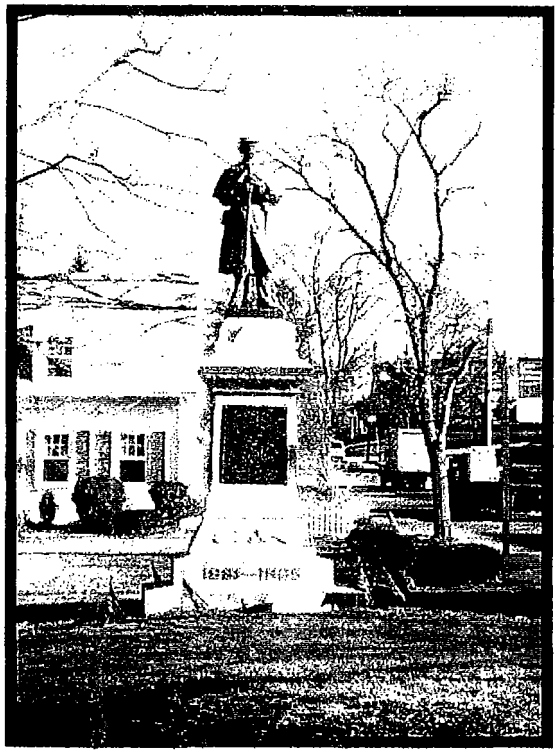
DOUGLAS MASTER PLAN



April 1998

DOUGLAS MASTER PLAN

Douglas Planning Board

Richard E. Preston, Communications Coordinator
Scott T. Mello, Chairman
Christine E. Anderson, Vice Chairman
Richard Spratt
Ernest R. Marks
Anthony P. Ricci

Consulting Assistance By:

Whiteman & Taintor
Frederick S. Taintor, Principal
Christine E. Wrigley, Project Manager
James Taintor, Document Production

In Association With:
Mark Bobrowski, Esquire

April 1998

Acknowledgments

The Douglas Planning Board wishes to thank the following persons who assisted in the preparation of this Master Plan:

Town committees and staff:

- Michael Balch, Town Administrator
- Ann Carlsson, Library Director
- Marylynne Dube, Conservation Commission
- Patrick Foley, Police Chief
- Donald Gonyor, Fire Chief
- Anthony Gressak, Water & Sewer Department Systems Manager
- Wayne Harris, Recreation Commission
- Donna Kmetz, Historical Commission
- Maria LaJoie, Committee Support Clerk
- Jane Lanpher, Building Department Secretary
- Betty Ann McCallum, Town Clerk
- Ida Ouillette, Assessors Office
- Allison Pfosi, Selectmen's Secretary
- Louise Redding, Town Accountant
- Edward Therrien, Highway Superintendent
- Concetta Verge, Superintendent of Schools
- Steve Walach, Douglas School Committee
- Scott Young, Town Engineer

State and regional officials:

- Bill Annese, Douglas State Forest Park Supervisor
- Michael Creasey, Blackstone River Valley National Heritage Corridor Commission
- Marty Green, Blackstone Valley Chamber of Commerce
- Barry Lorion, Massachusetts Highway Department
- William Perry, Blackstone Valley Chamber of Commerce
- Richard Rydant, Central Massachusetts Regional Planning Commission
- Bill Scanlan, Central Massachusetts Regional Planning Commission

Special thanks are also given to the residents of Douglas who participated in the March 18, 1998 Public Workshop and to those who regularly attending the Planning Board meetings concerning the Master Plan:

- Linda Brown
- Marylynne Dube
- Ron Forget
- Pam Holmes
- Donna Kmetz
- Don Konopacki
- Leon Mosczynski
- Lisa Mosczynski
- Shirley Mosczynski
- Jean Peterson
- Paul Peterson
- John Petraglia

TOWN OF DOUGLAS

29 DEPOT STREET
DOUGLAS, MASSACHUSETTS 01516

Accountant
508-278-2655

Administrator
508-476-4000

Assessors
508-476-4005

Building Dept.
508-476-4002

Conservation
508-476-4011

Engineer
508-476-4014

Health Dept.
508-476-4003

Highway Dept.
508-476-3378

Planning Board
508-476-4011

Selectmen
508-476-4000

Tax Collector
508-476-4007

Treasurer
508-476-4010

Town Clerk
508-476-4008

Veterans Dept.
508-476-4002

Zoning Board
of Appeals
508-476-4011

FAX
508-476-4012

April, 1998

TO: The residents of Douglas

FROM: The Town of Douglas Planning Board

RE: Life in the 21st Century

It is our pleasure as the Town of Douglas Planning Board to present you with this completed Master Plan.

Enclosed you will find a picture of the town as it is today, an assessment of the town's needs, desires and concerns, and a set of goals and policies to meet these needs as gleaned from months of study and public meetings.

The result is a document that will hopefully help to enhance the general quality of life in Douglas for decades to come. We hope you will read this document, as it is meant to be a guide and tool to be used by all those residents with a shared geography, namely Douglas.

It is our hope that this document will be read – and worn from use – as it helps to lead us to a comfortable, safe and prosperous place we call, our town.

See you in the future!

Sincerely,
The Douglas Planning Board

Richard E. Preston
Christine Anderson
Scott Mello
Richard Spratt
Ernest Marks
Anthony Ricci

Table of Contents

I. Introduction 1
Planning Process 1

II. Goals and Policies 5
Douglas in the Year 2020 5
Land Use 7
Housing 7
Economic Development 8
Natural and Cultural Resources 8
Open Space and Recreation 9
Services and Facilities 9
Circulation 10

III. Land Use 11
Growth and Development Patterns 11
Current Land Use 13
Land Use Inventory 13
Existing Land Use Pattern 17
Land Use Controls in Douglas 18
Land Use Controls in Adjacent Communities 19
Town of Oxford, MA 19
Town of Webster, MA 20
Town of Burrillville, RI 20
Town of Uxbridge, MA 20
Town of Sutton, MA 20
Analysis of Town Line Zoning District Compatibility 21
Buildout Analysis 25
Limitations 25
Methodology 26
Buildout Analysis Results 27
Comparison with other studies and plans 28
Fiscal Impacts of Current Land Use Pattern 31
Key Assumptions 31
Cost/Revenue Analysis 36
Land Use Issues of Regional Projects 37
Regional Landfill 37
Airport 38
Forces of Change 39
Recommendations 40
Northwest Douglas 40
Northeast Douglas 41
East Douglas Village 42
Douglas Village 43
Tassletop Village 43
Town Character Issues 43
Emerging Land Uses 47
Other Zoning Issues 47

IV. Housing 49
Housing Stock 49
Household Composition 52
Regulatory Structure 52
Affordable Housing 54
Forces of Change 55

Recommendations 56
Growth Management 56
Open Space Options 56
Multi-Family Development 58

V. Economic Development 59
Tax Base 60
Tax Base Implications 65
Tax Base Growth 66
Employment Patterns 67
Employment in Douglas 67
Employment of Douglas Residents 71
Land Availability for Industrial Development 74
East Douglas 74
Northwest Douglas 80
Regional Industrial Market Analysis 83
Commercial Development Potential 87
Developable Areas 87
Commercial Uses 88
Tourism 89
Recommendations 91
Business Development 91
Policy Changes 92

VI. Natural, Cultural & Historic Resources 93
Regional Context 93
Existing Conditions 94
Topography and Geology 94
Water Features 96
Wildlife Habitat 99
Historic & Cultural Resources 99
Historic Districts 103
Blackstone River Valley National Heritage Corridor 105
Scenic Roads 107
Recommendations 108
Natural Resources 108
Cultural and Historic Resources 109

VII. Open Space & Recreation 111
Introduction 111
Protected Open Space 111
Douglas State Forest 112
Unprotected Open Space 116
Forest Land- Chapter 61 117
Farm Land-Chapter 61A 118
Recreation-Chapter 61B 119
Potential Open Space Acquisition 119
Greenways 124
Mumford River Greenway 124
Southern New England Trunk Line Trail 124
Conservation Commission Needs and Concerns 125
Residential Development 125
Route 146 125
School Involvement 125
Staffing Needs 126
Recreation 126
Recreation Programs 126
Recreation Improvements 126
Recommendations 128

Open Space 128
Recreation 129

VIII. Services & Facilities 131
Municipal Center 132
Police Department 132
Fire Department 133
Water & Sewer Department 134
Water 134
Wastewater 137
Highway Department 143
Library 143
School Department 144
The Fiscal Forecast Model 152
Structure of the Model 152
Assumptions and Simplifications 153
Model Estimates 155
Conclusions 157
Recommendations 159

IX. Circulation 171
Regional Context 171
Local Circulation 172
Street Network 172
Traffic Volumes 172
Intersection Levels of Service 177
Road Repair and Maintenance 178
Bridges 179
Sidewalks, Trails and Bike Routes 179
Areas of Concern 180
Route 146 Improvements 180
Route 16 181
Recommendations 189

X. Implementation Program 191
Adoption and Implementation of the Master Plan 192
Regulatory Actions 193
Zoning Regulations 193
Zoning Map 196
Planning Actions 197
Land Acquisition 200
Public Facility Investment 200
Management Actions 202

Appendices 205
Appendix A: Review of Zoning Bylaw
Appendix B: Inventory of Property–National Historic Districts
Appendix C: Public Workshop

List of Figures

Figure 1: Regional Location Map....63
Figure 2: Total Employment by Community, 1990 and 1995....70
Figure 3: East Douglas Area Map....75
Figure 4: Design concepts for Northeast Douglas....78
Figure 5: Northwest Douglas Area Map....81
Figure 6: Park Attendance by Calendar Year for Summer Season....114
Figure 7: Water Supply and Projected Consumption Levels....135
Figure 8: Wastewater Flows....139
Figure 9: Projected School Enrollment, Pre K-K....149
Figure 10: Projected School Enrollment, Grades 1-5....149
Figure 11: Projected School Enrollment, Grades 6-8....150
Figure 12: Projected School Enrollment, Grades 9-12....151
Figure 13: Projected Expenditures....156
Figure 14: Projected Average Residential Tax Bills....158
Figure 15: Design Guidelines for Main Street....187
Figure 16: Pedestrian "Safe Havens"....188

List of Tables

Table 1: Existing parcel summary by current land use....14
Table 2: Minimum lot size by district....19
Table 3: Estimated number of dwelling units by land use code....26
Table 4: Zoning districts included in the buildout analysis....27
Table 5: Buildout by Zoning District....28
Table 6: Comparison of buildout projections....31
Table 7: Municipal Expenditures by Functions....33
Table 8: Average Tax Revenues, Estimated Costs, and Net Local Revenues per Parcel....34
Table 9: Tax Revenues, Estimated Costs, and Net Revenues for Typical Single Family and Commercial Properties....35
Table 10: Units in Structure for all housing units....49
Table 11: Year housing structure was built....50
Table 12: Comparison of 1990 Contract Rent and Housing Values for the State and Town of Douglas....51
Table 13: Median sales price for home 1990-1994....51
Table 14: Household size and type....52
Table 15: Subsidized housing units in surrounding communities....54
Table 16: 1990 Median Value for Owner Occupied Housing by Community....55
Table 17: FY 1997 Tax Levies....61
Table 18: Residential/Open Space Tax Levies as a % of Total by Community, FY 1997....62
Table 19: FY 1997 Tax Rates by Community....64
Table 20: Average Single Family Tax Bill, by Community, FY 1996....65
Table 21: Estimated Tax Revenue Sources 2005-2045....67
Table 22: Employment in Douglas, 1986-1995....68
Table 23: Change in Number of Establishments and Total Employment 1990-1995 by Community....69
Table 24: Largest Employers in Douglas, 1993....71
Table 25: Residents Employed by Occupation, by Town, 1990....71
Table 26: Commuting Destinations of Douglas Residents, 1990....73
Table 27: Northeast Industrial Districts Parcels....76

Table 28: Northwest Industrial District Parcels....80
Table 29: Inventory of Existing Industrial Parks in Neighboring Communities....85
Table 30: Industrial Zoned Sites near Route 146....86
Table 31: Local Historical and Cultural Resources....101
Table 32: Historic and Cultural Resources Relevant to the Blackstone River Valley National Heritage Corridor....103
Table 33: Scenic Roads in Douglas....108
Table 34: Chapter 61 land....117
Table 35: Chapter 61A land....118
Table 36: Chapter 61B land....119
Table 37: Current School Capacity and Enrollment Levels....144
Table 38: EASC Projected School Enrollment....145
Table 39: Projected Number of School Age Children per Household per Time Period....148
Table 40: Projected School Capital Expenditures....153
Table 41: FY 2019 Fiscal Projections....158
Table 42: Daily Traffic Volumes on Selected Douglas Roads....172
Table 43: Traffic Volume on Route 146, 1970-1990....173
Table 44: Daily Traffic Volumes....175
Table 45: Level of Service Criteria for Unsignalized Intersections....177
Table 46: Resurfaced Roads 1995-1997....178
Table 47: Pavement Widths in East Douglas....185

List of Maps

Map 1: Existing Zoning....23
Map 2: Proposed Zoning....45
Map 3: Potential Open Space Acquisition....121
Map 4: Proposed Sewer Extensions....142
Map 5: Estimated Daily Traffic Volume....174

I. Introduction

This Master Plan is meant to serve as a policy guide and a framework for future land use and development in the Town of Douglas. It is based on the assessments of existing resources and problems and projections of future conditions and needs. In other words, this Plan describes where Douglas is today and where we want to be in the future. Its purpose is to enable municipal officials to manage growth better and to bring about desirable changes for the town. This Plan provides background data and analysis and goals, objectives and strategies for the town to employ in guiding its own actions and those of other actors — public and private — as Douglas continues to grow and develop over the coming decades.

The primary purpose of the Plan is to define a land use pattern for Douglas that lays out the critical steps necessary to achieve the community's objectives. Therefore, while this Plan will focus on land use issues, it is important to emphasize that it will not focus in detail on many of the issues of importance to the Town. The Plan will not lay out a strategy for Town department staffing or operations, school programming or curricula, engineering specifics regarding roads, sewers, the water system or solid waste management. While these issues will be touched on within the Plan, and direction may at times be provided relative to land use decision making, it is not the intention of the document to thoroughly review the status of those types of issues or recommend complete solutions to the problems facing those departments. Rather, these issues will be explored as they relate to land use decision making and the impacts that increased growth could have on providing services.

Planning Process

This Master Plan was prepared by the Douglas Planning Board with consulting assistance from Whiteman & Taintor. The Planning Board met with the consultants on a monthly basis and all meetings were open to the public. These meetings were attended regularly by representatives of the Board of Selectmen, Conservation Commission, Historical Commission and other town residents and officials which allowed for a wider cross section of the community to review and comment on draft elements of the Master Plan. In order to incorporate the thoughts, needs and concerns of all Town departments, the consultants interviewed Town officials and gathered data from a variety of town sources such as the Assessors office, Town Administrator, Police Department, Fire Department, Water and Sewer Department, Highway Department, Library, School Department, Building Department, Recreation Commission and Conservation Commission. The consultants also met with the Board of Selectmen on three separate occasions to keep the Board apprised of the Master Plan's progress.

Summary sheets of each of the draft elements of the Master Plan were made available to the public as the particular element was completed and reviewed by the Planning Board. In addition, the *Blackstone Valley Tribune* and the *Douglas Herald* newspapers published articles on the Master Plan's progress following meetings with the Planning Board.

The Planning Board held a public workshop on March 18, 1998 to present key findings from the inventory and analysis phase of the Master Plan and preliminary recommendations for policy changes and actions. An informational flyer announcing the

workshop was sent to each household in Douglas (see Appendix). The public outreach effort resulted in an attendance of over 120 residents at the workshop.

The workshop began with an overview of the project and a presentation of the recommendations included in the Master Plan. Participants were then asked to discuss the following questions:

1. From what you have heard from the Master Plan tonight, is it moving in the right direction to protect Douglas' community character?

   As you are answering this question, think about the following issues:

   - Residential and commercial growth
   - Open space preservation
   - Recreation facilities
   - Transportation
   - Town services

2. The Master Plan recommends that economic development be focused more in the northeast part of town and that industrial development in the northwest be de-emphasized in favor of providing less intensive commercial uses. In addition, the Plan recommends that standards for commercial development be enhanced to improve the appearance and quality of these areas.

   Do you think these recommendations will move the Town toward promoting economic development that promotes Douglas' quality of life?

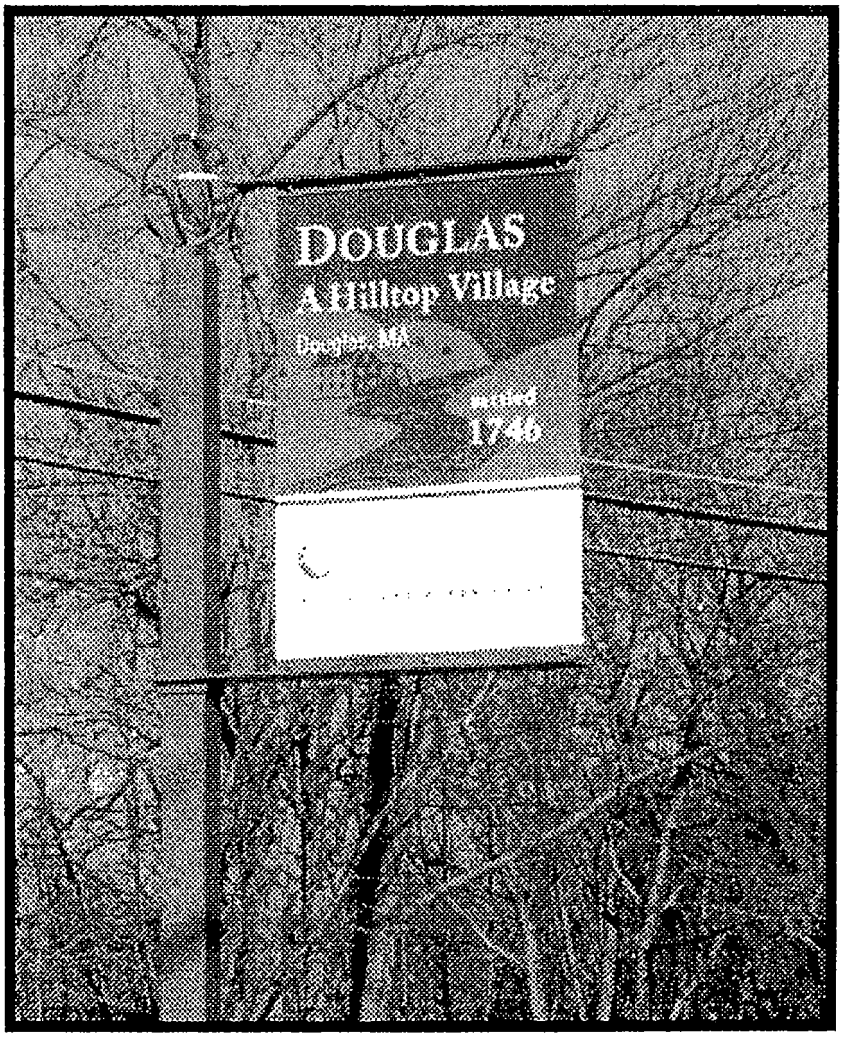
Small discussion groups (11 in all) addressed these questions, assisted by volunteer moderators/recorders. Upon reconvening, the groups compared notes on points of general agreement. Clear themes of consensus emerged and participants also raised a number of questions and requests for information relating to some of the issues raised by the workshop. In general, most groups felt that the Master Plan was moving in the right direction to protect Douglas' community character, although there were some who felt otherwise. The key findings of the workshop are discussed below.

- *Residential growth.* The majority of the discussion groups are concerned with the rate of residential development. Residents felt that growth should to be controlled and managed in some way. Some residents support a building moratorium or a limit on the amount of residential growth that can occur. For the most part, residents support the provision for conservation subdivisions or other alternatives to traditional subdivisions which encourage the preservation of open space. However, there was some dissent to this type of development. A few groups raised concern regarding the lack of housing for seniors but no specific suggestions were noted.

- *Economic Development:* Residents are overwhelming in favor of encouraging economic development in order to broaden the tax base. The general consensus that emerged from the discussion groups is that residents would like to see a mixture of commercial and industrial uses that are small to medium in scale. It was felt that these uses should be environmentally friendly (i.e. "green industries") and should be balanced with residential uses. Specific nonresidential uses that were mentioned as

Douglas Master Plan

Goals and Policies



II. Goals and Policies

As a way of placing the Master Plan's Goals and Policies in context, the section is prefaced with a description of the Plan's intended achievements. Douglas currently lacks an overarching purpose to drive and shape its community development and planning work. The following vision statement is intended to provide direction for what we want our town to be by the year 2020. This "vision" is not a prediction of what Douglas will be like in the future, but a statement reflecting what the Master Plan is intended to achieve. It reflects our values about the town and the changes we would welcome or oppose.

Douglas in the Year 2020

Douglas contains many qualities that distinguish it from other communities. These qualities include our distinct villages, historic structures, open lands and rural roads, all of which must be protected if we are to enhance our community character. Douglas will continue to grow in a manner that allows for new development to be absorbed into the existing landscape of villages, farms, residential areas and open space as well as in targeted business locations. The pace of development will be such that it does not create an extreme financial burden on the town to continue to provide high quality services.

The pattern of development in the town will reflect Douglas' traditional land use pattern. East Douglas will remain the heart of the community and continue to be an attractive historic central village containing a mix of civic, religious, commercial and residential uses. Housing types will continue to be a mixture of single family homes and multi-family units in village centers. The Douglas Village will remain an important part of our town's sense of identity by preserving the cemetery, churches, rural roads and historic buildings in the area. Route 16 will remain a scenic roadway that winds its way through village centers but also contains a variety of land uses which respect and maintain the rural, historic and topographic features of our town. Commercial sprawl will not be tolerated along this route or any other major transportation corridor in town. Roadside development will be held to a high standard of consistency with the scenic and historic character of the town's roadways.

Small-scale mixed use developments will be located to the west of Douglas Center and north and south of Route 16 at the Webster town line. These areas will provide opportunities to develop private recreation facilities, assisted living for the elderly, small scale offices, and some retail uses as well as some new homes. This development will be carefully managed to ensure that it serves the residents of the town and is not oriented primarily to highway traffic or regional commerce.

A third village center may also grow in the historic Tassletop area on South Street. This village center will maintain and preserve its historical significance while also incorporating conservation land and possibly a new school site.

Northeast Douglas will play a larger role in economic development opportunities within the town. Non-residential uses will be designed to be visually attractive and blend into the existing architectural style of Douglas and the natural landscape. The area nearest to Route 146 and the land west of North Street will contain mixed-use business parks with relatively small structures sited in a compact style. Warehousing and more intensive

industrial uses will be located behind Guilford Industries, between the mixed-use business parks. Businesses in this area will service the needs of town residents as well as providing employment opportunities within the region.

Business centers will have distinct edges and will be surrounded by open space and residential development. New homes will have been built in a variety of forms and patterns but will have been sensitively designed to limit visual and environmental impacts. Douglas will have avoided continuous roadside development that reflects suburban densities and tract housing subdivisions. Douglas will not be solely an exclusive bedroom community for people who commute to the region's employment centers but will be the home of residents that reflect the diversity that has been characteristic of the town.

Douglas' farms, open fields and natural resources will continue to be a vital part of its character, economy and social life. Where necessary, the Town will have acquired significant open space in danger of being lost to development or essential to protection of our ground water supply, but always with an objective of maintaining a variety of resource based uses. Active recreational facilities will be located throughout town to serve a variety of age groups and ability levels.

Douglas will serve as a gateway for visitors traveling to the Blackstone River Valley National Heritage Corridor. Douglas will provide information, wayfinding and interpretive sites targeted to visitors, but all landmarks will be consistent with the visual attractiveness of the community. The tourism industry will become a larger component of Douglas' economic base and the Town will be careful to keep in mind that tourism is largely based on the attractiveness and appeal of the community.

By the year 2020, Douglas will have provided new and upgraded public facilities with enough capacity to support anticipated demands through 2030. These will include a new fire station, new elementary school, new middle school, expanded water and sewer service to businesses, and new recreation facilities. Douglas will accomplish this through sound planning and prudent management so that the Town is on a stable fiscal basis with a relatively low debt level and a moderate tax rate.

Goals and Policies

This section presents a statement of Douglas' long term *goals* and the *policies* that town residents and officials will use to guide municipal decision making in support of the goals. For the purposes of this Plan and its use in coming years, the terms "goals" and "policies" should be used as follows:

- *Goal*: A statement that defines the broad direction the Town of Douglas wishes to pursue.

- *Policy*: A statement defining the Town's position and general course of action on specific issues that can be used to set clear requirements for public and private projects.

Land Use

Goal

Accommodate balanced growth and sustainable development consistent with Douglas' natural environment and established pattern of development, in order to maintain the Town's economic and fiscal health and the quality of life of its residents.

Policies

1. The East Douglas village area should remain the civic, service and commercial center of the town.
2. Commercial development and redevelopment should be concentrated in village centers.
3. Roadside "strip" commercial and industrial development outside of village centers should be avoided. New commercial development outside of existing centers should reflect the land use patterns of existing village centers, including a mix of land uses and a pedestrian orientation.
4. Route 16, as the town's main street and public face, should be carefully managed to protect the town's image.
5. Commercial and industrial development should not infringe on greenways and sensitive environmental features, but open space corridors should be used to help link centers.
6. New residential development should be designed to reinforce the town's compact, village-centered character, minimize further land consumption and protect open space.
7. Creation of new village centers, combined with preservation of rural areas, should always be considered as an alternative to the extension of low-density residential or commercial development.

Housing

Goal

1. Maintain the existing diversity of housing options in order to maintain housing affordability and accommodate households with varying housing needs and family structures.
2. Ensure that housing growth rates and locations are consistent with the Town's ability to provide public facilities and services, protect the environment and preserve and enhance community character.

Policies

1. New developments should protect the maximum amount of open space possible, incorporate open space in ways that are integral to the neighborhood, and contribute to the creation of a town-wide open space network.
2. Maintain the mix of unit types and styles in the East Douglas area.

3. Provide a variety of site development options for residential subdivisions.
4. Continue to strengthen the review process for new development and enforcement of Town Bylaws and regulations.

Economic Development

Goal

Develop a local economy that emphasizes the shopping, service, tax base and employment needs of the community.

Policies

1. Economic development should be promoted in order to offset the cost of services resulting from residential development.
2. New business and industrial development should be consistent with the town's natural environment and community character.
3. Intensive commercial and industrial development should only be accommodated on the east side of town near Route 146.
4. Home-based businesses that are compatible with residential neighborhoods should be accommodated and supported.
5. Tourism that builds on the historic, natural and recreational resources of Douglas and the Blackstone Valley should become a larger component of the town's economy.

Natural and Cultural Resources

Goal

Preserve and enhance the town's natural resources, historic buildings and sites, unique cultural resources and significant views.

Policies

1. The quality of the town's groundwater, wetlands, streams, and water bodies should be protected.
2. Development policies should be sensitive to preservation goals and concerns and direct growth and development away from environmentally sensitive areas.
3. Historic buildings that contribute to Douglas' character should be preserved and reused.
4. Douglas should support the regional goals associated with the Blackstone River Valley National Heritage Corridor.

Open Space and Recreation

Goal

Provide a system of open land and public recreational facilities that allow for the preservation of the natural environment, character of the community, and recreational opportunities.

Policies

1. Facilities for active and passive recreation should be adequate in number, size and quality to serve the recreational needs of Douglas' population.
2. Open space, trails and recreation sites should be linked to each other and to other communities.
3. Recreational access should be provided to water bodies throughout the town.

Services and Facilities

Goal

Provide high quality public services, facilities and infrastructure that are consistent with the fiscal health and environmental quality of the Town and that meet the needs of Douglas residents.

Policies

1. Facility and service plans for all Town departments should be assessed and reassessed for both long and short term projections.
2. The Town should support ongoing efforts to address the current and future facility and service needs of the Douglas Public Schools including the adequacy and location of facilities and staffing which recognizes and addresses population increases and shifts.
3. The Town should address the current and future public safety needs of the community including the adequacy and location of facilities, operational needs of the fire and police departments, and staffing which recognizes and addresses the increasing population.
4. The Town should actively pursue methods for the disposal of Douglas' solid waste that are consistent with the Town's financial situation, protect the environment and respect the character of the Town.
5. Wastewater collection and treatment should be provided to areas where service is needed to support and protect the environment and encourage appropriate types of economic development.
6. The recommended Waterworks Improvement Program should be followed and regularly updated in order to ensure adequate and high quality water service in Douglas.
7. The water service area should be extended to promote business development.

