
November 2013

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developers, commentators and individuals frequently observe underserved needs. Hence, there remains a further need to diversify the housing supply, in terms of both cost and type, to accommodate Bedford's demographic groups, and to strengthen the connection of residential neighborhoods to community services and amenities.

On the other hand, recent large multi-family housing and mixed use developments do not fully support the sense of place desired for the town's residential and commercial areas. Given Bedford's strong housing market, a broad range of efforts can be undertaken to ensure that housing be built that addresses the town's goals.

HOUSING STOCK

As of early 2013, Bedford had approximately 5,330 units of housing (the estimate varies because of slightly different methodologies used by federal, state, and local agencies.) An estimated 74% of the housing is owner occupied, and vacancy levels were 3.1% in 2010. Much of the housing in town (63%) is more than 40 years old, reflecting the boom years for residential development prior to 1970, with slower growth since then. An average of 20 single-family building permits per year was issued between 2000 and 2011. Single-family detached housing is the predominant physical housing type, with over two thirds of all housing falling into that category (see *Appendix*). The Carleton-Willard complex on Old Billerica Road makes a notable contribution to the regional options for seniors, with a range of independent, assisted living and nursing facilities on site. This complex is toward the upper end of the price range.

MIXED USE AND MULTIFAMILY ZONING

The Town's zoning bylaw (ZBL), with its extensive flexible mixed-use provisions and other sections that allow multifamily housing in specific locations or development types, has expanded the supply of mixed income multifamily housing. The largest such development created, the Village at Taylor Pond, has been built in one of the town's Industrial districts under the Industrial Mixed Use (IMU) special permit option. This development, while having many good design features, falls short of the integrated mix of land uses originally desired. It has proven difficult to attract businesses to occupy ground floor commercial space in the buildings, in part because of site attributes that are not favorable. Along with two Chapter 40B developments (Heritage at Bedford Springs and Village at Bedford Woods), the apartments are located along Middlesex Turnpike, a major collector and arterial road, isolated from traditional residential neighborhoods and lacking a sense of place beyond the confines of the development sites. While the housing in this corridor offers proximity to employment and helps to satisfy a demand for rental units, it needs bicycle, pedestrian, and recreation facilities, as well as viable retail stores. Improved transit services also would be beneficial.

The mixed use overlay zoning districts at the Town Center, Depot Area, and North Road locations need to contain reasonable zoning incentives that will facilitate the development of housing and functional commercial space that corresponds to market needs. Mixed-use projects recently or currently in the permitting pipeline such as not-yet-built 54 Loomis Street and the constructed Blake Block project have been at the vanguard in testing the practical constraints of the mixed use overlay zoning. Zoning that articulates a clearer vision, with the benefit of community support and a more predictable permitting process, would encourage further successful projects.

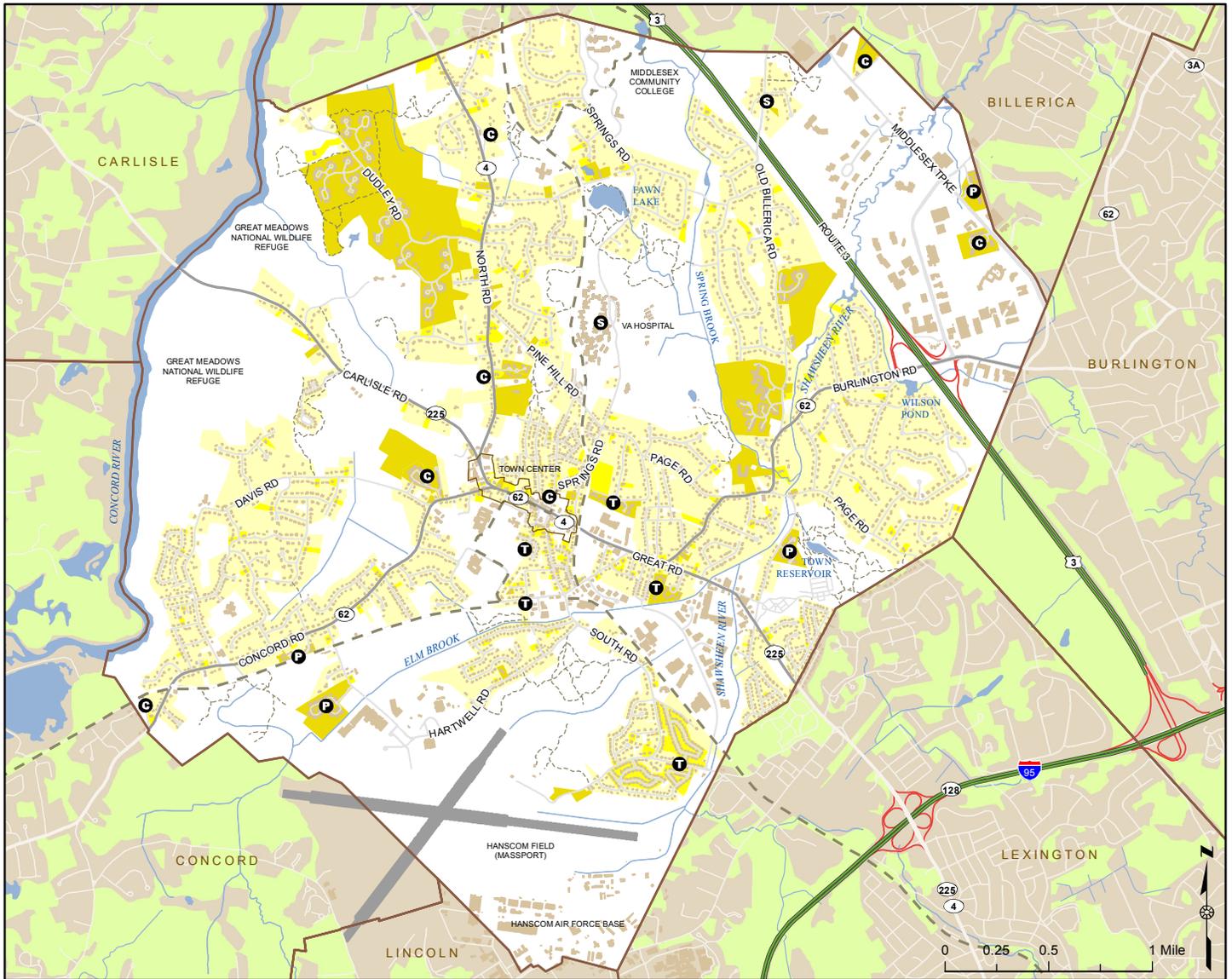
Hartwell Farms is a nearly-completed development of 75 condominium town houses in groups of three, which is proving to be a popular housing choice. The Carleton-Willard complex on Old Billerica Road makes a notable contribution to the regional options for seniors, with a range of independent, assisted living, and nursing facilities on site. This complex is toward the higher end of the price range.

AFFORDABLE HOUSING

Chapter 40B is a state law which allows a local Zoning Board of Appeals to approve housing developments under highly flexible rules if at least 25% of the units have a long-term affordability restriction. In communities that have fewer than 10% of affordable units in their housing stock¹², developers can appeal projects to a special State committee if a 40B comprehensive permit is denied by the ZBA. The comprehensive permit process can also occasionally be advantageous to developers and communities such as Bedford that have greater than 10% affordable units, as a means of facilitating housing development that meets local community objectives that would not otherwise be readily attained.

The Massachusetts Department of Housing and Community Development maintains a list of qualified affordable housing units, known as the Subsidized Housing Inventory (SHI). To be included on the SHI, units must be legally restricted to be affordable to households earning less than 80% of Area Median Income (AMI). In 2003, a household of 4 with an income of approximately \$70,000 per year can eligible for affordable housing units in Bedford. In April, 2013, Bedford had 900 units listed on its SHI, or 16.9% of 5,330 units in the total housing stock. Only a handful of communities in Massachusetts, mainly older and larger urban centers including Boston, Springfield and Holyoke, exceed Bedford's proportion of SHI units and typically not by a large margin. Four years earlier, Bedford's percentage reached 18.3% (due to

¹² Defined as year-round housing units counted in the most recent decennial Census.



Affordable Housing

Land Use

- 1 - Res Single Family
- 2 - Res 2-3 Family
- 3 - Res Multi Family

Affordable Housing

- C Chapter 40B Comprehensive Permit
- T Various Public Subsidized Programs
- S Special Purpose Subsidized Housing
- P Private Affordable / Inclusionary

- Road
- Trail
- Town Boundary

NOTE: Boundary of Town Center shown is the extents of the Historic District.

Map by Bedford Public Works
November 2013

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a small number of large developments occurring in a short span of time), but the SHI share has since declined as a result of market rate housing growth.

The actual number of affordable units is substantially lower than the number listed on the SHI. In order to encourage rental housing, DHCD allows communities to count 100% of the units in a rental development as if they were affordable, even though the actual proportion of affordable units in a 40B development may be as low as 25%. Approximately 412 units, or just under half of the 900 units on Bedford's SHI, are *market rate* rental units, while 488 units are actually designated as affordable.

On the other hand, Bedford has a significant quantity of subsidized housing that does not meet the requirements for inclusion on the SHI, such as vouchers from the housing authority and transitional assistance where families are housed mostly in old motels. A current proposal to construct 70 units of apartments for previously homeless veterans on the grounds of the Bedford Veteran's Administration Hospital would add all of these units to the town's SHI, which could push Bedford's percentage back to the previous record level. The Domiciliary is an already-constructed 50-bed unit for homeless veterans that includes a 12-bed wing for Women only.

Bedford's affordable housing stock has evolved from an unusually wide array of initiatives dating from the early 1970s and continuing to this day through many actors and funding sources. Affordable units include traditional state-funded public housing, comprehensive permit developments initiated by private developers under Chapter 40B, units created through inclusionary requirements in some of the Town's zoning bylaws, veterans' single room occupancy units at the VA Hospital, group homes for special needs, and units created by non-profit housing developers such as Habitat for Humanity. Nearly half of the units counted on the SHI were developed as Chapter 40B Comprehensive Permit projects completed between 2004 and 2008. Only about 8% of Bedford's affordable housing stock is ownership as opposed to rental units. *(For further detail, see the Appendix).*

Bedford has a Housing Authority, which manages 100 units of affordable rental housing for seniors, families, and disabled adults. The Authority's 80-unit rental complex at Ashby Place is the town's only age-restricted senior development. The Bedford Housing Authority also administers approximately 25 mobile vouchers, which recipients can use to rent any suitable apartment.

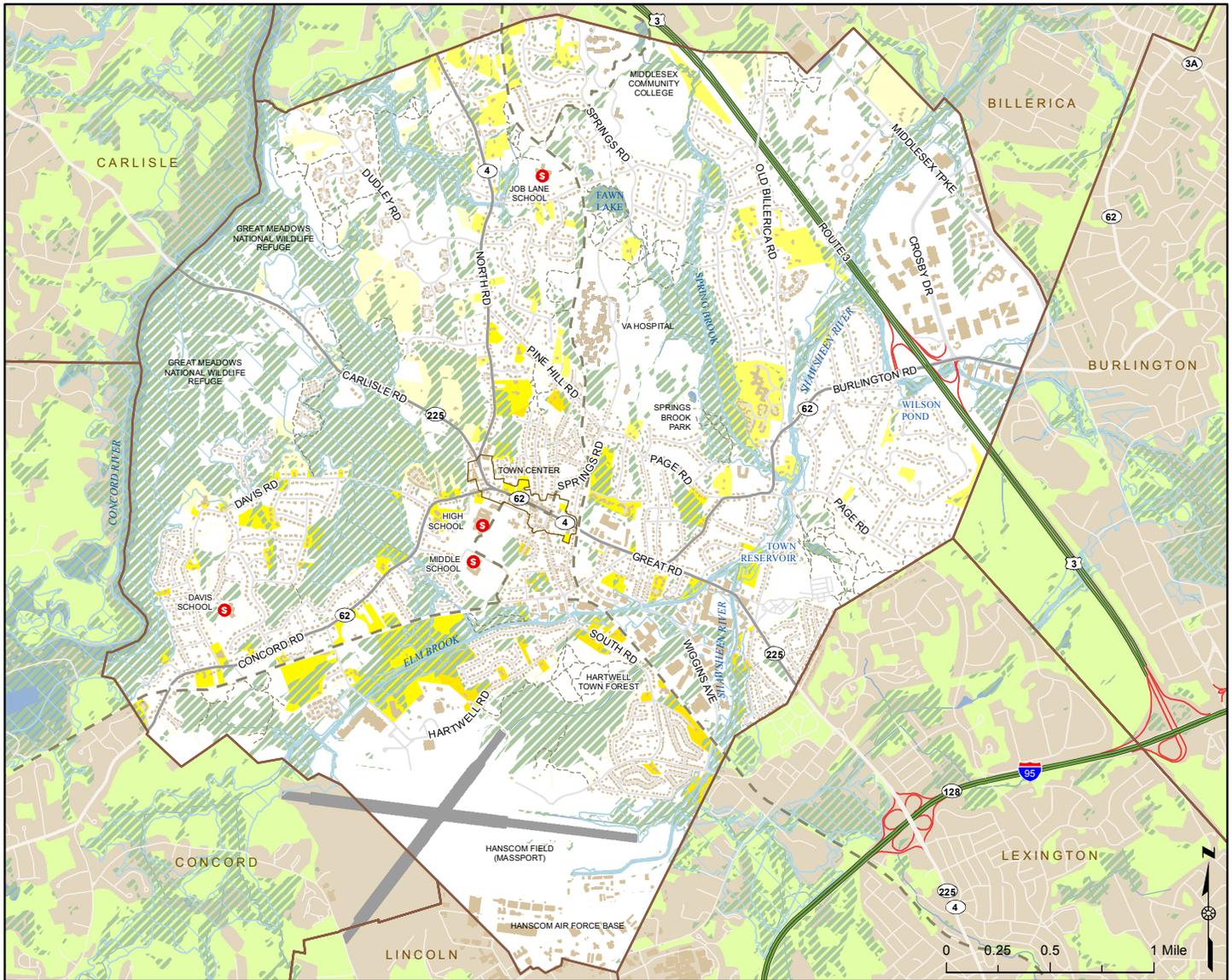
It should be noted that because of the variety of players, the Town does not have the ability to "fine tune" total SHI numbers. However, Bedford's high SHI percentage means that the Town

can take a more intentional role in planning for housing that meets local needs and objectives and exercise a greater degree of regulatory control over new development. Bedford will need to continue to produce some affordable units to maintain its position of having a comfortably high SHI percentage because continued housing growth (through infill and development of remaining parcels) will increase the total housing supply against which the share of affordable housing is calculated. In addition, it is likely that some affordable housing units may be eliminated from the SHI if long-term affordability restrictions are allowed to expire.

The Bedford zoning bylaw contains a number of provisions that require a share of dwelling units in new developments to be designated as affordable (the proportion varies). In these cases the developer is expected to take the necessary steps to apply for SHI status for the units, typically as Local Action Units, and to provide for the appropriate marketing. These zoning provisions apply to particular locations or types of development, and involve approval of special permits by the Planning Board. They are found in the following sections:

Section 9, Planned Residential Development	Requires a large parcel in a residential district; allows variety of housing types. Provides limited increase in density in return for conservation land or for including affordable units.
Section 15, Industrial Mixed Use	In the industrial districts, developers have the option of proposing mixed use developments instead of the traditional commercial uses. The types and range of mixed uses are specified to include multifamily dwellings.
Section 16, Residence D – Multiple Dwellings on a Lot	Currently only applies to Hartwell Farms parcel. Allows a variety of housing types.
Section 17, North Road Mixed Use Overlay District	Applies to small area around intersection of North Road and Carlisle Road. As an alternative to underlying business/residential zoning, developers may propose mixed use development that will contribute to village atmosphere with specified types of uses and other criteria.
Section 18, Depot Area Mixed Use Overlay District	Applies to area around intersection of South Road, Railroad Avenue and Loomis Street. As an alternative to underlying commercial zoning, developers may propose mixed use development with specified types of uses and other criteria that will further a number of aims for the locality.

Note: Refer to Zoning Bylaw for full text.



Large Residential Parcels

Parcels of Land Zoned Residential That Are at Least Two Times Larger Than Minimum Required Lot Size

Zone	Min. Lot Size (sq ft)
Residential R	60,000
Residential A	40,000
Residential B	30,000
Residential C	25,000

Note: Land zoned residential but owned by local, state, and federal entities are excluded.

Natural Resources

- Area of 1% Annual Chance Flood
- Wetland

- School
- Road
- Trail
- Town Boundary

NOTE: Boundary of Town Center shown is the extents of the Historic District.

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Unlike a few towns in Massachusetts, Bedford has no town-wide inclusionary zoning bylaw, where all residential developments over a certain size have to provide a percentage of affordable units. Such a provision may not be necessary to keep Bedford above the 10%.

THE HOUSING PARTNERSHIP

Bedford has benefited having from an active Housing Partnership committee (BHP), a volunteer group that exists in many municipalities in the state. The BHP is involved with general and project-specific affordable housing advocacy, study and identification of housing needs, fair housing initiatives, affordability monitoring and continuation efforts for qualified units, public education and outreach, liaison with the Regional Housing Services Office, and representation on the Metrowest Home Consortium, the entity that receives and disperses federal housing aid programs of all types, including housing rehabilitation and upgrading. The Partnership receives some consulting money from local Community Preservation Act funds, as well as some Town staff support.