8. Communication and cooperative efforts between all Town departments and boards should be improved.
9. The Town's telecommunication infrastructure should be improved as necessary and feasible in order to enhance opportunities for business, education, health services and delivery of municipal services.

Circulation

Goal

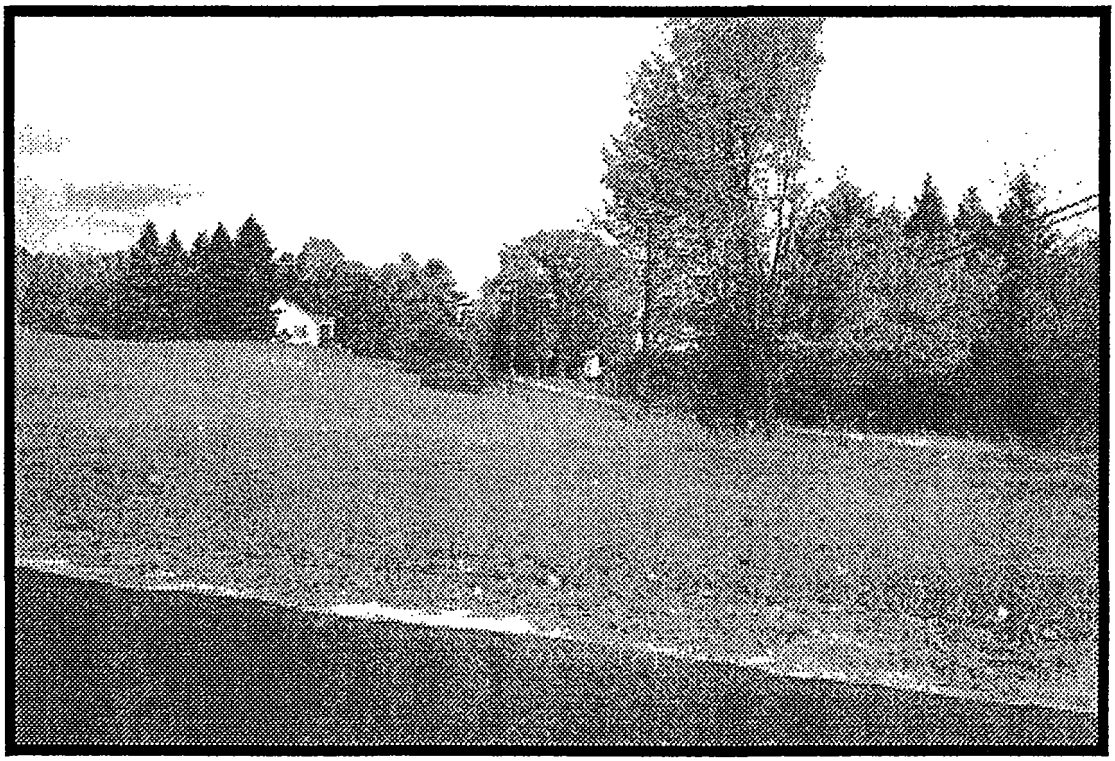
Maintain an efficient and thorough system of transportation for vehicles, bicycles, and pedestrians that is consistent with the Town's character and environment.

Policies

1. Town roads should have a capacity adequate for local and regional transportation needs, be designed to protect the town character, and maintained to protect public safety.
2. Traffic congestion mitigation in East Douglas should be balanced against impacts on local businesses, pedestrian safety, and the historic character of the villages.
3. Transportation modifications caused by new developments should be planned for in advance and should be paid for by new developments in proportion to their level of responsibility for the needed modification.

Douglas Master Plan

Land Use



III. Land Use

The Town of Douglas is one of the largest towns in the state, encompassing 36.37 square miles[1], but it has a relatively small population for its land area. As of January 1, 1997 the population of the town was 6,377. The town's proximity to Worcester, Providence and Boston as well as its attractive rural qualities and abundant open space make it very attractive for development. This is evidenced in the rapid growth in the town's population. The population of Douglas increased by almost 46% from 1980 to 1990 and has grown to 6,377 (17%) from the 1990 U.S. Census figure of 5,438.

The increase in population is linked to the rate of residential construction. The Town has issued over 100 building permits for new single family homes each year since 1994. This has resulted in large amounts of land being converted from farms, fields and open space to residential development. This surge of growth has resulted in a loss of open land and an increase in demand for services. While residential development has soared in recent years, commercial and industrial development has not kept pace. Consequently, this section provides recommendations as to what the future land use pattern of Douglas should be in order to manage growth, provide for the service needs of the community, and create a diverse tax base while maintaining the character of the town. The land use pattern will be the basis for zoning decisions, establishing policies, infrastructure improvements and development strategies.

This section of the Plan analyzes the historic land use pattern, the past's impact on the current land use pattern, the town's position today and the modifications in the land use pattern which should be considered for the future.

Growth and Development Patterns [2]

The Blackstone River runs from Worcester, Massachusetts to Providence, Rhode Island and played a role in the early development of Douglas. The Valley's landscape was largely agrarian during the early years of the 18th century. As the regional centers of Worcester and Providence began to grow, the activity in the Valley increased. At the end of the 18th century, the area was still largely rural but processing and manufacturing began to take on a more significant position in the economy.

Cottage industries such as weaving and spinning yarn and shoe making began to increase after the Revolutionary War. The heavily forested land in Douglas provided a material to turn into potash, pearl ash, shingles, barrel staves, tool handles, spindles and furniture. Quarrying activities for steatite, granite and limestone were extensive.

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[1] The Assessors data gives the Town's size as 34.98 square miles. The differences lie in the classifications of water bodies and roadways.

[2] Historical context provided by *Cultural Heritage and Land Management Plan for the Blackstone River Valley National Heritage Corridor.* Reprinted February 1995.

The first successful water-powered textile mill in the United States was developed in the late 1700s. By 1814, water-powered mills occupied all the readily available dam sites in the Blackstone Valley. Cotton and wool textiles were the predominant industries but the manufacturing of axes and edge tools, textile machinery and paper manufacturing were also beginning to develop. The rapid development of mills changed the landscape of the Valley. Much of the rural landscape was transformed to riverside mill villages. The communities centered on the large factories and contained uniform workers' houses, company stores and eventually churches, schools and other community buildings. The mill villages represented the densest concentration of industry in the country but the worker's gardens, company farms, and the surrounding country side still reflected the rural character of much of the Valley.

Mill management was dominated by family-owned firms and was often responsible for the development of entire mill villages by providing housing, schools and churches in addition to places of employment. In addition, mill owners often built ball fields, village halls, hospitals and cemeteries. Having everything provided for them, workers depended on and identified with their own small communities. As a result of these inward-looking attitudes, mill owners often discouraged the development of transportation which would link communities. However, as the differences in language, religion and ethnicity between mill owners and workers began to increase, the workers began to work against the sense of community fostered by management.

This early development pattern is reflected in East Douglas where old mills still line the river and Main Street is the center of community activity. This densely settled village still remains the heart of the community.

In the late 19th and early 20th centuries, the textile industry began to decline in the Northeast. The Great Depression of the 1930s struck the Valley particularly hard. Mills closed and towns lost significant numbers of people. Production began to move to the southern region of the country to benefit from newer facilities, decreased capital costs and to avoid labor troubles caused by the increase in unions in the Northeast. Numerous mills in Massachusetts were forced to cease operations and many mills were demolished or converted to other uses. In many cases, the vacant mills gave rise to a lack of pride in the community, as they represented unemployment and decline.

Since the 1980's, the Valley has seen an economic and cultural resurgence. The Black stone River Valley National Heritage Corridor was created by Congress in 1986. This is only the second National Heritage Corridor in the nation. The Blackstone River Valley National Heritage Corridor

> "was created at a time when the historic character of the Blackstone River Valley's nineteenth century mill villages, rural landscape and open space are threatened by the everquickening pace of suburbanization. The Corridor has experienced many changes, both man-made and natural. Now, it is enjoying a cultural and economic resurgence quickened by the pace of growth in the Boston and Providence areas. This growth has created new options and important choices for residents."[3]

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[3] *Economic Assessment for the Blackstone River Valley National Heritage Corridor.* Prepared by the Office of Travel, Tourism and Recreation and the Department of Resource Economics, The University of Rhode Island. November 1989. Page 5.

Current Land Use

Land Use Inventory

A summary of current land uses on a parcel basis is presented in Table 1. The table was generated from the Town's Assessors files and has been sorted by land use using the State land use classification codes employed by the Assessors and the Department of Revenue. The Town's Assessors files represent the conditions of the Town as of January 1, 1997.

According to the Town's Assessors records, approximately 6,495 acres or 29% of the Town's land area is in some developed state (residential, commercial, industrial or multiple use). Public uses (includes open land owned by local, state and federal governments) comprise 5,355 acres or 24% of the land (most of this is the Douglas State Forest). The remainder, about 47%, is open.

The large amount of open space in Douglas is primarily made up of vacant parcels that could potentially be developed. Sixty-eight percent of the open area (a total of 7,171 acres) is located in areas zoned for residential use. This represents 32% of the total parcel area in Douglas. Agricultural and recreational land (that is, parcels that are assessed under the current use provisions of Chapter 61 and 61A) make up another 2,231 acres, or 10% of the town.

DOUGLAS

EXISTING PARCEL SUMMARY BY CURRENT LAND USE

CURRENT LAND USE	LAND USE CODE	NO. OF PARCELS	TOTAL AREA (ACRES)	AVERAGE PARCEL SIZE	TOTAL LAND VALUATION	TOTAL BUILDING VALUATION	VALUATION (LAND + BLDGS.)	AVERAGE LAND VALUATION (PER PARCEL)	AVERAGE LAND VALUATION (PER ACRE)	AVERAGE BUILDING VALUATION
Residential Land Uses										
Single Family	101	1,933	5,200.77	2.69	$74,110,125	$153,998,712	$228,108,837	$38,339	$14,250	$79,668
Condominium	102	118	0.00	0.00	$0	$10,009,296	$10,009,296	$0		$84,825
Mobile Home	103	39	45.68	1.17	$1,077,744	$1,035,108	$2,112,852	$27,634	$23,593	$26,541
Two Family	104	98	136.70	1.39	$3,314,680	$8,555,990	$11,870,670	$33,823	$24,249	$87,306
Three Family	105	16	97.52	6.09	$616,626	$1,833,169	$2,449,795	$38,539	$6,323	$114,573
Accessory Land	106	28	286.90	10.25	$918,031	$403,320	$1,321,351	$32,787	$3,200	$14,404
Multiple Housing on One Parcel	109	47	68.80	1.46	$880,420	$2,021,823	$2,902,243	$18,732	$12,797	$43,018
Aparts-4-8 units	111	19	12.45	0.66	$622,107	$2,303,535	$2,925,642	$32,742	$49,973	$121,239
Apts-8 plus	112	3	15.44	5.15	$251,105	$4,929,807	$5,180,912	$83,702	$16,268	$1,643,269
Developable Residential Land	130	566	4,303.81	7.60	$19,514,398	$0	$19,514,398	$34,478	$4,534	$0
Potentially Devel. Residential Land	131	13	305.54	23.50	$319,562	$0	$319,562	$24,582	$1,046	$0
Undevelopable Residential Land	132	535	2,561.85	4.79	$2,064,794	$0	$2,064,794	$3,859	$806	$0
Total Residential Properties		3,415	13,035.45	3.82	$103,689,592	$185,090,760	$288,780,352	$30,363	$7,954	
Commercial Land Uses										
Lumber Yard	313	3	16.54	5.51	$139,188	$533,447	$672,635	$46,396	$8,415	$177,816
Storage, Warehouses	316	2	1.58	0.79	$81,561	$135,737	$217,298	$40,781	$51,523	$67,869
Facilities providing building materials	321	1	0.28	0.28	$30,277	$4,399	$34,676	$30,277	$106,921	$4,399
Small Retail & Service (<10,000 sq ft)	325	9	7.56	0.84	$408,427	$938,755	$1,347,182	$45,381	$54,013	$104,306
Eating & Drinking Estab.	326	2	1.09	0.54	$85,175	$572,841	$658,016	$42,588	$78,341	$286,421
Auto Sales & Services	330	1	2.46	2.46	$70,360	$138,258	$208,618	$70,360	$28,551	$138,258
Auto Repair	332	2	3.07	1.53	$83,750	$86,517	$170,267	$41,875	$27,293	$43,259
Parking Lots	337	1	0.37	0.37	$367	$0	$367	$367	$999	$0
General Office Bldg	340	1	2.05	2.05	$42,391	$442,340	$484,731	$42,391	$20,679	$442,340
Bank	341	2	3.21	1.60	$83,482	$709,851	$793,333	$41,741	$26,016	$354,926
Fraternal Organizations	353	1	0.30	0.30	$37,400	$138,235	$175,635	$37,400	$125,319	$138,235
Misc. Public Services, Membership Org's	356	1	0.59	0.59	$40,930	$91,293	$132,223	$40,930	$69,474	$91,293
Swimming Pools	383	1	1.75	1.75	$71,891	$258,087	$329,978	$71,891	$41,081	$258,087
Fish & Game Clubs	385	3	79.26	26.42	$159,094	$310,965	$470,059	$53,031	$2,007	$103,655
Camping Facilities	386	2	69.59	34.79	$269,649	$146,008	$415,657	$134,825	$3,875	$73,004
Developable Commercial Land	390	6	47.39	7.90	$249,092	$0	$249,092	$41,515	$5,256	$0
Potentially Developable Commercial Land	391	2	10.30	5.15	$41,839	$0	$41,839	$20,920	$4,063	$0
Undevelopable Commercial Land	392	1	0.14	0.14	$139	$0	$139	$139	$998	$0
Total Commercial Property		41	247.53	6.04	$1,895,012	$4,506,733	$6,401,745	$46,220	$7,656	

DOUGLAS

EXISTING PARCEL SUMMARY BY CURRENT LAND USE

CURRENT LAND USE	LAND USE CODE	NO. OF PARCELS	TOTAL AREA (ACRES)	AVERAGE PARCEL SIZE	TOTAL LAND VALUATION	TOTAL BUILDING VALUATION	VALUATION (LAND + BLDGS.)	AVERAGE LAND VALUATION (PER PARCEL)	AVERAGE LAND VALUATION (PER ACRE)	AVERAGE BUILDING VALUATION
Industrial Land Uses										
Buildings for Manufacturing	400	7	70.24	10.03	$880,945	$5,996,221	$6,877,166	$125,849	$12,542	$856,603
Warehouses to Store Manuf. Products	401	1	3.49	3.49	$121,819	$82,544	$204,363	$121,819	$34,905	$82,544
Sand and Gravel	410	13	248.01	19.08	$1,416,179	$246,508	$1,662,687	$108,937	$5,710	$18,962
Electricity Regulating Stations	424	1	0.48	0.48	$40,900	$0	$40,900	$40,900	$85,363	$0
Gas Pressure Control Stations	428	1	59.00	59.00	$78,791	$112,322	$191,113	$78,791	$1,335	$112,322
Telephone Exchange Stations	430	1	0.08	0.08	$32,786	$128,462	$161,248	$32,786	$408,045	$128,462
Industrial Developable Land	440	10	381.70	38.17	$1,572,784	$0	$1,572,784	$157,278	$4,120	$0
Potentially Developable Industrial Land	441	6	53.53	8.92	$112,181	$0	$112,181	$18,697	$2,096	$0
Undevelopable Industrial Land	442	8	180.48	22.56	$137,637	$0	$137,637	$17,205	$763	$0
Total Industrial Property		48	997.01	20.77	$4,394,022	$6,566,057	$10,960,079	$91,542	$4,407	
Agricultural Land Uses										
Field Crops (hay, wheat)	713	7	163.40	23.34	$143,496	$250,518	$394,014	$20,499	$878	$35,788
Productive Woodland, trees	717	6	237.44	39.57	$37,449	$0	$37,449	$6,242	$158	$0
Pasture	718	1	10.53	10.53	$35,491	$128,129	$163,620	$35,491	$3,370	$128,129
Chapter 61 Forestry Lands	601	35	1,104.06	31.54	$301,928	$480,352	$782,280	$8,627	$273	$13,724
Total Agricultural Property		49	1,515.43	30.93	$518,364	$858,999	$1,377,363	$10,579	$342	
Recreation Land Uses										
Hiking	801	1	17.92	17.92	$38,526	$0	$38,526	$38,526	$2,150	$0
Camping	802	2	184.73	92.37	$388,595	$30,064	$418,659	$194,298	$2,104	$15,032
Nature Study	803	17	512.96	30.17	$213,471	$248,435	$461,906	$12,557	$416	$14,614
Total Recreational Property		20	715.61	35.78	$640,592	$278,499	$919,091	$32,030	$895	
Public Service Land Uses										
Commonwealth of Mass	901	83	4,988.92	60.11	$4,143,496	$14,132	$4,157,628	$49,922	$831	$170
Municipalities	903	42	286.51	6.82	$1,263,860	$4,003,168	$5,267,028	$30,092	$4,411	$95,314
Charitable Organizations	905	3	32.73	10.91	$118,814	$355,159	$473,973	$39,605	$3,630	$118,386
Churches, Synagogues and Temples	906	15	46.80	3.12	$428,761	$1,584,678	$2,013,439	$28,584	$9,162	$105,645
Total Public Properties		143	5,354.97	37.45	$5,954,931	$5,957,137	$11,912,068	$41,643	$1,112	

DOUGLAS

EXISTING PARCEL SUMMARY BY CURRENT LAND USE

CURRENT LAND USE	LAND USE CODE	NO. OF PARCELS	TOTAL AREA (ACRES)	AVERAGE PARCEL SIZE	TOTAL LAND VALUATION	TOTAL BUILDING VALUATION	VALUATION (LAND + BLDGS.)	AVERAGE LAND VALUATION (PER PARCEL)	AVERAGE LAND VALUATION (PER ACRE)	AVERAGE BUILDING VALUATION
Open Land Land Uses										
Open Wetlands in Residential Area	202	2	395.00	197.50	$197,500	$0	$197,500	$98,750	$500	$0
Open Wetlands in Industrial Area	231	1	23.10	23.10	$11,550	$0	$11,550	$11,550	$500	$0
Non-61A, Non-productive Ag Land	210	1	27.52	27.52	$55,216	$0	$55,216	$55,216	$2,006	$0
Total Open Land Properties		4	445.62	111.40	$264,266	$0	$264,266	$66,067	$593	
Multiple-Use Property										
Primarily Residential w/ Commer.	013	9	57.26	6.36	$382,169	$1,037,158	$1,419,327	$42,463	$6,674	$115,240
Primarily Commercial w/ Resident.	031	5	3.42	0.68	$200,191	$751,591	$951,782	$40,038	$58,565	$150,318
Total Multiple-Use Properties		14	60.68	4.33	$582,360	$1,788,749	$2,371,109	$41,597	$9,597	
Totals for Land Use Classes		3,734	22,372.30	5.99	$117,939,139	$205,046,934	$322,986,073	$31,585	$5,272	
Unclassified		4	17.38		$13,440	$0	$13,440	$3,360	$773	
Totals for Planning Area		3,738	22,389.68	5.99	$117,952,579	$205,046,934	$322,999,513	$31,555	$5,268	

Existing Land Use Pattern

East Douglas serves as the downtown area for Douglas and has been the primary concentration of business activity since early in the development of the town. This area provides services such as dining establishments, small convenience stores, office space and banks in addition to being the municipal services center of the community. Douglas is fortunate to have retained an attractive town center that offers a variety of uses and the characteristics of a traditional New England village center. The buildings are close to the street and the size and style of the buildings provide a human scale and encourage pedestrian activity.

There has been a recent movement in communities across the country to recreate their downtowns into village centers similar to what currently exists in Douglas. The Neo-Traditional movement that is taking shape seeks to create neighborhoods and communities that have historical context, encourage interaction between residents and discourage poor uses of land and other resources. These neotraditional communities are typified by a diversity of housing types, walking distance to neighborhood shopping, walking paths, pedestrian-oriented design (rather than auto-oriented) and accessible and well located public open spaces. *East Douglas already contains these elements.* The role of East Douglas must be carefully considered in making land use decisions. Efforts to significantly modify this area could have irreversible damage on the town character.

The spine of the town center is Route 16 which transverses the town in an east-west direction as well as serving as the Main Street in East Douglas. It is a mixture of residential uses of varying densities, commercial uses and industrial areas near the east and west town lines. This diverse stretch of road is essentially the "face of the community" that is presented to outsiders who travel to and through Douglas. Improvements along the Main Street portion of Route 16 should respect the character of the village and the convenience of pedestrians and businesses (see *Circulation* element).

While the town currently contains three areas that are zoned for industry and several small commercially zoned areas, areas for nonresidential uses are underdeveloped. The lack of infrastructure such as water and sewer service prevent these areas from developing at their full potential. Industrial zones are located at the extreme northwest and northeast corners of town and on Route 16 near the Uxbridge town line. Commercial districts and zones which allow a mixture of residential and commercial uses are primarily located along Route 16 near the Webster town line, in the center of town (Southwest and Southeast Main Streets), and in East Douglas.

The most significant increase in residential development in recent years has occurred in the Village Residential district in East Douglas. A total of 124 single family homes off North Street alone have recently been completed or will be completed in the near future. A substantial number of residential subdivisions have been constructed or are approved in the RA district. Thirty-two lots have been created off Birch Street in the north part of Douglas near the Sutton town line and seventy-four lots have been created along South Street.[4]

Due to the large amount of developable land remaining in Douglas, increased development will not pose an immediate visual impact on the town. However, as the

[4] Monthly Subdivision Inspection summary by CME Associates, Inc. Updated July 31, 1997.

town approaches buildout and the high rate of development continues, each new development will have an increasingly significant impact on the landscape. Therefore, it is important for the Town to adopt policies and regulations that monitor the character and form of future development.

Land Use Controls in Douglas

Douglas currently has 4 residential zoning districts, 2 types of business zones and 1 industrial zone (see Map 1: Existing Zoning). Most of the town's land area is included within the Rural–Agricultural (R/A) district which permits agricultural and residential uses. The minimum lot size in an R/A district is 90,000 square feet for a single family dwelling; 4 acres for any religious or public education use, any municipal use, or a private non-profit club; 3 acres for a public or private outdoor recreational use; and 15 acres for a campground. Recreation uses and campgrounds may be established by a special permit. In addition, a saw mill or lumber-producing facility is allowed by special permit.

The Residential Commercial One (RC/1) and the Residential Commercial Two (RC/2) districts allow all uses permitted within the R/A district but also allow all commercial, industrial and public uses by special permit. The Village Residential district (VR) allows for all residential uses and religious and municipal uses. The VR district is the only residential district that allows multi-family dwellings by special permit. The other three districts do not permit multi-family dwelling units. The minimum lot sizes for each district are listed in Table 2.

There are two types of business districts in Douglas – the Central Business district (CB) and the Commercial district (C). Two small CB districts are located in the downtown area along Main Street and five C districts are located in several locations along Route 16. Both districts permit agricultural uses, commercial uses and most public and institution uses. The primary difference between these two districts in terms of the uses allowed is the CB district permits single family units as of right and multi-family dwellings by special permit while the C district prohibits both types of housing.

Minimum lot sizes in the CB district are 20,000 square feet for all uses except for multi-family dwellings and retail establishments for public sale which do not have a minimum lot size requirement. However, two-family and multi-family dwellings are only allowed by Special Permit and fall under the Limited Density Bylaw which regulates the density and site layout of new development. The minimum lot sizes in the C district are 35,000 and 90,000 square feet, dependent upon the anticipated scale of the use (i.e. a retail store or restaurant requires a minimum lot size of 35,000 square feet while a warehouse or recreation park requires a minimum lot size of 90,000 square feet).

The Industrial district permits retail shops, auto repair, contracting businesses, recycling businesses, manufacturing, warehouse or wholesale facilities, religious or public education uses, municipal uses, and sawmills. The minimum lot size is 35,000 square feet. The Industrial districts are located in the northwest and northeast quadrants of town, adjacent to the respective town lines.

Table 2: Minimum lot size by district

	Minimum lot size in sq. ft. or as noted			
Use	R-A	RC/1	RC/2	VR
Single Family dwelling	90,000	20,000	90,000	20,000
Any religious or public educational use	4 acres	90,000	90,000	90,000
Any municipal use	4 acres	90,000	4 acres	90,000
Multi-family dwelling				5,000 per bedroom
Duplex dwelling				20,000
Private, non-profit club or fraternal organization	4 acres	130,000	130,000	
Public or private outdoor recreation use	3 acres	130,000	130,000	
Campground	15 acres	15 acres	15 acres	
Retail establishment for public sale; funeral home; veterinary hospital; auto repair shop; restaurant; office building; indoor recreation facility; contracting business; warehouse of wholesale facility		130,000	130,000	
Sawmill		2 acres	2 acres	

Source: Town of Douglas Zoning Bylaw

Land Use Controls in Adjacent Communities

For the most part, zoning districts in surrounding communities adjacent to the Douglas town line are large lot, residential zones. In areas where this is not the case, the existing land use pattern in Douglas is compatible with the zoning in the adjacent town (see Map 1: Existing Zoning)

Town of Oxford, MA

Oxford borders Douglas to the northwest. The adjacent zoning district is Rural-Residential (R-1) with a minimum lot size of 60,000 square feet. The Oxford Zoning Bylaw states that the purpose of the district is to preserve and protect environmental features and the aesthetics of the area as well as limit the undue concentration of population.

In addition to single family dwellings, the district also permits agricultural uses, golf courses, recreation trails, riding stables, municipal uses and cemeteries by right. Special permit uses include outdoor tennis and swimming clubs, campgrounds, cluster residential developments and accessory apartments.

Town of Webster, MA

The Town of Webster is located to the west of Douglas and has the entire western town line in common. The Webster zoning district adjacent to the Douglas town line is Agricultural-Single Family Residential (ASFR) with a minimum lot size of 43,560 square feet. Uses allowed be right include detached single family residences; religious, educational and municipal uses; hospitals; convalescent homes; public utility buildings; agricultural uses; and accessory uses. Earth removal; farm slaughtering and raising of livestock are allowed by special permit.

Town of Burrillville, RI

The southern Douglas town line borders the Town of Burrillville, RI. The Burrillville zoning in this area is primarily Farming-Residential (F-5). This district has a minimum lot size requirement of 5 acres and allows commercial nurseries, single family homes, group homes or community residences, home occupations, public playgrounds, riding stables, hospitals or health clinics, public recreation halls, and veterinary offices by right. Special permit uses include raising of livestock, kennels, congregate living or assisted living facilities, inns or bed and breakfasts, golf courses, commercial or municipal swimming facilities, commercial picnicking, social and community centers, day care centers, schools, municipal uses, carnivals or temporary recreation facilities, radio or television uses, and saw mills.

The northwest area of Burrillville (southwest area of Douglas) is occupied by the Buck Hill State Management Area and the northeast area is the location of the Black Hut State Management Area, both of which are located within an Open Space district. The only uses allowed in this district are conservation, wildlife refuge, reforestation areas, wood lots and other uses which cannot be excluded under Rhode Island state law.

This northern section of Burrillville also contains an Aquifer Overlay District near Route 96 in Douglas. This district places restrictions on uses that are otherwise permitted within the district, such as requiring that uses are serviced by sewer or are only allowed by special permit.

Town of Uxbridge, MA

The Town of Uxbridge is located along the eastern town line of Douglas. Zoning in this area is primarily Agricultural with a minimum lot size of 2 acres. Uses allowed by right include single family homes, agricultural uses, country clubs and golf courses, drive-in theaters, airports, and restaurants.

Uxbridge also contains an Industrial district located west of Route 146, between Douglas Street and High Street. The minimum lot size is 30,000 square feet. Permitted uses include wholesale and retail stores, personal service establishments (ranging from a beauty shop to a gasoline filling station), offices, banks, theaters, bowling alleys, billiard rooms, fuel and ice establishments, motel or hotel, storage yards, and any industrial use "which is not dangerous.....to the Town of Uxbridge or its populace."

Town of Sutton, MA

The Town of Sutton borders Douglas to the north. The majority of the area is zoned Residential-Rural (R-1) and has a minimum lot size of 80,000 square feet if the lot is not

serviced by sewer and 40,000 square feet if sewer service is provided. Permitted uses are typical of a residential district, such as single-family homes, agricultural uses and municipal uses. Uses allowed by special permit include trailers, non-profit recreation, cemeteries, power plants and public utilities, hotels, funeral homes, convalescent/nursing homes, membership clubs, motion picture theaters, and private recreation facilities.

A Residential-Suburban (R-2) district is located in the Manchaug area of Sutton, north of Manchaug Street in Douglas. The minimum lot size for single family homes is 60,000 square feet and multi family developments require at least 40,000 square feet. Uses allowed both by right and by special permit in the R-1 district also apply to the R-2 district. The primary distinction in the use table between the two districts is that multi-family uses are allowed by special permit in the R-2 district and are prohibited in the R-1 district. In addition, motion picture theaters and private recreation facilities are prohibited in the R-2 district but are allowed by special permit in the R-1 district.

Within the area zoned R-2, there is a small Industrial zone (I) which permits commercial parking lots, earth removal, and typical manufacturing uses on lots of at least 40,000 square feet.

There are two areas zoned for Office-Light Industry (OLI) along Route 146, near North Street in Douglas. This district has a minimum lot size of 80,000 square feet and permits funeral homes, convalescent/nursing homes, business offices, motion picture theaters, recreation facilities and wholesale uses by right. Special permits are required for membership clubs, repair facilities and most manufacturing uses.

Analysis of Town Line Zoning District Compatibility

Due to the amount of land area in Douglas zoned for large lot, residential use, most of the zoning in Douglas complements the adjacent zoning in surrounding towns. However, there a few exceptions where there is potential for conflict.

Northwest Douglas

This area is primarily zoned for industry (IND), mixed residential/commercial (RC-II) or commercial (C) use while zoning in the towns of Oxford and Webster promote single-family development. The intensity and scale of uses permitted in the IND and C districts are inconsistent with residential land uses of the adjacent communities as well as the existing land use pattern (residential uses, vacant land and the Douglas State Forest) in this area of Douglas.

However, Sutton and Webster also permit various types of private recreation uses and convalescent hospitals within the residential districts while Douglas does not have similar provisions in most of the Town's zoning districts. Due to large amount of vacant, undeveloped land in northwest Douglas, there is potential for the Town to make zoning changes that will result in compatible land use patterns.

South Douglas

The amount of land in this area zoned as RA is consistent with the large lot residential zoning in Burrillville. The 90,000 minimum lot size requirement and absence of nonresidential uses is also beneficial to Burrillville's water supply protection efforts within the adjacent aquifer protection overlay zone. In addition, the location of the

Douglas State Forest north of the Buck Hill State Management area in Rhode Island is the most compatible use possible for Burrillville's Open Space district. The proximity of the two state owned areas also creates a regional greenway system.

Southeast Douglas

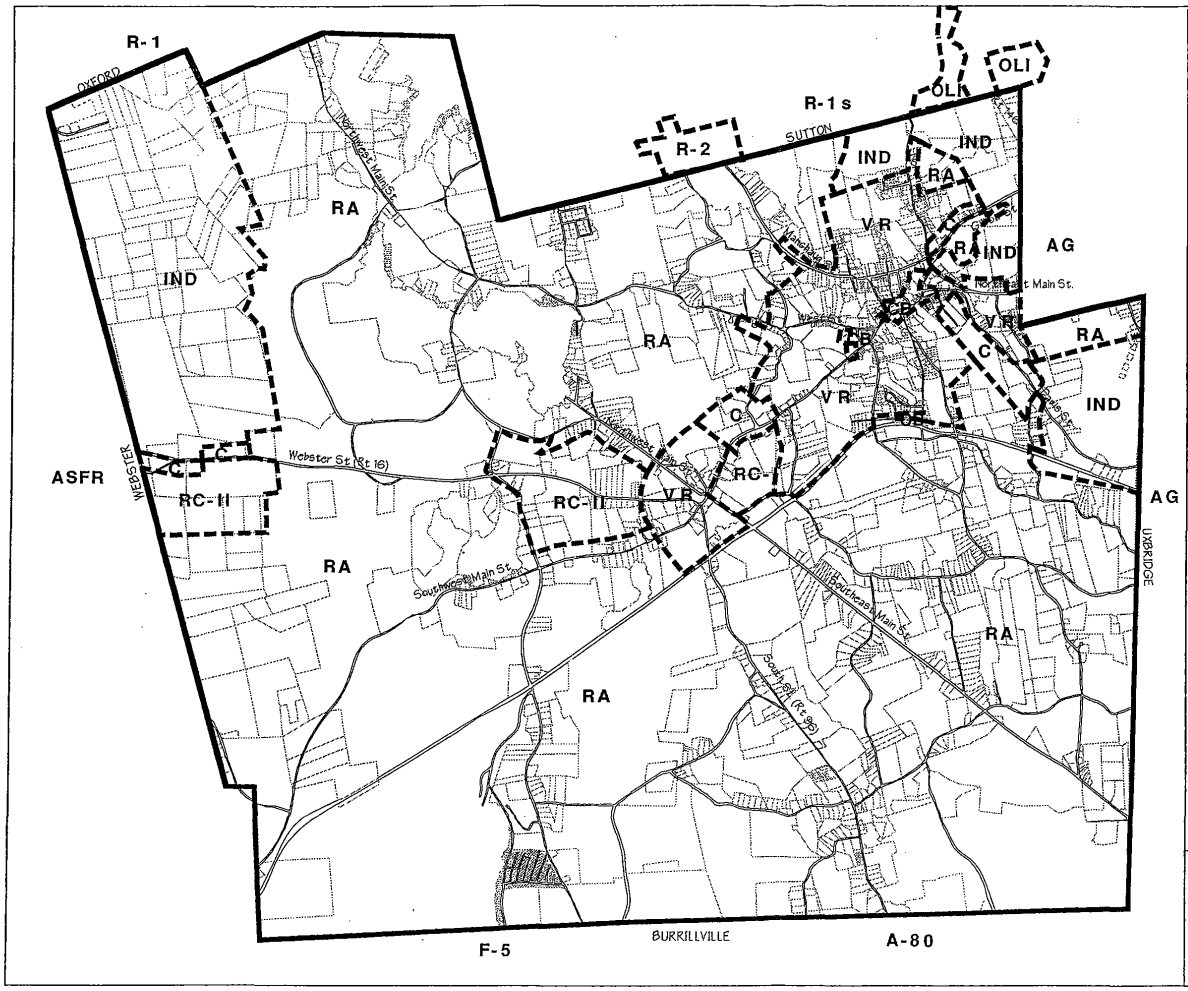
As is discussed for the southern portion of Douglas, the RA zoning is also consistent with the 2 acre minimum lot size for the Agriculture zone in Uxbridge. However, the provisions for golf courses, drive-in theaters, airports, and restaurants in the Uxbridge Agriculture district may not be compatible with the single-family homes encouraged by Douglas' zoning in this area.

The Industrial zone on the west side of Uxbridge is similar to the Industrial zone in Douglas on Davis Street and should not pose a conflict in land uses.

Northeast Douglas

As discussed above, the Uxbridge Agriculture district permits golf courses, drive-in theaters, airports, and restaurants. While the Industrial zones along Gilboa Street may not be consistent with agricultural uses in Uxbridge, the districts are compatible in terms of the other uses listed above.

The southern section of Sutton contains a variety of zoning districts which allow several intense non-residential uses that are consistent with the Industrial zoning in Douglas. Even the residential district (R-1) in Sutton permits uses such as hotels, funeral homes, convalescent/nursing homes, membership clubs, motion picture theaters, and private recreation facilities which will have similar impacts in terms of traffic, noise and appearance as the industrial uses in Douglas.



TOWN OF DOUGLAS
MASSACHUSETTS

1998 MASTER PLAN

Existing Zoning

Legend:

Zoning district boundary (approximate locations)

Town of Douglas

RA	Rural-Agricultural
VR	Village Residential
RC-I	Residential Commercial One
RC-II	Residential Commercial Two
CB	Central Business
C	Commercial
IND	Industrial

Adjacent Towns

R-1	Rural Residential (Oxford)
ASFR	Ag.–Single Fam. Res.(Webster)
AG	Agriculture (Uxbridge)
R-2	Residential-Suburban (Sutton)
OLI	Office Light Industrial (Sutton)
R-1s	Residential-Rural (Sutton)
F-5	Farming-Residential (Burrillville)
A-80	Aquifer Overlay Zone(Burrillville)

N

1800' 3600' 7200'

Whiteman & Taintor
Planning Consultants

Base map: Deanne Frederickson
Source: Department of Landscape Architecture and Regional Planning, University of Massachusetts, Amherst

Buildout Analysis

A buildout analysis is an estimate of the maximum amount of development that can theoretically occur under the existing zoning regulations. In this case, the number of residential dwelling units will be examined. It is important to note that the buildout analysis is not a prediction of the amount of development that will actually occur; but an estimate of the level and type of development that the Town has stated, through its regulations, that it will accept. Any changes in these regulations will affect the overall buildout of the town.

A buildout analysis does not forecast *when* development might occur, or *where* within the Town growth will occur first. These are influenced by market conditions in the Town and the region, as well as the comparative characteristics of individual sites. For example, it is likely that development will occur soonest on those sites that are easiest to develop; these will include sites with the fewest environmental and regulatory constraints, and the best access to roads and utilities. It is also likely that vacant land will be developed before large parcels with existing residences are subdivided into smaller house lots.

Limitations

This analysis was performed using parcel-specific data from the Town's Assessors' records as of January 1, 1997. Although as a whole, a parcel may be designated by the Assessors as "developable" or "potentially developable," it may contain areas within it that are not usable (or usable at a great expense) because of surface or subsurface conditions such as water, wetlands or ledge. Consequently, a parcel that is designated as "developable" or "potentially developable" may not be able to be developed in its entirety.

To a certain degree, the buildout analysis was able to account for these development limitations. Using the Assessors parcel maps and associated index, the database was modified to indicate those parcels which contain areas categorized as "wasteland" by the Assessors office or appear to contain significant wetland areas. The Assessors parcel maps indicated the total area of a parcel and, if appropriate, the amount of area that is wooded or categorized as wasteland. Any amount of land categorized as wasteland was deducted from the total parcel area to determine the potential amount of buildable land. The index to the Assessor parcel maps reflected the approximate location of significant wetland areas but the wetlands were not indicated on each individual parcel map. Therefore, if the parcel map did not indicate a "wasteland" category but the parcel appeared to contain wetlands based on the map index, an adjustment was made to the buildable area of the parcel.

There are a total of 7 parcels that are shown on the parcel maps as having limitations but are not included in the Assessors database. These parcels represent a total land area of 2,828.86 acres of which approximately 248 acres are classified as "wasteland." However, it is assumed that these parcels have been combined with other parcels that are included within the database because the total area included within the database is consistent with the total land area of the town. Therefore, the buildout estimate may be slightly high because it was not possible to determine which parcels contain development limitations caused by a total of 248 acres of wasteland.

Site specific information on soils and other environmental constraints was not available. Consequently, any development limitations that may be caused by these factors were not considered in the buildout analysis.

Methodology

The buildout analysis was based on the Town's Assessors data files and represent the conditions of the Town as of January 1, 1997. No attempt was made to verify or adjust information in the data files except with respect to undevelopable land, as discussed above. The analysis thus does not reflect changes that have occurred during 1997, including new buildings constructed and any land acquisitions by the Town that have removed land from potential development.

As stated in the *Current Land Use* section, the Assessors database indicates the existing land use of each parcel, using a land classification system established by the Massachusetts Department of Revenue. Using the land area and land use classification code for each parcel, the buildout analysis estimates the number of additional dwelling units that can be created.

The database for the study contained 3,738 parcels with a total area of 22,390 acres. The data records were imported into a computer spreadsheet program for analysis.

- The *developable area* of a residential parcel is based on the total area of the parcel less the estimated area for wetlands or categorized as "wasteland."

- *Existing dwelling units* were estimated using a "lookup table" in the spreadsheet which assigned a number of dwelling units to each three-digit state land use classification code, as follows:

Table 3: Estimated number of dwelling units by land use code

Code	Use	Units
013	Multiple -use, primarily residential	1
031	Multiple -use, primarily commercial	1
101	Single family	1
102	Condominium	1
104	Two family	2
105	Three family	3
109	Multiple house on one parcel	2
111	Apartments – 4 to 8 units	6
112	Apartments – more than 8 units	12
121	Rooming and boarding houses	1

- *New residential lots added through subdivision or compliance with minimum lot size requirements* were computed if the parcel was vacant or had enough area for additional dwelling units under the applicable zoning density.

Table 4: Zoning districts included in the buildout analysis

Zoning District	Name	Min. Area (sq. ft.)
CB	Central Business	20,000
RA	Rural-Agricultural	90,000
RC-1	Residential Commercial One	20,000
RC-2	Residential Commercial Two	90,000
VR	Village Residential	20,000

With the exception of the CB district, each zoning district is considered to be a residential district according to Section II of the Zoning Bylaw, "Classes of Zoning Districts." However, the CB district was included in the buildout analysis because single family uses are permitted within this zone. In addition, the RC-1 and RC-2 districts permit commercial uses as well as residential uses. In any district where both commercial and residential uses are permitted, it was assumed that developable lots would be used for residential development for the purposes of determining the *maximum* residential buildout under the existing zoning.

In the case of parcels larger than the minimum required lot area, the developable area was reduced by 15% prior to dividing by the minimum lot area, in order to account for roads and inefficiencies in lot configurations.

- *No residential buildout* was computed for (a) parcels in a business or industrial district except as described above, (b) parcels currently owned by government agencies or nonprofit entities, or (c) parcels designated by the Assessors as undevelopable.

- *Buildout dwelling units* equaled the total existing units and units on new residential lots.

Buildout Analysis Results

The buildout analysis estimates that a total of 4,786 new dwelling units could be developed under the existing zoning regulations. Based on data from the 1990 Census combined with Town building permit records, it is estimated that the Town had approximately 2817 dwelling units at the beginning of 1997 (1990 Census count of 2191, plus 626 building permits issued between 1990 and 1996); therefore, the total number of housing units at buildout is estimated to be between 7500 and 7700 dwelling units.

1990 dwelling units (U.S. Census)	2191
1990-1996 building permits for new dwellings	+ 626
1997 dwelling units (estimate)	2817
Potential additional house lots	4786
Total dwelling units at buildout	7603

The table below presents the distribution of the estimated existing and potential additional residential dwelling units by zoning district. Please note that the slight

difference in the number of existing dwelling units shown in the table versus the number shown above could be due to a number of factors: all permits issued may not have resulted in construction, some units may still have been under construction on January 1, 1997 (the date of the Assessor information), and estimates used for the number of apartments in multi-family dwellings may be different from the actual number (see Table 3 above).

Table 5: Buildout by Zoning District

ZONING DISTRICT	EXISTING NO. OF PARCELS	TOTAL AREA (ACRES)	AVERAGE PARCEL SIZE	EXISTING DWELLING UNITS	ADDITIONAL UNITS POSSIBLE UNDER ZONING	BUILDOUT DWELLING UNITS
CB	71	34.69	0.49	115	7	122
RA	2,468	18,242.75	7.39	1,508	3,220	4,728
RC-1	15	73.39	4.89	6	78	84
RC-2	53	388.02	7.32	30	114	144
VR	972	1,470.66	1.51	953	1,367	2,320
C/IND	152	2,151.92	14.16	57	-	57
Unknown	7	28.24	4.03	7	-	7
TOTAL	3,738	22,389.68	5.99	2,676	4,786	7,462

For the purposes of this Master Plan, the estimated final housing buildout number is 7600 dwelling units. This is used as the maximum for all housing and population growth. While there might be some variation around this figure, for the purposes of long range planning, it is quite adequate for projecting future housing and population impacts. Even if the town continues to grow at a rate of 100 units per year (the average growth rate for 1994-1996), buildout will not be reached until 2045. If the long term growth rate returns to 53 units per year (the average from 1985-1995), buildout will not be reached until 2070.

The average household size in 1990 according to the U.S. Census was 2.87 persons per household. If it is assumed that average household size will remain constant in the future for the purposes of this analysis, the buildout population will be approximately 22,000.

Comparison with other studies and plans

The *Waterworks Facilities Master Plan* (February 1995), *Our Rural Heritage and the Future: A Master Plan for the Town of Douglas* (Spring 1994), and the draft *Facility Plan for Wastewater Treatment* (December 1996) contain buildout and/or population projections which differ from the projections made above. The differences are primarily due to variations in methodology. The approach for each of the other studies is described below for the purposes of comparison.

Waterworks Facilities Master Plan

The *Waterworks Facilities Master Plan* used a combination of building permit records, MISER (Massachusetts Institute for Social Research) population projections, and mathematical formulas to project the future population of Douglas.

The first step in the process was the examination of useable acreage by zoning district. This included land that was both developed and undeveloped. Areas that were determined to be undevelopable were those that contained wetlands, floodplains and protected land. The developable area was then divided by the minimum lot size for the RA, VR, RC-1 and RC-2 districts. The total number of potential residential dwellings based on this approach was projected to be 10,181.

The differences in this methodology as related to what was used in the buildout projections for the town-wide Master Plan are as follows:

- The existing developed parcels were not separated from the buildout estimate. Consequently, if the parcels that have already been developed are smaller or larger than the current minimum lot size, the total buildout estimate will be inaccurate.

- Land for roads or other infrastructure was not factored into the analysis so the projections may be high.

- It is assumed that the districts that accommodate both residential and commercial uses are only used for single family developments. Since existing developed parcels are not removed from the developable land area that was used as the basis for the projections, any existing commercial or multi family developments within these districts are categorized as single family within the maximum buildout estimate.

Population projections for the Waterworks Plan were based on an examination of recent growth trends. The study states that approximately 60 dwelling units per year were constructed from 1985 to 1993. The U.S. Census figure of 2.87 persons per household was applied to the growth in housing units to determine that the estimated growth in population would be 172 persons per year or 3.16% annual growth since the 1990 Census. MISER projected the population to increase by 103 people per year of 1.89% through the year 2000. The year that MISER made these projections is not stated in the study. Based on weighted averages of what has occurred in the past in Douglas, mathematical formulas were used to project the population of Douglas in the future. The Waterworks Plan projections are consistent with the MISER projections as shown in the table below.

	2000	2005	2010	2015
Waterworks plan	6481	7002	7523	8045
MISER*	6467		7469	

* Year of MISER data unknown

The study also states that if the 2.87 persons per household figure is applied to the 10,181 dwelling units projected for the town at buildout, then the ultimate population is projected to be 29,220. While the study does not state when buildout might occur, it is clear from the population projections that is not anticipated to occur until well after the year 2015. If the assumption that the town will grow at a rate of 170 persons per year,

buildout under this scenario would not occur until after the beginning of the 22nd century.

Facility Plan for Wastewater Treatment

As the draft *Wastewater Treatment Plan* currently exists, no population or buildout figures were specifically developed for the study. The study uses MISER projections from March 1992 and bases the rate of projected growth on these figures.

MISER estimated that the population would be 5714 in 1995 (the population was actually 5,764 according to the Town Report for that year) and 5991 by the year 2000 (Douglas has already exceeded this figure with a January 1997 population of 6377). The MISER population projections result in a 5% growth year for each five year period. The study applied this growth rate to future population levels to project a population of 7000 by the year 2015. However, since the population is currently over 6300, it is likely that the population will exceed 7000 before the year 2015. The study does not mention what the buildout population of the town could be.

Our Rural Heritage and the Future

Like the Waterworks Plan, this study examined the land in Douglas with potential for development. Any land that was already in a developed state, protected by the state or federal government or contained constraints due to soil limitations or slope were considered undevelopable. The land area remaining was then divided by the minimum lot size for the appropriate district. This analysis resulted in an estimate that there are 17,083 acres of land that could be developed in Douglas. Specifically, the study concluded that 7829 residential lots, 285.5 commercial lots and 2793.4 industrial lots could be created.

Two population figures are given for this buildout estimate. The first is 31,316 based on 4 people per household. However, the basis for using the figure of 4 persons per household is unclear. The second figure is given as a potential population of 40-50,000. There is no mention of how this figure was determined. It appears that it may be a combination of the buildout population combined with the current population but the resulting current population figure is too high.

The differences in this methodology as related to what was used in the buildout projections for the town-wide Master Plan are as follows:

- Land for roads or other infrastructure was not factored into the analysis so the projections may be high.

- The household size of 4 persons per household used to estimate the potential population seems high relative to the U.S. Census and the current trends toward smaller household sizes.

- There is no indication as to when buildout could be reached. Therefore, it is difficult to plan for the necessary changes in infrastructure and capital improvements as the rate of expected growth is not factored into the analysis.

- The number of existing units is not factored into the analysis to provide the overall buildout figure for the town.

Summary

The population and buildout projections for each study are presented below.

Table 6: Comparison of buildout projections

Plan/Study	2015 population	Buildout dwelling units	Buildout population
1997 Master Plan	8,978 slow rate of growth 12,134 current rate of growth	7,600	22,000
Waterworks Facilities Master Plan	8,045	10,181	29,220
Facility Plan for Wastewater Treatment	7,000	N/A	N/A
Our Rural Heritage and the Future	N/A	10,210*	31,316-50,000

*The study estimated that an additional 7,829 residential lots could be created. The Town records indicate that Douglas had approximately 2381 housing units in 1994, the year the study was completed. The total buildout in the table above is the sum of these two figures.

Fiscal Impacts of Current Land Use Pattern

The following pages present analyses regarding the average estimates of the costs that various land uses place on Town departments. The analysis is based on the Fiscal Year 1995 expenditure level for Douglas' various departments.

Key Assumptions

Several important assumptions are made in the following tables:

1. All data is from the most complete State Department of Revenue data files. Fiscal Year 1995 was used in the model. The files were checked with Town Reports to confirm that the figures are dependable. There is some variation between some budget categories due to post-fiscal year account balancing and reconciliation, but overall the numbers are accurate for the purposes of long range master planning.

2. The total parcels in a category (i.e. residential or commercial) includes both vacant land and developed parcels. This is due to the way that the Department of Revenue organizes its data. Therefore, both costs and revenues for developed parcels of land are somewhat understated due to the dilution of the vacant lands mixed into the parcel count. The assumption was made that this understatement of value and costs tends to balance itself out and the resulting net cost and net revenue figures are good approximations of reality.

3. General fund expenditures within thirteen functional categories are allocated to broad land use types based on assumptions described below. The expenditures in these categories are from the general fund only. Spending from special revenue enterprise, capital projects or trust funds are not reflected in these figures.

4. Expenditures are allocated equally to all parcels, regardless of land use category, for nine of the thirteen budget categories; general government, police, fire, other public safety, public works-highways, other public works, fixed costs, intergovernmental expenses and other miscellaneous expenditures. The assumption is that homes and businesses tend to make use of these departments equally. The costs are averaged by the number of parcels in town.

5. All education costs are allocated to residential development. While one might argue that the presence of business drives the construction of more homes, for a community such as Douglas, the stronger argument is that business tends to follow housing development.

6. It is assumed that commercial and industrial properties place no cost burden on the following departments: education, health/welfare and culture/recreation and that the costs for these services is based on the demand from residential properties. The remainder of the costs are equally distributed between residential and non-residential properties.

7. Open Space costs are factored at 50% or 25% of residential costs for all departments where an argument can be made that some cost might be incurred to service open space (e.g. fire suppression, monitoring vandalism, environmental monitoring, tax billing, etc.)

This analysis estimates the service costs attributable to various land uses as of fiscal year 1995. They do not predict what will happen in the future, but they are the most accessible figures available to provide a basis for estimating what might happen in the future if current conditions remain stable. These conditions include:

- the relative level and quality of service provided to the community by various departments,
- the Town's taxation policies (e.g., split vs. single tax rates, use of stabilization fund, etc.),
- the levels of state aid and other revenue sources relative to the Town's overall costs, and
- changes in real estate values relative to changes in the cost of providing municipal services.

Table 7: Municipal Expenditures by Function and Land Use Category

Fiscal Year: 1995

		General Govt	Police	Fire	Other Public Safety	Education	Public Works Hghwys	Other Public Works
Expenditures		$312,117	$495,267	$28,991	$84,001	$4,507,838	$305,713	$12,492
Allocated Debt Service		$56,018	$88,890	$5,203	$15,076	$809,063	$54,869	$2,242
Adjusted Expenditures		$368,135	$584,157	$34,194	$99,077	$5,316,901	$360,582	$14,734
State/Federal Aid		$15,568	$24,703	$1,446	$4,190	$2,954,006	$96,836	$623
"All Other" Revenues		$7,595	$12,051	$705	$2,044	$109,687	$7,439	$304
Local Costs		$344,973	$547,403	$32,043	$92,844	$2,253,208	$256,308	$13,807
	# of parcels							
Local Costs per Residential Parcel	2,005	$165	$263	$15	$45	$1,124	$123	$7
Local Costs per Commercial Parcel	37	$165	$263	$15	$45	$0	$123	$7
Local Costs per Industrial Parcel	39	$165	$263	$15	$45	$0	$123	$7
Local Costs per Open Space Parcel	4	$165	$66	$4	$0	$0	$61	$0
Local Costs per Vacant Parcel	1,261	$165	$66	$4	$0	$0	$61	$0

		Health and Welfare	Culture and Recreation	Debt Service	Fixed Costs	Inter-governmental	Other Expenditures	Total Expenditures
Expenditures		$40,900	$49,563	$1,178,480	$700,069	$12,561	$16,600	$7,744,592
Allocated Debt Service		$7,341	$8,896	($1,178,480)	$125,648	$2,254	$2,979	($0)
Adjusted Expenditures		$48,241	$58,459	$0	$825,717	$14,815	$19,579	$7,744,592
State/Federal Aid		$2,040	$8,238	$0	$34,919	$627	$828	$3,144,024
"All Other" Revenues		$995	$1,206	$0	$17,034	$306	$404	$159,770
Local Costs		$45,205	$49,014	$0	$773,763	$13,883	$18,347	$4,440,798
	# of parcels							
Local Costs per Residential Parcel	2,005	$23	$24	$0	$372	$7	$9	$2,176
Local Costs per Commercial Parcel	37	$0	$0	$0	$372	$7	$9	$1,005
Local Costs per Industrial Parcel	39	$0	$0	$0	$372	$7	$9	$1,005
Local Costs per Open Space Parcel	4	$0	$0	$0	$0	$0	$0	$296
Local Costs per Vacant Parcel	1,261	$0	$0	$0	$0	$0	$0	$296

Table 8: Average Tax Revenues, Estimated Costs, and Net Local Revenues (Costs) per Parcel

	Residential	Open Space	Commercial	Industrial	Personal Property	Total
Total Value per Category	$268,816,100	$264,300	$8,149,500	$10,402,600	$11,019,200	$298,651,700
Average Assessed Value per Parcel	$82,307	$66,075	$220,257	$266,733	$144,989	$86,994
Tax Rates	$15.40	$15.40	$15.40	$15.40	$15.40	$15.40
Total Tax Revenue	$4,139,768	$4,070	$125,502	$160,200	$169,696	$4,599,236
Average Annual Tax Revenue	$1,268	$1,018	$3,392	$4,108	$2,233	$1,340
Avg Rev with PP split to Com & Ind	$1,268	$1,018	$4,508	$5,224		$1,340
Average Annual Local Costs per Parcel	$2,176	$296	$1,005	$1,005		
Average Annual Net Rev or Cost	($909)	$721	$3,503	$4,219		
Cost per Dollar of Revenue Received	$1.72	$0.29	$0.22	$0.19		

Source: DOR Assessor Data files

Table 9: Tax Revenues, Estimated Costs, and Net Local Revenues or (Costs) for Typical New Single Family and Commercial Properties

	Model	Input
Average School Cost per Child	$2,138	$2,200
Average No. of Children per Household	0.49	0.65
Average School Cost per Household	$1,054	$1,430
Average School Cost per Res. Parcel	$1,124	$1,525

	Single Family	Open Space	Commercial	Industrial	Personal Property	Total
Typical Assessed Value per Parcel*	$150,000	$70,000	$280,000	$320,000	$160,000	$298,651,700
Tax Rates	$15.40	$15.40	$15.40	$15.40	$15.40	
Average Annual Tax Revenue	$2,310	$1,078	$4,312	$4,928	$2,464	$1,340
Avg Rev with PP split to Com & Ind	$2,310	$1,078	$5,544	$6,160		$1,340
Average Annual Local Costs per Parcel	$2,577	$296	$1,005	$1,005		
Average Annual Net Rev or Cost	($267)	$782	$4,539	$5,155		
Cost per Dollar of Revenue Received	$1.12	$0.27	$0.18	$0.16		

* Values for typical new development, rather than town-wide averages.