AFFORDABILITY

Beyond subsidized housing, there is also a need to provide market rate housing for a broader range of incomes, as the cost of housing has significantly increased relative to household income. Many residents - perhaps 40% - could not afford a dwelling in Bedford if they were entering the market today. Household earnings have increased a little more than three-fold since 1980, but housing costs have gone up about seven-fold (see *Appendix*). The housing cost to income ratio rose from 2.47 in 1980 to 4.97 in 2010.¹³ Long term property appreciation has benefitted older residents, but some express concern about the ability of their children to stay in the area. A trend toward larger unit size contributes to the climbing cost of market rate housing (see *Appendix*). While single family detached housing has become less affordable, the expansion of other housing forms in the 2000's, including attached townhouse, multi-family apartment, and accessory units, has helped balance the cost of Bedford housing. Business leaders have drawn attention to the benefits of having a range of housing in order to maintain a local workforce.

Median home sale prices have been fairly stable over the past decade, ranging from \$424,000 in 2002 to a peak of \$540,000 in 2010. Prices declined to \$505,000 in 2011, but have slowly risen since, and in 2013 have been edging upward at a steeper pace.¹⁴ Real estate property

¹³ US Census and Multiple Listing Service Database.

¹⁴ Multiple Listing Service

taxes also contribute to a rise in housing costs. Average single-family tax bills have increased from \$5,031 in 2004 to \$7,963 in 2013.

On the rental side, historical comparison is less relevant since most of the units were created within the past decade. Apartment rents in the newer complexes currently range from \$1,600 to \$2,700 per month, with a few outliers at the \$2,900 level. Affordable units average 43% to 53% lower, depending on income level and the number of bedrooms. Houses for rent average \$2,367. There is little data available for units rented in older 2 to 4 family structures, but such housing is typically less expensive because of its age and the fact that they lack the common amenities newer multi-family complexes have. The Zoning Bylaw allows accessory apartments as a second dwelling unit within structures constructed as detached one family dwelling, provided certain requirements are met, but does not allow them as separate structures on a lot. The exact number of accessory apartments in existence is not known but permits have been issued for 42.

It has been observed that Bedford has a population who do not have conventional housing, and who may be doubling up or otherwise counted as homeless, and that low paid employees often commute to Bedford from less expensive towns. Apart from affordable housing programs, it has been suggested that educational and advisory services might help some people to improve their housing situations.

Emergency or transitional housing for homeless people also presents issues. Currently, rooms at the Bedford Plaza Hotel on The Great Road are occupied by homeless families who are residing there under state subsidy through the Department of Housing & Community Development. The state has announced that it intends to eliminate this program by the end of June, 2014, but this is contingent upon finding permanent housing for these families somewhere in the region. There may be a need for a smaller local emergency housing program.

CHANGING NEIGHBORHOOD CHARACTER

As communities reach full build-out capacity, a higher proportion of home construction occurs through redevelopment. Typically older, less expensive housing stock is torn down and replaced with new homes of significantly larger size and higher value. The trend in part reflects the changing needs and preferences of households since earlier periods of home construction. The rate of “teardown” housing redevelopment in Bedford has been fairly low in comparison to neighboring Lexington and other towns, but will likely increase as opportunities for new development diminish. Sometimes such “mansionization” creates an uncomfortable degree of visual contrast, loss of natural features in a neighborhood, or shadow impacts, so this may be a good time to review dimensional zoning regulations and consider approaches to preserving

scale and character such as Neighborhood Conservation Districts. Likewise, infill housing developments such new lots inserted between or behind existing houses are common and are a logical response to demand, but similar issues apply.

OTHER HOUSING NEEDS

Despite Bedford’s accomplishments in diversifying its housing stock, there remains a need to accommodate broader segments of the population, such as multigenerational families, young adults, and “empty-nesters” who wish to establish and maintain long-term ties to the community through smaller scale housing developments that blend harmoniously with existing development patterns. There may also be specific needs meriting small scale housing initiatives, such as female veterans.

Examples of emerging housing types that could be compatible with traditional neighborhoods and village centers include “cottage-style” single family homes on small lots, or live/work space for artists or working professionals. Accessory dwelling units can also provide flexibility for homeowners, family members and renters, at a lower cost than typical market rate housing. The federal Coast Guard housing on Pine Hill Road is vacant and may potentially be declared surplus. There has been some public discussion of whether it could beneficially be reused.

As the great majority of Bedford’s homes are now over 40 years old, much of the housing stock could benefit from energy efficiency improvements that would help to lower house operating costs while reducing carbon emissions. New housing in town is now required to incorporate the “stretch code” standards for energy efficiency.

Many of Bedford’s existing neighborhoods lack pedestrian, bicycle, and transit infrastructure that can provide alternative means for residents to connect to jobs, schools, shopping, recreation, and community resources. This infrastructure can be retrofitted into some existing neighborhoods, improved in others, and should be considered in planning and developing new residential areas. The recent Healthy Living Survey carried out under Bedford’s Healthy Communities Grant reinforces these needs.

Modifications to zoning could create incentives or opportunities to provide units with a range of sizes, styles, and prices – in single family and multifamily formats, as well as amenities and walking/biking infrastructure serving residential neighborhoods to support healthy lifestyles.

STRATEGIES

ZONING AND REGULATORY CHANGES

- Consider the use of incentives such as density bonus, reduced parking requirements, and flexible dimensional standards to encourage well-planned residential opportunities for underserved groups such as seniors, young adults, and low income households.
- Employ regulatory tools to better preserve older housing stock and neighborhoods.
- Establish more balanced ratios of housing-to-commercial or other business uses in all mixed use scenarios, appropriate to specific locations and districts.

HOUSING PLANNING AND ADVOCACY

- Prepare studies that will document Bedford's underserved housing demand segments, whether retired residents, young households, workers, or others.
- Continue and strengthen the role of the Housing Partnership, particularly fortifying capability in community outreach, public information and identification of unmet needs, as well as ensuring that affordable housing units are monitored for compliance with fair housing and affordability requirements.
- Continue to support the strategic use of Community Preservation Act funds, HOME Consortium grants (as available), MassHousing funding and other sources, including local bank collaboration, to encourage development and rehabilitation of projects that help to maintain the town's affordable housing stock.
- Monitor and pursue housing rehabilitation opportunities that might arise from governmental/institution properties becoming available.
- Identify realistic locations for potential construction of smaller detached single family homes in higher concentrations than normally allowed in Bedford.
- Make high energy efficiency fundamental in creation or rehabilitation of affordable units.

CAPITAL INVESTMENT

- Follow a master connectivity plan that reduces isolation of residential areas from other neighborhoods, commercial areas and public destinations.

- Wherever feasible, locate housing resources in places where infrastructure and roads are already well established, to reinforce community goals for redevelopment of village centers and compact development.

9. SERVICES AND FACILITIES



SERVICES & FACILITIES SNAPSHOT

Town Facilities Overview	
Facilities	Status
Schools - Davis Elementary - Lane Elementary - J. Glenn Middle School - Bedford High School	<ul style="list-style-type: none"> Schools comprise 73% of Town Facility floor area. Major renovations mid 2000s Recent energy upgrades Periodic needs for space reconfiguration and IT renewal
DPW Office/Garage Old VA Garage Hartwell Pump House	<ul style="list-style-type: none"> New building 2005 Hartwell used for storage Need further storage & energy efficiency
Fire Station	<ul style="list-style-type: none"> Rebuilt 1997 Deficiencies in current space
Police Station	<ul style="list-style-type: none"> Moved in 1998 Also houses Historical Society
Public Library	<ul style="list-style-type: none"> Expansion in 1998 Needs interior improvements: space & energy efficiency
Municipal Buildings - Town Hall - Old Town Hall - Town Center Building	<ul style="list-style-type: none"> Renovated and enlarged 2005 Pending Multipurpose Room renovation Some HVAC needs
Other Facilities	<ul style="list-style-type: none"> Historic buildings and sites Parks and cemeteries 87.8 miles of roads 7.8 miles of trails Water and sewer systems DPW seasonal storage

Recreation Facilities	Points to Note
<ul style="list-style-type: none"> 9 to 12 baseball diamonds 13 multi-use fields 5 playgrounds 8 tennis courts 4 basketball courts 2 boat launches 1 swimming area & spray park 3 bike-pedestrian paths 1 track & field complex 1 skateboard park 4 school gymnasiums 	<ul style="list-style-type: none"> Rec services include adult interest classes, Kids Club and summer concerts Relatively high proportion of residents participate in team sports. Ongoing debate over athletic field capacity Town leases fields from VA Over half of town facilities located at schools The Edge provides private indoor & outdoor sports including skating



Managing Town Facilities

- Facilities Department maintains municipal & school buildings & facilities.
- All major buildings replaced, expanded or extensively renovated in last 15 years.
- Capital Asset Management Program, online FY14
- Capital Expenditures Committee

Energy Efficiency

- 2009-2011 reduction in electricity in school and government buildings (4-5%). Significant reduction in fuel oil, conversion to more efficient gas heating.
- 2011 adopted Green Communities Act & Stretch Code
- FY13/14 Grant + TM Appropriation of \$488,000, projected \$1.16M over 5 years to replace lighting and make other energy efficiency improvements in schools, DPW, other buildings.

Additional Town Services

Police Department

- 11,000-12,000 calls per year.
- Focus on accident reduction and community policing

Fire Department

- Most calls for medical emergencies; total volume increased over past decade.
- Mutual aid arrangements for peaks in demand.

DPW

- Maintain athletic fields, parks, roads and sidewalks

YFS/Health/COA

- Range of social services in Town Center Building

Planning, Code Enforcement & Other Govt. Services

- Located in Town Hall

Municipal Expenditures and Revenue Sources			
(\$1000)	2003	2007	2012
Expenditures	\$49,300	\$60,500	\$70,100
General Gov.	\$9,400	\$10,600	\$11,200
Education	\$22,300	\$27,400	\$32,100
Public Works	\$6,300	\$6,400	\$6,300
State & Regional Payments	\$2,600	\$2,600	\$3,300
Debt Excl., Bonding & Pension Liability	\$8,700	\$13,600	\$17,100
Revenues			
Property Taxes	72%	70%	77%
Fees	7%	7%	7%
Intergovernmental	10%	10%	7%
Other sources	11%	13%	9%
Source: MA Dept. of Revenue Div. of Local Services			

VISION

Bedford recognizes the fundamental role of public services and facilities in sustaining a healthy community and high quality of life, by employing appropriate policies, practices and funding. Municipal and contractual services serve the full spectrum of Bedford's population sectors, including those with the greatest needs, such as the young and the elderly. Town administrative services are enhanced through technology, training, and best use of space. Buildings and facilities are maintained in good condition with high energy efficiency standards, and modern communications technology. Public safety facilities bolster high-quality performance, with energy-efficient vehicles and equipment. Schools and library facilities offer an environment where learning and enjoyment are maximized. Well-designed infrastructure such as streets, utilities, stormwater management, lighting, signs, and trees, is coordinated with wider policy aims, including improvement of pedestrian and bicycle connectivity and stewardship of natural resources, and is maintained to keep the physical systems in usable condition at all times. Recreation facilities and programs have the capacity to serve a wide spectrum of the population. An expanding commercial tax base helps to fund the high level of services and asset management.

SUMMARY OF ISSUES AND OPPORTUNITIES

1. Strategic long-range capital planning: The town can build upon the beginnings of a system for strategic long-range facilities planning to address major capital needs and expenditures, such as building rehabilitation or replacement, and infrastructure upgrades and improvements.
2. Energy efficiency: Structural elements, heating, electrical, and lighting systems can be upgraded to decrease the cost of fuel and maintenance.
3. Short-term capital decisions: Short-range capital investment decision-making can be updated to prioritize facility maintenance and upgrades, invest in equipment and technology, and address unplanned major repairs.
4. Infrastructure improvements: including those to enhance pedestrian circulation and traffic safety, can be organized to happen in a systematic manner that considers the whole network, as well as regional initiatives.
5. Facilities demand exceeding supply: Recreation and other municipal services facing demand that is outstripping available resources can be optimized through strategic changes in maintenance, facilities, space planning, and programming.

6. Climate Change: Natural features and built facilities can be upgraded to decrease the impact of severe weather events that cause flooding, structural damage, and other hazardous conditions.
7. Private investment in infrastructure: can be coordinated with the Town’s capital budget expenditures for maximum public benefit.

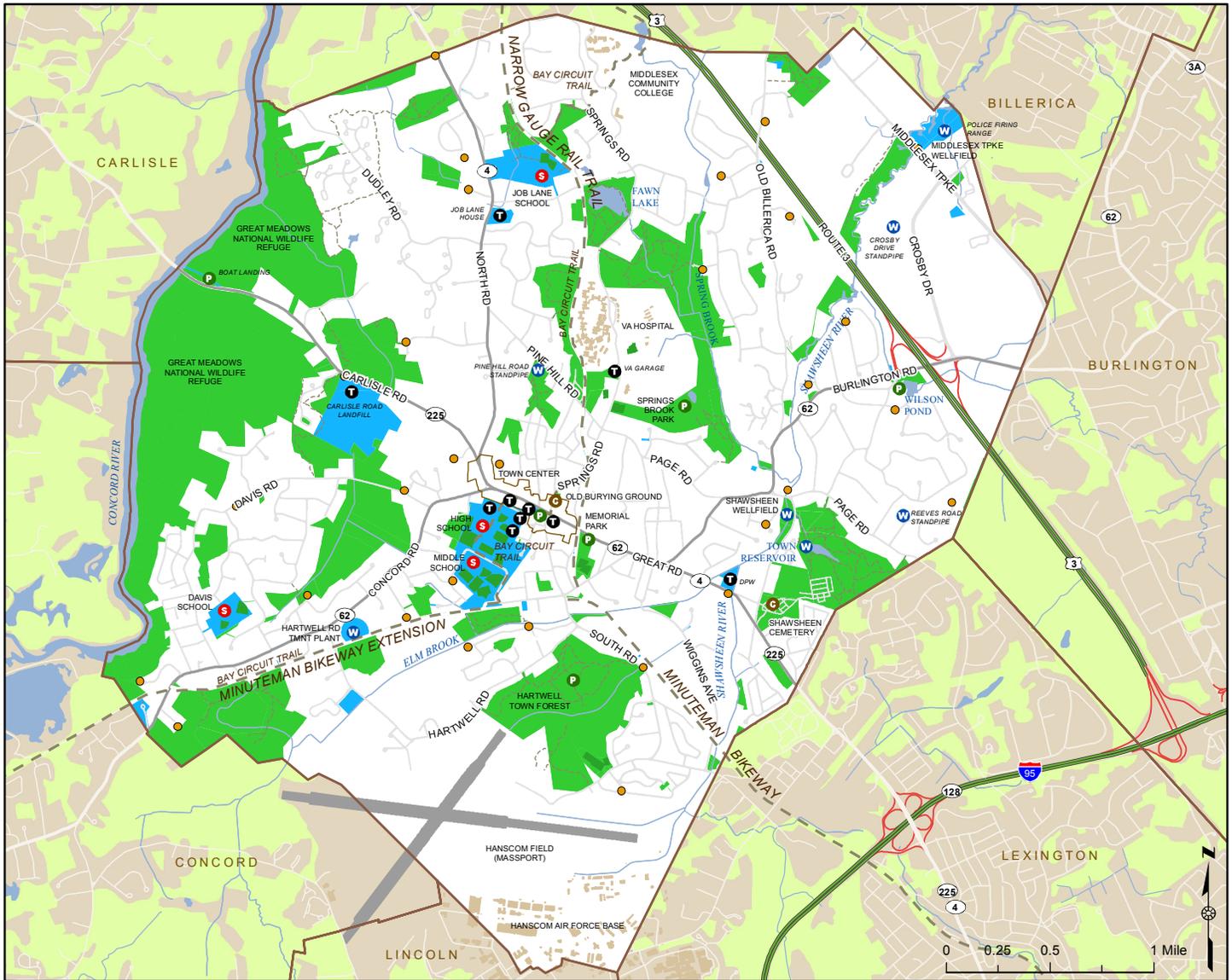
GOALS

1. Establish a comprehensive and long-range planning and funding capacity that encompasses all municipal and school capital facilities needs within and beyond the standard 6-year time horizon.
2. Make the Green Communities reduction goals for municipal energy consumption a permanent objective and invest in renewable energy.
3. Build durable facilities and infrastructure that anticipate changes in demand, technology, and natural events through capital investments and planning.
4. Guide optimal investment in the short to medium time frame (one to six years) for maintenance, repair and upgrade of public facilities with systematic planning supported by data and analysis, while incorporating life cycle costs as a factor in all capital planning and analysis.
5. Seek sustainable funding and cost reduction through grants, public/private partnerships, regionalization, and expanding the tax base.
6. Work collaboratively with public and private entities to increase the level of energy efficiency on private residential and commercial property.
7. In the area of Recreation, put systems in place that assure optimum communication between the Recreation Department, Public Works, and the Facilities Department.

DISCUSSION

OVERVIEW

The public infrastructure of buildings, streets, fields and parks, and other facilities and systems—and the Town services that go with them—play a major role in defining the character of a community. It’s difficult to picture Bedford without facilities such as the municipal complex and the abutting schools campus, the Town Common, and the restored Old Town Hall. There is also the bustle of the heavily-traveled Great Road, and the convergence of historic ways at



Public Facilities

Public Facilities

- Public Open Space
- Sports Field
- Other Town Land
- P Park / Recreational Area
- C Cemetery
- S School
- T Other Town Facility
- W Water Infrastructure
- Sewer Pump Station

- Road
- Trail
- Town Boundary

NOTE: Boundary of Town Center shown is the extents of the Historic District.