Cost/Revenue Analysis

Table 7 presents total municipal expenditures by department, applies the set of assumptions described above on how various land uses (residential, commercial, etc.) use Town services at different levels and then estimates the average municipal costs associated with residential, commercial, industrial and open space land uses. In other words, Table 7 gives estimates of how much it costs the Town to provide services to an average home, retail business, industrial operation or parcel of open land. The purpose of this analysis is to understand which types of land uses cost less and which cost more. This has implications for which types of land uses the Town might choose to encourage or discourage in yet undeveloped areas. The results of the analysis indicate that in FY 1995, the average residential parcel created costs of approximately $2,176 per year. Commercial and industrial costs were approximately $1,005 per parcel and open space and vacant parcel costs were $296 per year (see Table 7).

Table 8 presents data from the Town's Assessors records on the amount of taxable value by land use category, averages that value by the number of parcels in Town, applies the Town's taxation rate and produces the average tax revenues paid by the average residential, business, industry and open space parcel. Those figures are compared with the average costs calculated in Table 7 and the result is the net revenue or cost to the Town. The net figure is summarized as the *cost per dollar of revenue received.* If this figure is less than $1.00, then the land use costs less than the taxes that land use pays. If this figure is greater than $1.00, then the land use is on average costing the town more than the land use pays in taxes. Residential uses creates costs of $1.72 for each dollar of taxes they pay. Commercial and industrial uses create just $0.22 and $0.19 in costs for each dollar they pay and open space parcels create $0.29 in costs. In other words, under Douglas' current taxation policy, homes are generating far more costs than they are generating in taxes while non-residential uses pay much more in revenues than the costs they incur.

Table 9 is based on the same assumptions and calculations used in Table 8 but the average assessed value per parcel has been increased to account for increased valuations. In addition, the costs per single family parcel are considered rather than the costs for all residential development. The increase in valuations changes the cost per dollar of revenue received to the following:

- Single Family $1.12
- Commercial $0.18
- Industrial $0.16

These figures can only be used as general guidelines. They do not account for incremental capital costs that some types of development may cause such as the purchase of specialized equipment to service specific types of businesses or the need to expand a school due to housing growth. These figures look only at average annual town service and debt service costs. However, these cost and revenue figures do provide a good picture of where the Town's costs are allocated and how much revenue flows from various land uses. They illustrate that the Town's even tax rate of $15.40 in Fiscal Year 1995 required that the business community subsidize the costs of the residential sector. The major cost associated with homes is education. It is typical in our society for all sectors of the property system to share the cost of educating children and Douglas is no exception.

Land Use Issues of Regional Projects

Due to the large amounts of vacant land, proximity to highways and relatively low population levels, Douglas has been a target for siting major regional projects such as a regional landfill and an airport.

Regional Landfill

Proposals for a regional landfill first began in 1987. There have been several periods of time in which the Town felt that the landfill was not going to be developed. However, as of this writing, the landfill issue is working its way through the court system in the form of appeals. Regardless of the outcome of the court case, action needs to be taken to mitigate the impacts of the currently proposed regional landfill or regulations adopted to adequately regulate this type of use in the future.

The proposed site for the regional landfill is in the northwest section of town within an industrial zone.[5] It is approximately 280 acres and located on the northerly side of Webster Street (Route 16) and abuts the western border of the town. The land is currently undeveloped and is owned by Douglas Environmental Associates, Inc., the agency attempting to develop the landfill. The site lies within the geologic formation known as the Southeast New England Platform. The landfill site is east of this feature and west of the Nashoba Thrust Belt, a major geologic fault. The proposed landfill would be located at the highest point of the Reid Smith Fault which runs from Webster Lake to the Whitin Reservoir. In addition, the Douglas State Forest is adjacent to the proposed site. The State Forest is an important part of the watershed for the area due to the number of first order streams within the park.

The number of faults within this region create numerous gullies and swails. The wide zone of fractures created be these faults provides a downhill conduit of ground water to Lake Webster and the Whitin Reservoir, located approximately 1.25 miles from the proposed landfill site. Due to these environmental features, the landfill could potentially have detrimental impacts on the water features and the surrounding environment.

In 1987, the Board of Selectmen (acting as the Board of Health) entered an agreement with Douglas Environmental Associates, Inc. to locate a regional landfill in Douglas, but the Department of Environmental Protection has repeatedly denied a permit to construct the facility. Since 1987, the Board of Selectmen and Board of Health have changed in membership and it is the general opinion of the town that the landfill is not desirable. However, due to the original agreement signed by the Board of Selectmen in 1987, the Town does not have standing to appeal the decision. DEA began its efforts to secure the necessary approvals for the landfill project in 1987. The DEP's latest decision denying the necessary construction permit is dated September 22, 1995. .[6]

DEA proposes to build an integrated solid waste management facility that would include landfilling, recycling and composting operations. The facility would be

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[5] Information concerning the location of the proposed landfill and associated environmental features is from *Our Rural Heritage and the Future,* a plan prepared by the University of Massachusetts at Amherst, Department of Landscape Architecture. Spring 1994.

[6] Information regarding the current status and description of the project is from the Commonwealth of Massachusetts Superior Court decision dated July 24, 1997.

developed in four phases, with each phase allowing approximately five years of operating capacity. The permit at issue relates to phase one of the facility and would authorize the construction of a 35-acre landfill with seven cells and related structures. DEP has previously approved permit applications for the recycling and leaf composting operations.

A draft landfill construction permit for phase one of the project was granted by DEP in September 1992. The issuance of the draft permit was followed by two public hearings which revealed that there has been substantial and often intense local opposition to the proposed facility. In April 1993, the DEP issued a final decision denying the permit based on two issues:

(1) the hydrogeological aspects of the project, and in particular, the claimed failure of DEA to accurately determine the site characteristics and to demonstrate that the environmental monitoring system was accurate; and

(2) the claimed failure of DEA to show that the project would not constitute a threat to certain identified endangered species under the Massachusetts Endangered Species Act.

DEP's decision was overturned based on the Court's decision that the DEP had violated DEA's due process rights by basing its decision on reports and information that either were never made available to DEA for comment before the permit was denied, or were submitted too late for DEA to comment on.

Revisions and additional studies were made as well as proposals for mitigation measures to protect endangered and threatened species found on the site but the permit was continuously denied by DEP. The primary issue became the depth of the buffer that would be provided to protect the marbled salamander, a threatened species in the area. DEA complied with the DEP demands for studies, reports, comments and data on all requested subjects. However, the DEP repeatedly required more information. Therefore, the Court's most recent decision (July 24, 1997) states "a remand to the [DEP] with directions to grant the permit with such conditions be ordered" meaning that the DEP's denial of the permit is based on the requirement of a buffer which the DEA is willing to provide. The issue in question was the required depth of the buffer.

The second issue under debate is the demonstrated need for this landfill. The Court decision concluded that the DEP's decision to eliminate DEA's ability to accept any MSW (Municipal Solid Waste - consists of residential trash from homes and commercial waste generated by businesses and institutions) at the proposed facility was "arbitrary, capricious and abuse of discretion." The Court's decision was based on the lack of a reasoned explanation of how the DEP arrived at the figures it did for disposal capacity.

The most recent Court decision was made July 24, 1997. The decision is being appealed by DEP and several other environmental organizations (such as the Massachusetts Audubon Society), state legislatures and surrounding communities have expressed their opposition and could also appeal the decision.

Airport

The Massachusetts Aeronautics Commission (MAC) has considered a site in Uxbridge and Douglas for a major second international airport in New England. In 1991, the Executive Office of Transportation and Construction (EOTC) proposed the acquisition

of up to eight square miles of land to build a second major airport in Massachusetts. Twelve potential sites have been analyzed, including the Douglas location.[7]

The Coalition for an Integrated-Transportation Plan (CITPlan) was formed by representatives from 19 municipalities containing or adjacent to potential sites. The basis of this organization's opposition is the need for another major airport has not been demonstrated, selection of sites is premature, and comprehensive solutions should be found for any demonstrated transportation needs.[8]

The Town of Douglas has endorsed the CITPlan position on developing a forward-thinking transportation plan. In addition, the Town feels that if the airport were located in Douglas, the development would displace nearly 25% of the town's population and threaten the day-to-day function of the town with its proximity to churches, schools, residences and businesses. It is also felt that the plan is not in accordance with established recreation areas such as the State Forest, Wallum Lake, Whitin Reservoir, proposed trails and the Blackstone Valley National Heritage Corridor. Based on these reasons, the Planning Board requested that all further action by MAC cease until a Northeast Corridor transportation plan be developed.[9]

According to the Massachusetts Aeronautics Commission, a Strategic Assessment Report was completed in 1993 by Arthur D. Little indicating that a second regional airport will not be needed until the year 2050. The MAC also stated that Douglas is not a prime consideration for a future location.[10]

Forces of Change

During the course of any period of time, there are a limited number of major trends that produce change within communities. An objective of a Master Plan is to sort out which trends can be used for the benefit of the community, which trends must be resisted in some manner and which trends are so large and pervasive that accommodating strategies must be sought.

1. **Decentralization of the Boston Metropolitan Region.** Route 128 linked Boston's neighboring towns enabling people to live in the suburbs and commute to Boston. As development expanded and mobility increased, the limits of the original beltway were exceeded and Interstate 495 provided a second beltway. Both beltways have stimulated new growth in both business locations and residential development. Routes 146 and 395 are beginning to accommodate larger amounts of traffic as development continues to move out from Boston. The proposed improvements to these two routes will allow travel to Boston, Worcester and Providence to become more convenient and could spur increased development in the Douglas area.[11]

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[7] "State Must Prove Need for Second Major Airport," *MACC Newsletter*, Massachusetts Association of Conservation Commissions, Late summer 1991, Volume xx, Number 4.

[8] Ibid.

[9] Letter from the Douglas Planning Board to the Massachusetts Aeronautics Commission, September 25, 1991.

[10] Armond Dufrane, Massachusetts Aeronautics Commission. Telephone conversation 10/7/97.

[11] *Our Rural Heritage and the Future*, page xvii.

2. **The Blackstone River Valley National Heritage Corridor.** Douglas is one of fifteen towns that make up the Blackstone River Valley, the birthplace of industrialization in the United States. This historic region and the recent recognition of the area by Congress has the potential to increase the amount of tourism in the area.[12] In addition, the recent efforts toward a coordinated approach to preserving and protecting this area's natural and cultural features should be recognized by Douglas.

3. **Disposal of Solid Waste.** Douglas and surrounding communities are faced with a problem of waste disposal. The landfills in Douglas and its neighbors have been closed or will be closed in the near future. The region is limited in the number of potential sites due to the physical constraints of the land. Because Douglas has the fewest physiographic constraints and the largest amount of undeveloped land in the region, it is a prime target for the location of a regional landfill.[13] The Town must develop strategies to deal with the impacts associated with a regional landfill (such as traffic, environmental quality, the impact on tourism, etc.) should the DEA project come to fruition.

4. **The aging of the Baby Boomers.** While the exact ramifications of this demographic trend on communities like Douglas are not entirely clear, the town should begin to plan for infrastructure, facility and service additions that will be required by an older population. Smaller homes, town-sponsored senior housing facilities, and encouraging housing developments that will allow senior citizens to remain in their own homes for longer periods of time should be considered in planning for the town's future. The need for recreational and social opportunities for older residents will increase, as will transportation needs as older residents drive less but need to be transported to shopping, appointments and social/recreational activities.

Recommendations

The overall recommendation for the *Land Use* element of the Master Plan is the protection of Douglas' character by the strengthening of village centers, the preservation of open space, the encouragement of economic development and the greater allowance for flexibility in residential development.

Northwest Douglas

The size of the Industrial district in northwest Douglas should be reduced. This area is primarily vacant land as it currently exists, and a change in zoning would impact few, if any, existing uses. Development of this area as an industrial center is unlikely due to the investment in infrastructure that would be necessary to make it successful: road access to the parcels in this district is limited, the area is not serviced by Town water or sewer, and service is unlikely to be extended to this area in the future (see *Economic Development* and *Services and Facilities* elements). In addition, the distance to major transportation routes further limits the development potential of this area. Substantial industrial development could also be detrimental to the number of significant environmental and visual features of this area (see *Economic Development; Natural, Cultural and Historic Resources; and Open Space and Recreation* elements).

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[12] *Our Rural Heritage and the Future*, page 1-5.

[13] *Our Rural Heritage and the Future*, page 1-11.

The permitted uses and dimensional requirements of the Residential Commercial Onel (RC-II) district (located south of Route 16 near the Webster town line) should be revised to better reflect the character of the town, promote economic development and reflect the zoning of the adjacent communities. The minimum lot area should be reduced from 130,000 square feet to 45,000 square feet so that the potential for small scale commercial uses, consistent with town character, are not eliminated due to large lot size requirements. In addition, the town risks encouraging large scale, big box retailers that could have a detrimental impact on traffic flows and the town character if the lot size is not reduced. Uses such as golf courses, assisted living facilities and nursing homes should be permitted within this district in order to provide additional opportunities for economic development (see *Economic Development* element). These uses are consistent with the zoning provisions of the adjacent towns and the types of economic development from which the Town could benefit.

The Commercial (C) districts located along the western portion of Route 16 in northwest Douglas are currently undeveloped. The narrow depth of these districts encourages strip commercial development which is inconsistent with the town character and the goals of the Master Plan. The types of uses permitted within this district are not likely to be feasible due to the lack of infrastructure and the existing road network described above. The area would be better served by the RC-II district so that appropriate types of development are encouraged. The RC-II district should be extended approximately 2000 feet north of Route 16 and replace both the Commercial district and the southern portion of the Industrial district.

The northern portion of the existing Industrial district should be rezoned to RA in order to encourage uses which are more consistent with the proximity to the Douglas State Forest and other environmental qualities of the area.

The Douglas State Forest occupies a substantial amount of land in the western half of Douglas. This area is currently zoned RA, which is somewhat misleading due to the amount of area occupied by the State Forest. An Open Space (OS) district should be created in order to acknowledge the presence of the State owned land. The district boundaries would be those of the Douglas State Forest. The only uses that should be permitted within this district include conservation land, forestry and public recreation. The OS district would complement the adjacent OS district in Burrillville, RI.

Northeast Douglas

This area has the greatest potential for economic development due to its proximity to Route 146, the potential to extend water and sewer service to the sites and the minimal impact that development will have on the East Douglas village.

There is a substantial amount of developable land remaining within the Industrial district in northeast Douglas. However, some of this area should be rezoned to allow for a greater variety of uses consistent with the town character. A Mixed Business district should be created in order to encourage mixed-use business parks which consist of relatively small structures sited in a compact style. This zoning district would replace portions of the current industrial zoned areas west of North Street and along Route 146. Zoning for the site should allow for a variety of uses, including professional and business offices, personal services, restaurants and financial institutions. Retail uses could be allowed by special permit; however, manufacturing, warehousing and distribution facilities should be restricted to the Industrial district east of North street and north of Gilboa Street.

Dimensional regulations for the Mixed Business district should require a minimum lot size of 30,000 square feet and front setbacks from internal roadways should be greatly reduced from the current standard of 50 feet to a minimum setback of 10 feet and a maximum setback of 20 feet. Required side setbacks should be no greater than 10 to 15 feet. These changes will force buildings to be located near the street line and will allow them to be clustered together, creating a pattern that is consistent with the surrounding traditional village centers. However, the zoning should also include a buffer area along Gilboa Street to preserve the existing open gateway leading up to the Guilford Industries mill building. This buffer could be established by a means of a requirement for a 200-foot setback from the existing roadway.

A key feature of the new zoning should be to ensure the development in the foreground consists of small-scale structures with high visual interest. It is therefore recommended that the following standards be included:

- Establish a maximum building footprint (e.g. 3,000 to 4,000 square feet) to encourage a variety of small businesses and pedestrian circulation;
- Require that buildings be at least 1-1/2 stories in height;
- Require roofs with pitch similar to East Douglas Village.

The Commercial (C) district north of Gilboa Street and east of North Street currently contains vacant land and residential homes. Due to the lack of commercial uses in the district, to area should be rezoned to avoid the creation of strip commercial uses within the gateway area to Douglas. Village Residential (VR) zoning is more consistent with the existing land use pattern and character of the area.

Within northeast Douglas there are two areas that need additional study in order to determine if zoning changes are warranted. The first area is the RA district located between North Street and the Industrial district. A detailed site analysis is recommended in order to inventory the existing uses and to determine the development potential. The second area is the portion of the Industrial district located south of Gilboa Street. This area may be better served by a Mixed Business district. A zoning change may be warranted for either area based on access, topography, environmental impacts, surrounding uses, and the Town's fiscal and economic needs.

East Douglas Village

East Douglas serves as the downtown for Douglas and is one of the historic settlement areas of the Town. The business area of East Douglas is currently zoned Central Business (CB) and allows for a variety of commercial uses. However, the use of the words "central business" creates a perception that large scale, intensive uses are intended for this area and does little to represent the existing character. It is recommended that the name of this district be changed to "Village Business" (VB) to depict a more accurate image of the historic character of the village center. It also provides an indication of the type of development that would be appropriate for this district such as a mix of business and residential uses within the small scale of a traditional village.

A small Central Business (CB) district is located on the corner of Railroad Avenue and Depot Street. This appears to be a remnant of the days when the adjacent railroad line was still operational. Due to the lack of commercial uses, the presence of surrounding residential homes and the conversion of the rail line into a recreational trail (SNETT), it

is recommended that the area be rezoned to Village Residential (VR) which is the current zoning of the surrounding parcels.

The old Douglas Grammar School is located south of Main Street in East Douglas. This building is considered to be an important historical resource of the Town and has some potential to be re-used for another purpose. In order to allow for a greater range of potential adaptive re-use projects, the parcel should be rezoned from Village Residential (VR) to Village Business (VB).

Douglas Village

The Douglas Village is the historic center of the Town and also the location of important water recharge areas within the aquifer protection zone. Due to the presence of Centerville Brook, Reidell Brook (see *Natural, Cultural and Historic Resources* and *Open Space and Recreation* elements), and a Town well, two zoning changes are recommended.

The first recommendation is the reduction of the size of the Commercial area (C) where the Highway garage and Sunoco service station are located. The area north of Reidell Brook and the Highway Department should be rezoned from Commercial to RA, reducing the existing Commercial district from approximately 1800 feet to 600 feet north of Route 16.

The second recommendation is the rezoning of the Residential Commercial One (RC-I) district to RA. This zoning is more consistent with the Aquifer Protection Overlay district and will enhance protection efforts of the Town well and Centerville Brook.

Tassletop Village

The Tassletop area on South Street is a third important historic resource of the town. The area is currently zoned RA, which does not acknowledge the existing smaller lot size or distinguish this area as significant. It is recommended that the area be rezoned to Village Business (VB) to recognize this area as a village center. In addition, the VB district will allow for the creation of commercial services to accommodate the growing population in this area.

Town Character Issues

1. Missing from the zoning bylaws are site development standards relating to parking and landscaping. Zoning for all commercial and industrial uses should include standards such as:

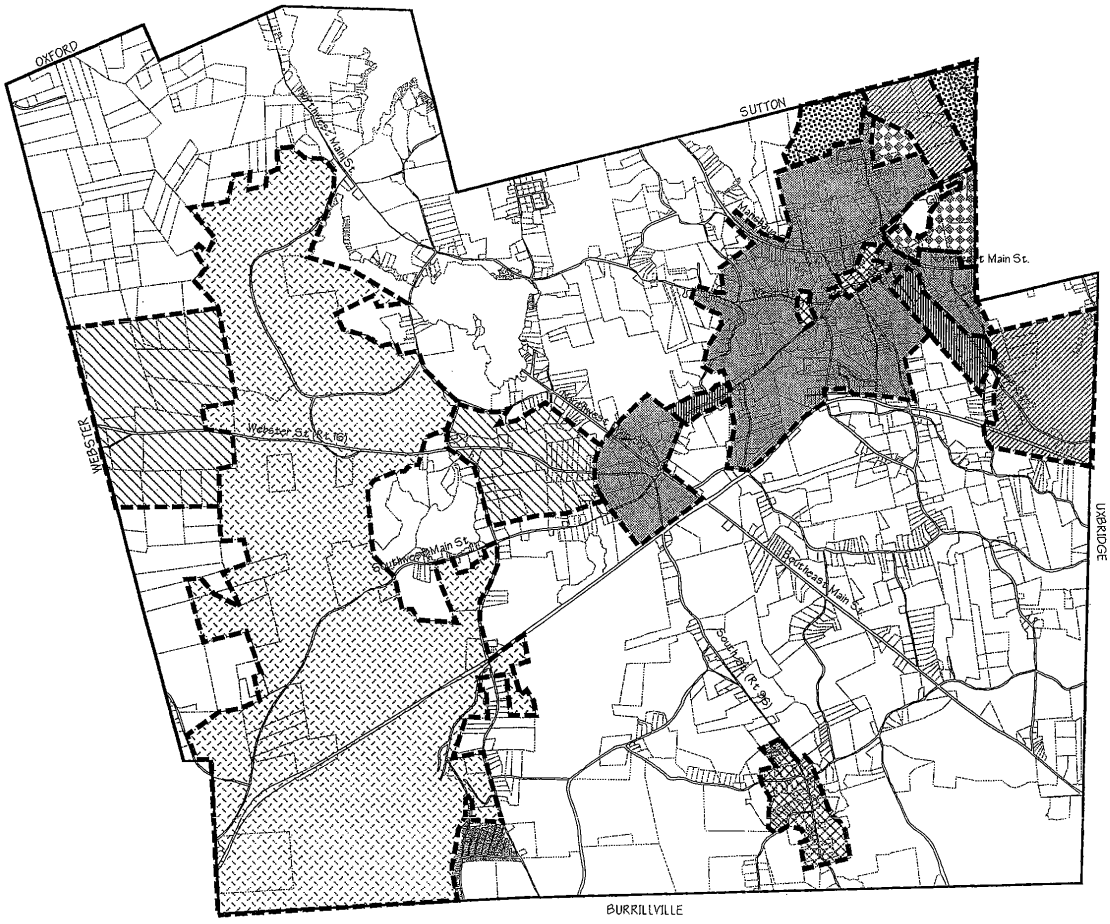
    - Landscaping strips to provide buffers between parking areas and street lines;
    - Internal landscaping islands to break up expanses of paved areas within large parking lots (e.g., lots with more than 25 spaces, which corresponds to an office building of about 5,000 square feet);
    - Standards for driveway design and spacing.

2. Sign regulations should be adopted to ensure that accessory on-site signage as well as billboards and similar off-street signs are consistent with the desired appearance of the site. These regulations should address such issues as the number, size, location and lighting of signs on a lot.

3. The Use Regulations of the Zoning Bylaws should be revised to distinguish between developments of differing sizes: retail and industrial uses in structures of 8,000 square feet or less should be allowed by right in appropriate districts but a special permit should be required for uses in excess of 8,000 square feet.

4. The Use Table should be modified to allow gas stations and motor vehicle repair establishments by special permit rather than by right in the CB (to be changed to VB) and Commercial (C) districts.

5. The Town should consider adopting the Growth Management Tools described in the *Housing* element and *Appendix A- Zoning Review* while the Town investigates methods to broaden the tax base and absorb new growth.



TOWN OF DOUGLAS
MASSACHUSETTS

1998 MASTER PLAN

Proposed Zoning

Legend:

- Zoning district boundary (approximate locations)
- Rural-Agricultural
- Village Residential
- Residential Commercial Two
- Village Business
- Commercial
- Mixed Business
- Industrial
- Open Space
- Area in need of further study

N

1800' 3600' 7200'

Whiteman & Taintor
Planning Consultants

Base map: Deanne Frederickson
Source: Department of Landscape Architecture and Regional Planning, University of Massachusetts, Amherst

Emerging Land Uses

Aside from long-range development trends specific to Douglas, there are also some emerging issues in the area of land use and zoning that Douglas should face as it updates its land use regulations.

Many suburban communities in Massachusetts are facing the problem of how to regulate "adult-oriented uses." While Douglas residents may wish to exclude this type of use from the Town altogether, a number of court cases have upheld the First Amendment right of these types of businesses, and zoning regulations have been overturned where the courts have determined that they had the effect of prohibiting such uses. An example of an Adult-Use Bylaw that Douglas could use as an example is provided in Appendix A.

For a number of years, telecommunication companies have been siting transmission facilities in communities across the country. Because antennas for these cells needed to be on towers of up to 200 feet, the siting process has often required the companies to petition for variances from the height limitations of the zoning bylaws. Specific zoning regulations have been adopted by several Massachusetts communities in order to establish specific height regulations for various types of facilities in different zoning districts; safety and screening standards; and special permit requirements. An example of such a Bylaw is provided in Appendix A.

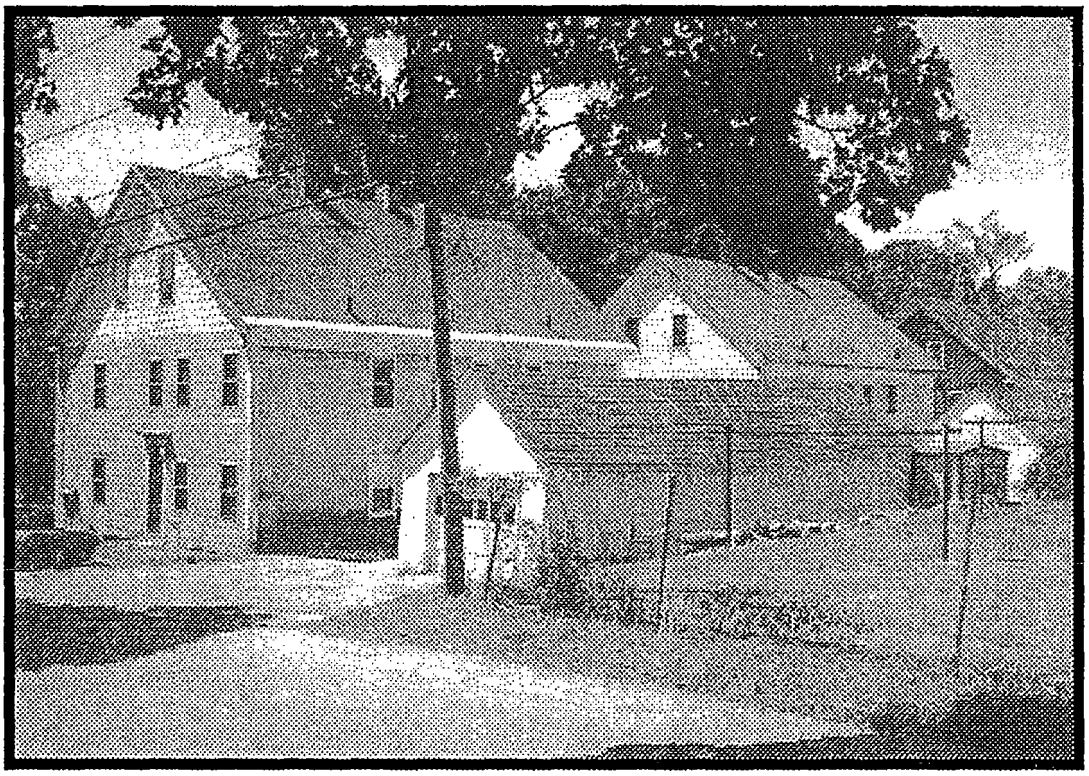
Other Zoning Issues

- The Town should adopt a series of zoning amendments to rectify internal consistencies, noncompliance with statute or case law and obvious omissions as identified in Appendix A of the Master Plan.
- Section 1.04 of the Zoning Bylaw should be revised to include or modify the definitions noted in Appendix A of the Master Plan for the following:
    - accessory use
    - frontage
    - farm
    - agriculture
    - family
    - nonconforming structure
    - home occupation
- Section 1.05 of the Zoning Bylaw should be revised to conform with case law, as described in Appendix A.

The Town should create a Route 16 Corridor Strategy to encourage appropriate types of development while preserving the character of the area.

Douglas Master Plan

Housing



IV. Housing

As indicated in the *Land Use* element, the rate of housing development in recent years is becoming a concern for Douglas. This section provides information regarding Douglas' existing housing stock, housing development trends, and housing needs.