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Great/Concord/North Roads, as well as landmarks such as Page Field, Springs Brook Park, and Depot Park.

Other facilities have less aesthetic impact, but are no less necessary to the community, such as sewer pumping stations, water storage tanks, the DPW's old landfill site on Carlisle Road now used for sand and salt storage and composting, and the busy signalized intersections along The Great Road commercial areas.

Bedford is one of the relatively few suburban communities to have its own Facilities Department to provide operations and maintenance support for all municipal and school buildings, as well as long-range capital planning for all of those buildings. Facilities has been a leader in energy reduction programs, where its capacity to monitor and access available grants has been important. It also takes a holistic view of space utilization. Usually these functions are imbedded within a public works office, but the benefits of having a free-standing Facilities Department focusing principally on the buildings have become apparent over the years.

The Department of Public Works is principally involved with everything within the outdoor physical plant. DPW provides operations and maintenance and capital planning for all facilities other than major buildings, including roads and infrastructure, utilities, parks and fields, street lights, conservation areas, pumping stations and other municipal apparatus. The clean division of duties between Facilities and DPW has worked well, although some have expressed the hope that there can be closer coordination where joint recreation facilities are involved, due to their heavy use and maintenance demands.

The community's quality of life is also influenced by the services it makes available to its citizens, such as those offered by the Council on Aging, Recreation Department and Youth and Family Services, as well as the Board of Health. These agencies, now physically consolidated in the remodeled Town Center building on Mudge Way, collectively offer a range of services to every age group, including active recreation, cultural and educational activities, health initiatives, direct assistance programs, and individual counseling. A network of volunteers contributes substantially to the delivery of services that support Bedford's quality of life, in addition to joint programs with institutional and other governmental entities in town.

Provision of services and facilities is made possible through a variety of funding mechanisms, including long-term municipal debt, local funding from free cash and the tax levy, Community Preservation Act funds, State aid such as Chapter 90 funds for road maintenance and other local aid programs, and occasional discretionary grants. Fees help to support some functions such as sewers, inspectional services, and recreation activities. In the end, however, there is

always strong competition for scarce resources, which presents the town with the question of how much financial burden taxpayers can reasonably assume in exchange for those services and facilities.

STATUS OF FACILITIES

Bedford has made noteworthy progress in upgrading and consolidating its facilities since the last Comprehensive Plan in 2002. The 2005 renovation and addition to the Town Center building on Mudge Way met the space needs of multiple, complementary departments. Old Town Hall, rehabilitated in 2004, provides attractive gathering space for private and public organizations and functions, while generating rental revenue for the Town, as do meeting rooms in the Town Center building. From FY09 through FY12, space rentals at the Town Center, Old Town Hall and the Depot Park Railroad Car generated revenue totaling \$487,981; FY13 rentals reached approximately \$135,000, better than the average in recent years.

A new Public Works building on The Great Road opened in 2005 on the site of the former building. Smaller-scale building repairs and systems upgrades occurred at Town Hall, the Public Library and High School. In the prior decade from 1988 to 1998, several facilities were rebuilt, or relocated and upgraded, including the Police and Fire Departments, Town Hall, the Library, the Davis and Lane Elementary Schools, and the John Glenn Middle School. The multi-town widening and improvement of Middlesex Turnpike began with the 2010 awarding of the construction contract, culminating years of engineering/design, permitting and public process, and is anticipated to be completed in 2016. The 2011 Great Road Master Plan is an important study that offers a blueprint not only for traffic management, but for a more attractive and pedestrian friendly artery traversing the community. Measurable gains occurred in the non-vehicular circulation network in the 2000's, including the addition of sidewalks, major upgrade of walking trails and the Depot Park historic restoration, which provides a locus for bicycle trails converging at that location.

Thanks to these efforts, Bedford's physical plant and infrastructure are in better condition than those in many communities. However, as much as the town has achieved in the last decade and a half, it is an unavoidable fact that facilities are constantly aging and declining in physical function, while the demand for services increases. Space needs also change as does technology. The upkeep and eventual replacement of these facilities, and the improvement of services to meet expanding and changing needs over time, is a complicated and expensive proposition and lies at the heart of much of what government spends its time doing.

The following discussions are organized by department and/or function (see *Appendix* for additional departmental and topic details).

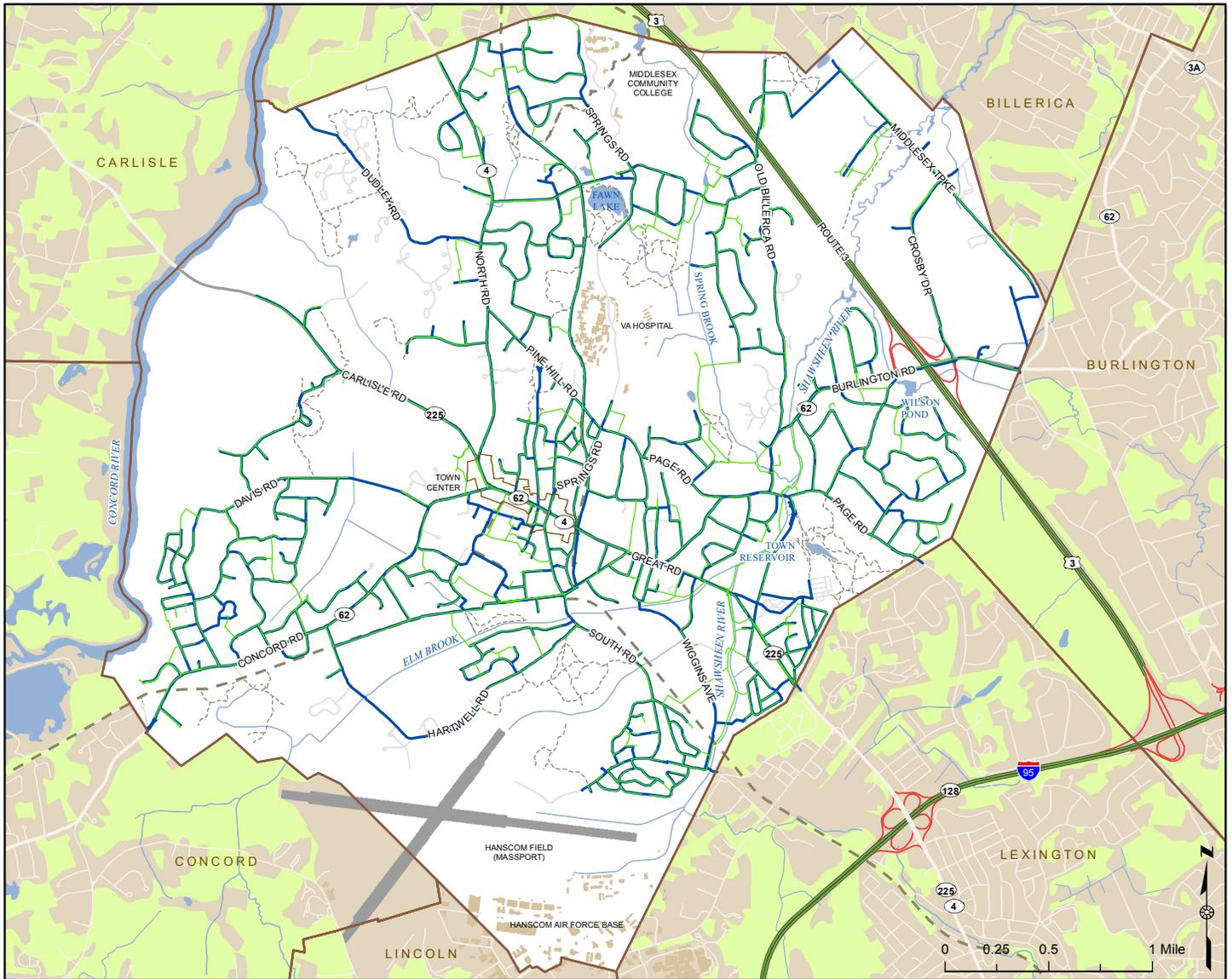
DEPARTMENT OF PUBLIC WORKS

The town's roads, water and sewer systems, together with sidewalks, street lighting and street trees, require ongoing maintenance and periodic renewal. The Department of Public Works has the lead responsibility for these facilities and their associated pump stations and materials sheds. A portion of the road network is repaved each year with a combination of Town appropriation and Chapter 90 funds from the State, but the program funding is at a lower level than in the past (\$1 million in FY12 compared to \$3 to \$4 million at the peak). The DPW is challenged to keep up with maintenance of the heavily used athletic fields, as well as trying to program street maintenance, repaving, and road enhancements for pedestrian and bicycle safety, given State and local funds that vary annually. DPW also operates the town's solid waste disposal services, bolstered by a part-time recycling coordinator who was hired at the beginning of 2013. This added capacity has been helpful in implementing the town's improved recycling program and special recycling events such as hazardous waste days and paper shredding.

The Town's water distribution system includes three wells and three water storage tanks. Approximately 85% of water is supplied by the Massachusetts Water Resources Authority, with the other 15% coming from the Shawsheen Road well field. In recent years significant spending has been necessary to install improvements within the distribution system to address emerging water quality issues. Most of the town's land area is served by wastewater collection lines flowing to the MWRA treatment plant at Dee Island plant in Boston Harbor.

The DPW also provides maintenance for 80 acres of town parkland and active recreation land, and staff support for town events. While volunteers play an important role in maintenance of town-owned trails, the DPW undertakes improvement and extension of the town's trail network. The Shawsheen Cemetery and the Old Burial Ground are also maintained by DPW.

Although the DPW is housed in recently built premises near the eastern end of The Great Road, one factor that constrains the adequacy of the facility is the small buildable area of the site (4.25 acres, of which approximately one third is wetlands), and its proximity to the Shawsheen River and Elm Brook. Outdoor storage space for equipment, vehicles and materials is inadequate and the DPW favors a new consolidated multi-department storage facility at the VA Hospital garage (owned by the Town). The DPW would also benefit from an improved communications network to serve all Town departments and facility locations. Further issues are the condition of the salt and sand storage sheds at the old landfill site on Carlisle Road, and the high electrical costs at the sewer pumping stations and in the DPW building.



Utilities

Utilities

-  Town Sewer
-  Town Water

-  Road
-  Trail
-  Town Boundary

NOTE: Boundary of Town Center shown is the extents of the Historic District.

Map by Bedford Public Works
November 2013

The information displayed on this or any other map produced by the Town of Bedford is for reference purposes only. The Town of Bedford does not guarantee the accuracy of the data. Users are responsible for determining the suitability for their own individual needs.

All information is from the Town of Bedford's Geographic Information System (GIS) database. Any questions or concerns should be addressed to the Town GIS Analyst.

POLICE DEPARTMENT

In 1997, the former Library was expanded to create the present Police Station, which had been jointly located in the former Fire Station on The Great Road. The Police Station also accommodates the Bedford Historical Society and the Town's emergency dispatch communications center.

Due to heavy traffic volumes and congestion and public demand, the Police Department has to devote considerable resources to traffic-related issues, primarily enforcement. Providing input to the Great Road Master Plan, the department supports a multi-pronged approach to promoting traffic safety, including engineering improvements such as intersection design and signal timing, and encouraging land use patterns that promote trip reduction. In its approach to preventing and addressing crime, the department emphasizes community policing, and has close connections with other organizations in town.

The department has some space needs, such as a larger home for the armory, currently a small storeroom situated in the Station. One possibility is to reconfigure existing space. The department is also interested in sharing an off-site vehicle storage facility such as the one being considered for the Bedford VA Garage owned by the Town (see DPW Discussion above). A warrant article for replacement of the emergency communications equipment (dispatch) at a cost of \$504,000 passed annual Town Meeting in spring 2013. Emergency preparedness has been attracting increased attention in recent years, which is part of the impetus for considering a backup Emergency Operations Center in the Town Hall basement at some point in the future.

FIRE DEPARTMENT

The Fire Station is housed in a 12,000 SF building constructed in 1997 to replace the old combined police and fire headquarters constructed in 1940.

The Fire Department offers services in firefighting, emergency medical care, hazardous incident response, on-premises alarm inspections, and addressing miscellaneous safety calls. As in almost every community, firefighting calls have declined over the long term, due in part to code requirements such as alarms and sprinkler systems in large structures, but other service demands have increased significantly. An analysis of incident data from 2004 to 2012 shows that emergency medical response is the most frequent activity, with more than 1,000 calls per year and climbing. Fire incidents have averaged 43 per year since 2004, fluctuating from year to year.

The department responds to many types of emergency or hazard situations, including industrial spills and downed electrical wires. Certain types of development in Bedford generate a higher demand for emergency services than others. Examples include the Bedford VA Hospital and industrial premises in the Wiggins Avenue area that use hazardous materials in processing. Severe weather events required a higher number of responses in 2011 and 2012. Mutual aid arrangements are in place with other towns and Hanscom, and are important for handling major incidents or peaks in demand; more than 300 requests (from or to Bedford) were fulfilled in 2012.

Although the current structure is not significantly aged, the Fire Department is concerned that the apparatus floor is under-sized for modern equipment. Potential solutions are to replace the building on its relatively small site of 30,000 SF (0.69 acres), construct a station at a new location in the general vicinity, or renovate the existing building and construct a substation in the Crosby Drive/Middlesex Turnpike area. The last option would be the most costly because a second station would involve additional vehicles and staff, as well as the building cost. Another consideration is that the current location, while conveniently central, could provide an opportunity for expansion of the area's small business offerings if the station is relocated. This dialogue, wherever it might lead, is likely to take place in the next several years.

SCHOOLS

The John Glenn Middle School and Bedford High School are located on the municipal complex in the center of town. The Lt. Job Lane Elementary School is located in the northern part of town, and the Davis Elementary School is to the west. Since the 2002 Comprehensive Plan, the Town has completed major renovations to the High School and Lane Elementary School, and major repairs and equipment upgrades to the other schools.

The total number of students at the start of the 2013-2014 school year was 2,487. As well as serving the town's resident population, the High School receives 100 to 135 students from housing located in Lincoln on the Hanscom Air Force Base. The schools also participate in the METCO Program, receiving students from Boston. A fluctuating number of students from homeless families in temporary housing at the Bedford Plaza Hotel on The Great Road enroll in Bedford schools, with the number approaching 50 for the first time in FY14, (see *Appendix*). A comparable number of these students travel daily to school systems outside of Bedford. It is important to note, however, that the Department of Housing & Community Development is starting to phase out the homeless shelter program, and the student numbers are starting to decline in late 2013.

Bedford students of high school age have the option of attending the Shawsheen Regional Vocational Technical High School in Billerica, which serves five towns through an inter-town school committee. The Bedford High Integrated Preschool, located inside the High School, serves special education and typically developing students, ages three to five.

In the last decade the Bedford school system has experienced a steady increase in student enrollment, growing 11% between 2004 and 2013. According to school administration projections, the total enrollment in the school system is expected to continue to increase by 3.5%, reaching a peak in 2020 (see *Appendix*) of approximately 2,675. Enrollment projections for the middle school and elementary schools do not show significant growth that would justify major space additions (see *Appendix*).

Bedford High School has experienced the most pressure from growth in student enrollment, with a 14% increase from 2010 to 2013. The current number of 881 is above the 2008 projection of 850 done for the renovation design, and is projected to increase a little further with a peak of 922 in 2015. After that, it has been forecasted to level off around the 900 mark in the years up to 2020. This incremental gain, however, does not reach a level where consideration of space additions would be necessary.

Some work has been done on reviewing space utilization and needs. Proposed additions to the elementary schools have been cancelled, but there might be a need for internal reconfiguration at the high school and longer term upgrades to the elementary schools.

LIBRARY

The Public Library, located in in the municipal complex, was significantly expanded in 1998 and has sufficient space for the foreseeable future. Changing demand and programs, however, will require repurposing and reconfiguring that space, based upon the Library's Long Range Needs Assessment. There is a significant deficit of individual study spaces. The Teen Room created in 2008 is too small to accommodate its growing popularity, and conference and meeting rooms are heavily subscribed. The underused second floor balcony can meet some of these needs by providing better access from the first floor; a new staircase would allow construction of additional individual study cubicles.

Parking was increased in 1998 by removing a softball field. The roof on the old library section was recently replaced. The HVAC system will need to be replaced in a few years. The wireless network was replaced in 2011, but this and the computer system will need periodic upgrading due to the steady shift to the digital and internet environment.

SOCIAL SERVICES

Youth & Family Services, Council on Aging and Board of Health, along with Recreation, are based in the renovated Town Center building, the historic yellow wooden structure next to Town Hall. This building is the social services locus of Bedford and provides an extremely wide array of services for various need groups and ages. The grant-funded Healthy Bedford (HB) program is also housed in this building and closely integrated with these departments. HB is a multi-faceted initiative promoting general health and wellness through walking, bicycling, exercise, improved diet, pedestrian-friendly land use development and other measures to make people more active and in charge of their personal health.

The Youth and Family Services (YFS) Department provides a range of counseling, community education, resource and referral services, and other programs to support various groups. This lengthy list includes: the Corner after-school program for middle school students; veteran's services; confidential counseling through Eliot Clinical Services; emergency financial assistance; youth prevention services; job match; high school peer to peer mentoring; teen website, and much more. YFS is also affiliated with the Town's Healthy Bedford initiatives.

YFS reviewed and updated its mission a few years ago. Some emerging concerns are changing demographics, transportation and access to childcare for those without cars, need for youth employment, desire for subsidized and senior housing in center of town, and the need for more space for teens to meet.

The Council on Aging coordinates assistance to frail elders in their homes; provides referrals, advice and community education relating to elder affairs; and offers on-site education, health and fitness and social and educational programs to persons over 60. The Council coordinates with the Health Department and with the public safety departments and other agencies. Attendance at activities has risen in recent years. Looking ahead, the elderly segment of the population will continue to grow significantly, if trends continue.

The Board of Health (BOH) plays vital roles in Bedford to protect the public health and safety as well as to plan for future enhancement of these objectives. Among the BOH functions are the following: food protection; environmental health and sanitation regulation; school health services; community nursing; public education and health screening; senior health programs; pharmaceutical/biotech laboratory inspections; emergency procedures with public safety, and involvement in the Healthy Bedford initiatives.

The 2005 renovation and addition to the Town Center building provided adequately for the space needs of multiple, complementary departments in the area of social services. Therefore at least in the short term, any issues are programmatic. The adequacy of the Bedford Local Transit service for the needs of the various groups who either cannot afford to drive or are unable to should periodically be reviewed.

RECREATION

The term Recreation has multiple meanings in Bedford, and covers a wide array of activities. An extensive list of cultural, outdoor, leisure, fitness and sports programs is offered by the Recreation Department for children and adults throughout the year. The Recreation Department offers approximately 50 adult education courses during the fall and spring seasons, covering interests ranging from cooking to personal finance, personal wellness to home repair, as well as active sports. There are organized Bedford athletic leagues for youth adults, including soccer, football, lacrosse, baseball, softball, basketball and hockey. The subject of recreation also encompasses interscholastic competition at the high school and middle school levels, and inter-town non-profit leagues such as Lexington/Bedford Youth Hockey and Lex/Bed/Hanscom Pop Warner football. The preceding list does not include activities of the Council on Aging, Youth and Family Services (discussed separately), or non-profit organizations such as the Bedford Center for the Arts, each of which has significant cultural offerings. Recreation facilities encompass 17 athletic fields of widely differing size, shape and sports usage, situated among six different locations. Twelve fields are located within the centrally-located Town Campus, adjacent to the Middle and High Schools. Two more fields located at elementary schools are not usable for regulation competition. Other facilities include the Page and Springs Brook Park fields, and the new fields off South Road (abutting the Freedom Estates subdivision). The Town also leases three playing fields at the Bedford Veterans Administration Hospital, especially for soccer. It is difficult to specify the use of the fields by individual sport. Many are used for multiple sports, and they vary widely as to physical condition and availability, as well as the overlapping of league seasons. Most of the fields have little informal use outside of scheduled games, the exception being the South Road fields.

A recent municipal study categorized field capacity as follows, with sport overlap built into the analysis:

- Large rectangular multi-use fields for soccer, lacrosse and football: 5 to 7 fields
- Small to intermediate multi-use fields: 6 to 8 fields
- Large baseball diamonds: 2 fields
- Small diamond (grass or dirt infield): 7 to 10 fields
- Practice areas: 5 to 6 fields

Bedford's recreation facilities also include: 4 basketball courts; 8 tennis courts at 2 locations; 1 swimming area with a spray park; 1 skateboard park; 7 playgrounds; 1 outdoor track & field complex; 4 school gymnasiums; and the 3 bicycle trails. The privately-operated Edge Sports Center is also a major resource, offering two ice hockey rinks, two outdoor turf athletic fields with one field enclosed for the winter months, an athletic training center and a health club, serving a range of age groups and programs. The Patriot Golf Course at the VA Hospital has been used in the past by Bedford organized athletic programs but is not currently available for such activity.

Other active and passive recreation needs are met by Bedford's network of developed parks and playgrounds. These parks include:

- Springs Brook Park, the town's swimming area, along with picnicking, outdoor entertainment, and walking trails. The "swimming hole" has had some issues with water quality but DPW has moved aggressively to mitigate the problem.
- Memorial Park on the Great Road, opposite the Whole Foods/Marshall's plaza
- The Old Reservoir, newly restored with a rebuilt dam and new bridge
- Wilson Mill Dam, newly restored dam, waterway and historic mill site
- Wilson Park, the small green triangle at the intersection of North, Concord and Great Roads
- Children's playgrounds at the municipal complex, Eliot Road.

These parks also provide other benefits such as scenic amenities, volunteer-maintained gardens, and dog-walking. Some residents have suggested that more parks would be beneficial, and a lack of such amenities in the Middlesex Turnpike area has been noted.

Demand for athletic field use increasingly exceeds the available supply. Some sports, such as football and lacrosse, are harder on natural turf. In late 2012, the Selectmen-appointed the Outdoor Recreation Area Study Committee (ORASC), which produced a detailed report concluding that "The fields in Bedford are significantly overused, which leads to poor conditions, higher maintenance costs and significant field closures."

Finding that Bedford serves a higher proportion of its population through organized team sports than a sample of nine other communities in the region (see *Appendix*), the report suggested a need for additional full-size fields to support existing school and recreational

teams.¹⁵ Moreover, the ORASC report concluded that best practices for turf management are impractical given the heavy field use, favoring creation of one or more synthetic turf fields which bear a much greater playing load than grass, thus increasing capacity. After considerable debate over the merits of synthetic versus natural turf, a measure passed at the fall Town Center in 2012 to replace the grass at Sabourin Field at the high school with synthetic playing surface, with the commitment of \$605,000 in Community Preservation Act funds to cover more than half of the \$1.1 million project cost.

Another ORASC recommendation was construction of two playing fields at the so-called St. Michael's property purchased by the Town in 2004, leading to further discussion over the synthetic versus grass playing surface issue. It has now been determined that the new fields will feature natural turf. Another proposal is to use the 41-acre Town-owned site off Concord Road, formerly known as Princeton Properties, for a blend of activity, with about 10 acres devoted to new athletic fields and the remaining land permanently protected as a natural area.

These deliberations underscore continuing debate in Bedford regarding synthetic turf versus natural grass, and active versus passive use of public open space. Advocates of synthetic turf believe that the significant capacity gains offered by such surfaces will reduce pressure to develop new grass fields on conservation lands or other open areas, and will also save significantly on maintenance costs. Arguments against include the high initial capital cost and the resultant impact on long-term municipal debt. Occasional concerns have also been raised in regard to health, sanitation and injuries with synthetic surfaces. Somewhere in this exchange there is likely enough room to reach solutions that all parties can accept.

Municipal resources are not sufficient to ensure consistent maintenance of all of the town's recreational facilities including athletic fields, the trail network, and facilities such as tennis, skateboard, and basketball courts. Close coordination is required between the Recreation Department, the Department of Public Works, and the Facilities Department in addressing issues at all types of athletic facilities. There are also ongoing needs for better equipment at playing fields, such as refuse containers and storage sheds, as well as more off-street parking in some locations. The one certainty in Recreation is that demand will continue to grow in every activity, sport, and age group. The data substantiate that rising demand.

¹⁵ ORASC report, November, 2012.

CLIMATE CHANGE

The following are some of the potential impacts of more frequent and more severe storm activity (adapted from research by the Schools of Environmental & Biological Sciences and Planning & Public Policy at Rutgers University, 2013):

- Falling tree limbs could imperil electrical transmission and distribution and power generation plants could experience more outages.
- Telecommunication services could be disrupted more frequently.
- Infrastructure such as roads, bridges, sewage collection and water distribution lines, sidewalks and trails could be strained and experience shortened life cycles due to rising flood levels and increased precipitation.
- Public health impacts could be increased from higher temperatures and precipitation rates, particularly involving infectious diseases, respiratory and allergic illnesses, and infrastructure impacts requiring greater water quality treatment.
- The quality of water supply in the region could be degraded from increased stormwater flow and transmission of sediment, leading to service disruptions and sometimes requiring more treatment.
- Wetlands could exceed flood capacity more often with resultant damage to indigenous soils, vegetation and wildlife, and greater flood impacts on wetland uplands.
- Native vegetation, whether planted or naturally occurring, could be stressed and their growing cycles disturbed due to warmer temperatures and increased precipitation and humidity.
- Public parks and private residences could be faced with more landscape maintenance issues, as trees, shrubs and grasses are stressed and invasive species and weeds proliferate.

Public policy in Bedford and elsewhere will be under increasing pressure to respond to these kinds of impacts, whether through capital budgets and planning, land use planning and zoning, town maintenance and facilities practices and other arenas.

ENERGY USE

Bedford has been an active participant in the Green Communities (GC) program for four years. The Massachusetts Department of Energy Resources (DOER) administers this multi-faceted program, which is intended to foster a 20% reduction in energy consumption by cities and towns within a five-year time frame.

Green Communities offered substantial implementation grants - \$148,150 for Bedford - as an incentive to participate, and required the town to address zoning barriers to energy-related facilities, commit to reducing municipal energy consumption by 20%, purchase more energy-efficient vehicles (with certain vehicles, such as heavy equipment, exempt), and adopt the Stretch Code - enhanced building energy efficiency standards that Massachusetts officials based on the latest standards from the International Codes Council.

Under the leadership of the Facilities Department and the volunteer Energy Task Force, Bedford has instituted an ongoing series of capital improvements in municipal buildings and schools, including lighting replacement, heating and air conditioning system upgrades, and other capital expenditures to improve energy performance. It has also used re-commissioning (or retro-commissioning) of buildings, which encompasses a detailed monitoring and quality control process to assure peak performance with existing systems, and employs low-cost improvements. Bedford has also collaborated extensively with private energy providers to take advantage of their monitoring services and financial incentive programs. Eight high-efficiency replacement vehicles in the municipal fleet had been purchased through February, 2013.

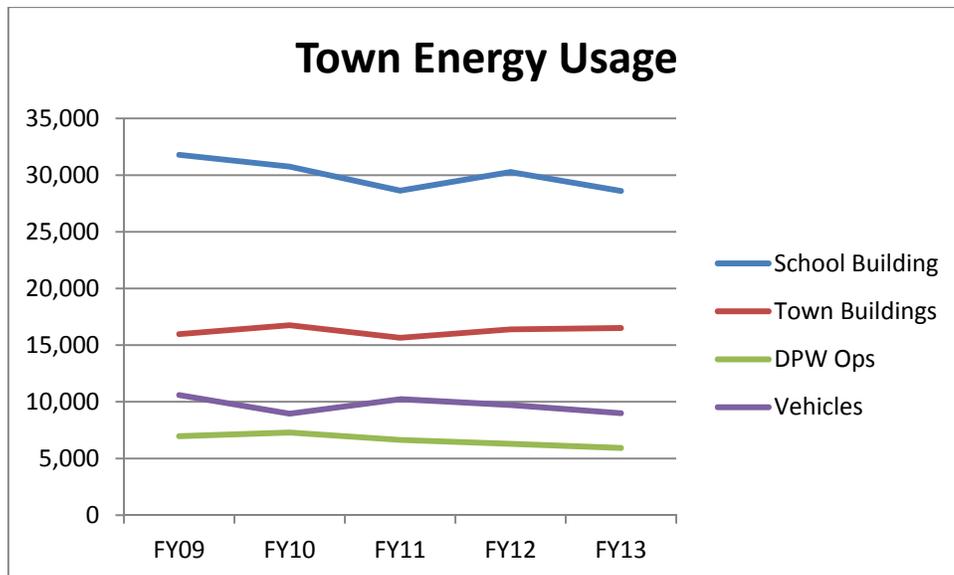
The Bedford Facilities Department maintains an extensive energy performance data base, updated annually for Green Communities reporting. One of the spreadsheets analyzes annual energy consumption for all town buildings, other energy-consuming facilities, DPW operations and maintenance, and vehicular fuel use. In the baseline measurement year of FY09, total municipal energy consumption was 64,144 MMBtu's (million British thermal units); a target 20% reduction of that figure would be 51,315 MMBtu's. Overall municipal energy consumption has declined in every ensuing year, FY10 through FY13, but by a widely varying margin. In FY11 the reduction was only 1%, but in FY12, the number went down by 14%, both measured against the FY09 baseline. So in the best-performing single year to date, the total consumption of 54,989 MMBtu's represented 71% of the long-range 20% reduction goal. By the end of the Green Communities program period, the town's energy reduction is expected to come close enough to the MA DOER 20% goal to attain essential compliance.

During the period of study, Schools represented 47-48% of the preceding energy consumption, or 28,000-32,000 MMBtu's. Town buildings represented 24-27%, or 14,000-16,000 MMBtu's. DPW operations constituted 10-10.5% or 6300-7300 MMBtu's, and Vehicles 15.5%-16%, or 9,000-10,500 MMBtu's (all figures rounded).

In terms of actual energy reduction broken down by these same facility categories, the Schools have generally been the best performer, with reductions ranging from 6-18%. This is not a

surprise, since the greatest capital investment has gone into the Schools, as they expend nearly half of the town’s energy use. Town vehicles have ranged from 3-18% (FY10-FY12 only; FY13 data not yet available), but this reduction can be expected to increase as more vehicles are replaced. DPW operations have fluctuated considerably, ranging from an increase of 5% to a reduction of 10% (through FY12 only). DPW, more than the other facilities, is subject to energy demands from uncontrollable external events such as major storms. Finally, Town buildings have ranged from an increase of 4% to a reduction of 11%. This category has seen the most modest improvement among the four facility types, but also has not received the same level of investment in lighting or HVAC upgrades as the Schools.

The graph below provides a quick visual for the town’s overall progress:



To convey some idea of current energy capital investment in dollars, the FY14 budget calls for more than \$370,000 in HVAC improvements and lighting upgrades in the Schools, along with \$61,000 in similar improvements in five other town buildings. There is an anticipated offset of nearly \$49,000 in utility company incentive programs. The projected energy reduction is 1,256 MMBtu’s, the anticipated direct energy savings about \$51,000 and the payback period after which the energy gains are pure benefit, is 6.6 years. The Facilities Department projects about \$1.157 million in expenditures for energy improvements through FY18. The Department also has also applied for a follow-up grant to MA-DOER (see *Appendix*).

The Town also monitors energy use by type of fuel or power--electricity/natural gas/fuel oil/diesel/gasoline--and then breaks that down to the level of individual buildings and facilities,

consisting of every town building and school, street lights, sewer and water pumping stations, and other facilities. Among the more notable trends in these reports were:

- A 34% increase in FY 13 from FY12 in use of Natural Gas, due to conversion of systems to use of this currently more economical fuel (11% increase from FY 09).
- An overall decrease of energy consumption between the FY09 baseline and FY13 of 4.8%, among *buildings* only.
- A slight 2.6% decrease in Electricity use from FY12 to FY13, but a 15.3% increase in Fuel Oil use for the same period, and an overall Electricity consumption increase of 8.8% from FY09.

The Green Communities program goals are just the beginning of good energy practice. GC puts in place the programs, investment, and systems to embed energy efficiency as a core principle. It also raises the town's consciousness of energy needs. In conjunction with the Town of Arlington, Bedford has appointed a part-time Energy Manager who works with building occupants to help them understand how their behaviors impact energy use. Through the Stretch Code, which sets minimum standards for substantially expanded and/or rehabilitated buildings, GC involves private property as well as governmental facilities.

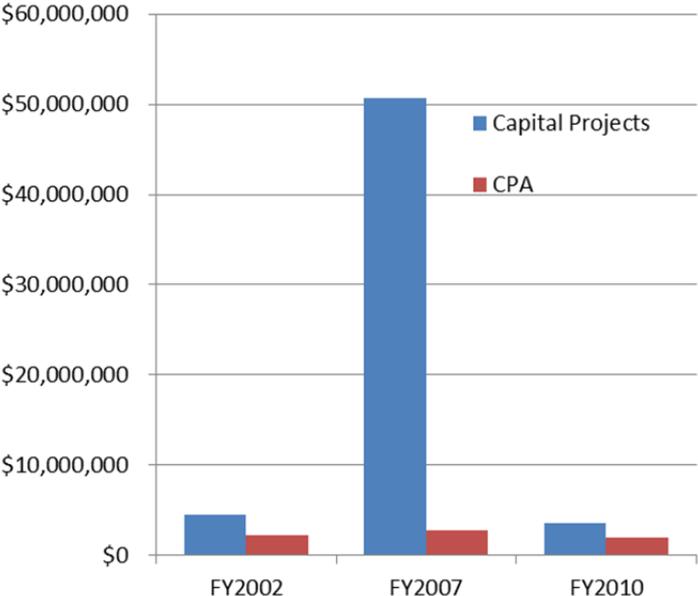
Beyond these commitments, Bedford could consider the feasibility of developing alternative energy facilities to help meet municipal needs. For example, MAPC conducted a study finding that the DPW property on Carlisle Road (the old landfill site used for salt and sand storage, composting and brush disposal, and some construction debris) might be suited for a large photovoltaic array; parking lots and roofs are other potential locations to examine. Independent or collaborative efforts such as Solarize Massachusetts can play a complementary role in encouraging take up of new, efficient or renewable energy technology in the community.

CAPITAL PLANNING, FINANCING AND FISCAL MATTERS

Capital costs can include anything from road paving to fire trucks, sewer and water improvements to School HVAC upgrades, and land acquisition to computer equipment. New or replacement buildings are always the largest capital expenditures. Funding for capital costs comes from different sources, including the tax levy, free cash, sewer and water system user fees, and in some instances, other local revenues. Another important source is Community Preservation Act funds; through FY 13, CPA covered project costs (or the associated debt service) of approximately \$18.5 million since CPA's advent in 2001, and the fund holds millions more in reserves in the requisite program areas.