Housing Stock

According to the U.S. Census, Douglas had a total of 2,191 housing units in 1990. Seventy-eight percent were owner occupied and 22% were renter occupied. The relatively high number of renter occupied units can be attributed to the amount of two- to four-unit structures and structures containing five or more units. The number of units in a structure for all housing units in town as of the 1990 Census are presented below:

Table 10: Units in Structure for all housing units

Units in structure	# of units	% of total
1, detached	1,601	73%
1, attached	64	3%
2	210	10%
3 or 4	95	4%
5 to 9	68	3%
10 to 19	14	1%
20 to 49	70	3%
50 or more	0	0%
Mobile home or trailer	55	3%
Other	14	1%
Total	2,191	100%

Source: 1990 US Census

Most housing units in Douglas were constructed prior to 1939, a reflection of Douglas' historic mill town economy, or since 1980 when the areas west of Boston began to grow.

Table 11: Year housing structure was built

Year	# of units constructed	% of housing stock
1989–March 1990	87	4.0%
1980–1988	582	26.6%
1970–1979	387	17.7%
1960–1969	175	8.0%
1950–1959	222	10.1%
1940–1949	216	9.9%
1939 or earlier	522	23.8%

Source: 1990 US Census

Douglas has experienced a tremendous increase in the number of new housing units in recent years. Since the 1990 Census, 502 building permits have been issued for new single family units, 96 apartment units were constructed and 28 condominiums. Based on the number of building permits issued since the 1990 Census it is estimated that there were 2,817 dwelling units in Douglas by the end of 1996.

Table 12: Comparision of the number of units 1990-1996

	1990		End of 1996	
	# of units	% of total	# of units	% of total
Single Family, detached	1601	73%	2103	75%
Single Family, attached (condo)	64	3%	90	3%
2-4 Family	305	14%	307	11%
Multi Family and other	221	10%	317	11%
TOTAL	2191		2817	

Source: US Census and Annual Town Reports

As discussed in the Land Use section, the total buildout of Douglas is projected to be approximately 7600 units. Even if the recent rate of 100 new dwelling units per year continues in the future, Douglas will not reach buildout until 2045.

Douglas' rapid growth of new homes is probably attributable in part to its affordability relative to the state and the region. In 1990, both the value of owner-occupied housing and the contract rent for renter- occupied housing were lower than the respective state averages, as indicated in Table 12.

Table 12: Comparison of 1990 Contract Rent and Housing Values for the State and Town of Douglas

	Douglas	Massachusetts
Value of Owner Occupied Housing		
Low quartile	$115,300	$126,800
Median	$138,500	$162,800
High quartile	$164,100	$216,000
Monthly Contract Rent		
Low quartile	$290	$323
Median	$439	$506
High quartile	$556	$668

Source: 1990 U.S. Census

The 1990 median household income in Douglas was $38,362 and the median income for the State was $36,952. Thus, the median income in Douglas is slightly higher than the state's median income yet the housing costs are considerably less. This indicates that, in general, Douglas is an affordable community in which to live.

The median sales prices of housing has steadily increased over time since the recession of the early 1990s.

Table 13: Median sales price for home 1990-1994

Year	Price	% Change
1990	$115,000	-3.4%
1991	$73,000	-36.5%
1992	$81,526	11.7%
1993	$105,000	28.8%
1994	$112,400	7.0%

Source: Banker and Tradesman

The increase in the median sales price for homes in 1994 is only slightly less than the median price in 1990. This indicates that Douglas' housing prices have returned to the level before the recession of the early 1990s.

Household Composition

The following chart summarizes the current family composition of Douglas' 1,889 households in 1990.

Table 14: Household size and type

Type of Household	Household Subset		Number of Households
1 Person Household (Singles)			343
	Male householder	153	
	Female Householder	190	
2 Person or More Household			1,546
	Married Couples with children	702	
	Married Couples, no children	562	
	Male Head of Household, no wife	74	
	Female Head of Household, no husband	143	
	Nonfamily households	65	
Total Households			1,889

Source: 1990 U.S. Census

Douglas can be considered a "traditional family" town. Sixty-seven percent of households are married couples compared with 52% for the State. Thirty-seven percent of the households in Douglas are married couples with children while 24% of the households in the State fall into this category. It should be noted that the 1990 Census figures are prior to the building boom that Douglas has experienced within the last several years. The tremendous growth in the number of single family dwelling units since 1994 may have changed the demographics of the town to include more traditional families. This is reflected in the recent surge in school enrollments discussed in the *Services and Facilities* section of the Plan.

It is important to note that 22% of the households are single person or nonfamily households and 11% are 2 or more person households with a male or female head of household and no spouse. These figures are significant but much lower than the State percentages of 35% and 15% respectively.

Regulatory Structure

The number of districts that permit residential uses as well as the variation in associated dimensional regulations will continue to produce a diversity of housing options in Douglas as the town continues to grow. Minimum lot sizes for single family dwellings are 20,000 square feet or 90,000 square feet in all districts permitting this use. Multi family and two family structures are only allowed by special permit and must be reviewed under the Limited Density Bylaw. The lot size requirements for multi family dwellings and two family dwellings range from 5,000 square feet per bedroom to 20,000 square feet per development according to the Schedule of Dimensional Requirements and the

Limited Density Bylaw states that the overall tract density may not exceed 1.6 dwelling units per acre in VR district or eight bedrooms per acre in the CB district.

The majority of the land area in Douglas is zoned RA which requires that a single family home be located on a parcel of at least 90,000 square feet in size. The large lot zoning decreases the total number of buildings that can be constructed but consumes far more land than smaller lot sizes. Therefore, the lot sizes restrict the overall number of housing units but not the amount of land that is developed. This can result in a sprawling development pattern which increases the costs of extending roads and ongoing municipal services such as plowing and other roadway maintenance.

The large lot size may be an attempt to create housing that is consistent with a rural style of development, such as old family farms and estates. It may be a more feasible option and more likely to result in the desired effect if the minimum lot size were reduced in exchange for providing flexible development options. In addition, more variations in lot sizes should be considered. The current requirements of 20,000 or 90,000 are at opposite ends of the spectrum and allow no options in between.

The Limited Density Bylaw is one attempt to create developments that respect the character of the town through the preservation of natural features and the efficient use of land. The development must offer the following:

- Promotes the most efficient use of land in harmony with its natural features.
- Encourages the preservation of open land for conservation, agriculture, open space and recreational uses.
- Preserves historical and archaeological resources.
- Protects existing and potential water supplies and/or
- Protects and promotes the health, safety, convenience and general welfare of the inhabitants of the Town of Douglas.[14]

These features are desirable for any development in Douglas. However, this development option is only available for two-family and multi-family developments due to the established minimum requirements for initial review. The design requirements state that each structure shall not contain less than two dwelling units and no more than twenty. In addition, the interior design of each dwelling unit is restricted to a maximum of two bedrooms and only 5% of the units may contain three bedrooms. Attorney Mark Bobrowski feels that the Limited Density Bylaw as it is currently written may promote large scale developments, in spite of its intention. He has provided an alternative townhouse bylaw in Appendix A.

Minimum setback requirements also impact the style of development. Although many homes in East Douglas, the historic village center and along Route 16 are sited close to the street, the Zoning Bylaw establishes a minimum front setback of 50 feet in all districts with the exception of the CB district which requires 15 feet. The combination of large lots and excessive minimum setback requirements could result in a pattern of development that is more consistent with twentieth century suburban sprawl than it is with the current historic character of Douglas.

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[14] Town of Douglas, Zoning Bylaw, Section V– Limited Density Bylaw.

Affordable Housing

As stated above, the median cost of housing in Douglas is less than the average cost for housing in the State. The Limited Density Bylaw and the provisions for multi family housing and two family structures will continue to enable the town to provide a diversity of affordable housing options while preserving the town character.

Although the town falls short of the 10% subsidized housing goal established by the State, it is making attempts to provide more affordable housing options. According to the Department of Housing and Community Development Department, Douglas had 137 subsidized housing units in 1993. This comprised 6.84% of the total housing stock in that year (these figures should include the addition of the subsidized units in Haywood Landing completed in 1990). This percentage is far greater than many of the surrounding communities. The following table compares Douglas to surrounding communities in terms of the percent of the housing stock that is subsidized.

Table 15: Subsidized housing units in surrounding communities

Community	Subsidized housing units (% of total housing stock)
Worcester	13.22
Upton	8.66
Oxford	7.45
Douglas	6.84
Webster	5.96
Uxbridge	5.41
Northbridge	5.16
Millbury	4.53
Grafton	4.43
Blackstone	3.5
Millville	2.16
Mendon	2.11
Sutton	1.70

Source: Massachusetts Department of Housing and Community Development, Community Profiles, 1993.

The cost of housing is not perceived to be an issue for Douglas at this time. In fact, most feel that housing is relatively inexpensive compared to surrounding high growth towns. However, the town continues to grow and becomes more desirable as a place to live, and affordability may become an issue within the life of this Master Plan.

Table 16: 1990 Median Value for Owner Occupied Housing by Community

Community	1990 Median Value
Oxford	$122,400
Webster	$125,700
Millville	$128,300
Worcester	$128,900
Millbury	$134,600
Blackstone	$137,900
Douglas	**$138,500**
Uxbridge	$142,200
Northbridge	$142,800
Grafton	$154,400
Sutton	$167,500
Mendon	$172,600
Upton	$184,700

Source: 1990 US Census information provided by the Central Massachusetts Regional Planning Commission, January 1994.

Douglas ranks 7th of 13 surrounding communities in terms of the median value of owner occupied housing units. Oxford has the lowest median value of $122,400 of the comparison communities while Upton has the highest at $184,700. While Douglas ranks in the middle of these communities, it is only $16,000 higher than the lowest figure for these communities but $46,000 less than the highest ranking community.

Forces of Change

Household composition is changing throughout the country. While Douglas is generally a traditional family town, it is important to consider the changes in household structure as a wider range of needs for a diverse population become more evident in the future. The needs of the population within any community will differ based on the age, family composition, socioeconomic status, and personal values of residents.

Demographers are projecting continued strong increases in the following household categories as a combination of demographic trends and societal shifts take further hold:

- More single parent households either due to divorce or unmarried parents.
- Sharp increases in "empty nest" households.
- The emergence of the "sandwich generation" where the head of household is responsible for both children and elderly parents.
- The return of "twenty-something" children to the family home.
- The growth of "non-traditional family" households with unrelated adults sharing living space.

- The rise of single heads of households, driven largely by the growth in the elderly population and resulting large numbers of widows and widowers as well as later marriages among younger people.

While these demographic shifts do not warrant a major change in Town policy, a recognition of these changes may make subtle but important policy and service changes easier and more effective.

Recommendations

Growth Management

The rate of residential growth is likely to continue in Douglas due to the large amounts of vacant land. The following suggestions are provided in order to control and manage growth in Douglas while the Town investigates methods to broaden the tax base and absorb new growth in the future (see *Appendix A- Zoning Review* for specific language):

1. *Rate of Development.* This growth management tool can temporarily be adopted by a community (five years is recommended) in order to phase growth so that it will not unduly strain the community's ability to provide basic public facilities and services. It is intended to provide the Town time, information and capacity to incorporate growth into the Master Plan for the community , and to preserve and enhance the existing community character and the value of property. The rate of development is determined by the number of building permits that have been issued by the Town in recent years. It is recommended that the Town establish a rate of 70 dwelling units per year for the five year period. This figure is the average number of permits issued by the Town of Douglas during the past 8 years, the time period that has been supported in court cases.

2. *Subdivision Phasing.* The purpose of subdivision phasing is to assure that growth does not strain the Town's ability to provide public facilities and services or disturb the social fabric of the community, while remaining in keeping with the community's desired rate of growth (see Rate of Development, above) and allowing the Town to study the impact of growth and plan accordingly. Subdivision phasing essentially limits the number of building permits to ten per year for the construction of residential units on a tract of land divided into more than 10 lots.

Open Space Options

Douglas faces the challenge of accommodating more homes without losing the scenic and rural qualities that make a town feel like a "small town." As development continues, the town will begin to feel less like a "small town" if strategies are not developed. The Town should provide alternatives to the traditional subdivision in order to encourage the type of residential development that is consistent with Douglas' character. The following strategies are recommended (see *Appendix A- Zoning Review* for specific language):

1. *Flexible Development.* The purpose of this bylaw is to preserve open space and to promote more sensitive siting of buildings and better overall site planning. It would apply to the creation of 5 more lots in a residence district, whether a subdivision or not, subject to site plan review. All developments under this provision will contain a buffer of at least 200 feet between the existing right of way and the development. The Planning Board may authorize the modification of lot sizes, shape, and other

dimensional requirements for lots within a Flexible Development, under the following conditions:

- Lots with reduced area or frontage will only have frontage on a street created by a subdivision (i.e., not along an existing right of way);
- Lots may be reduced in area to a minimum of 85% of the required size
- Lot frontage may be reduced to 65% of the frontage required if all lots within the development have an average of 85% of the frontage required for the district.
- Each lot has at least 85% of the required yards for the district.

2. *Conservation Subdivision.* The Conservation Subdivision provision is intended to encourage the development of single family homes that promote the preservation of open space and natural, cultural and historic resources. This provision would apply to the creation of 5 more lots, as is true for the Flexible Development provision described above, but would require a special permit. The development would be subject to the following four step design process:

   - Designation of the open space and identification of the most sensitive and noteworthy natural, scenic and cultural resources on the property.
   - Location of the house sites, which can be within 50 feet of open space areas but no closer than 100 feet to wetland areas.
   - Street and lot layout that avoids or minimizes adverse impacts on open space.
   - Designation of lots lines, generally drawn midway between house locations.

   Based on the above, the Planning Board may authorize the modification of lot size, shape and other dimensional requirements provided that lots with reduced area or frontage front on subdivision roads; each lot is at least 15,000 square feet and has at least 50 feet of frontage; and no structure is within 10 feet of a lot line. The number of lots that can be created in a conservation subdivision is limited to the maximum amount of lots which could be constructed under a conventional subdivision. In addition, a minimum of 10% of the development area must be contiguous open space and the property must be buffered from adjacent properties and the existing right of way.

3. *Rear Lots.* Under this provision, individual lots within a residential district would not need to have the required street frontage if the following conditions can be met:

   - The area of the rear lot is at least double the minimum area of the normally required lot size.
   - The building line designated on the plan and the width of the lot at that line exceeds the number of feet normally required for street frontage.
   - The lot width and frontage is at least 35 feet.
   - Only one rear lot may be created per property.
   - At the time of the creation of the rear lot, it is in common and contiguous ownership with the front lot.

- Rear lots serving single-family structures have setbacks at least equal to those required in the district.

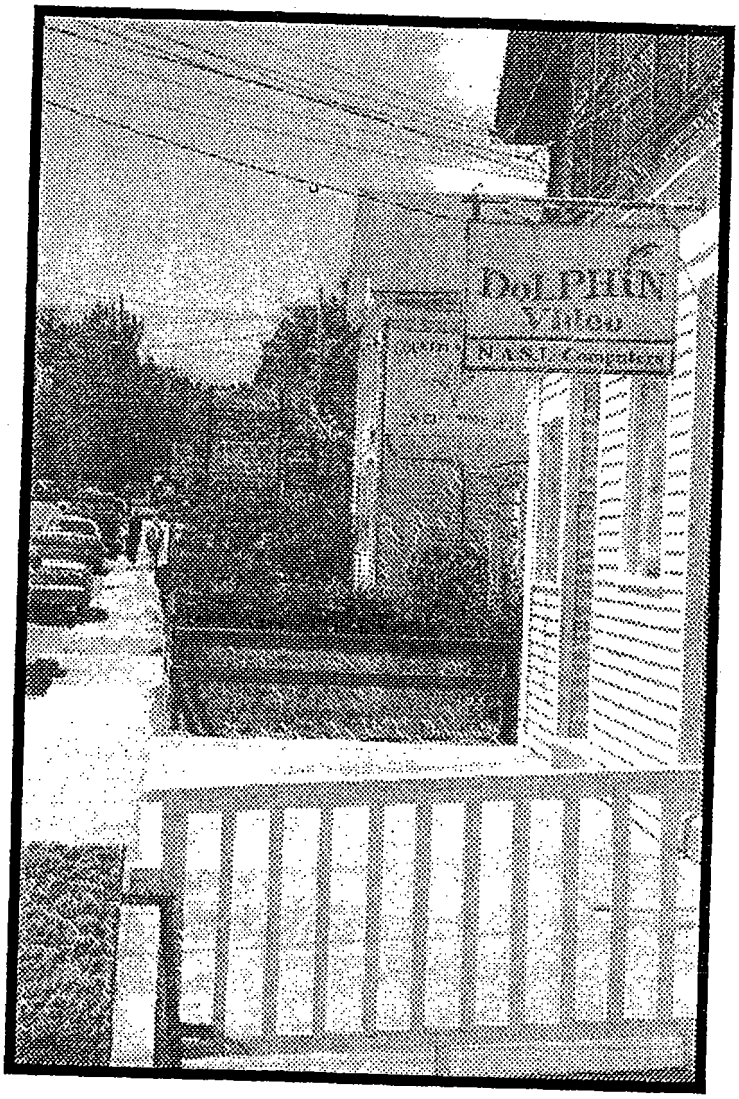
Multi-Family Development

Under the current zoning, Douglas will become a community dominated by single-family dwellings. In order to preserve the diversity of housing structures that currently exist in the village centers and to ensure that there are affordable housing options in the future, the Town should provided mechanisms to develop a variety of housing types.

Based on the Zoning Review completed by Attorney Mark Bobrowski, it is recommended that the Town delete Section 5.0 of the Zoning Bylaw –Limited Density Residential Development and consider adopting a Townhouse Development Bylaw (see *Appendix A)*. This bylaw would reduce the required tract size to 10 acres and the number of dwelling units per building to four, while preserving open space.

Douglas Master Plan

Economic Development



V. Economic Development

Economic development is essentially the increase in nonresidential activity. It is an effort to expand or improve business opportunities in order to broaden the tax base, provide additional services and create employment in a community. It can include changes in zoning to provide more physical space for nonresidential activity, changes in policies to attract more establishments, the expansion of infrastructure to make a location more appealing as a business location, improved marketing and promotion of an existing economic base, the creation of a business retention and recruitment strategy, or job training and education.

The purpose of the Economic Development element of the Douglas Master Plan is to identify strategies to broaden the tax base, examine local employment trends, evaluate local shopping and service needs and opportunities, and balance the needs of businesses, consumers and town character. This element will identify the economic opportunities and challenges that Douglas faces now and those which it could encounter in the future. Many future issues will be both opportunities and challenges for the Town. The key is to develop flexible strategies that allow the Town to recognize both the positive and negative aspects of a particular force of change and utilize it for the best interest of the town.

Douglas has a number of opportunities that will help it to attract economic growth:

- The Town currently has a substantial amount of vacant land that is zoned for industrial use. The land use policies for these zones must be clarified in order to utilize these areas for their greatest development potential and enhancement of the town (see *Land Use* element).
- The amount of available buildable land, the potential to extend water and sewer service to some locations, and affordable housing opportunities for the work force make Douglas a desirable location for business.
- The Town's locational advantages include immediate access to Route 146 and proximity to I-395. Additionally, the town is located between the Worcester and Providence markets as well as being within the Boston region.
- The Route 146/Mass Pike interchange will improve highway accessibility in Douglas, making the town more attractive as a business location. This could spur development along the Route 146 corridor and in other industrial zones and broaden the tax base.
- Rhode Island has seen an increase in economic development activity which could result in spin-off development opportunities in Douglas.
- East Douglas is not only Douglas' downtown but is also one of two historic centers of the town. Its local role as the service center of the community must be balanced with its regional role as a potential tourist destination within the Blackstone Valley, and Main Street's role serving as a regional transportation route with its role as part of Route 16.

- Route 16 is the face of the community as well as a regional transportation corridor. Policies regarding this corridor's role in economic development, in serving local transportation needs, providing a gateway into the Blackstone Valley and being a part of a regional transportation network must be defined (see *Circulation* element).
- The proposed regional landfill has the potential to generate $1.4 million in revenues for the Town of Douglas each year, more than one quarter of the town's current tax levy.[15] The Town of Plainville, for example, has benefited from the tax revenues generated from the landfill located near the intersection of I-495 and Route 1. This has been the largest nonresidential tax source in town and the landfill is now nearing the end of its use. Once the landfill closes, Plainville will need to replace the loss in nonresidential tax revenues in order to maintain the Town's fiscal health.

However, Douglas also faces some challenges and threats:

- There has been an increase in residential development both in and adjacent to industrial zoned land in northeast Douglas which could jeopardize the future potential for nonresidential development. It is the recommendation of the Master Plan to encourage economic development in this area, which will require a policy change in allowing residential construction in this area.
- The current lack of water and sewer service to the land zoned Industrial has limited development opportunities in Douglas.
- Guilford Industries is a vital component of the Town's tax base. If this industry should choose to relocate to another town, the fiscal impact on Douglas could be significant if it is not replaced by a comparable business or if the building remains vacant for an extended period of time.
- While the proposed regional landfill has the potential to increase tax revenues, it could also create traffic problems, be detrimental to the environment, and change the character of the town.

This section of the Master Plan provides background information on the local economy, land distribution, tax rates and employment in Douglas so that an appropriate economic development strategy may be established and implemented.

Tax Base

Douglas is heavily dependent on residential properties for its tax base, with 91% of its tax revenues coming from residential property values (see Table 17). The FY 1997 tax

[15] The $1.4 million payment is a "host community/payment in lieu of taxes" agreement which is equivalent to an assessed valuation of $87,750,000. As a point of comparison, it would take 21 industrial properties similar in value to Guilford Industries to equal this valuation.

rate of 16.02 generated a total tax levy of $4,976,568. The total assessed value for the town was $310,647,200.[16]

Table 17: FY 1997 Tax Levies

	Tax Levy	% of Total
Residential	$4,503,163	90.5%
Open Space	$4,234	0.1%
Commercial	$127,064	2.6%
Industrial	$169,322	3.4%
Personal Property	$172,785	3.5%
Total	$4,976,568	100.0%

Source: Massachusetts Department of Revenue, 1997

[16] For cross-reference information with the Fiscal Analysis presented in the Land Use section, the 1995 figures are as follows:

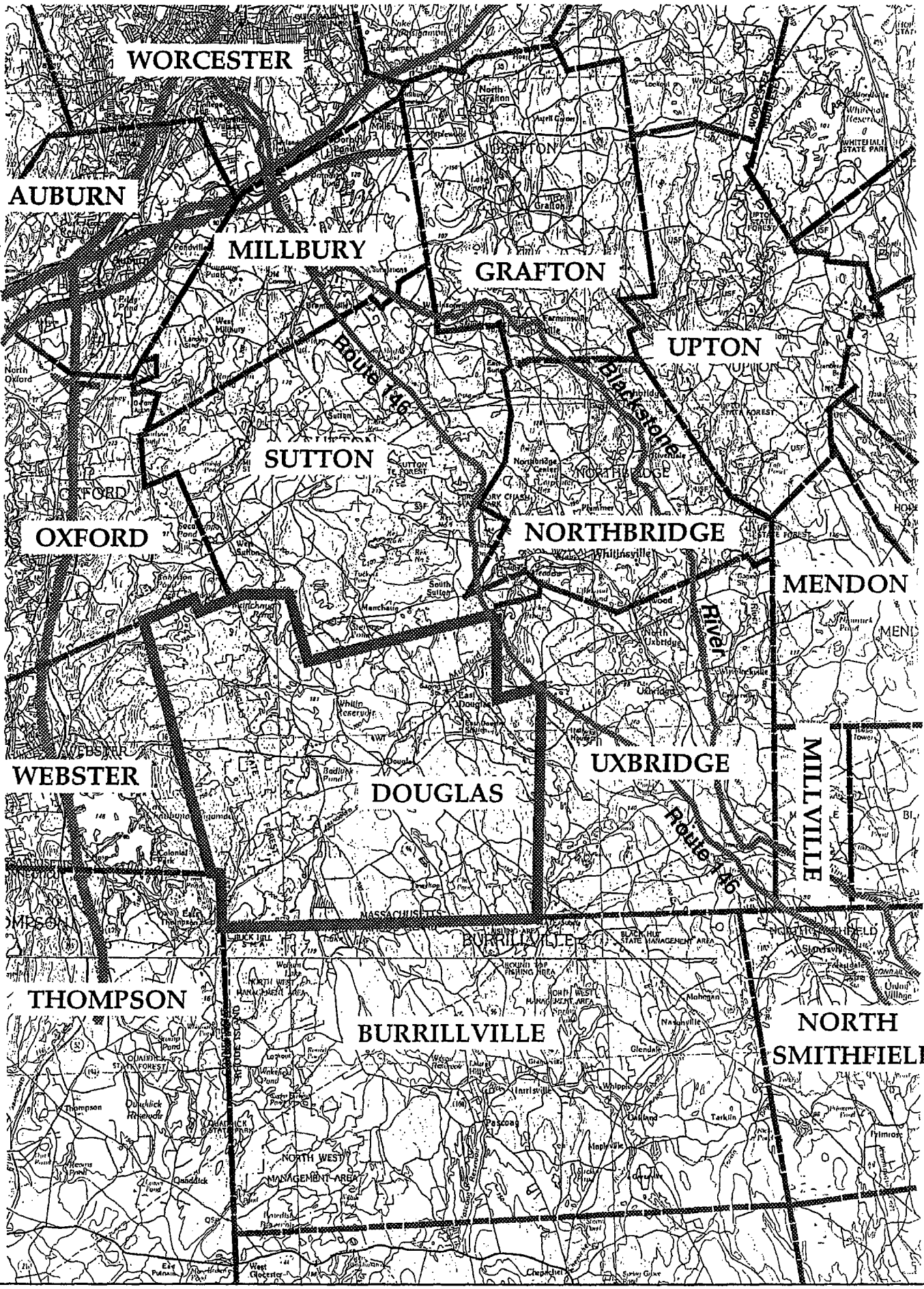
Tax rate:	15.40
Tax levy:	$4,599,236
Total Assessed value:	$298,651,700

Of the surrounding Blackstone Valley communities, Douglas ranks 4th in terms of dependence on residential/open space revenues (see Table 18). See Figure 1 for Douglas' regional location.

Table 18: Residential/Open Space Tax Levies as a % of Total by Community, FY 1997

Municipality	Residential/Open Space as % of total	Commercial/ Industrial/ Personal Property as % of total
Millville	94.4	5.6
Upton	92.8	7.2
Blackstone	91.5	8.5
Douglas	**90.6**	**9.4**
Mendon	88.4	11.6
Grafton	87.2	12.8
Sutton	87.2	12.8
Uxbridge	84.8	15.2
Northbridge	84.4	15.6
Millbury	84.0	16.0
Oxford	82.4	17.6
Webster	71.3	28.7
Worcester	56.0	44.0

Source: Massachusetts Department of Revenue, 1997



REGIONAL LOCATION MAP

Douglas' 1997 single tax rate of 16.02 is high relative to the surrounding communities. Douglas has the 4th highest rate for residential uses and the 5th highest rate for commercial/industrial uses within Douglas' region (see Table 19).

Table 19: FY 1997 Tax Rates by Community

Municipality	Residential Tax Rate	Municipality	Commercial/Industrial/ Personal Property Tax Rate
Worcester	18.67	Worcester	35.69
Millville	17.40	Webster	21.18
Uxbridge	16.77	Millville	17.40
Douglas	**16.02**	Uxbridge	16.77
Oxford	16.00	**Douglas**	**16.02**
Sutton	15.37	Oxford	16.00
Blackstone	15.32	Sutton	15.37
Grafton	15.30	Blackstone	15.32
Northbridge	14.32	Grafton	15.30
Millbury	14.27	Northbridge	14.32
Mendon	14.27	Millbury	14.27
Upton	11.74	Mendon	14.27
Webster	11.50	Upton	11.74

Source: Massachusetts Department of Revenue, 1997

The average single family tax bill in Douglas was $1,779 in fiscal year 1996, compared to the state median average of $1,957. Douglas' average single family tax bill has been $130 to $178 less than the state median average single family tax bill between fiscal years 1993 and 1996.

Douglas' average single family tax bill is the median for the Blackstone Valley and selected other surrounding towns. It is $325 less than Grafton, the highest of the Blackstone Valley, and $542 more than Webster, the lowest of the surrounding towns.