Municipal bonded indebtedness covers the greater part of capital costs, amortizing the costs for taxpayers over an extended period. Here are also budget offsets like the state Chapter 90 funding for annual road maintenance (tending to decline in recent years but typically around \$500,000 per annum), library construction grants, and other outside aid. The Town’s bond rating from Standard and Poor’s has been at the AAA level since FY07, enabling the Town to borrow at low interest rates. The Town’s strong fiscal management has allowed this market ranking to be sustained even through the deep recession from 2007 to 2009.

The chart below shows a large spike in the 2007 sample year, due to budget appropriations for the High School addition and renovation. The two other sample years are more characteristic of annual capital expenditures.



Capital Expenditure Appropriations, 3 Sample Years, with CPA Contributions

A Six-Year Capital Improvements Plan (CIP) is the basis for Bedford’s capital planning, creating some continuity in the process year to year with annual updates determining each fiscal year’s capital budget. The Capital Expenditures Committee, a standing appointed body, plays a key role in that process, along with the Finance, Public Works, Facilities, and Town Manager/ Selectmen Departments, as well as Police, Fire and sometimes other municipal functions that incur capital costs. This document is the planning tool that catalogues all anticipated capital projects and associates each with cost estimates and funding sources. A newly implemented Capital Asset Management Program (CAMP) provides a structured, computer-based system to

tie together and track all of Bedford’s capital assets (valued at \$1.3 billion) and their maintenance needs. It is anticipated that CAMP will function as the analytical source for all capital planning for the foreseeable future.

Bedford is one of the few towns of its size to have its own Facilities Department, charged with upkeep and capital planning for major municipal and school buildings. Facilities recommends a longer-range planning analysis, such as one with a 20 year time frame, which would project needs, costs, fiscal impacts and options over this greater span, allowing the Town to fully track the useful life of facilities and the related life-cycle costs and fiscal requirements. The Facilities Department also emphasizes that the town could benefit from a series of new space utilization studies as a long-range planning strategy, making recommendations for relatively low cost alternatives for meeting some space needs.

Bedford’s total annual budget in recent past years has been in the \$72-80 million range, and of that, usually at least 90% is composed of operations and maintenance costs. The capital budget portion typically ranges from 3-10% of the total annual appropriation, although major expenditures produce large spikes, such as the one in FY07. To illustrate this in the present context, the FY14 total budget (in round numbers) is approximately \$79 million (M), of which the capital budget is approximately \$3.4M, or about 4% of the total. Within that FY14 capital budget, \$2M will be covered by bond issuance and approximately \$1.4M will come from the tax levy. A small contribution of \$45,746 will come from Water and Sewer fees and from other local funds.

The table below shows that in the ten year period since the last Plan, bonded indebtedness grew from less than \$30,000,000 to more than \$64,000,000. In a given year or two, debt might decrease because other debt was retired and projects finished. But over time, buildings and infrastructure age, population edges upward, equipment wears out, new development occurs and weather events proliferate, so capital needs and costs can only increase. The per capita column represents the theoretical “burden” of this municipal debt upon each town resident, but it should not be construed to be an actual tax levy.

Table 9-1. Municipal Bonds FY 2002-2013

Fiscal Year	General Obligation Bonds/Notes	
	Total Amount	Per Capita
2002	\$29,134,342	\$2,327
2003	\$46,515,294	\$3,716
2004	\$42,571,243	\$3,401
2005	\$50,721,492	\$4,052
2006	\$46,478,873	\$3,713
2007	\$50,292,770	\$3,839
2008	\$78,832,612	\$6,017
2009	\$71,343,040	\$5,445
2010	\$59,861,184	\$4,349
2011	\$64,747,530	\$4,629

The table below underscores the price to pay for maintaining and creating facilities, purchasing equipment, improving working interiors and so on. It shows that in the most recent full fiscal year, FY13, the Town paid nearly 4.5 million in principal payments and 2 million in interest payments, for a debt service of more than \$6.4M.

Table 9-2. Municipal Debt Service FY 13

FY 13 Municipal Debt Service	Amount
Principal	\$4,461,016
Interest	\$1,939,501
Total	\$6,400,517

Projected by the Town in its Annual Comprehensive Financial Report, from FY13 to FY31 would entail principal payments of nearly \$60M, interest of \$15M and a total debt service of close to \$75M for the 18 years. These projections highlight the fact that total capital costs and their ensuing debt service always require planning ahead, to anticipate large costs and, if possible, fund them in less burdensome years.

STRATEGIES

LONG-RANGE AND STRATEGIC PLANNING

- Incorporate broad input from municipal departments and the community in defining future facilities.
- Create a long-range capital investment tool that projects the physical and fiscal implications of municipal projects over a time span such as 20 years, incorporating life cycle cost analysis.
- Incorporate Capital Asset Management Program data and analysis into all Town departments involved with capital investment expenditures or planning, as well as the Capital Expenditures and Space Needs Committees.
- Program infrastructure funds for extended periods of time, to ensure that needs are anticipated and funded over the life of projects.
- Update the Town's Open Space and Recreation Plan, with a focus on resolving strategic decisions regarding improvement and expansion of athletic fields and other recreational facilities, and prioritizing maintenance of facilities, trails, and resource areas.

ROLES AND PARTNERSHIPS

- Increase the Town's ability to monitor and evaluate the long-range costs and benefits of regionalizing services and facilities.
- Extend role of the volunteer Energy Task Force to evaluate opportunities for efficiency gains in the public and private sector on an ongoing basis.
- Use public/private community groups as a resource to support maintenance of open space, parks, and trails.
- Increase coordination between municipal, institutional, and private recreation facilities.
- Identify public-private partnerships to coordinate infrastructure planning in designated revitalization and redevelopment areas.

CAPITAL INVESTMENT

- Create a long range sidewalk and bicycle network plan, identifying specific property segments and opportunities to add to the system and increase connectivity, along with potential private and public funding strategies.

- Evaluate the needs for capital investment in both maintenance and small support facilities at athletic fields such as storage sheds, refuse containers, and other small capital expenditures.
- Create a plan for phased implementation of a municipal communication system.

EDUCATION, MARKETING, & ADVOCACY

- Spur public debate on options for long range energy initiatives, such as using Town land for a solar facility, further investment in street light replacement, more extensive building HVAC upgrades, and other alternatives.
- Raise public awareness of municipal energy conservation efforts and capital investment, within and beyond Green Communities, and encourage private implementation of such improvements.

ACTION PLAN



LAND USE



ECONOMIC DEVELOPMENT



NATURAL & CULTURAL RESOURCES



TRANSPORTATION



HOUSING



SERVICES AND FACILITIES

ACTION PLANS OVERVIEW

An Action is the final level of thought that is produced by a Comprehensive Plan. Actions are the slate of possible implementation measures that the community and the stakeholders within it might choose to pursue in achieving the Vision of the Plan. Actions result after a Vision is established for the community and for each topical element or chapter, Issues and Opportunities are identified, broad Goals are set to give a shape and direction to the topic, and then Strategies are derived for moving in the right direction.

The Action Plan tables include a column entitled “Participants to Consider,” in which potential organizations and groups that might logically be involved in the pursuit of a given action item are listed. The establishment of this Comprehensive Plan does not infer that this is a mandatory assignment for which the board, committee or department must plan and budget at some point in the future. Rather, each action is a suggestion for the community and all stakeholders within it to consider. If the impetus to move forward with any given measure is there, the potential participants will themselves decide if they have the desire, time and resources to play a role in that initiative.

ACTION PLAN: LAND USE				
Name/Description of Action Item	Participants to Consider [w/potential lead entities in bold]	Required Level of Effort & Duration	Desired Timeline or Target Date	Critical Priority w/in Whole Plan?
ZONING AND REGULATORY CHANGES				
<p>LU#1 <u>Craft a modern Open Space Residential Development 4-step process</u> zoning bylaw, fashioned predominantly for Bedford's less developed residential districts, while eliminating the existing Cluster and Planned Residential Development provisions.</p> <p>[same as natural/cultural action #1]</p>	<p>Planning Board, in primary consultation with Conservation Commission, Land Acquisition Committee. Also: Arbor Resources, Code Enforcement, other interested boards, committees & departments.</p>	<p>High; 7 ½ months.</p>	<p>Fall town meeting, 2014</p>	✓
<p>LU#2 <u>Revise Industrial Mixed Use Special Permit zoning</u> to create complementary mixes in industrial districts of industrial/office/corporate businesses with housing uses and/or commercial uses, reaching a balance that is acceptable to the town and the business community, as well as to impart a clearer sense of desired physical form and amenities.</p> <p>[same as economic development action #1]</p>	<p>Planning Board, in consultation with numerous town boards, committees and departments, the business community, the economic development specialist and residents at-large.</p>	<p>High level of effort. 12 months duration.</p>	<p>Annual town meeting 2015 end date.</p>	✓
<p>LU#3 <u>Revise the Three Mixed Use Overlay districts</u> to make commercial/retail options more of an incentive for market investment, to attain practical and acceptable mixes of commercial and housing uses fine-tuned to each district, and to impart a clearer sense of desired physical form and amenities in each respective district.</p> <p>[same as economic development action #2; natural/cultural action #9 and housing action #11 are related]</p>	<p>Planning Board, in consultation with numerous town boards, committees, the business community and residents, especially those in the districts.</p>	<p>High level of effort. 16 months duration.</p>	<p>Annual town meeting 2015 end date if possible, otherwise fall town meeting 2015.</p>	✓

<p>LU#4 <u>Evaluate and revise all existing Industrial zoning</u> to align it more closely with contemporary site and space requirements of biotechnology/life sciences; high technology manufacturing; scientific research and development; and other leading segments of the Massachusetts and global economies. [same as economic development action #3]</p>	<p>Planning Board, in consultation with the business community, various town boards, committees and departments (especially Selectmen and FinCom), and residents at-large.</p>	<p>Medium level of effort. 7 to 8 months duration.</p>	<p>Annual town meeting 2016 end date</p>	
<p>LU#5 <u>Adopt a special overlay district for the heavier commercial segments of The Great Road</u>, in which redevelopment of commercial property is encouraged in an improved form that departs from older strip commercial layouts, and which is in line with Bedford’s vision for the area. [same as economic development action #4]</p>	<p>Planning Board, in consultation with the business community, various town boards, committees and departments (especially Selectmen and FinCom), and residents at-large.</p>	<p>High level of effort. 18 months duration.</p>	<p>Adopt by fall town meeting 2016.</p>	
MUNICIPAL AND REGIONAL COORDINATION & PLANNING				
<p>LU#6 <u>Institutional Communication & Planning</u>: As the needs arise over time, establish sufficient town expertise and capacity--through staffing, consulting arrangements and/or institutional partnerships (such as those with a university or foundation)--to fully participate in Hanscom/Massport base reuse planning and processes required in response to changes at Bedford Veteran’s Administration Hospital, Middlesex Community College or other governmental/institutional uses. [same as economic development action #11]</p>	<p>Selectmen/Town Manager, in consultation with Bicycle Advisory Committee, DPW, Trails Committee Planning Board, other interested boards and committees, residents at large.</p>	<p>Medium level of effort. Ongoing, especially as needed at critical junctures.</p>	<p>Start date to be determined.</p>	
<p>LU#7 <u>Form a departmental task force to identify and propose ways to communicate and regulate as efficiently as possible in matters involving development permitting and related procedures.</u> <u>[related to economic development action #5]</u></p>	<p>Planning Board, Code Enforcement, in consultation with DPW, Police, Fire, Selectmen/Town Manager and other departments</p>	<p>Low to medium level of effort. 4 months duration.</p>	<p>Should be completed by end of 2014.</p>	

<p>LU#8 <u>Recognizing the cultural value of Bedford's neighborhoods and buildings that developed between the late 19th century and the 1930's</u>: institute a thorough program of research and public information to raise public awareness of an era that does not receive sufficient attention in Bedford.</p>	<p>Historic Preservation Commission, Historical Society, in consultation with other town boards and committees, and possibly the Bedford Schools.</p>	<p>Medium level of effort. 18 months duration.</p>	<p>As information becomes available, but initial efforts should commence by beginning of 2015</p>	
<p>LU#9 <u>Create a comprehensive cultural/historic assets public information resource</u> -with on-line presence, a sign system in the field and written/graphic materials, to encourage visitors, commerce, public appreciation and further preservation. [same as natural/cultural action #8]</p>	<p>Historic Preservation Commission, in close collaboration with the Information Technology Department, Historical Society, Historic District Commission, Chamber of Commerce, Depot Park Advisory Committee and Friends, Public Library, and other interested groups, boards and committees, possibly including the Schools for student projects. Could be established by Selectmen, after discussions with affected entities.</p>	<p>High. 24-36 month duration.</p>	<p>Launch date uncertain, but collaborative meetings could begin by beginning of 2015 to begin to establish the system.</p>	
<p>LU#10 <u>Develop a pedestrian/ bicycle connectivity master plan</u>, covering sidewalks, crossings, off-road pedestrian and multi-purpose trails, and identifying relatively safe on-road bicycle routes and lanes. Implement through:</p> <ul style="list-style-type: none"> a) town improvements within Right of Way; b) agreements with landowners on key parcels to obtain necessary rights; c) coordination between owners of adjacent business properties; d) use of reasonable exactions in new development projects 	<p>Trails Committee, Bicycle Advisory Committee, Friends of Minuteman Bikeway, DPW, in consultation with Bicycle Advisory Committee, DPW, Trails Committee Recreation Commission, Land Acquisition Committee, Healthy Bedford, FinCom, DPW, Conservation Commission and Planning Board involvement in implementation.</p> <p><i>[Potentially helpful steps taken in late 2013 include CPA funding for a Bicycle Master Plan, agreement on working list of desirable easements, and application for Healthy Communities Implementation Grant.]</i></p>	<p>Medium to high level of effort. Good start already made. 12 to 18 month duration.</p>	<p>Produce preliminary Plan by late 2014, final by early 2015. Some progress on implementation each year.</p>	<p>✓</p>

INFORMATION AND PUBLIC OUTREACH

<p>LU#11 <u>Institute a planned program for use of online town venues and social media</u>, to better disseminate public information about Bedford and to increase interactivity with citizens and business people, where appropriate and feasible.</p>	<p>Selectmen/Town Manager, Finance Department, Information Technology Department, in consultation with other departments in town government as well as private organizations.</p>	<p>Medium level of effort. 18 months duration.</p>	<p>Effort should commence by beginning of 2015</p>	
<p>LU#12 <u>Conduct a concentrated campaign of recruitment for additional civic volunteers, committee and board members and special event participants</u>, building upon the strong work done by the Volunteer Coordinating Committee and individual departments, particularly using online and social media resources in strategic and targeted ways.</p>	<p>Selectmen/Town Manager, Volunteer Coordinating Committee, in consultation with Bicycle Advisory Committee, DPW, Trails Committee certain departments that require activity volunteers</p>	<p>Medium level of effort. 10 months duration.</p>	<p>Start date to be determined.</p>	

CAPITAL INVESTMENT & PLANNING

<p>LU#13 <u>Public transit and trip reduction initiatives</u>: Participate in organized efforts to plan for, retain and improve transit (MBTA/LRTA/Towns) and Transportation Demand Management programs on a regional basis. [related to transportation actions #11, 12 & 13 and economic development action #7]</p>	<p>[See Transportation Actions #11, 12 & 13 for details of suggested Action.]</p>			
<p>LU#14 <u>Pursue funding for improvements to intersections in the street system that are most negatively impacted by business development</u>: to benefit both businesses and residents, increase funding for improvements to operations and safety at intersections in the local street system that are most negatively impacted by business development, employing public and private funding as well as exactions within the permitting process for new development. [same as transportation action #6 and economic development action #15]</p>	<p>Economic Development Specialist, larger employers, DPW, in consultation with Bicycle Advisory Committee, Trails Committee, Chamber of Commerce, as well as impacted residents.</p>	<p>Medium to high level of effort. Ongoing, mostly via annual capital budget process.</p>	<p>Initial coordination capability should be organized by early 2016. Long term initiative.</p>	

<p>LU#15 <u>Upgrading and major repair of sanitary sewer, stormwater and water supply facilities in business areas:</u> exchange information on current problems and potential need for future improvements by means of the increased town/business dialogue called for in Actions under the Economic Development and Services and Facilities Elements.</p> <p>[related to economic development action #6 and services & facilities action #8]</p>	<p>DPW, Economic Development Specialist, in consultation with Selectmen/Town Manager</p>	<p>Low to medium level of effort.</p> <p>Periodically, as needed.</p>	<p>Effort can begin when enhanced town/business dialogue is in place.</p>	
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ACTION PLAN: ECONOMIC DEVELOPMENT

Name/Description of Action Item	Participants to Consider [w/ potential lead entities in bold]	Required Level of Effort & Duration	Desired Timeline or Target Date	Critical Priority w/in Whole Plan?
ZONING BYLAW CHANGES				
<p>ED#1 <u>Revise Industrial Mixed Use Special Permit zoning</u> to create complementary mixes in industrial districts of industrial/office/corporate businesses with housing and/or commercial uses, reaching a balance that is acceptable to the town and the business community, as well as to impart a clearer sense of desired physical form and amenities. [SAME AS LAND USE ACTION #2; HOUSING ACTION #3 IS RELATED]</p>	<p>Planning Board, in consultation with numerous town boards, committees and departments, the business community, the economic development specialist and residents at-large.</p>	<p>High level of effort. 12 months duration.</p>	<p>Annual town meeting 2015 end date.</p>	✓
<p>ED#2 <u>Revise the Three Mixed Use Overlay Districts</u> to make commercial/retail options more of an incentive for market investment, to attain practical and acceptable mixes of commercial and housing uses fine-tuned to each district, and to impart a clearer sense of desired physical form and amenities in each respective district. [SAME AS LAND USE ACTION #3; NATURAL/CULTURAL ACTION #9 AND HOUSING ACTIONS #3 AND #11 ARE RELATED]</p>	<p>Planning Board, in consultation with numerous town boards, committees, the business community and residents, especially those in the districts.</p>	<p>High level of effort. 16 months duration.</p>	<p>Annual town meeting 2015 end date if possible, otherwise fall town meeting 2015.</p>	✓
<p>ED#3 <u>Evaluate and revise all existing Industrial zoning</u> to align it more closely with contemporary site and space requirements of biotechnology/life sciences; high technology manufacturing; scientific research and development; and other leading segments of the Massachusetts and global economies. [SAME AS LAND USE ACTION #4]</p>	<p>Planning Board, in consultation with the business community, various town boards, committees and departments (especially Selectmen and FinCom), and residents at-large.</p>	<p>Medium level of effort. 7 to 8 months duration.</p>	<p>Annual town meeting 2016 end date.</p>	
<p>ED#4 <u>Adopt a special overlay district for the heavier commercial segments of The Great Road</u>, in which redevelopment of commercial property is encouraged in an improved form that departs from older strip commercial layouts, and which is in line with Bedford's vision for the area. [SAME AS LAND USE ACTION #5; TRANSPORTATION ACTION #1 IS RELATED]</p>	<p>Planning Board, in consultation with the business community, various town boards, committees and departments (especially Selectmen and FinCom), and residents at-large.</p>	<p>High level of effort. 18 months duration.</p>	<p>Adopt by fall town meeting 2016.</p>	

<p>ED#5 Streamlined or expediting permitting system: investigate the pros and cons of some kind of system similar to the MA Chapter 43D model, by establishing a temporary task force. [RELATED TO LAND USE ACTION #7]</p>	<p>Selectmen/Town Manager and Planning Board, in consultation with ZBA, Conservation Commission, Code Enforcement Department and other town boards and committees.</p>	<p>High level of effort. 12 months duration.</p>	<p>Not determined</p>	
MANAGEMENT CAPACITY AND PARTNERSHIPS				
<p>ED#6 Internal business dialogue: create a direct dialogue between Bedford's larger employers and the town, by conducting two carefully-crafted interactive discussion forums per year on a permanent basis, where issues of mutual concern are aired in a structured environment designed to produce clear courses of mutual action. Matters may include anything from traffic and transportation, to redevelopment of aging campuses and buildings, public services and infrastructure, permitting, town support for business expansion, and other topics.</p>	<p>Economic Development Specialist, Selectmen/Town Manager, interested large employers, existing local business organizations, area institutions, various town boards and committees, and other entities.</p>	<p>Medium level of effort. Ongoing, multi-year.</p>	<p>Launch first forum by 2015.</p>	
<p>ED#7 External business dialogue: continue and increase the participation of Bedford businesses, government and institutions in key regional organizations for economic development and transportation, by means of an organized, ongoing program of retention/recruiting/appointment/election of committed Bedford representatives; such organizations could include: Metropolitan Planning Organization/Transportation Improvement Program & MPO Advisory Committee; Middlesex 3 Coalition; Route 128 Business Council; Minuteman Advisory Council on Interlocal Cooperation, MAECON and others. [LAND USE ACTION #13 AND TRANSPORTATION ACTIONS #3, #11 AND #12 ARE RELATED]</p>	<p>Selectmen/Town Manager, as well as Department of Public Works, Planning Board and others.</p>	<p>Medium level of effort. Ongoing.</p>	<p>Ongoing.</p>	✓
<p>ED#8 Targeted business sector dialogue: establish an ongoing dialogue of mutual interest between the Town and Bedford-based businesses, to increase opportunities to make the town a major regional player in the "new economy" in greater Boston, the Commonwealth of Massachusetts and globally. Work particularly with businesses that hold membership in such professional entities as: the MA Biotechnology Council; MA Life Sciences Center; MA High Technology Council, Environmental Business Council of New</p>	<p>Economic Development Specialist, Selectmen/Town Manager and others.</p>	<p>Medium level of effort. Ongoing, gradual progress.</p>	<p>Substantial progress by end of 2014.</p>	

<p>England, MA Economic Development Council and other industry associations, as well as the MA National Association of Industrial & Office Properties; MAEcon and others</p>				
<p>ED#9 <u>Demonstration Project: move forward with a site-specific economic development project that is part of a grant-funded initiative—such as Public Works Economic Development funding under MassWorks—to improve adjacent infrastructure or roads, in a way that is complementary to a specific new or expanded business being constructed.</u></p>	<p>Economic Development Specialist, Selectmen/Town Manager, DPW, business developer/investor, Planning Board, and other business interests.</p>	<p>Undetermined, but long lead time to gather interest & participants</p>	<p>Undetermined.</p>	
<p>ED#10 <u>Public transit and trip reduction initiatives involving economic development:</u> Participate in organized efforts to plan for, retain and improve transit (MBTA/LRTA/ Towns) and Transportation Demand Management programs on a regional basis. Coordinate such efforts among abutting towns, private employers and regional entities such as MAGIC, Route 128 Business Council, Middlesex 3 and others. Help obtain funding and/or services for a regional transit implementation plan funded by MA DOT. [RELATED TO TRANSPORTATION ACTIONS #11, #12 AND #16, LAND USE ACTION #13, AND ED#7 ABOVE]</p>	<p>Selectmen/Town Manager, Economic Development Specialist, DPW, in collaboration with other towns and regional entities.</p>	<p>High level of effort. Ongoing, especially as needed at critical funding junctures.</p>	<p>Commence Summer, 2015.</p>	
<p>ED#11 <u>Institutional Communication & Planning:</u> As the needs arise over time, establish sufficient town expertise and capacity--through staffing, consulting arrangements and/or institutional partnerships (such as those with a university or foundation)--to fully participate in Hanscom/Massport base reuse planning and processes required in response to changes at Bedford Veteran's Administration Hospital, Middlesex Community College or other governmental/institutional uses. [SAME AS LAND USE ACTION #6]</p>	<p>Selectmen/Town Manager, Planning Board, other interested boards and committees, residents at large.</p>	<p>Medium level of effort. Ongoing, especially as needed at critical junctures.</p>	<p>Medium level of effort. Start date to be determined.</p>	

CAPITAL INVESTMENT & PLANNING				
<p>ED#12 <u>Specific highway projects: create a private/public partnership to develop and present the case for major highway and interchange upgrading projects that will benefit the whole market region, feeding into the Boston MPO Transportation Improvement Project process .</u> [SAME AS TRANSPORTATION ACTION #5]</p>	<p>Selectmen/Town Manager, Economic Development Specialist, DPW, in consultation with Chamber of Commerce and others.</p>	<p>Medium level of effort because Bedford has been doing this for a long time. Ongoing, especially as needed at critical funding junctures.</p>	<p>Initiate more structured partnerships by end of 2014.</p>	
<p>ED#13 <u>Direct a fair share of capital improvement funds— local, state and private-- toward a Complete Streets approach in priority locations,</u> especially in the case of The Great Road and its Master Plan, to help bring about key redevelopment goals in Bedford. Pursue possible grant sources under MassWorks Infrastructure programs. [RELATED TO TRANSPORTATION ACTIONS #1, #2, #7 LAND USE ACTION #5 AND ED#4 ABOVE]</p>	<p>DPW, Selectmen/Town Manager, in consultation with Historic District Commission, Historic Preservation Commission, Chamber of Commerce, FinCom Planning Board, major property owners, Healthy Bedford and others.</p>	<p>High level of effort. Very long term in duration.</p>	<p>Ongoing, long term.</p>	
<p>ED#14 <u>Create a bicycle and pedestrian master plan to provide alternative transportation infrastructure and connectivity for commuters within and near Bedford.</u> [INCLUDED IN TRANSPORTATION ACTION #9 AND LAND USE ACTION #11]</p>	<p>DPW, Bike Trails Committee, in consultation with Selectmen, Healthy Bedford, Planning Board and others.</p>	<p>Medium to high level of effort. Good start already made. 12 to 18 month duration.</p>	<p>Produce preliminary Plan by late 2014, final by early 2015. Some progress on implementation each year.</p>	
<p>ED#15 <u>Pursue funding for improvements to intersections in the street system that are most negatively impacted by business development: to benefit both businesses and residents, increase funding for improvements to operations and safety at intersections in the local street system that are most negatively impacted by business development, employing public and private funding as well as exactions within the permitting process for new development.</u> [SAME AS TRANSPORTATION ACTION #6 AND LAND USE ACTION #14]</p>	<p>Selectmen/Town Manager, DPW, larger employers, Chamber of Commerce, as well as impacted residents.</p>	<p>Medium to high level of effort. Ongoing, mostly via annual capital budget process.</p>	<p>Initial coordination capability should be organized by early 2016. Long term initiative.</p>	

ACTION PLAN: NATURAL & CULTURAL RESOURCES

Name/Description of Action Item	Participants to Consider [w/ potential lead entities in bold]	Required Level of Effort & Duration	Desired Timeline or Target Date	Critical Priority w/in Whole Plan?
OPEN SPACE/NATURAL RESOURCES PROTECTION/ENHANCEMENT				
<p>NC#1 <u>Craft a modern Open Space Residential Development 4-step process</u> zoning bylaw, fashioned predominantly for Bedford's less developed residential districts, while eliminating the existing Cluster and Planned Residential Development provisions.</p> <p>[SAME AS LAND USE ACTION #1]</p>	<p>Planning Board, in primary consultation with Conservation Commission, Land Acquisition Committee. Also: Arbor Resources, Code Enforcement, other interested boards, committees & departments.</p>	<p>High; 7 ½ months.</p>	<p>Fall town meeting, 2014</p>	
<p>NC#2 <u>Integrate planning and budgeting for capital projects for open space and trails</u>--to strategically coordinate & prioritize capital planning & initiatives involving open space acquisition and creation of new and upgraded trails & connecting greenway segments; mandate meetings as necessary between all key players, prior to entering budget process each year.</p> <p>[RELATED TO LAND USE ACTION #10, TRANSPORTATION ACTION #9 AND SERVICES & FACILITIES ACTION #7]</p>	<p>A Consortium consisting of Conservation Commission, Community Preservation Committee, Land Acquisition Committee, Trails Committee, DPW, FinCom and other entities. Possibly established by Selectmen, after discussions with affected entities.</p>	<p>Medium 6 months to establish process.</p>	<p>Establish consortium by mid- 2015, then carry forward on an ongoing basis thereafter.</p>	
<p>NC#3 <u>Maintain and upgrade existing conservation areas and other facilities on a long term basis</u>--form a temporary task force to establish a long term plan for maintenance and upgrade of conservation areas, trails and connecting greenway segments, to help strike a balance in expenditures between the acquisition of <i>new</i> properties and the maintenance & upgrade of <i>existing</i> ones.</p> <p>[RELATED TO SERVICES & FACILITIES ACTION #5 AND ACTION NC#4 BELOW]</p>	<p>A special committee consisting of DPW, Conservation Commission, Trails Committee, Community Preservation Committee, Selectmen, FinCom and other interested boards, committees & departments. Possibly established by decree of Selectmen, after discussions with affected entities.</p>	<p>High. 12 months start to finish.</p>	<p>Start committee meetings Spring 2015.</p>	
<p>NC#4 <u>Update the Open Space & Recreation Plan</u> Last full version was around 10 years ago, with an update for 2004-2008. Help to strike a better balance between conservation and recreation goals community-wide.</p> <p>[SAME AS SERVICES & FACILITIES ACTION #13]</p>	<p>Conservation Commission, Recreation Commission, Recreation Department, Department of Public Works, Land Acquisition Committee.</p>	<p>High. 2 year duration for whole process.</p>	<p>Appropriation by fall town meeting 2014, complete update within one year.</p>	

<p>NC#5 <u>Raise public awareness of the “alternate Infrastructure”</u>—the system of trails in and between conservation areas, along with bike trails and the sidewalk network—with an expanded and easily-accessed range of paper and online maps and information, in a user-friendly and multi-media system [RELATED TO TRANSPORTATION ACTION #14]</p>	<p>DPW, Trails Committee, Bicycle Advisory Committee, with Conservation Commission, Information Technology , Healthy Bedford and other departments, boards, committees and interested citizens.</p>	<p>Medium to high level of effort. 10 to 12 months duration.</p>	<p>Have program fully in place by mid-2015.</p>	
<p>NC#6 <u>Consider creation of a private non-profit 501(c)3</u>--for rapid response open space acquisition opportunities—typically a local land trust—with mandatory advisory role for Land Acquisition Committee.</p>	<p>Establish by means of a Consortium consisting of Conservation Commission, Land Acquisition Committee, Selectmen, Town Manager, Legal Counsel, Community Preservation Committee, and other entities, plus consultation w/MA Land Trust Coalition, UMASS Extension & other statewide entities.</p>	<p>Medium. 12 months.</p>	<p>No specific target date or end point; as circumstances permit.</p>	
<p>NC#7 <u>Increase use of ecologically sound landscape practices by homeowners and businesses</u> through educational materials and publicity on matters such as invasive plant species removal, invasive pest management, native plantings, and use of chemical fertilizers, organic gardening, composting and use of rain barrels.</p>	<p>Arbor Resources Committee in consultation with the Public Works Department and interested groups such as the Conservation Commission and Bedford Garden Club, and through potential distributors such as town website support staff, cable TV, newspapers, library, schools and Chamber of Commerce. Links to existing online resources can be used where appropriate.</p>	<p>Medium. 6 months.</p>	<p>No particular start date: as circumstances permit.</p>	
<p><i>More “urban” open space elements, meaning parks, playgrounds, playing fields, street tree networks, other public plantings, public pedestrian spaces and similar assets are covered primarily in the Services and Facilities element.</i></p>				
<p>PRESERVATION & ENHANCEMENT OF CULTURAL AND HISTORIC RESOURCES</p>				
<p>NC#8 <u>Create a comprehensive cultural/historic assets public information resource</u>-with on-line presence, a sign system in the field and written/graphic materials, to encourage visitors, commerce, public appreciation and further preservation.</p>	<p>Historic Preservation Commission, in project collaboration with the Information Technology Department, Historical Society, Historic District Commission, Chamber of Commerce, Depot Park Advisory Committee and Friends, Public Library, and other interested groups, boards and committees, possibly including the Schools for student projects. Could be established by Selectmen, after discussions with affected entities.</p>	<p>High. 24-36 month duration.</p>	<p>Launch date uncertain, but collaborative meetings could begin by beginning of 2015 to begin to establish the system.</p>	

<p>NC#9 <u>Revisit mixed use overlay district zoning provisions</u> in each of the three districts to add and clarify scale and design requirements, as needed, in order to strengthen ties to cultural and historic buildings, sites and vernacular architecture in neighborhoods. [RELATED TO LAND USE ACTION #3, ECONOMIC DEVELOPMENT ACTION #2 AND HOUSING ACTIONS #3 AND #11]</p>	<p>Planning Board, in consultation with other departments, boards and committees, & business community.</p>	<p>Medium.</p>	<p>Bring before annual town meeting 2015.</p>	
<p>NC#10 <u>Provide greater incentives to the market</u> to design sites and buildings in a way that is sensitive to the cultural/historic assets of the community in mixed use districts and to neighborhood scale, by considering mechanisms such as density or site coverage bonuses or relaxing of certain dimensional or performance standards, where appropriate.</p>	<p>Planning Board, in consultation with other departments, boards and committees, & business community.</p>	<p>Medium.</p>	<p>Bring before annual town meeting 2015.</p>	
CULTURAL/SOCIAL ACTIVITIES				
<p>NC#11 <u>Increase cultural and social activities involving natural/cultural resources and open space</u>, to help foster community interaction and increase awareness of the resources. Support with publicity.</p>	<p>Board of Selectmen in consultation with Conservation Commission, Recreation Department and other boards, committees and departments that organize events and programs. Publicize via town website, cable TV and other media.</p>	<p>Varying on a per diem basis.</p>	<p>No particular start date: as circumstances permit.</p>	
<p>NC#12 <u>Increase awareness of town government – related volunteer opportunities in the area of natural and cultural resources and open space</u>. Also: provide links to a wider range of relevant community and regional organizations via town’s new website.</p>	<p>Information Technology staff, in consultation with Town Manager/Board of Selectmen office, Town Clerk and consultation with other departments.</p>	<p>Low to medium. 4 months duration</p>	<p>No particular start date: as circumstances permit.</p>	