Table 20: Average Single Family Tax Bill, by Community, FY 1996

Municipality	Single Family Assessed Value	# of Single Family Parcels	Single Family Assessed Value	Tax Rate	Average Single Family Tax Bill	Rank in State (highest to lowest) of 338 communities
Grafton	$424,242,200	2,972	$142,746	14.74	$2,104	136
Millville	$77,488,600	638	$121,455	16.71	$2,030	150
Mendon	$196,697,800	1,302	$151,074	13.41	$2,026	151
Uxbridge	$292,598,750	2,472	$118,365	16.21	$1,919	177
Sutton	$286,150,796	2,254	$126,952	15.02	$1,907	181
Upton	$287,107,500	1,669	$172,024	10.61	$1,825	199
Douglas	$207,276,600	1,794	$115,539	15.40	$1,779	209
Blackstone	$213,388,700	1,807	$118,090	14.84	$1,752	215
Worcester	$2,089,751,401	21,705	$96,280	17.41	$1,676	226
Northbridge	$295,710,000	2,517	$117,485	13.95	$1,639	237
Millbury	$342,779,400	3,108	$110,289	14.51	$1,600	249
Oxford	$322,133,600	3,115	$103,414	15.43	$1,596	254
Webster	$370,751,900	3,200	$115,860	10.68	$1,237	314

Source: Massachusetts Department of Revenue

Tax Base Implications

Douglas can choose any of these comparison communities as "models" for tax base diversification strategies: the impact that the tax rate and composition of the tax base have on the average single family tax bill is apparent.

- Relative to surrounding communities, Douglas residents are not overtaxed. The average single family tax bill in Douglas is the median for the region in spite of the tax rate being slightly higher than the median.
- Oxford, Webster and Worcester are the least dependent on residential revenues and have the lowest average single family tax bills in the region. This emphasizes the impact that a strong nonresidential tax base can have on the costs to residents in financing the services of a community.
- The Town of Webster has the lowest residential tax rate and the lowest average single family tax bill in the Blackstone Valley, yet is second only to Worcester in the highest tax rates for nonresidential uses. The tax rates shown in Table 19, the tax levies shown in Table 18, and the average single family tax bill shown in Table 20, indicate that Webster is able to shift a substantial amount of the tax burden to commercial and industrial properties. This emphasizes the point that a split tax rate can result in substantial savings to residential tax payers, but only if there is a significant amount of nonresidential development to which the split tax rate can be applied.

Tax Base Growth

From the perspective of economic development policy, a basic question is how much commercial and industrial growth will be necessary to keep pace with the residential growth. The following discussion presents a simplified analysis, assuming that future expenditures and property values maintain their current relative relationships.

Residential properties have comprised approximately 91% of Douglas' tax revenues since 1990. The average increase in assessed values for new single family residential parcels is $150,000. If Douglas continues to experience an increase of 100 new dwelling units each year, the corresponding increase in residential assessment will be $15,000,000. In order to maintain the current revenue distribution of 91% residential and 9% commercial/industrial, the valuation in nonresidential property would have to increase by $1.5 million for every 100 new single family homes constructed.

Average value for new single family parcel	$150,000
Residential growth rate	X 100 units/year
Total increase in valuation of res. parcels	$15,000,000
10% of valuation from commercial/industrial property	$1,500,000

To put this into perspective, it may be helpful to compare this needed growth in valuation with examples of industrial and commercial land uses that exist in the town today. The Town's largest industrial use is Guilford Industries on Gilboa Street, and a typical modern commercial property is the Unibank building on Main Street in East Douglas. The current assessed values of the buildings on these properties can be used as benchmarks to determine the amount of development required to keep the tax base balanced at its current level (land valuations are assumed to be already assessed).

The assessed building value for Guilford Industries is currently $4,197,517. The current building value for Unibank is $353,401. Consequently, Douglas would need to add one industrial property similar in value to Guilford every 3 years, or 4 commercial properties similar in value to Unibank each year, in order to keep pace with residential development and maintain the current mix of tax revenues.

Guilford assessed value			$4,197,517
Unibank assessed value			$353,401
10% of valuation from commercial/industrial property			$1,500,000
# of Guilfords each year	$1.5 million/$4.2 million	=	0.36
# of Unibanks each year	$1.5 million /$0.3 million	=	4.2

If these figures are tied to residential buildout projections at the 100 dwelling units per year growth rate, Douglas would need to create an additional 17 large industrial developments or 204 smaller commercial developments by buildout in order to maintain the current tax revenue structure (see Table 21).

Table 21: Estimated Tax Revenue Sources 2005-2045

Year	# of new dwellings since 1997	Res. Valuation growth since 1997	Comm./Indus. growth to maintain balance	# of large industrial developments	OR	# of smaller commercial developments
2005	800	$ 120,000,000	$12,000,000	3		34
2015	1800	$ 270,000,000	$27,000,000	7		77
2025	2800	$ 420,000,000	$42,000,000	10		119
2035	3800	$ 570,000,000	$57,000,000	14		162
2045	4800	$ 720,000,000	$72,000,000	17		204

Source: Analysis by Whiteman & Taintor

Employment Patterns

Employment in Douglas

Douglas has a growing base of employers, primarily in manufacturing and contract construction. According to data from the Massachusetts Department of Employment and Training, in 1986 Douglas had 91 establishments with a total of 599 employees.[17] During the recession of the early 1990's, the number of establishments dropped to 69 but the number of employees increased. As of 1995 (the most recent year for which figures are available), Douglas had returned to a level where there were once again 91 establishments but employment increased to 851.[18]

[17] These data are for establishments that are subject to unemployment compensation laws, and thus exclude very small businesses and self-employed persons. Firms that either hire no employees or have only part time workers do not show up in the data.

[18] The Massachusetts Department of Employment and Training (DET) publishes information regarding employment and wages in Massachusetts cites and towns. This information represents the jobs available in various sectors within a particular town but is does not indicate whether or not that job is held by a Douglas resident.

Table 22: Employment in Douglas, 1986-1995

Year	Number of establish-ments	Total employment	Largest Employment Sectors in Douglas					
			Gov't	Contract Construction	Manufacturing	Wholesale & Retail Trade	FIRE	Services
1986	91	599	139	70	C	43	C	31
1987	68	541	158	86	C	43	C	34
1988	77	597	180	101	C	54	C	40
1989	77	641	189	102	C	73	C	40
1990	74	662	221	65	224	98	C	37
1991	79	596	213	53	189	84	C	40
1992	69	663	222	118	187	78	C	37
1993	75	811	231	137	292	89	C	43
1994	88	827	223	114	328	83	11	60
1995	91	851	229	92	338	82	35	66

C = Confidential. Data is confidential if there are less than three reporting units in the total; or if with three or more units, one unit accounts for 80% of the total.
FIRE= Finance, Insurance and Real Estate

Source: Massachusetts Department of Employment and Training, "Employment and Wages in Establishments Subject to Unemployment Compensation Laws by City and Town 1986-1995"

The sectors with the most significant growth in the number of employees are manufacturing and contract construction (see Table 22). The government sector employs a significant amount of people and has steadily increased over time.

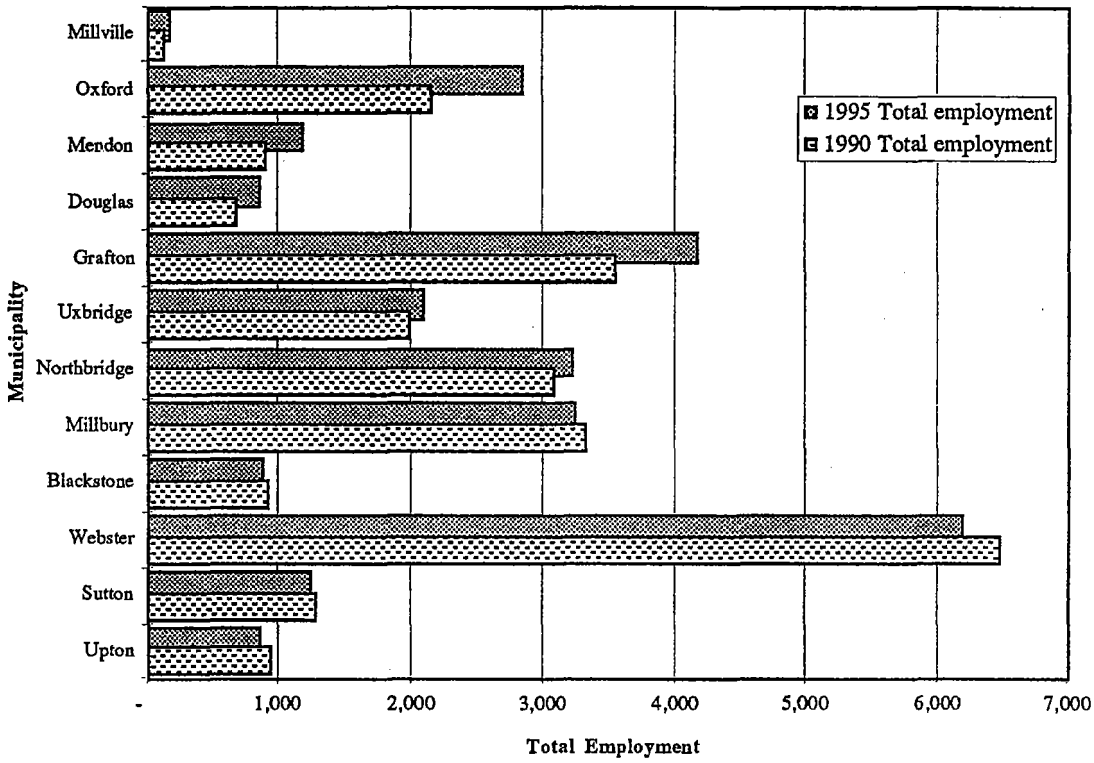
Since the recession, Douglas has seen a 23% increase in the number of establishments and a 29% increase in total employment. In contrast, many of the surrounding communities have seen a decrease in both the number of establishments and total employment within this time period (see Table 23 and Figure 2).

Table 23: Change in Number of Establishments and Total Employment 1990-1995 by Community

Municipality	% Change 1990-1995 Number of establishments	% Change 1990-1995 Total employment
Millville	15%	33%
Oxford	-3%	33%
Mendon	8%	32%
Douglas	**23%**	**29%**
Grafton	-6%	17%
Uxbridge	10%	5%
Northbridge	5%	4%
Worcester	-3%	1%
Millbury	-4%	-2%
Blackstone	-7%	-4%
Webster	-3%	-4%
Sutton	12%	-5%
Upton	-4%	-7%

Source: Massachusetts Department of Employment and Training, "Employment and Wages in Establishments Subject to Unemployment Compensation Laws by City and Town 1986-1995."

Figure 2: Total Employment by Community, 1990 and 1995



The average firm size in Douglas (as of 1995) is relatively small with 9 employees per firm.[19] This is the median of the surrounding communities. Worcester has the largest average number of employees per establishment with 22 and Blackstone and Millville have the fewest with 5 and 6, respectively. The average wage paid by the employers in Douglas was $24,231 in 1995. The town's five largest employers had a combined total of 280 people in 1993. However, excluding Town government and the school department, only one employer in Douglas –Guilford Industries– had more than 20 employees in 1993. However, Granutec's employment doubled between 1993 and 1997. Recent figures indicate Granutec employed 30 people as of December, 1997. Recent employment data for the other four employers was not available.

[19] The average size of businesses in each city and town can be estimated by dividing the total number of employees in establishments subject to employment security law by the number of such establishments. This measure is only an estimate because some businesses (in particular, ones with no employees other than the owners) are not subject to the employment security law. Note also the term "establishments" includes government entities as well as private businesses.

Table 24: Largest Employers in Douglas, 1993

Employer	# Employees
Town of Douglas	155
Guilford Industries	75
Guaranteed Builders, Inc.	20
Axe Mill Tavern	15
Granutec, Inc.	15

Source: Mass. Department of Housing and Community Development, Community Profile.

Employment of Douglas Residents

The U.S. Census also contains data on employment and wages but presents it in terms of the place of residence rather than the location of the workplace. Therefore, a Douglas resident may indicate in the U.S. Census that he is employed in a service industry but this information does not reveal in which town that service job is located.

Table 25: Residents Employed by Occupation, by Town, 1990

	Managerial & Professional	Technical, Sales and Administrative	Service	Farming & Forestry	Precision Production and Repair	Operators, Fabricators and Laborers
Douglas	**24%**	**36%**	**10%**	**1%**	**14%**	**16%**
Blackstone	23%	28%	12%	1%	18%	17%
Grafton	31%	32%	13%	1%	11%	12%
Mendon	36%	32%	6%	1%	13%	11%
Millbury	24%	37%	13%	0%	13%	14%
Millville	24%	31%	13%	1%	15%	16%
Northbridge	25%	30%	14%	1%	14%	16%
Oxford	23%	34%	12%	0%	15%	16%
Sutton	28%	32%	12%	1%	13%	14%
Upton	38%	32%	9%	0%	11%	10%
Uxbridge	24%	33%	12%	1%	13%	16%
Webster	20%	33%	11%	1%	15%	19%
Worcester	27%	34%	16%	1%	9%	14%

Source: 1990 U.S. Census

The majority of residents in the Blackstone Valley were employed in either Managerial and Professional or Technical, Sales and Administrative occupations, as of the 1990 Census. Thirty-six percent of Douglas residents were employed in Technical, Sales and Administrative positions in 1990, the second largest percentage in the Blackstone Valley.

Home Occupations

The previous data did not cover self employed persons or other businesses which are not subject to the employment security law. Therefore, any business with no employees other than the owners, such as home occupations, were not presented in the tables above. Due to improvements in telecommunications and other technology, home occupations have become a far more common and feasible employment option.

The current Town Bylaws define a home occupation as "the use of a room or an area in a dwelling or subordinate building as an office, studio, or workshop, provided that it is not inconsistent with nor detrimental to the neighborhood in respect to noise, smoke, odor, dust or appearance. Home occupations are allowed as of right in the RC-1, RC-2, CB, C, and Ind. districts and by special permit in the R-A and VR districts.

Information regarding the number of home occupations in Douglas was not available but there has been interested expressed throughout the course of the Master Plan to encourage more home occupations as part of the Town's economic development strategy. in order to achieve this, the Town should adopt a Home Occupation Bylaw. Specific language for such a bylaw is provided in Appendix A.

Location of Workplace

Most of Douglas' residents work outside of the community. According to the U.S. Census, Douglas had 2,692 employed residents. Seventeen percent lived and worked in Douglas while 15% worked in Worcester. The majority of other workers commuted to nearby communities such as Uxbridge and Webster. Only 0.8% of Douglas residents commuted to Boston and 0.3% commuted to Providence in 1990.

Table 26: Commuting Destinations of Douglas Residents, 1990

Place of work	% of total workers in Douglas
Douglas	17%
Worcester	15%
Northbridge	9%
Uxbridge	4%
Westborough	4%
Webster	4%
Auburn	4%
Grafton	4%
Milford	3%
Millbury	3%
Framingham	2%
Marlborough	2%
Shrewsbury	2%
Northborough	1%
Mendon	1%

Source: 1990 U.S. Census

It is important to note that the 1990 figures do not reflect the building boom that has occurred in Douglas in recent years. The addition of 100 new homes each year since 1994 has most likely altered the residential commuting pattern for the town as a whole.

Land Availability for Industrial Development

The 1994 study prepared by students of the University of Massachusetts identified two areas of Douglas as being most suitable for development in terms of physical factors: (1) the commercial center of town in East Douglas, and (2) the industrial zone land in the northwest section of town.[20] The physical suitability was determined by rating slopes, drainage, depth to water table and the depth to bedrock. The study also examined the topoclimatic conditions and visual quality. Combining the assessment of these three analyses (physical, topoclimatic, and visual), the land that is located along Route 16 was determined to be the most suitable for development in terms of visual and topographical rating and the northwest area of town in terms of physical and visual qualities.

The UMass study selected a "Preferred Development Alternative" under which development would be concentrated in the town center and in six new, small villages located in areas throughout town. The study recommended that 10% of the land should be used for commercial and light industrial use. These types of land uses were targeted for the northwest and northeast corners of town, the areas currently zoned for industrial use. It was also recommended that only light industry be allowed due to the number of first order streams in the area.

The areas identified by the UMass study are currently zoned for industrial use. This section will further analyze the development potential of these areas in terms of industrial development options.

East Douglas

As stated in the *Land Use* element, East Douglas serves as the downtown and focal point of Douglas. Residential development has been increasing dramatically in the North Street area and the amount of industrial zoned land in this vicinity has the potential to increase development opportunities for non-residential uses.

There are approximately 182 acres of developable industrial land within two industrial zones: (1) the area located between North Street and Gilboa Street, the west side of North Street at the Sutton town line, and the area between Gilboa and Northwest Main Streets, and (2) the industrial area located along Davis Street and the Uxbridge Town line (see Figure 3). While these areas contain some physical limitations in terms of slope and a few wetlands, they are primarily free of significant constraints. The visibility and access associated with Route 146 increases the development potential of these areas. In addition, traffic generated from development in these zones is less likely to impact the downtown than development in the northwest area of Douglas due to the proximity to Route 146.

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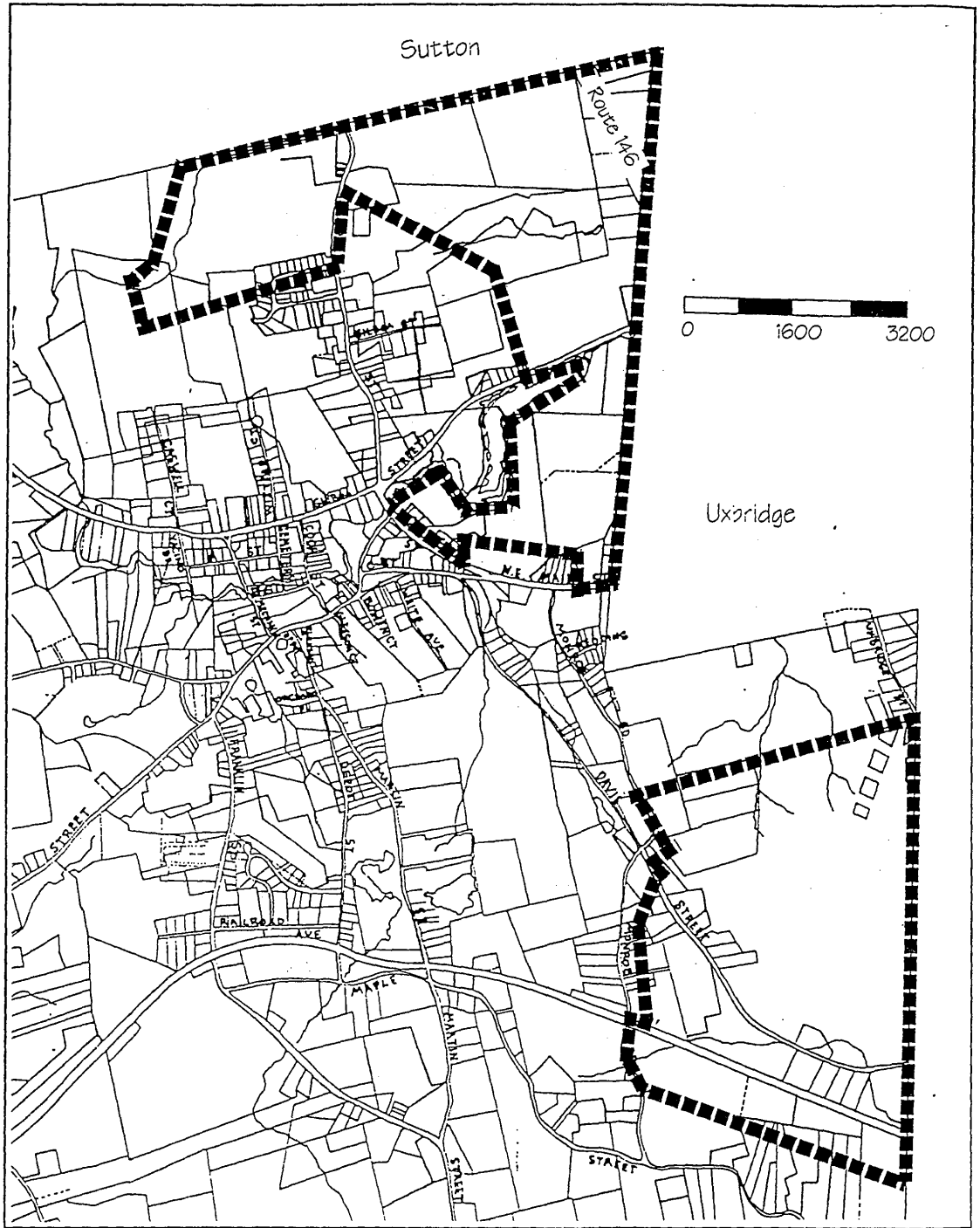
[20] *Our Rural Heritage and the Future: A Master Plan for the Town of Douglas*



EAST DOUGLAS AREA MAP

N

Parcel boundaries

Industrial zone boundary

The total area zoned for industrial use in the northeast part of town (i.e., the North Street-Gilboa Street district and the Davis Street area) consists of approximately 958 acres. Approximately 678 acres have been assigned land use codes while an additional 280 acres are classified as "owner unknown" and have not been assigned a land use code within the database (however, there is adequate information for the Town to tax these parcels). The total acreage for each land use code within this industrial zone is shown below.

Table 27: Northeast Industrial Districts Parcels

Current Land Use	Land Use Code	Number of parcels	Parcel Acreage
Multi-use, primarily residential	013	1	43
Single Family residential	101	20	96
Mobile home	103	1	2
Two-Family	104	1	2
Multiple houses on one parcel	109	1	14
Developable residential land	130	3	52
Undevelopable residential land	132	12	116
Underwater land	231	1	23
Auto sales and service	330	1	2
Auto repair	332	1	1
Buildings for manufacturing	400	7	70
Sand and Gravel	410	6	120
Developable industrial land	440	8	130
Undevelopable industrial land	442	1	7
Subtotal		64	678
Owner Unknown*			280
TOTAL			958

* Number of parcels is unknown; acreage is estimated based on the total land zoned for industrial use minus the land that is accounted for within the database.

Source: Assessors database, January 1, 1997

Approximately 157 acres of land are currently in some type of residential use (Land Use codes 013, 101, 103, 104, 109), 73 acres are used for commercial and industrial purposes, and 120 acres are used for sand and gravel operations. This results in 608 acres of vacant industrial zoned land. Approximately 182 acres of this land has been classified by the Assessor as developable or potentially developable (Land Use codes 130 and 440). Twenty–three acres are classified as "under water land" which could not be developed and an additional 123 acres are classified as undevelopable residential or industrial land. It is uncertain if the "undevelopable land" is classified as such due to a lack of access or if in fact, the land contains development limitations. The 280 acres of "owner unknown" land may or may not be developable.

Due to the lack of infrastructure in these areas it is the policy of the Zoning Board of Appeals to grant variances to allow single family residential development (the area nearest North Street in particular).[21] The trend toward residential development is further evidenced by the amount of land within this industrial district which is currently used for residential land uses.

This area is Douglas' best opportunity for economic development. The Town should develop clear policies and associated regulations regarding this area as described in the recommendations of the *Land Use* element. If the Town wants economic development, it must coordinate the actions of all Town boards to ensure that the land base is protected from further incremental loss. However, infrastructure improvements are necessary to make these areas competitive within the regional market.

The Old Colony Planning Council prepared an *Industrial Land Study* for the Town of Easton in 1993. As part of this study, various businesses were interviewed or surveyed in order to investigate the firms' locational considerations. The types of firms that were listed in the study are relevant to the East Douglas location as they are low wastewater generating uses and emphasized the importance of highway accessibility. If Douglas does not invest in infrastructure improvements the following types of firms may still find Douglas to be an attractive location due to the access to Route 146:

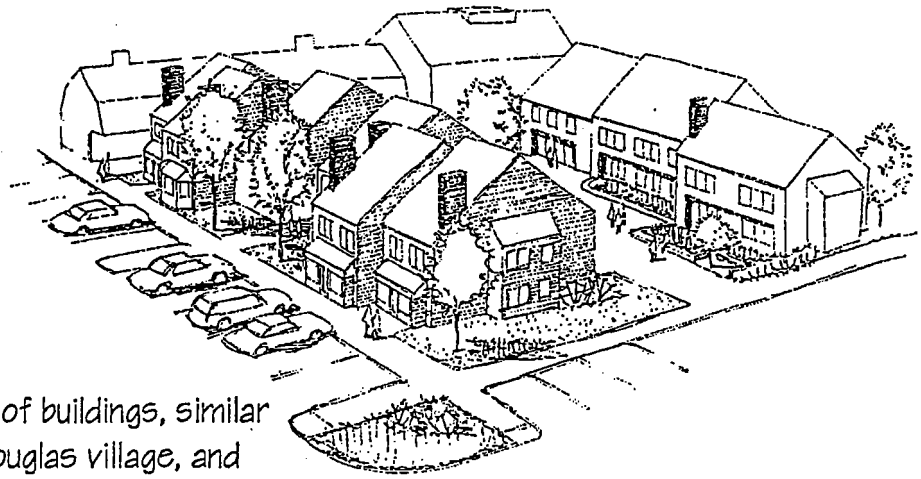
- Computer printer distributor
- Video production-advertising company
- Welding supplies wholesaler
- Classic car dealer
- Warehouse for an R&D firm
- Manufacturer and distributor of wholesale metals
- Clothing manufacturing

If Douglas would prefer to encourage the types of developments that are more consistent with an industrial park, infrastructure improvements will have to be made.

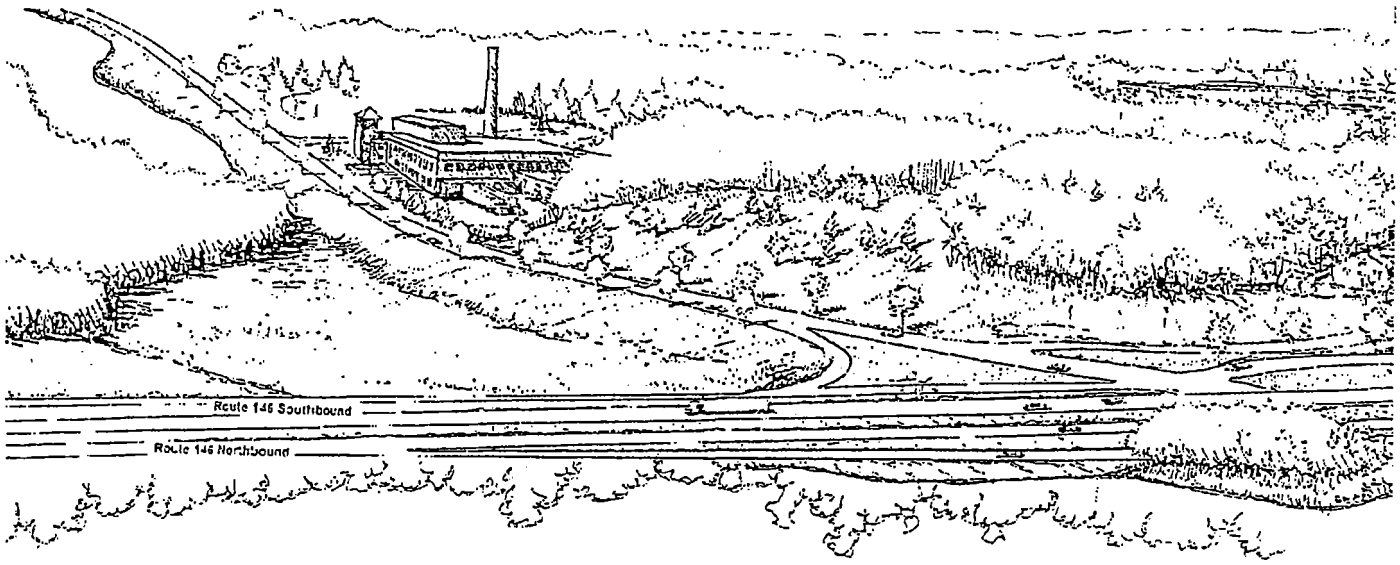
The Blackstone Valley Chamber of Commerce recently completed a corridor study to address design issues and identify regulatory strategies for the Route 146 corridor. The Hutnak property located to the west of Route 146 was selected as a study site for potential site design options. The study made specific recommendations for changes to the Douglas Zoning Bylaw in order to encourage development that is beneficial to the Town's tax base as well as its character. The specific recommendations are described in the *Land Use* element and sketches of the design concepts are shown in Figure 4.