ACTION PLAN: TRANSPORTATION

Name/Description of Action Item (see Glossary for agency name acronyms)	Participants to Consider [w/ potential lead entities in bold]	Required Level of Effort and Duration	Desired Timeline or Target Date	Critical Priority w/in Whole Plan?
STRATEGIC PLANNING & MULTI-MODAL DESIGN				
<p>TR#1 Pursue implementation of the Great Road Master Plan through design and funding processes, potentially with state, local and supplementary private funding. Seek complementary building & streetscape designs in adjacent redevelopment projects, where feasible, to create attractive streetscapes.</p>	<p>DPW, Selectmen/ Town Manager, in consultation with Fin Com and Planning Board; consultation at appropriate project stages with Bicycle Advisory Committee, BARC, Healthy Bedford, Board of Health, Youth and Family Services, Historic District Commission, Historic Preservation Commission, Chamber of Commerce, abutting property owners and general public. Eastern portion of Great Road requires discussion of control and funding with state.</p>	<p>High level of effort. Possibly 10 year duration.</p>	<p>Initiate funding efforts by beginning of 2015. Make significant progress on the ground by 2019.</p>	
<p>TR#2 Adopt a Complete Streets policy for renewing Bedford's major roads, considering the needs of all users (drivers, transit riders, bicyclists and pedestrians). Apply the most comprehensive redesign to heavily used The Great Road, and use a tailored approach when road upgrades or major repaving are planned elsewhere,</p>	<p>DPW, Selectmen/Town Manager, in consultation with impacted businesses, in consultation on specific projects with a broad range of town boards and committees, including the Bicycle Advisory Committee, and the general public.</p>	<p>High level of effort. Ongoing policy approach requiring skilled management and design input</p>	<p>Have town policy in place by end of 2014, begin targeting priority candidate streets by mid-2015, have implementation plan & capital budget in place by mid- 2016.</p>	
<p>TR#3 Long-range Transportation Planning: Sustain an organized effort to ensure that Bedford has long term active involvement in regional organizations which influence planning for the transportation networks serving the region. [RELATED TO ECONOMIC DEVELOPMENT ACTION #7]</p>	<p>Selectmen/Town Manager, Planning, DPW, in consultation with and other town representatives, via Boston MPO, MAGIC/MAPC, Middlesex 3 Coalition, HATS and other groups.</p>	<p>Medium level of effort. Continuation & reinforcement of existing initiatives.</p>	<p>Ongoing.</p>	

<p>TR#4 <u>Implement a planned program of traffic calming and impact reduction measures</u>, such as pavement narrowing, bump-out construction, one-way operation to deter problematic cut-through traffic (e.g. ones used to bypass traffic lights), as well as low elevation speed platforms on hazardous, high volume segments, and curb cut limitations through permitting processes.</p>	<p>DPW, Selectmen/Town Manager, in consultation with other departments, boards and committees, as well as interested residents.</p>	<p>High level of effort. Long term implementation.</p>	<p>Planning efforts should commence by start of 2016. Some progress on implementation each year.</p>	
<p>TRANSPORTATION PROJECT FUNDING & PARTNERSHIPS</p>				
<p>TR#5 <u>Specific highway projects: create a private/public partnership to develop and present the case for major highway and interchange upgrading projects that will benefit the whole market region, feeding into the Boston MPO TIP process.</u> [SAME AS ECONOMIC DEVELOPMENT ACTION #12]</p>	<p>Selectmen/Town Manager, Economic Development Specialist, DPW, in consultation with Chamber of Commerce and others.</p>	<p>Medium level of effort because Bedford has been doing this for a long time. Ongoing, especially as needed at critical funding junctures.</p>	<p>Initiate more structured partnerships by end of 2014.</p>	
<p>TR#6 <u>Pursue funding for improvements to intersections in the street system that are most negatively impacted by business development</u>; to benefit both businesses and residents, increase funding for improvements to operations and safety at intersections that are most negatively impacted by business development, employing public and private funding as well as exactions within the permitting process for new development. [SAME AS ECONOMIC DEVELOPMENT ACTION #15 AND LAND USE ACTION #14]</p>	<p>Selectmen/Town Manager, DPW, Economic Development Specialist, larger employers, in consultation with Chamber of Commerce, as well as impacted residents.</p>	<p>Medium to high level of effort. Ongoing, mostly via annual capital budget process.</p>	<p>Initial coordination capability should be organized by early 2016. Long term initiative.</p>	
<p>CAPITAL INVESTMENT</p>				
<p>TR#7 <u>Establish a structured, comprehensive evaluation process for local capital projects</u> in transportation, in which vehicular transportation operations and safety, non-vehicular modes and land use planning are all part of the equation, to attain the most balanced capital investment strategy in the long term. [RELATED TO SERVICES & FACILITIES ACTION #1]</p>	<p>DPW, Selectmen /Town Manager, Police Dept., Bicycle Advisory Committee, in an Ad Hoc Task Force with Planning and other departments, boards and committees.</p>	<p>Medium level of effort. 12 month effort to put system in place.</p>	<p>Implement system by start of 2016. Process becomes very long term.</p>	

<p>TR#8 Consider the pros and cons of extending Wiggins Avenue to Depot Park & points beyond, as a traffic management improvement in a particularly congested area of town with conflicting land uses, evaluating the costs and benefits of constructing this project.</p>	<p>DPW, Selectmen/Town Manager, in consultation with Economic Development Specialist, larger employers, as well as Conservation Commission and impacted residents.</p>	<p>Medium level of effort; higher and multi-year if funding and construction pursued.</p>	<p>Uncertain start date.</p>	
<p>PEDESTRIAN/ BICYCLE NETWORK AND FACILITIES</p>				
<p>TR#9 <u>Develop a pedestrian/bicycle connectivity master plan</u>, covering sidewalks, crossings, off-road pedestrian and multi-purpose trails, and identifying relatively safe on-road bicycle routes and lanes. Implement through: a) town improvements within Right of Way; b) agreements with landowners on key parcels to obtain necessary rights; c) coordination between owners of adjacent business properties; d) use of reasonable exactions in new development projects; e) working with adjacent towns to connect routes. [SAME AS LAND USE ACTION #10; RELATED TO ECONOMIC DEVELOPMENT ACTION #14, SERVICES AND FACILITIES ACTION #7 AND TR#10 BELOW]</p>	<p>Trails Committee, Bicycle Advisory Committee, Friends of Minuteman Bikeway, DPW, in consultation with Recreation Commission, Land Acquisition Committee, Healthy Bedford, FinCom, DPW, Conservation Commission and Planning Board involvement in implementation.</p>	<p>Medium to high level of effort. Good start already made. 12 to 18 month duration.</p>	<p>Produce preliminary Plan by late 2014, final by early 2015. Some progress on implementation each year.</p>	
<p><i>[Potentially helpful steps being taken in late 2013 include successfully obtaining CPA funding for a Bicycle Master Plan; agreement on a working list of desirable easements, and application for Healthy Communities Implementation Grant.]</i></p>				
<p>TR#10 <u>Alternative Transportation Enhancement: implement a program of non-capital intensive measures</u> to improve opportunity and safety for pedestrians and bicyclists, including relatively low cost improvements such as: improved pedestrian crossings; additional signs and pavement markings; snow clearing of selected sidewalks and trails; increased installation of public and private bicycle racks on the ground and on transit vehicles; installation of landscaped gathering areas, and other initiatives.</p>	<p>DPW, Trails Committee, Bicycle Advisory Committee, in consultation with Healthy Bedford and other departments, boards, committees and interested citizens.</p>	<p>Medium level of effort. Long term implementation.</p>	<p>Planning efforts should commence by start of 2015. Some progress on implementation each year.</p>	

TRIP REDUCTION AND TRANSIT INITIATIVES

<p>TR#11 <u>Transportation Management Association</u>: unite the efforts of employers, business property owners, and regional and town organizations, to reduce single occupancy trips by establishing or joining a Transportation Management Association to cover Bedford (potentially either an expansion of the Rt. 128 Business Council or a new association to cover Bedford or the Rt. 3 corridor). [RELATED TO ECONOMIC DEVELOPMENT ACTIONS #7 AND #10, LAND USE ACTION #13 AND TR#16 BELOW]</p>	<p>Selectmen/Town Manager, Economic Development Specialist, DPW, in consultation with large employers, Chamber of Commerce, Planning Board, Transportation Advisory Committee and others.</p>	<p>High level of effort. 24 month duration.</p>	<p>Planning and coordination should begin before end of 2014. There should be tangible progress by mid-2016.</p>	<p align="center">✓</p>
<p>TR#12 <u>Public transit advocacy</u>: Initiate an organized effort to advocate for retention of service, funding and better coordinated routes and schedules for public transportation services from the MBTA, LRTA, local systems and private shuttle bus programs, including working regionally through MPO TIP process, MAGIC/MAPC and ad hoc multi-town consortia. [RELATED TO LAND USE ACTION #13 AND ECONOMIC DEVELOPMENT ACTION #10]</p>	<p>Selectmen/Town Manager, Planning, in consultation with large employers, Youth and Family Services and others.</p>	<p>Medium level of effort. 12 month duration.</p>	<p>Have in place by end of 2015.</p>	
<p align="center">EDUCATION AND MARKETING</p>				
<p>TR#13 <u>Public information campaign for trip reduction & transit use</u>: promote local residents' use of transit (MBTA, LRTA, school buses and BLT), as well as safe bicycling and walking routes (such as safe Routes to School), by means of an organized program of publicity and special event participation & sponsorship, including health-based initiatives.</p>	<p>DPW, School Department, Healthy Bedford, Board of Health, Youth and Family Services in consultation with and other departments, boards, committees and interested citizens.</p>	<p>Medium level of effort. 9 month duration.</p>	<p>Begin campaign by 2015</p>	
<p>TR#14 <u>Create paper and online maps and guides for residents and visitors</u>, to increase use of pedestrian and bike and transit routes and popular destinations. [RELATED TO NATURAL/CULTURAL ACTION #5]</p>	<p>DPW, Trails Committee, Bicycle Advisory Committee, in consultation with Conservation Commission, Information Technology, Healthy Bedford and other departments, boards, committees and interested citizens.</p>	<p>Medium to high level of effort. 10 to 12 months duration.</p>	<p>Have program fully in place by mid-2015.</p>	
<p align="center">REGULATORY TOOLS & INCENTIVES</p>				
<p>TR#15 <u>Adjust zoning and subdivision control</u> to more explicitly require developers to mitigate traffic impacts attributable to the project. [RELATED TO LAND USE ACTIONS ON ZONING]</p>	<p>Planning Board in consultation with Bicycle Advisory Committee, DPW, Trails Committee.</p>	<p>Medium level of effort.</p>	<p>Annual Town Meeting 2015 end date.</p>	

<p>TR#16 <u>Make specific zoning changes related to alternative transportation and trip reduction,</u> to more clearly require creation of connecting segments for bicycle trails, sidewalks and greenway trails, as well as joining transportation demand management programs, where appropriate. [RELATED TO LAND USE ACTIONS ON ZONING]</p>	<p>Planning Board in consultation with Bicycle Advisory Committee, DPW, Trails Committee.</p>	<p>Medium level of effort.</p>	<p>Annual Town Meeting 2015 end date.</p>	
<p>TR#17 <u>Rewrite Industrial Mixed Use zoning bylaw</u> to create complementary mixes of business, housing and amenities that will reduce need for vehicle trips. [RELATED TO LAND USE ACTION #2 AND ECONOMIC DEVELOPMENT ACTION #1]</p>	<p>[See relevant Actions under Economic Development and Land Use elements.]</p>			<p>✓</p>

ACTION PLAN: HOUSING				
Name/Description of Action Item	Participants to Consider [w/ potential lead entities in bold]	Required Level of Effort and Duration	Desired Timeline or Target Date	Critical Priority w/in Whole Plan?
ZONING & REGULATORY CHANGES				
H#1 <u>Underserved markets: Investigate significant modifications to the zoning bylaw (ZBL)</u> to provide increased opportunity for Bedford's underserved markets (following studies – see H#4), considering amendments both to mixed use and conventional zoning districts and to provide market incentives.	Planning Board , in consultation with Housing Partnership, as well as other departments, boards and committees and interested residents and businesses.	Medium to high level of effort. 10 months duration.	Needs to draw on studies conducted under H#4, but aim to complete by end of 2015. Timing could depend upon funding for consultants or more staffing.	✓
H#2 <u>Neighborhood Conservation Districts:</u> Explore feasibility and pros and cons of creating one or more Neighborhood Conservation Districts in older, denser neighborhoods as a means of encouraging preservation of historic streetscapes and scale.	Planning Board , in consultation with Historic Preservation Commission, Historic District Commission, and other departments, boards and committees and interested residents.	High level of effort. 18-24 month duration. Studies needed.	Uncertain start date, but should be underway no later than early 2016. Start date could depend upon available level of funding for consultants or more staffing.	
H#3 <u>Adjust residential-to non-residential space ratios in the Zoning Bylaw</u> within each of the three distinct mixed use overlay districts, as well as the industrial mixed use special permit provision, to attain a better balance in each location between legitimate housing needs, the concerns of the community and real estate market feasibility.	Planning , in consultation with members of the development community, other property and business owners, and other departments, boards and committees and interested residents and businesses.	Medium to high level of effort. 14 month duration.	Effort should begin by summer, 2014, but start date could depend upon funding for consultants or more staffing.	✓

HOUSING PLANNING & ADVOCACY

<p>H#4 <u>Fund and conduct necessary housing studies to better document and understand Bedford’s potentially underserved markets</u>, including a. “empty-nesters” already residing in Bedford; b. seniors; c. households seeking starter homes; d. workers in Bedford businesses who would like to live here and not commute.; and e. veterans</p>	<p>Planning Board, in consultation with the real estate community, the Housing Partnership, the Town Manager/Selectmen, and other departments, boards and committees and interested residents.</p>	<p>Medium to high level of effort. 10 to 12 month duration.</p>	<p>Effort should begin in 2014.</p>	<p align="center">✓</p>
<p>H#5 <u>Conduct greater community outreach and communications</u> with housing need groups and the general public, while continuing other Housing Partnership duties such as channeling HOME and CPA funds to projects, working with advocates and monitoring affordable housing units .</p>	<p>Housing Partnership, Selectmen/Town Manager, in consultation with Planning, as well as other departments, boards and committees and interested residents</p>	<p>High level of effort. Duration will depend upon funding level, degree of outreach that is achievable, and other factors.</p>	<p>Begin pursuing funding for fall Town Meeting 2014.</p>	
<p>H#6 <u>Pursue one or more rehabilitation opportunities</u> for providing affordable units, especially the Coast Guard housing on Pine Hill Road, should it be declared surplus. Monitor potential opportunities that might arise if Hanscom A.F.B. or the VA Hospital are ever closed.</p>	<p>Housing Authority, Housing Partnership, in consultation with Selectmen/Town Manager, members of the development community, and interested residents.</p>	<p>High level of effort. Multi-year project.</p>	<p>Start date depends upon unknown variables beyond town control...</p>	
<p>H#7 <u>Conduct area-specific planning studies to identify potential opportunities for cottage-type housing</u> or other forms of close village-density housing, as a way of creating market dwellings of relatively modest scale.</p>	<p>Planning, in consultation with other departments, boards and committees, the development community and interested residents.</p>	<p>Medium to high level of effort. 8 to 10 months duration.</p>	<p>Start date depends upon available level of funding for consultants or more staffing.</p>	
<p>H#8 <u>Local Financing</u>: develop relationships with community banks to help with financing local first-time homebuyers.</p>	<p>Housing Partnership, in consultation with other departments, boards and committees.</p>	<p>Medium to high level of effort. 8 to 10 months duration.</p>	<p>Uncertain start date.</p>	
<p>H#9 <u>Make affordable housing and energy efficiency work together</u>: Connect residents and developers more directly with programs to promote energy efficiency improvements in all housing, including affordable units.</p>	<p>Code Enforcement, Housing Partnership, in consultation with an expanded Energy Task Force or other interested organizations.</p>	<p>Medium level of effort. 10 months duration to establish.</p>	<p>Start by mid-FY15.</p>	

CAPITAL INVESTMENT

<p>H#10 <u>Channel sufficient capital investment into increasing pedestrian and bicycle connectivity</u>, to reduce the isolation and vehicular-dependency of all residential areas, connecting them to other neighborhoods, and shopping, governmental and cultural destinations. Prioritize particularly isolated areas such as Middlesex Turnpike housing complexes. [RELATED TO TRANSPORTATION ACTIONS #7, #9 AND #10]</p>	<p>DPW, Trails Committee, Bicycle Advisory Committee, Selectmen/Town Manager, in consultation with Friends of Minuteman Bikeway, Recreation Commission, Land Acquisition Committee, FinCom, Conservation Commission and Planning Board.</p>	<p>Medium to high level of effort. But will be spread out over a long period of time as an ongoing process.</p>	<p>Base it upon production of preliminary connectivity master plan by late 2014, final by early 2015. Some progress on implementation each year.</p>	
<p>H#11 <u>Continue well thought out planning and zoning initiatives</u> to promote distinctive mixed use centers. [RELATED TO LAND USE ACTIONS #3 AND #5]</p>	<p>Planning Board, in consultation with numerous boards, committees and departments, as well as businesses and the general public.</p>	<p>High level of effort. Ongoing process.</p>	<p>Ongoing and long term, starting before end of FY14.</p>	

ACTION PLAN: SERVICES AND FACILITIES

Name/Description of Action Item (see Glossary in this Plan for agency name acronyms)	Participants to Consider [w/ potential lead entities in bold]	Required Level of Effort and Duration	Desired Timeline or Target Date	Critical Priority w/in Whole Plan?
LONG-RANGE AND STRATEGIC PLANNING (NOT INCLUDING RECREATION)				
S&F#1 <u>Long-term capital needs analyses:</u> Extend the capital investment process into a longer-term time frame of 10 to 20 years, incorporating programmatic needs of all departments, life cycle costs of equipment and facilities, and detail on all infrastructural elements; prepare special detailed studies as needed.	Department of Public Works, Facilities Department, in consultation with Town Manager/Selectmen, Planning Board, Finance Department, and outreach to all relevant town departments and the general public.	Medium level of effort. Ongoing process.	Start by end of calendar 2014. Ongoing process.	✓
S&F#2 <u>Dialogue on options for Fire Station capacity:</u> Establish an internal discussion and analysis of alternatives for resolving Fire Department space needs, with the potential for future capital projects of widely varying scope and cost. <i>Note: Police Department space needs are internal within the existing structure and may entail space reconfiguration and repurposing.</i>	Fire Department, Facilities Department, Town Manager/Selectmen, in consultation with <u>Capital Expenditure Committee</u> , Land Acquisition Committee and other relevant committees and boards.	Medium level of effort. 12 month duration.	Start date is uncertain, depending on interest in proceeding with the study, but a target start date no later than end of 2014 is recommended.	
ROLES AND PARTNERSHIPS				
S&F#3 <u>Regional opportunities:</u> Assess the status of and opportunities for regional services and facilities every three years by convening key Bedford committees, boards, departments and town representatives to HATS, MAGIC, Shawsheen Tech, MPO and other organizations. [ECONOMIC DEVELOPMENT ACTION #7 AND LAND USE ACTION #13 ARE RELATED]	Town Manager/Selectmen, Department of Public Works, Facilities Department, in consultation with School Committee, Planning Department, Board of Health other relevant committees and boards.	Low level of effort. Sporadic occurrence.	Put mechanism in place by end of calendar 2014.	
S&F#4 <u>Long-term energy initiatives:</u> Establish the Energy Task Force by means of Selectmen action as a permanent entity with a long-range mission to advocate for energy-related programs and initiatives in both town facilities and privately-owned properties.	Town Manager/Selectmen, Energy Task Force, Facilities Department, in consultation with private groups, Planning Board and others.	Low level of effort to establish, ongoing medium effort to implement as permanent program.	Put mechanism in place by end of calendar 2014.	