[21] Art McGuiness, Board of Appeals. November 3, 1997.

Figure 4: Design Concept for Northeast Douglas

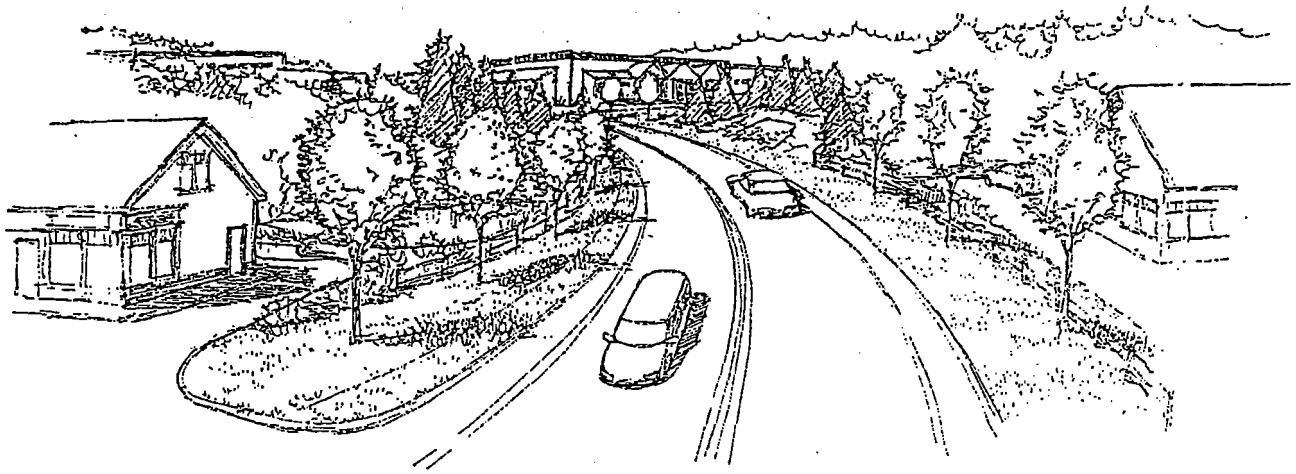


Encourage a clustering of buildings, similar in style to the East Douglas village, and establish a maximum building footprint of 3,000 to 4,000 square feet.

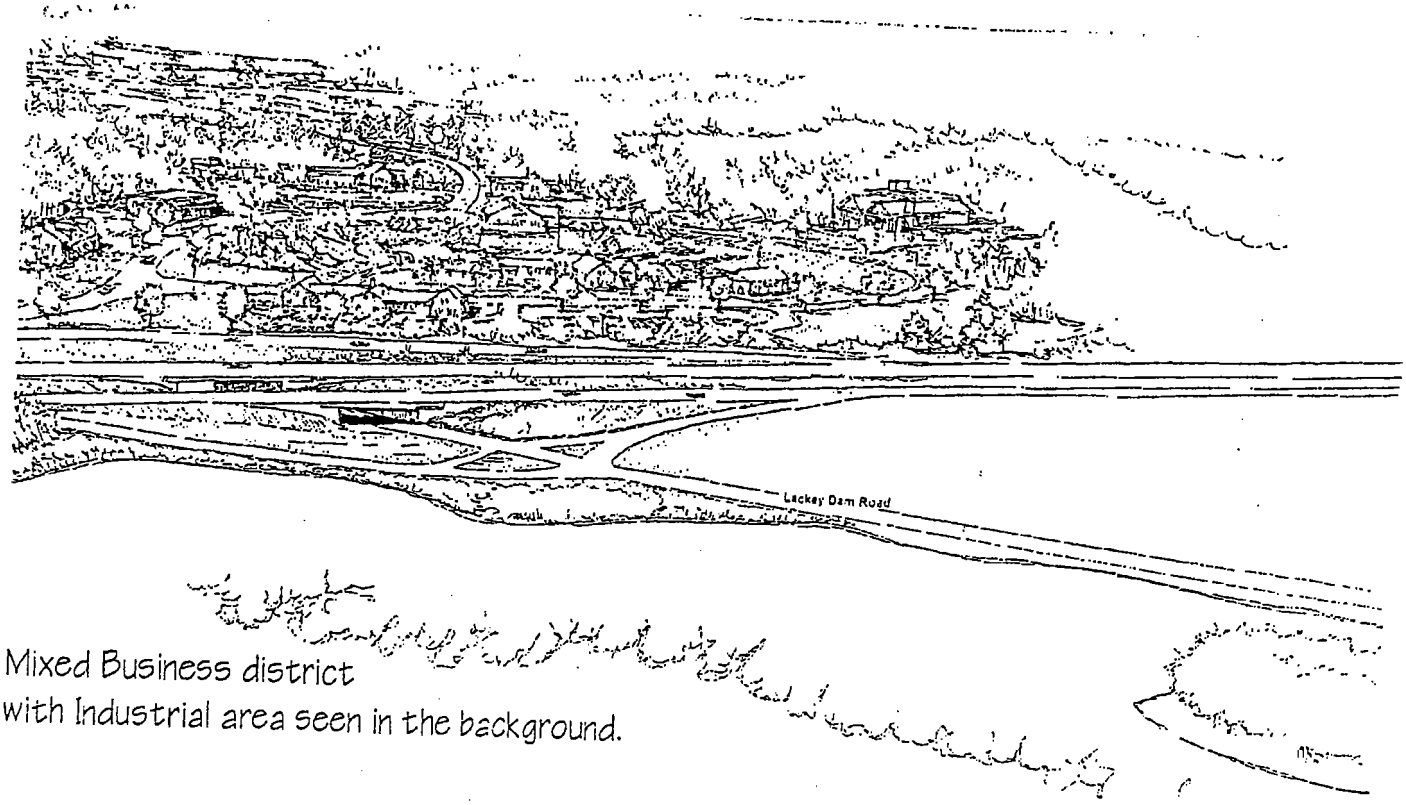


Illustrations by Gates, Leighton & Associates, Inc., East Providence, RI.

Gateway to Douglas: sample site design under proposed zoning.



Canopy trees should be planted along roadways in order to screen commercial areas, large industrial uses, and parking lots.



Mixed Business district with Industrial area seen in the background.

Northwest Douglas

The northwest industrial area (see Figure 5) is approximately 1800 acres and consists of a variety of land uses, according to the Assessors' database. Approximately 800 acres of this land belong to unknown owners. The total acreage for each land use code within this industrial zone is shown below.

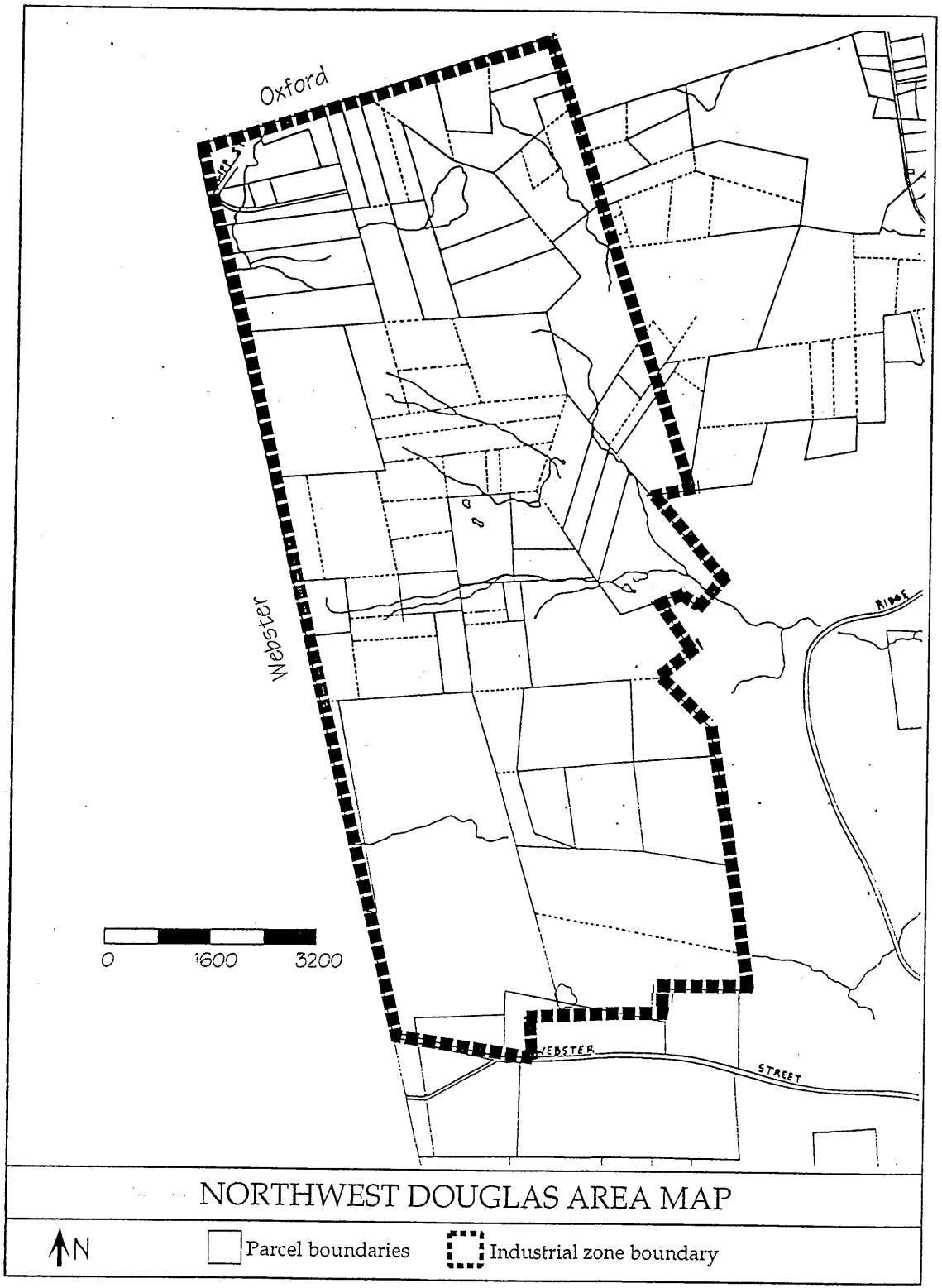
Table 28: Northwest Industrial District Parcels

Current Land Use	Land Use Code	Number of parcels	Parcel Acreage
Potentially developable residential land	131	1	155
Undevelopable residential land	132	8	203
Warehouse	401	1	3
Developable industrial land	440	2	252
Potentially developable industrial land	441	6	54
Undevelopable industrial land	442	7	173
Forest land -Chapter 61	601	7	162
Municipal land	903	1	13
Subtotal		33	1015
"Owner Unknown"			785
TOTAL			**1800**

Source: Assessors database, January 1, 1997

The 252 acres of "developable industrial land" identified above is the site of the proposed regional landfill and consists of the only two parcels immediately accessible via Route 16. The "potentially developable" and "undevelopable" land is located throughout the zone and varies in accessibility.[22] Once again, it is uncertain if the "undevelopable" parcels contain physical constraints or if they are undevelopable due to a current lack of access. The Chapter 61 land is primarily located in the northern part of this district and could potentially be developed at some point in time. Consequently, the entire 1800 acres primarily consists of vacant land.

[22] Some of this developable land is classified under a residential land use code even though it is actually within an industrial zone due its location. The parcel may be located within both the industrial zone as well as the adjacent residential zone. This distinction of developable residential land versus developable industrial land is insignificant as the tax rate is the same.



NORTHWEST DOUGLAS AREA MAP

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Parcel boundaries

Industrial zone boundary

The current road network and proximity to major highways will play a role in development suitability for nonresidential uses. Access to parcels in the northwest industrial zone is limited. The industrial zone in the northwest section of town comprises approximately 1800 acres of land yet there is a lack of roads to access the majority of the parcels, making them undevelopable as they currently exist. Assuming that roads could be provided in the future, the most logical access points would be from Northwest Main Street or Route 16 (Webster Street).

The accessibility to Route 16 is a positive feature of this area in terms of business location. This state route leads directly to both I-395 and Route 146. However, in order to access either highway, one must travel through the Douglas village centers or through Webster. The traffic volume in East Douglas is a concern for many residents and the addition of increased truck traffic (associated with industrial development) through the historic centers of the town could be detrimental to the town character. Route 16 westbound from the Douglas town line to I-395 contains a significant amount of vacant land in Webster so it may be a more feasible option for a business to locate in Webster than in northwest Douglas if access to I-395 is a concern.

The recent regional landfill issue has highlighted some of the environmental features and qualities of this area. A geologic fault, first order streams, and the proximity to the Douglas State Forest have been identified as significant environmental and visual features of this area. Due to the presence of these features, it is felt that a regional landfill could be detrimental to the landscape and environmental quality of the area. The same rationale can be applied to the potential for substantial industrial development; therefore, the Town should review the types of nonresidential uses that it wishes to promote in this area.

Due to the environmental factors described above, lack of infrastructure and existing road network, this area is not as suitable as the East Douglas areas for industrial development. However, due to the attractiveness of the landscape and potential highway accessibility, there are some development options that could be considered for this area that would contribute positively to the tax base:

1. *Golf Course:* This type of use would be relatively low in traffic generation, demand few services for the taxes paid, preserve some of the natural features of the area and provide additional recreational facilities within the town. A change in the zoning regulations would be required as "commercial outdoor amusement or recreation place, not including drive-in movie theater" are allowed by special permit only in the RC-1, RC-2, CB, and Comm. districts.

2. *Resort/Hotel:* This could be combined with the Golf Course alternative or be an individual project. The increase in tourism associated with the Blackstone Valley National Heritage Corridor (discussed later in this chapter) could support this type of development. Once again, it would be high in revenue but have a low demand for services. In addition, traffic would be intermittent and most likely occur on weekends and summer months when traffic volumes generally taper off within the town (due to the decrease in commuting traffic). Hotels and motels are permitted by right in the CB district and by special permit in the RC-1, RC-2, and Comm. districts. Large scale hotels or resorts are not mentioned in the Zoning Bylaw as it presently exists.

3. *Retirement Community/Assisted Living/Life Care Facility*: This option would produce the tax revenues of residential properties without impacting the schools. Traffic generation would be lower than a traditional residential development due to the lower trip generation levels of the elder population. However, there may be an increase in the need for assisted transportation and emergency services which may strain the town's ability to provide services. In addition, this type of land use would not occupy a substantial amount of land so additional uses for the site would need to be developed, and the location is not convenient to other services that elderly residents would desire. There is no mention of this type or a comparable type of use in the Zoning Bylaw.

Regional Industrial Market Analysis

Douglas currently has approximately 2,758 acres of its land area zoned for industrial use. As discussed in the previous section, the majority of this land is vacant. While there is interest by residents and town officials in increasing the nonresidential tax base by encouraging more development within these areas, it is important to consider the market demand for such uses.

The Town of Uxbridge recently commissioned RKG Associates, Inc. and Vanasse Hangen Brustlin, Inc. to perform a market feasibility study of industrial/commercial land located in Uxbridge.[23] Because Douglas and Uxbridge share similar locational and infrastructure characteristics, the findings of this study have strong relevance for Douglas. The study concluded that there is a plentiful supply of competitive industrial real estate within the region and the availability of water and sewer service makes fully serviced sites more attractive. However, there appear to be few sites within the immediate Uxbridge/Douglas area.

The primary market area identified in the Uxbridge study lies within a 5 to 10 mile radius and includes the communities of Millville, Blackstone, Mendon, Hopedale, Upton, Northbridge, Sutton, Uxbridge, and Douglas as well as the Rhode Island communities of Burrillville, North Smithfield and Woonsocket. The influence of a secondary market area was also considered as the new Route 146 interchange will impact the region. The secondary area is approximately 20 miles in radius and includes Attleborough, North Attleborough, Plainville, Wrentham, Franklin, Milford, Holliston, Hopkinton, Westborough, Grafton, Shrewsbury, Millbury, Worcester, Auburn, Oxford and Webster (see Figure 1: Regional Location Map).

The RKG study concluded that there is a large quantity of available, fully serviced land in industrial parks (with water, sewer, electricity and gas) within the combined regional area. However, there is a limited supply of serviced sites along the Route 146 corridor. In addition, large lots (50 acres or more) with water, sewer and highway access are available along the I-495 corridor between the Mass Pike and I-95 within the secondary market area but are limited within the immediate primary market area.

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[23] Information regarding industrial land in Uxbridge and the region is from RKG Associates, Inc. and Vanasse Hangen Brustlin, Inc. *Market Feasibility Study and Engineering Review of Industrial/Commercial Land Located in the Town of Uxbridge, Massachusetts.* Draft report, July 12, 1996.

RKG Associates identified 50 existing and planned industrial parks within the primary and secondary market areas. The 50 parks total more than 5,900 acres. Approximately 56% of the total area, or 3,300 acres, remain available for development. Based on historic absorption trends this available acreage would satisfy the market demand for the next 30 to 50 years.

Only 600 acres of undeveloped land are located within the primary market area. Uxbridge contains 370 of these 600 acres of land and three industrial parks in Rhode Island have more than 180 acres which are fully serviced by utilities. The remaining 2700 acres of undeveloped land are located throughout the secondary market area and includes 2,000 acres that are fully serviced with utilities.

It is important to note that the RKG study only examined existing and planned industrial *parks*, not necessarily land zoned industrial. Therefore, industrial land in Douglas and other communities was not considered in the analysis of regional trends. However, based on the study finding that there is a surplus of industrial land available within industrial parks, the addition of industrial land outside of a planned park would only add to the surplus.

Table 29: Inventory of Existing Industrial Parks in Neighboring Communities[24]

Name Location City	Access	Utilities	Year Started	Total Acres	Undev. Acres	Price per acre
Quaker Industrial Park Quaker Hwy Uxbridge	Rt. 146	S,E,G	1993	87	85	$50,000
Heritage Industrial Park Quaker Hwy/Industrial Rd. Uxbridge	Rt. 146	E,G	1988	25	16	$100,000
Ironstone Commerce Park Quaker Hwy Uxbridge	Rt. 146	E,G	1990	265	265	N/A
Commercial Drive Worc-Prov Turnpike Sutton	Rt. 146	E,G	1990	11	11	$13,700
Burnap Comm & Indus Park Worc-Prov Turnpike Sutton	Rt. 146	E,G	1988	20	0	N/A
Upton Indus Park Rt. 140 Upton	Rt. 140	W,E	1980	20	3	N/A
Hopedale Airport Indus Park Airport Drive Hopedale	Rt. 140	W,S,E,G	1978	55	5	N/A
Highland Corporate Park Mendon Rd/ Rt. 126 Cumberland, RI	Rt. 199/ 146/ 295	W,S,E,G	1996	120	120	$65,000
Highland Industrial Park Mendon Rd/ Rt. 126 Woonsocket, RI	Rt. 199/ 146/ 295	W,S,E,G	1975	130	46	$50,000
North Smithfield Industrial Dr./ Pound Hill North Smithfield, RI	Rt. 146	W,S,E,G	1968	100	25	$42,000
Burrillville South Main St. Burrillville, RI	Rt. 100	W,S,E,G	1970	53	15	$40,000
Webster Indus Park Sutton Rd Webster	I-395	W,E,G	1975	45	0	-
Oxford IP-West Main Street Oxford	Rt. 12/ I-395	W,E,G	1975	25	0	-
Oxford IP -East Town Forest Rd Oxford	I-395	W,E,G	1980	125	55	$3500
Oxford Crossing Sutton Street Oxford	I-395	W,E,G	1990	100	100	$7000

Utilities available: (W) Water, (S) Sewer, (E) Electricity, (G) Natural Gas

This table was modified from the original Uxbridge study which examined 50 parks. Only those parks nearest to Douglas are shown in Table 29.

There are several sites in Millbury, Sutton and Northbridge that are currently zoned for industrial use but have not been developed as industrial parks. RKG felt that these sites

[24] RKG Associates, Inc. and Vanasse Hangen Brustlin, Inc. *Market Feasibility Study and Engineering Review of Industrial/Commercial Land Located in the Town of Uxbridge, Massachusetts.* Draft report, July 12, 1996. Page 16.

should also be considered due to the anticipated construction of the Route 146 interchange. These sites may be introduced to the market in the next few years as property owners and developers are anticipating an increased demand for industrial sites within the Route 146 corridor as a result of the interchange.

Table 30: Industrial Zoned Sites near Route 146[25]

Location	Size (acres)	Description
Millbury	88	On Rt. 146 near new interchange; under contract for retail development; utilities near by
Millbury	100	On Rt. 146 at Sutton Town line; Redevelopment Authority may consider rezoning to Industrial
Sutton	60	On Rt. 146 adjacent to Burnap IP, Mixed Ind, Bus, Res
Sutton	120	On east side Rt. 146 north Fayette Rd, owned by Worcester Sand & Gravel
Sutton	100	On west side Rt. 146; north of Whitins Road
Sutton	70	On west side Rt. 146; south of Whitins Road
Sutton	100	On east side of Rt. 146; south of Oakhurst Rd/Douglas & Uxbridge Town lines
Northbridge	150	On west side of Rt. 122; application for predevelopment assistance to MDFA is reported to be pending

Douglas is located within a competitive industrial real estate market. The current supply within the region is plentiful and additional sites are being created or upgraded in several locations. The only shortage is in large sites with water and sewer service. At present, there are no large sites with water and sewer service within the Blackstone Valley. Sites that are not served by utilities are likely to become less marketable in the future as the quality of existing sites is improved.

Given this regional market context, the next step is to estimate how much of the demand for industrial space Douglas can expect to capture. Again, the Uxbridge study presents useable data. The Town of Uxbridge is comparable to Douglas in that it currently does not provide water and sewer service to its nonresidential areas and the town will be impacted by the Mass Pike/Route 146 interchange. Since 1980, 17 properties containing 225,000 square feet have been constructed in Uxbridge. This averages to slightly more than one building and 15,000 square feet of new construction per year. The average building size is 13,200 square feet with an average lot size of 3.72 acres, indicating that the town has been attracting relatively small scale industrial uses.

Because most of the buildings in Uxbridge have been constructed on sites that lack water and/or sewer (such is the case in Douglas), it is assumed that this growth pattern is

[25] RKG Associates, Inc. and Vanasse Hangen Brustlin, Inc. *Market Feasibility Study and Engineering Review of Industrial/Commercial Land Located in the Town of Uxbridge, Massachusetts.* Draft report, July 12, 1996. Page 22.

representative of what Douglas is likely to experience if no investment is made in water and sewer extensions. If these growth trends are applied to Douglas, it will take approximately 102 years for the 382 acres of developable industrial land identified within the Assessors' database to build out. As described earlier, Douglas has approximately 2400 acres of vacant industrial land, when parcels of unknown ownership, land classified as developable residential land and Chapter 61 land are considered. Therefore, the length of time for buildout to occur would be far greater if the total land area is considered.

Commercial Development Potential

Developable Areas

According to the Assessors database, there are 57 acres of "developable" or "potentially developable" commercial land in Douglas (this does not include parcels that are classified as "owner unknown"). However, the Central Business (CB) and Village Residential (VR) districts permit both residential and commercial uses. The *Land Use* element described the potential buildout for these districts in terms of the number of residential lots that could be created but these lots could also be used for commercial development. The development potential for each commercial district is described below.

Central Business (CB)

Approximately 35 parcel acres of Douglas is included in the CB district. The majority of this land is currently in residential use (26 acres). Approximately 4 acres are used for small retail and restaurants, less than 2 acres are in some other commercial use and 2.5 acres are public service uses. The only remaining vacant land within this zoning district is located in East Douglas and consists of 10,000 square feet of developable residential land and slightly less then 9,000 square feet of undevelopable residential land.

Commercial (C)

Seventy-one acres are included in the C district. Forty-two acres are in residential use while 29 acres could be developed. The developable acreage is located in East Douglas. Residential uses are not permitted in the C district under the current Zoning Bylaw so it is expected that the developable acreage will be used for nonresidential development. The existing residential uses were most likely constructed prior to zoning.

Village Residential (VR)

The VR district encompasses a total of 1470 parcel acres. Roughly half of this acreage (727 acres) is in residential use and 181 acres are public service uses. Only 16 acres are used for commercial purposes. Approximately 436 acres are vacant, of which 290 acres could be developed for either residential or commercial use.

Commercial Uses

The general economic development strategy of the Blackstone Valley (according to both the Chamber of Commerce and Corridor Commission) is to maintain and enhance the traditional New England village centers that contribute to each community's unique sense of place while promoting more intensive nonresidential development in appropriate areas such as near major highway locations. Douglas should consider this strategy as a model in its economic development planning. A considerable amount of discussion has occurred regarding the development possibilities for the underutilized industrial areas in Douglas but the small scale commercial uses are equally important in an economic development strategy.

Douglas' commercial uses primarily consist of small scale retail and service establishments under 10,000 square feet in size. This type of use is categorized within the Assessors database as Land Use Code 326 and comprises the greatest number of parcels in Douglas under the commercial code (Land Use Codes in the 300 series). In addition, there are several eating and drinking establishments in town (LU Code 326), auto service establishments (LU Codes 330-335), and a few building and construction related uses (LU codes 313 and 321). These establishments provide many of the basic services upon which local residents depend as well as contributing to the unique charm of the town.

In addition to these commercial uses, there are a number of mixed-use properties. There is a total of 57.26 acres of land that are classified by the Assessor as "Multiple Use-primarily residential" (Land Use Code 013) and 3.42 acres that are classified as "Multiple Use-primarily commercial" (Land Use Code 031). These uses are located in the Village-Residential (VR) and the Central Business (CB) districts of the Douglas Village and East Douglas. The majority of the parcels average 1/2 to 1 acre in size. The two exceptions are a 42 acre industrial zone parcel on Gilboa Street and a 7.65 VR parcel in the Douglas Village.

Basic service needs such as a full service grocery store and a drug store are notably absent from Douglas. Some residents have expressed interest in attracting these types of uses to better service their needs. However, it is difficult to determine if Douglas would be able to support these types of uses without conducting a detailed market feasibility study.

East Douglas and the Douglas Village are characterized by small lots, narrow streets and minimal building setbacks. This is primarily what contributes to the small town feel of Douglas and is representative of the traditional New England village. It is important to realize that these village centers could not be created under the current Zoning Bylaws. The minimum lots sizes and minimum setback requirements would not allow for many of the structures to exist should similar developments be proposed today. However, the title "Village District" depicts an image of the historic character of these areas and provides an indication of the type of development that is appropriate for these areas. It is important, however, to specify the desired type of development rather than assume that what has been will always occur in the future.

The most important strategy that Douglas can implement in terms of commercial economic development is to preserve the current commercial uses and the attractive

character of the commercial areas. This can be accomplished through the establishment of a downtown business association, the modification of zoning regulations to reflect the established patterns of development in village centers, the development of design guidelines, improved pedestrian accommodations, off-street parking improvements, and business retention and recruitment strategies. In addition, streetscape improvements such as street trees, decorative lighting, benches, and improved sidewalks can enhance the visual elements of a downtown. The site plan review process combined with the site development standards discussed in the *Land Use* element can also assist in creating more attractive developments.

As discussed in the *Land Use* and *Goals & Policies* elements, Route 16 is the face of the community and should be managed carefully to protect the town's character. Route 6A on Cape Cod has been discussed as an example of how a main street and transportation corridor could serve as a model for Route 16 in Douglas. Route 6A is a scenic roadway that contains a variety of land uses but respects and maintains the rural, historic and topographic features of the region. It winds through village centers and scenic rural areas while providing attractive transitions from both new and old developments to outlying areas. Conversely, Route 9 in Framingham and Natick has been cited as an example of the types of large scale development and regional transportation corridor that Douglas should avoid.

Tourism

The Blackstone Valley National Heritage Corridor provides an opportunity to draw visitors to its historic and outdoor recreational resources. This could have a positive economic impact on hotels, restaurants and retail trade within the area as communities provide services that are less locally oriented and begin to attract more visitors and tourists. Based on these opportunities, Douglas should consider tourism as an important element of its future economic development.

The *Economic Assessment for the Blackstone River Valley National Heritage Corridor* states that the Corridor will be most attractive to visitors "who enjoy mini-vacations, long weekends or short family trips."[26] Visitors seeking special interests such as history, railways, bicycling, canoeing and kayaking will be attracted to this area. The Corridor may also serve as a day trip for visitors to the larger region. Representatives from the Blackstone Valley Chamber of Commerce as well as the National Heritage Corridor Commission feel that the key to tourism (and economic development, to a certain extent) in the region is the preservation and promotion of the traditional village centers of each community within the Blackstone Valley.