<p>S&F#5 <u>Parks and open space maintenance</u>: Create a more unified approach to maintenance of parks, open space and trails by means of a partnership between all relevant public and private groups, committees and departments; convene on ad hoc basis every year before the advent of the budget process to reach consensus on operating budget requests . [RELATED TO NATURAL/CULTURAL ACTION #3 AND S&F#10 AND S&F#11 BELOW]</p>	<p>Department of Public Works, Conservation Commission, BARC, Trails Committee, in consultation with other relevant committees and boards.</p>	<p>Medium level of effort. Annual.</p>	<p>Put mechanism in place by September, 2014.</p>	<p>✓</p>
<p>CAPITAL INVESTMENT & SPECIAL STUDIES</p>				
<p>S&F#6 <u>Possible new storage facility at VA</u>: Prepare a feasibility study for a possible new storage facility replacing the municipal garage at the VA Hospital site, to better serve the equipment and vehicle storage needs of multiple departments.</p>	<p>Department of Public Works, Facilities Department, Town Manager/Selectmen, Police Department, Fire Department, in consultation with Recreation Commission & Department, <u>Capital Expenditure Committee.</u></p>	<p>Medium level of effort, via consultant engagement. 12 month duration.</p>	<p>Start date is uncertain, depending on interest in proceeding with the study.</p>	
<p>S&F#7 <u>Bicycle and pedestrian Infrastructure Investment</u>: Initiate a program of actions to make a bicycle, sidewalk and trail network a reality that becomes a new sub-set of the municipal infrastructure system [RELATED TO LAND USE ACTION #10, TRANSPORTATION ACTION #9 AND NATURAL/CULTURAL ACTION #2]</p>	<p>Trails Committee, Bicycle Advisory Committee, Friends of Minuteman Bikeway, and DPW, in consultation with Recreation Commission, Land Acquisition Committee, and Healthy Bedford, FinCom, DPW, Conservation Commission and Planning Board involvement in implementation.</p>	<p>Medium to high level of effort. Good start already made. 12 to 18 month duration.</p>	<p>Produce preliminary Plan by mid-FY 15, final by early 2015. Some progress on implementation each year.</p>	<p>Already identified as priority in the Transportation and Land Use Elements.</p>
<p>S&F#8 <u>Private and public capital investment</u>: Ensure that infrastructure improvements in designated redeveloping and mixed use areas of town are optimized by integrating potential privately-funded improvements with town capital budgeting, especially for roadway and traffic management improvements [RELATED TO SEVERAL ACTIONS IN LAND USE, ECONOMIC DEVELOPMENT AND TRANSPORTATION]</p>	<p>Department of Public Works, Planning Department, in consultation with Town Manager/Selectmen.</p>	<p>Medium level of effort. Ongoing, based on development activity.</p>	<p>Put policy in place by early 2015. Ongoing.</p>	
<p>S&F#9 <u>Townwide communications capability</u>: Prepare a long-range feasibility study for a possible new municipal communications system that connects all departments involved with emergency preparedness and public safety.</p>	<p>Police Department, Fire Department, Department of Public Works, in consultation with Town Manager/Selectmen, <u>Capital Expenditure Committee.</u></p>	<p>Medium level of effort, via consultant engagement. 12 month duration.</p>	<p>Start date is uncertain, depending on interest in proceeding with the study.</p>	

RECREATION

<p>S&F#10 <u>Short term operations and maintenance</u>: identify and prioritize immediate and short term needs for all athletic fields and facilities in a comprehensive analysis, utilizing information from the Capital Asset Management Program, participant feedback and other sources; convene on ad hoc basis every year before the advent of the budget process to reach consensus on operating and capital budget requests. [RELATED TO NATURAL/CULTURAL ACTION #3 AND S&F#5 ABOVE]</p>	<p>Department of Public Works, Recreation Commission & Department, Facilities Department, in consultation with Conservation Commission, and other boards, committees and departments, as needed.</p>	<p>Medium level of effort, annual.</p>	<p>Put mechanism in place by early 2015. Ongoing on annual basis.</p>	<p align="center">✓</p>
<p>S&F#11 <u>Create a stage II report, building upon the work and 2012 report of the Outdoor Recreation Areas Study Committee</u>, for the purpose of establishing a broader set of data and analysis that comprehensively defines and quantifies demand by every sport and activity, each participating age group, town “vs.” school sports demand, and concurrent team utilization. Connect this information to the demand for and scheduling of athletic facilities, public, private and regional, as well as facilities at Bedford Veteran’s Administration Hospital and Hanscom Air Force Base. Consider long term maintenance aspects such as the costs and benefits of synthetic and natural turf.</p>	<p>Successor to Outdoor Recreation Areas Study Committee, Department of Public Works, Recreation Commission & Department, in consultation with Conservation Commission, Facilities Department and other boards, committees and departments, as needed.</p>	<p>High level of effort. 18 months duration, could be reduced if consulting services are utilized.</p>	<p>Start preliminary effort by end of 2014, finish within 18 months.</p>	
<p>S&F#12 <u>Build a consensus on athletic fields policy for the town</u>, by further building upon the work and 2012 report of the Outdoor Recreation Areas Study Committee, establishing a structured dialogue and communication process with all public and private stakeholders, including the option of creating a permanent Fields Committee.</p>	<p>Recreation Commission & Department, Department of Public Works, ORASC successor, in consultation with Town Manager/Selectmen, Conservation Commission, private recreation providers (especially The Edge), Facilities Department, Land Acquisition Committee and other boards, committees and departments, as needed, as well as consultation with VA Hospital.</p>	<p>Medium to high level of effort. 12 month duration.</p>	<p>Start by mid-2014. Finish by mid-2015 (or earlier).</p>	
<p>S&F#13 <u>Update Open Space and Recreation Plan</u> to provide full detail for active recreation and athletic facilities, as well as town parks, including sufficient analysis of potential new major facilities in the future, such as an indoor swimming pool or indoor track. Consider opportunities offered for inter-generational use of these and other facilities. [SAME AS NATURAL/CULTURAL ACTION #4]</p>	<p>Conservation Commission, Recreation Commission & Department, Department of Public Works, in consultation with Town Manager/Selectmen, Facilities Department, and other boards, committees and departments, as needed.</p>	<p>High level of effort. 2 year duration.</p>	<p>Funding appropriation by fall town meeting 2014, complete update within one year.</p>	<p>Already identified as priority in the Natural/Cultural Resources Element.</p>

<p>S&F#14 Consider the preparation of site-specific plans for heavily-utilized park and recreation facilities, such as Springs Brook Park, identifying specific short and long range capital improvements.</p>	<p>Department of Public Works, Recreation Commission & Department, BARC, in consultation with <u>Capital Expenditure Committee</u> and other boards, committees and departments, as needed.</p>	<p>Medium to high level of effort. Ongoing policy on an as needed basis.</p>	<p>As needed.</p>	
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GLOSSARY

SPECIFIC TO BEDFORD COMPREHENSIVE PLAN

AGENCIES AND ORGANIZATIONS

There are certain State agencies and organizations that are referred to with sufficient frequency, and in multiple elements of the Plan, that they require brief explanations of their function. The most common ones are as follows:

MPO = Metropolitan Planning Organization. The elected body required in metropolitan areas of the country as a prerequisite for receiving federal transportation aid, and through which projects in all transportation modes are programmed and funded each year, by means of the *Transportation Improvement Program (TIP)*.

MAGIC= Minuteman Advisory Group on Interlocal Coordination. MAGIC is one of several sub-planning areas of the Boston Metropolitan Area Planning Council (MAPC), the 101 community regional planning agency in Greater Boston. MAGIC bounds roughly align with the Route 2 corridor from Lexington to Littleton and Stow on the westernmost end, encompassing 13 towns.

MassDevelopment = the quasi-public State agency that has special statutory powers to own and sell land, generate revenue, disperse economic development aid directly to businesses, and undertake large redevelopment projects.

Mass Department of Environmental Protection = the State agency that functions as the “super-regulator,” administering laws and regulations that cover everything from stormwater management and quality, to wetlands protection, sanitary sewer systems, water supplies, solid waste disposal, hazardous and toxic waste, to recreation and conservation, and more.

Mass Department of Transportation = the State agency that in 2009 consolidated previously separate transportation-related agencies such as MassHighway and the Mass Bay Transportation Authority (transit) into a single super agency integrating all modes of transportation. MA DOT plans for, maintains and manages the operation of highways, public transit and commuter rail, E-Z-Pass, ridesharing, bikeways and virtually any facilities related to transportation systems. It also includes the Registry of Motor Vehicles and oversees all airports and aeronautics facilities.

Mass Office of Business Development = the State agency that provides a one-stop contact point for businesses that are seeking to locate or expand in Massachusetts. MOBD is involved in business promotion and individual client facilitation.

Middlesex 3 Coalition = the initiative incorporated in 2012 that includes Bedford, Billerica, Burlington, Chelmsford and Lowell, as well as affiliations with UMASS Lowell, Middlesex Community College, numerous private businesses and State economic development agencies, for the purpose of promoting

business and a positive image for the region, and dealing with issues of mutual interest such as transportation.

Route 128 Business Council = the organization formed in 1987 to operate regional transportation demand management programs and shuttle connections to transit lines, to lessen traffic congestion in the communities along and near Route 128. It partners principally with businesses to provide these services.

BUSINESS-RELATED DEFINITIONS

Business is used in the comprehensive plan not as a particular land use category that could be seen on a map, but as an all-encompassing term that includes *any kind of economic activity that is clearly non-residential*. The term would embrace any kind of operations and enterprises that involve commercial, industrial, office, research and development, distribution or other economic activity.

Commercial land uses or developments refer to the bundle of uses that include storefront and big box retail, service businesses, supermarkets, restaurants, banks, and sometimes offices, all of which depend to one degree or another on foot traffic and in-person customer visits. The non-residential parts of The Great Road typify commercial uses in Bedford.

ZONING AND LAND USE

IMU—Industrial Mixed Use: this zoning provision is specific to the Bedford zoning bylaw (ZBL). It is not an overlay district but a special permit from the Planning Board that may be used in any of the town’s three Industrial zones. It is a flexible, loosely structured special permit that allows a great deal of latitude in creating mixes of non-residential and residential uses.

Mixed Use: Mixed Use is a general term in real estate and land planning that usually refers to any scenario where non-residential land uses (commercial/industrial/office/etc.) have a direct economic relationship to residential uses on a site, a campus, neighborhood or district. Mixed use may mean that non-residential and residential uses are fully integrated within the same building, as with the Blake Block project, or they may be contained in separate structures, as long as there is a real project connection between the uses, as opposed to their physical proximity being just coincidental. Mixed use developments can occasionally consist of a blend of entirely non-residential uses that are combined in a project, but would otherwise not be allowed under conventional, non-mixed use zoning.

Mixed Use Overlay Districts: Mixed use overlay districts (MUOD) codify land use and development scenarios in the zoning bylaw that offer mixed use development opportunities that the underlying zoning district would not otherwise allow, and that the Town wants to see happen. Bedford has three MUOD districts: Town Center, Depot Area and North Road. Each involves a special permit from the Planning Board.

Regulatory is an all-inclusive term usually used as an adjective, as in “regulatory process,” or “regulatory environment.” It connotes the permitting processes that cover proposed development and redevelopment projects that might involve zoning laws, subdivision control, wetlands protection, building-related codes, historic district review, site plan review, water resources protection, stormwater management, demolition delay, curb cut control and other local powers. It can also refer to other jurisdictions, such as Massachusetts sewer and water system licenses, Federal/State environmental laws, such as the National Pollutant Discharge Elimination System.

TRANSPORTATION-RELATED

Bicycle Transportation, General, as employed in the Plan, primarily involves the use of the general terms bicycle *Routes, Lanes and Trails*, as well as connectors or connecting segments. The term Route is most general in usage, encompassing any type of bicycle travel that gets the rider from point X to point Y. Lanes is a more explicit word, referring to a right of way in or along a public street or other way that is dedicated to bicycle travel by means of pavement markings, signs, surfacing or other means of differentiating that lane for bicycles. Trails refer to any off-road trail, paved or unpaved, that is used for bicycle, or bicycle and pedestrian travel. It might be a major, heavily-used rails-to-trails facility like the Minuteman Bikeway, or anything at a smaller scale, including short connector segments linking destinations.

Bicycle Transportation, terms not used, the general terms bicycle *Routes, Lanes and Trails*, as well as connectors or connecting segments, are appropriate for use in a community comprehensive plan, but the reader should be aware that there is an extensive vocabulary of terms in the field of bicycle transportation planning that are commonly seen in the much more detailed context of bicycling master plans, studies and facilities design and engineering. Lanes, for example, can be of buffered, opposite-direction or left-side design. There are cycle tracks, offering enhanced protection for the rider, and these tracks can be one-way, raised, or two-way in their design. A variety of features can increase rider safety on and within busy streets, such as bike boxes, marked crossings, queuing boxes, refuge islands and through-bike lanes at intersections. There is an array of techniques involving bicycle-integrated traffic signals, such as signal heads, detection and actuation signals, warning beacons and related tools. Additional examples include bicycle route way-finding signs, colored pavement markings, master planned routes and other features, there are many more terms as well (see *Urban Bikeway Design Guide, National Association of City Transportation Officials, 2012*).

Complete Streets refers to the increasingly popular national and international strategy of approaching the design or upgrading of major streets in a multi-modal way, considering not just motor vehicle operation but making pedestrian, bicycle and transit use more feasible and safer. It infers not just the design concept to projects on a given roadway, but to the commensurate movement to change attitudes of government officials and the wider public toward transportation facilities. See *Complete Streets: Best Policy & Implementation Practices, American Planning Association, 2010* for more information.

Transportation Demand Management (TDM) refers to the bundle of programs and incentives that are designed to reduce single-occupancy vehicular trips in traffic-congested regions. TDM is only feasible where there are concentrations of employment, with large numbers of people arriving at and departing from their work place in roughly the same time window each day. The tool kit may include ridesharing, van pooling, transit passes, shuttle buses between transit hubs and businesses, staggered hours, cash incentives for not commuting singly, and other techniques. It typically operates through a Transportation Management Association (TMA), which may be a public, private or institutionally-run organization. TDM programs vary considerably in size, service scope and geographic area, but even the smallest ones require substantial “critical mass” to make them viable, often requiring collaboration of multiple businesses.

GENERAL TERMINOLOGY

Context as used in the comprehensive plan can have multiple meanings and applications, but it always infers that the subject (or object, or issue) that is being written about has a larger decision-making framework against which it can or should be evaluated. Context, for example, might have a physical connotation, as in “the design of that proposed site and new building should be sensitive to the historical and architectural context of the surrounding neighborhood.” Or it might have regulatory and legal meanings, such as “the proposed re-zoning of that district to commercial must be considered in the context of its likely effects on the entire zoning bylaw.” Or it might indicate a larger framework for almost any policy being considered, as in “the proposed conversion of 50% of town power needs to solar energy to save money must be weighed in the context of extremely high initial capital costs.”

Form (or physical form): Form is a broad concept that refers to the physical elements that give a site or a larger area its overall “feel.” Form denotes the size and shape and scale of buildings, their layout and setbacks on a lot or site, the arrangement of the features of that site (landscaping, parking, etc.), and other factors. The concept can apply to a site, a neighborhood, district or area of town. The Town Center feels much different than Crosby Drive. The townhouses at the Pulte development on Hartwell Road feel much different than the Page Hill subdivision, and the Depot Park environs have a different form than that of The Great Road corridor.

Hierarchy is another term that can have multiple meanings in a comprehensive plan or in any application, but it always involves categorizing the subject (or object, or issue) that is being written about in multiple levels or layers of understanding. Street systems, for example, can be classified in a hierarchy from local streets up to arterial roads. Bicycle routes can be considered in a hierarchy from designated street lanes up to major rails-to-trails off road paths serving the region. But hierarchies can also be applied to administrative and legal matters, as in “environmental quality laws can apply to large project in a hierarchy from Town bylaws, to MADEP regulations, to federal environmental permits.