Tourism is largely based on the attractiveness and appeal of a particular destination. Therefore, it is important to protect and enhance the "product" (i.e. the town) that one is attempting to "sell." A particular store or restaurant may become a tourist attraction, but it is those places that are attractions in and of themselves that people most want to visit. According to a recent article in *The Washington Post*, "Tourism involves more than

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[26] *Economic Assessment for the Blackstone River Valley National Heritage Corridor.* Prepared by the Office of Travel, Tourism and Recreation and the Department of Resource Economics, The University of Rhode Island. November 1989. Page 35.

just marketing. It also involves making destinations more appealing. This means conserving and enhancing a destination's natural assets. It is, after all, the unique heritage, cultural, wildlife, or natural beauty of a community or region that attracts sightseers in the first place."[27] Visitor destinations within Douglas include the Douglas State Forest and the Douglas Village and East Douglas, as they are characteristic of the old New England style of villages. Additional attractions in the future may also be the development of a trail system utilizing the Trunkline rail right of way which could someday serve as a bikeway from Boston to Amherst.

The *Economic Assessment for the Blackstone River Valley National Heritage Corridor* describes Douglas as straddling Route 16, "an important link between the [Massachusetts Department of Environmental Management] sites in nearby Uxbridge, with Interstate 395 at Webster, MA."[28] The study states that I-395 could be an important tourism gateway for visitors traveling to the northern portion of the Corridor. Mike Creasey of the Blackstone Valley Heritage Corridor Commission feels that Douglas serves as the western "gateway" to the Blackstone Valley and it is critical to continue efforts to preserve and enhance both the Douglas Village and East Douglas. The Corridor Commission, Chamber of Commerce and the Douglas Historic Commission envision that the historic Jenckes store could serve as an information point as well as an historic museum and cultural center for those visiting the Blackstone Valley.

Douglas' current Zoning Bylaws allow most uses that would be associated with the tourism industry. Retail establishments and restaurants are allowed as of right in the CB and C districts and by special permit in the RC-1 and RC-2 zones. Hotels and motels are permitted as of right in the CB district and by special permit in the RC-1, RC-2 and C districts.

Inns and bed and breakfasts are not included in Douglas' current Zoning Bylaw. The creation of these uses would be consistent with Douglas' character and increasing role as a tourist destination. Consideration should be given to where these types of uses should be permitted.

An inn is typically distinguished from a hotel or motel by its size and more personal atmosphere. A sample definition of an inn could be: "a privately owned facility containing between 5 and 20 rooms accessible only through a main lobby or interior hallway for the purpose of providing overnight accommodations or otherwise temporary lodging for the general public and which may provide meals to the extent otherwise permitted by law. It does not provide services such as conference facilities or meeting rooms for the general public."

While an inn may be located in a building constructed for the purpose of establishing this type of business, a bed and breakfast is located within a primary residence where the owner/operator lives in the building. In addition, bed and breakfasts are typically smaller than inns. A sample definition of a bed and breakfast could be: "an owner occupied dwelling in which no more than 4 rooms are offered for rent for the primary

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[27] "The Tourism Trap: How can a community attract visitors and their money without losing its soul?" by Edward T. McMahon. *The Washington Post.* September 8,1997. Page 22.

[28] *Economic Assessment for the Blackstone River Valley National Heritage Corridor.* Page 100.

purpose of furnishing overnight lodging and a breakfast meal to the overnight guests only."

Appropriate size and location restrictions would be necessary to ensure that large hotels and motels did not establish in Douglas under the guise of "inns" or "bed and breakfasts." With adequate provisions, these types of uses could be developed in a non-intrusive manner within the town.

The key points that Douglas should emphasize in planning for tourism within the broader Blackstone region are providing information, wayfinding and interpretive sites targeted to visitors. These landmarks should be consistent with the visual attractiveness of the community.

Recommendations

Business Development

Douglas is heavily dependent upon its residential tax base. As the town continues to grow and additional public services and infrastructure are needed, Douglas may find that a diversified tax base will help ease the burden of increased residential growth. A diversified tax base can be accomplished through business activity located in appropriate areas and of such character that it does not conflict with the small town qualities that residents cherish. The recommendations of the *Land Use* element in terms of zoning changes and site development standards will allow the Town to accommodate nonresidential development that is high in value, does not detract from the character of the community and expands the employment and service needs of residents.

Douglas will most likely continue to be a town with small businesses (in terms of the number of employees) and the home for people who commute to work outside of Douglas unless the Town takes specific action to attract larger businesses through infrastructure improvements. East Douglas is the Town's best opportunity for economic development. The current lack of water and sewer service to vacant non-residential zoned land is a deterrent to development. Investments in water and sewer service should be made in order to make these sites competitive in the regional market. The Town should adopt the recommendations of the *Wastewater Facilities Master Plan* in order to expand sewer service and explore the feasibility and opportunities for extending water service (see *Services and Facilities* element).

Currently, the town contains a variety of small scale retail uses, restaurants and a few service oriented businesses. These uses will continue to be an economic base for the town and should be encouraged and preserved. The objective should be to provide a greater diversity of small scale uses. The *Land Use* recommendations of changing the name of the Central Business district to Village District, creating a Mixed Business district, adopting site development standards, and including the old Douglas Grammar school in the Village Business district will support this type of development.

Northwest Douglas is a visually attractive area but is limited in economic development potential due to sensitive environmental qualities and the distance to major transportation routes. However, there is some potential for large scale but less intensive uses such as recreation, tourism and retirement related developments. The reduction in

the size of the Industrial area and the modifications in regulations to the RC-II district will promote appropriate types of development in this area (see *Land Use element).*

Home businesses are allowed in Douglas under the current Zoning Bylaws but specific regulations for home occupations should be adopted to ensure that the types of uses that are encouraged are appropriate for the Town. Regulations should be flexible enough to accommodate changes in technology and business types. Occupations and professions that may be conducted as a home occupation should be identified as well as reviewed and adjusted as necessary to accommodate changes in technology. The sample bylaw in Appendix A should be considered for adoption by the Town.

Policy Changes

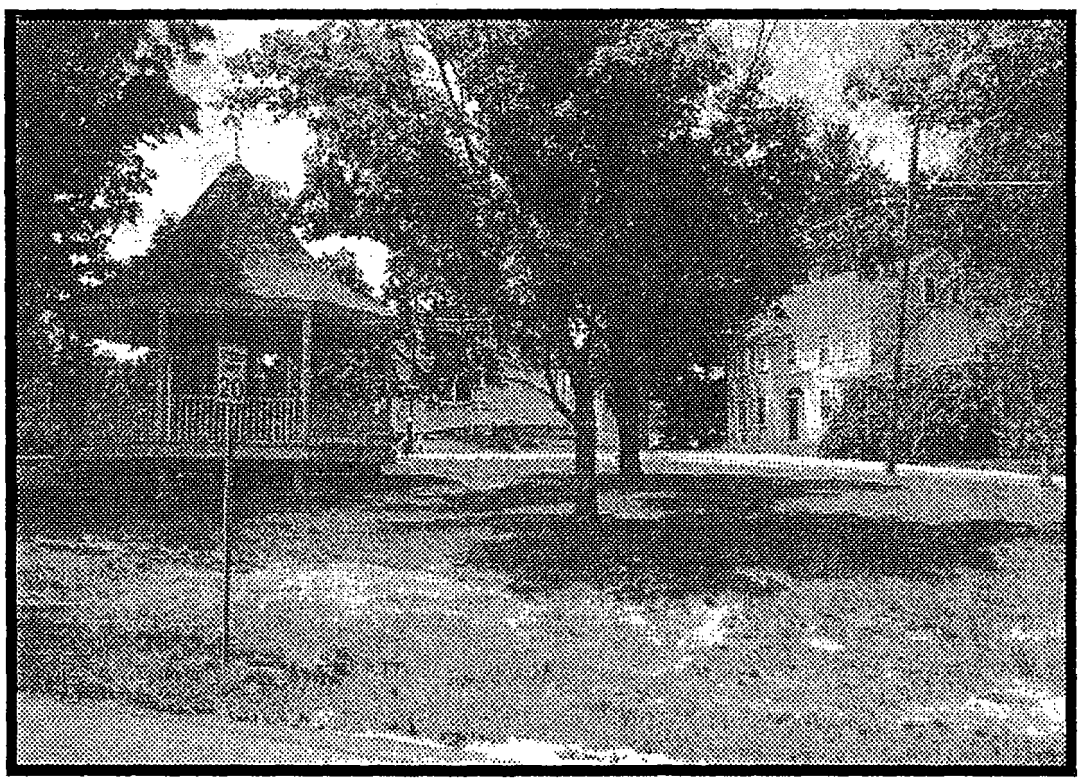
Tourism in the Blackstone Valley is expected to increase in future years. The town must develop appropriate strategies and policies to attract appropriate aspects of the tourism industry while protecting the community's sense of place. A community's food, lodging, informational signage and other supporting attractions are part of the tourism industry but the attractiveness of the town is the primary draw to the area and should be respected and maintained.

It is recommended that the Town revise both the Site Plan Review and Special Permit sections of the Bylaw, as discussed in Appendix A. The site plan review process can be used to shape a project according to the requirements of the Town's bylaw. The revision of this section of the bylaw, combined with the zoning recommendations of the *Land Use* element, will allow development to be consistent with the desired appearance of the Town. Separately the special permit procedure from the site plan review process (this is the current state of the site plan review process will bring the Town into conformance with state statutes and case law. In addition, revisions to the special permit procedure will allow the Town greater control over the types of projects permitted within applicable districts.

The proposal for the regional landfill in northwest Douglas has prompted the Town to evaluate this area in greater detail than ever before. While it is unclear whether or not the landfill project will come to fruition, the Town must develop policies and strategies to address this area. The proposed zoning recommendations will allow for economic development opportunities in and around the site of the proposed landfill if the project is defeated. However, if the project does continue, the Town should dedicate revenues from the facility to make long term capital improvements to the Town's infrastructure. The alternative is to utilize the revenues to lower residential tax bills but this will not assist the Town in pursing its goal of broadening the tax base in the long run.

Douglas Master Plan

Natural, Cultural and Historic Resources



VI. Natural, Cultural & Historic Resources

This section of the Master Plan provides an inventory and assessment of the natural, cultural and historic resources within the Town of Douglas from both a local and regional perspective. Without planning, the appearance of a community, lifestyle of residents and the condition of valuable resources can be dramatically altered within a relatively short period of time due to changes in the land use pattern. The purpose of this section is to provide an assessment of existing resources within the community and surrounding region so that they may be incorporated into the larger goals, objectives and strategies of the Town. This information was used in developing the Master Plan's land use and development policies, including proposed zoning amendments.

Regional Context

Douglas is located in the south-central region of Massachusetts which has topographic characteristics of the Eastern Upland of Massachusetts. This upland region contains stream valleys that are narrower and deeper than those of the surrounding lowlands. The rivers and streams provide waterpower resources due to the greater flow velocity created by uplands draining into narrow valleys which are relatively easy to dam. The waterpower provided by these factors led to the early industrialization of the area.[29]

Douglas is primarily located within two drainage basins: the Blackstone and the Quinebaug. A small portion of the northwest section of town drains into the French River in Webster. The Blackstone River Basin begins in Worcester, traveling south through Providence, Rhode Island and into Narragansett Bay. The Blackstone River drains south-central Massachusetts and northern Rhode Island. This area has long been known for its historical role in the industrialization of America. The Quinebaug and French Rivers begin in brooks in western Brimfield and Wales, Massachusetts and continue through Connecticut to the Thames River.

The major geologic faults generally run northeast to southwest and relate to the Clinton-Newbury-Bloody Bluff fault complex of eastern Massachusetts.

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[29] *Guidelines for Operations and Land Stewardship, Douglas State Forest.* Massachusetts Department of Environmental Management. November 1992. Page 17.

Existing Conditions

Topography and Geology

Topographic features

Douglas' landscape is characterized by many rounded hills, small ponds, some steep slopes and large amounts of glacial debris in the form of boulders, gravel and sand. These features are primarily due to the glacial and stream action that have carved and shaped the present landscape. The highest points are located on the western side of Douglas with a maximum elevation of approximately 900 feet. Moving east, the landscape is a series of rolling hills but generally decreases in elevation with the lowest point being 320 feet in East Douglas.

Soils[30]

Glacial till and a mixture of clay, silt, sand and gravel are the most widely distributed surface deposits. In addition, bedrock forms occasional outcrops through the till.[31] Approximately 43% of the Town's area is composed of soils in the Canton association. The Canton soils are fine, sandy loams, 20 to 36 inches deep over loose, gravely loamy sand till. The soils have moderate limitations for home sites, septic tank sewage disposal and the installation of water and sewer pipes due to the stoniness and/or steep slope of this soil association. Most of these soils are found in a band extending east-west across the south-central section of town from Bald Hill to the Webster Town line.

The Hollis soil association is characterized by fine sandy loams in thin deposits of extremely stony glacial till underlain by bedrock with a depth of 18 inches. This soil association comprises about 13% of the Town, primarily in the northwest section. Development is severely limited due to the bedrock outcrops that are common in these areas.

The Scituate-Woodbridge-Millis-Paxton soil association comprise about 25% of the town. This soil type is moderately well drained with hardpans at a depth of 1.5 to 3 feet from the surface and the water table is within the 1.5 to 3 feet of the surface for four to five months of the year. For these reasons, the soils have severe limitations for commercial and industrial uses and high density residential development with on-site septic systems.

Approximately 6% of the town is comprised of the Whitman-Muck-Ridgebury soil association and can be found in level drainage channels and depressions throughout the town. Soils in this association are fine, sandy loams and have a very hard layer at a

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[30] Soil information from the U.S. Department of Agriculture, Soil Conservation Service, cited in *Town of Douglas Master Plan*, prepared by David A. Hulseberg and Pamela J. Brown, August 1991.

[31] *Guidelines for Operations and Land Stewardship, Douglas State Forest.* Massachusetts Department of Environmental Management. November 1992. Page 35.

depth of 1.5 to 2.5 feet from the surface during most of the year. The soils severely limit development but are suitable for wetland wildlife.

Soils in the Mumford River area, Centerville Brook Valleys, areas south of the Whitin Reservoir, and areas near Tassletop are comprised of the Hinkley-Merrimac-Sudbury soils. This soil association is excessively drained, loamy, sandy soils underlain by thick, stratified deposits of sand and gravel at a depth of 15 inches or less. These soil types are excellent sources of sand and gravel and have only slight or moderate limitations for home sites, the installation of water and sewer pipes, road construction and commercial and industrial development. Approximately 12% of the town's land area consists of this soil type.

The *1991 Master Plan* prepared for the Town examined the limitations of soils for home sites and septic tank sewage disposal. The study concluded that approximately 54% of the town is characterized by soils having severe limitations for on-site sewage disposal and almost 20% of the town's land has severe limitations for home sites for reasons other than those associated with the operation of a septic system. This could affect the location of future development and require additional infrastructure improvements such as water and sewer service.

Sand and Gravel

Approximately 4,300 acres of the town's land consists of sand and gravel deposits, most of which is commercially minable.[32] Due to the large amounts of sand and gravel in Douglas and the existing number of extraction operations, the Town adopted an Earth Removal Bylaw. The purpose of the Bylaw is "to protect the public safety and property values by preventing the creation of hazards due to deep holes, steep slopes, and embankments and by preventing land from becoming worthless due to removal of top soil, sand, gravel or other material." The regulations are designed to insure that the land can be used for development in the future and to provide for the re-establishment and protection of the area.[33]

The Bylaw requires a special permit for the removal of more than 300 cubic yards of material from any land within the town and the regulations seem to adequately address the concerns cited in the purpose of the Bylaw. However, the Planning Board has raised concerns about the effectiveness of the Bylaw so a stricter review, permit and monitoring process may be warranted. The Planning Board's specific concerns related to the gravel operations within residential districts and the impacts of excessive removal in other areas.

Attorney Mark Bobrowski reviewed the existing Earth Removal Bylaw and has made the following recommendations:

- The term "incidental" should be defined to include a limitation of not more than 5,000 cubic yards in the aggregate.

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[32] *Our Rural Heritage and the Future, page 2-7.*

[33] Town of Douglas, Zoning Bylaw, Section VI-Special Regulations

- The fines may be raised to $300 per violation, with each day constituting a new offense.
- A provision for the 200 foot buffer in the new Rivers Act should be added to the section addressing areas where excavation should not occur adjacent to wetlands and floodplains.

A model Earth Removal bylaw has been included in Appendix A.

Water Features

Lakes, ponds, streams and wetlands not only provide drinking water and irrigation but wildlife habitat, scenic views and recreational opportunities as well. Water resources also play an important regional role as communities are linked through watersheds and surface water which often cross town boundaries. Any activities occurring within lake or river watersheds affect that body of water and may have implications on another community downstream.

Floodplain

Approximately 3,515 acres or 14.3% of Douglas is designated floodplain. The majority of this area lies along the Mumford River.[34] This is significant as the flooding of this area could impact the East Douglas area as development is concentrated in this location. A 100-year floodplain designation means that there is a 1% chance that a major flood could occur within that area in any given year. Therefore, a "100-year flood" could potentially occur several times within a 100-year period. It is important to monitor development within a floodplain as unregulated development can increase the likelihood of flooding by increasing the surface runoff into the stream channel.

Wetlands

Wetlands include marshes, swamps and bogs and often lie within a floodplain. According to *Our Rural Heritage and the Future*, Douglas contains approximately 1,109 acres of wetlands. This represents 4.6% of the total land area of the town. Most of the wetlands are associated with the Mumford River, Whitin Reservoir and Wallum Lake.[35] Wetlands are protected under Massachusetts Law. Under the Wetlands Protection Act (M.G.L., Ch.131, sec. 40), wetlands are defined in terms of vegetative cover (as opposed to soil characteristics). The Act regulates dredging, filling, or altering areas within 100 feet of such wetlands. Under the Inland Restricted Wetlands Act (M.G.L., Ch.131, sec. 40A), specific areas can be protected through deed restrictions.

In addition to the State regulations, Douglas adopted a Wetland Bylaw in January 1983. The purpose of the Bylaw is to further protect the floodplains and wetlands in the town "by controlling activities deemed to have a significant effect upon wetland values, including but not limited to the following: Public or Private water supply, groundwater, flood control, erosion control, storm damage prevention, water pollution control,

[34] *Our Rural Heritage and the Future, page 2-7.*

[35] Ibid.

wildlife, recreation, aesthetics and fisheries."[36] The Conservation Commission is in the process of revising the Bylaw to integrate the Rivers Protection Act and increase controls.[37]

Surface water

There are approximately 900 acres of land in Douglas (3.7% of the town's land area) that contain ponds and streams. The major water bodies include Wallum Lake, Crystal Lake (also known as Badluck Pond), Manchaug Pond and the Whitin Reservoir. In addition to surface water, Douglas contains approximately 74 miles of streams, 47 of which are head waters.[38]

The Mumford River originates in the watershed of Crystal Lake and Whitin Reservoir, flows through East Douglas and is a tributary of the Blackstone River. The watersheds of Crystal Lake and Whitin Reservoir include acreage within the Douglas State Forest. While the streams in the State Forest are protected due to the public ownership of the area, it is important to protect the headwaters of all streams in Douglas as they feed into the larger rivers and water bodies. Any contamination of the headwaters will be carried into other water bodies.

Nearly all of Douglas' ponds and lakes are used for recreation and the town does not extract any water from these surface water features for drinking purposes. In fact, the Mumford River and Manchaug Pond are contaminated beyond acceptable levels for human consumption.[39] In spite of the number of ponds and lakes in Douglas, the Town does not have any public swimming or beach access although swimming is available in the Douglas State Forest.

Wallum Lake[40]

Wallum Lake is located in the southern part of Douglas within the State Forest, at the Burrillville/Douglas town line. The lake is approximately 322 acres in size, with about half of the acreage in Rhode Island. Wallum Lake is used extensively for recreational purposes such as swimming, fishing, and boating.

Acidity in Wallum Lake has been a concern in recent years. The problem is most likely due to the acidity of the surrounding soils and the fact that the lake is totally supplied by groundwater. Acid rain may also be contributing to the problem. The lake was limed three times between 1972 and 1992 to counteract the effects of very high acidity which can kill many forms of favorable aquatic life. Living Lakes, Inc. (a private non-profit organization formed in 1985) is monitoring the lake as part of an aquatic liming and fish restoration demonstration project.

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[36] *Town of Douglas Wetland Bylaw,* January 5, 1983

[37] Marylynne Dube, Conservation Commission Chair, November 6, 1997.

[38] *Our Rural Heritage and the Future, page 3-10.*

[39] *Our Rural Heritage and the Future, page 3-3.*

[40] Information adapted from *Guidelines for Operations and Land Stewardship, Douglas State Forest.* Massachusetts Department of Environmental Management. November 1992. Pages 32-33.

An additional challenge in maintaining the quality of Wallum Lake is nutrient loading. Increased nutrient loading can cause accelerated weed growth and other unfavorable conditions for recreational use. While the shoreline of Wallum Lake is relatively undeveloped due to the amount of land in public ownership, nutrient loading may be accelerated by existing and future development on private land surrounding the lake. If nutrient levels are increased, the Massachusetts Department of Environmental Management expects that changes within the lake would be gradual but could be very noticeable within a 10-20 year period.

Whitin Reservoir[41]

Whitin Reservoir is located in the northwest quadrant of town and has some shoreline along the western edge within the Douglas State Forest. It no longer serves as a public water supply but its waters provide aquifer recharge for downstream municipal and private wells in Douglas. Two streams cross the Douglas State Forest to enter the Whitin Reservoir from the west and the south. Water leaving the outlet dam flows into the Mumford River and eventually to the Blackstone River. The dam is in need of repair and was classified as one of the top twenty most hazardous dams in central Massachusetts by the DEM Dam Safety Program as of 1992.

The reservoir is considered mesotrophic which means that it is of moderate depth and vegetation. A lake's "trophic" level is a measure of a lake's age and is often used to identify the relative condition or quality of the water body as well as serving as an indicator of the amount of nutrients in the water. The lake is also stratified and supports warm water fisheries. A stratified lake or pond has thermocline levels where the temperature takes a significant drop at a specific depth throughout the lake during the summer season and nutrients are not mixed between stratified areas during this time.

Wallis Pond[42]

Wallis Pond is also a man-made water body and is located south of Whitin Reservoir. The dam and a significant portion of the shoreline were acquired by DEM as part of the Douglas State Forest when the 120 acre Wallis property was acquired. The pond has a high algae level (eutrophic) and is unstratified.

Aquifer Recharge Areas

An aquifer is a geologic formation that can easily yield a significant amount of groundwater. As water is withdrawn from an aquifer, it is replenished by water that is carried from the surface through permeable materials. The aquifer's "recharge area" is an area on the surface of the land below which groundwater moves to replenish the aquifer. These areas must be protected from actions that might reduce the downward flow of water or contaminate groundwater supplies.

Douglas is located in an area containing 12 aquifers, one of which is a high yield aquifer (it can yield more than 300 gallons per day without the threat of depletion).

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[41] Ibid. Page 34

[42] Ibid. Page 35

Approximately 27% (190 acres) of the primary aquifer recharge areas are covered by residential land uses, 2 acres contain waste disposal sites and 10 acres contain commercial development.[43] The most significant watershed areas are located in the western half of town and the lower southeast section of town near Greene Brook. It is important to monitor these areas as Douglas depends on groundwater for the town's water supply.

Wildlife Habitat

Douglas has a substantial amount of wildlife and contains a variety of habitat areas suitable to different plant and animal species. This is primarily due to the large amounts of vacant, undeveloped land within the town as well as the Douglas State Forest.

The primary focus of the Department of Fisheries and Wildlife's Natural Heritage and Endangered Species Program (NH&ESP) is to protect rare and endangered plant and animal species and plant communities. The NH&ESP produces an Atlas which contains areas delineated as "Estimated Habitats" of rare wildlife and certified vernal pools for use with the Wetlands Protection Act, and areas delineated as "Priority Habitats" of rare plant and animal species and exemplary natural communities for use in general land use project planning. Estimated Habitats in Douglas are located in the majority of the northwest quadrant of town in and around the State Forest and in two smaller areas along South Street. Priority Habitats are located on the western edges of Whitin Reservoir, Crystal Lake, and Wallum Lake and the area of Cedar Swamp in southeast Douglas.

The Douglas State Forest cited several uncommon communities of rare species and habitats in the *1992 GOALS Plan* and recommended them for inclusion in the NH&ESP Natural Areas Registry.

- Wood Turtles
- Eastern Box Turtle
- Scelerolepis uniflora
- Tulip Poplar trees
- A vernal pool near the Southern New England Trunk Line Trail
- Southern New England Basin Fern
- Marbled Salamander
- Atlantic White-Cedar Swamp
- Southern New England Basin Swamp

Historic & Cultural Resources[44]

Historic resources include sites, structures and objects that have played a role in past events and are usually categorized as national, state or local historic and cultural resources. Cultural resources are places and objects that reflect the present lifestyle of an

[43] *Our Rural Heritage and the Future, page 3-15*

[44] Adapted from Chapter 5 of *Our Rural Heritage and the Future*

area, the development of a particular place, the social attitude of residents and the past and present human activities of that community.[45]

The majority of historical and cultural resources are located in East Douglas or in the Douglas Village as these are the original settlement areas of the town. Without protection, these resources could be mistreated or destroyed, resulting in a loss of character in the town.

The 1994 UMass Master Plan explored methods to rediscover or preserve existing rural qualities and historical features that contribute to the character of the town. Examples of the types of resources that were considered to be important include agricultural landscapes, community gathering places, and historic sites and structures. Significant historic and cultural resources which contribute to Douglas' character (as identified by *Our Rural Heritage and the Future* and modified and expanded through Master Plan review meetings) are listed below.

[45] *Our Rural Heritage and the Future, page 2-17.*

Table 31: Local Historical and Cultural Resources[46]

Feature	Location
First Congregational Church	Old Douglas Center
Douglas Town Common	Old Douglas Center
Northeast Main Street	Old Douglas Center
2nd Congregational Church	East Douglas
Whitin Reservoir	Wallis St./Cedar St./Northwest Main St.
Wallum Lake	Southwest Douglas area
East Douglas Cemetery	East Douglas
E.N. Jenckes Store	East Douglas
East Douglas Town Square	East Douglas
Hayward Woolen Mill	East Douglas
Northeast Main Street Farm	Northwest Main Street, near Cedar Street
Cheseborough Farm	Old Douglas Center
Southeast Main Street Farm	Southeast Main St., south of railroad right of way
Depot Street Mill	East Douglas
Tassletop Cemetery	South Street, near Burrillville Town Line
Douglas Cemetery	Old Douglas Center
St. Denis Cemetery	Manchaug Street
Dire property cemetery	Douglas State Forest
Coopertown	Douglas State Forest
Yew Street Farm	Yew Street and Perry Street
Webster Saw Mill	Webster and Cedar Street
Douglas Meeting Grounds	South Street, south of Old Douglas Center
Leon & Shirley Mosczynski's Farm	Oak Street, north of Whitin Reservoir
West Street Farm	West Street and Cross Street
Franklin Street Farm	Franklin Street and Maple Street
Wallis Street Farm	Wallis Street and Streeter Street
Perry and Martin Street Farm	Near Yew Street
Vine and Pine Street Farm	Southeast Douglas
Caswell Court Farm	Off Manchaug Street, near Gilboa
Manchaug Street Farm	Northeast Douglas
Bald Hill Farm	Yew Street
Walnut Street Farm	Walnut Street and Wallum Lake Road
Gilboa Street Farm	Northeast Douglas
Pine Street Farm	Pine Street, near Southeast Main Street

Northeast Main Street reflects Douglas' historic economy of agriculture and lumbering. The transition into the manufacturing based economy can be seen in East Douglas. Development in this area increased with the development of axe and textile

[46] *Our Rural Heritage and the Future, page 5-19.*

manufacturing. Significant structures which reflect this historic time period are the Lovett and Hayward Mills, the Jenckes store and the Second Congregational Church. Of the three original manufacturing mills, Guilford of Maine is the only one that is still operational. Lovett and Hayward have both been converted to apartments but still reflect the character and historic qualities of the historic manufacturing based economy.

The First Congregational Church and the Douglas Town Common in the old Douglas Village are historic landmarks of the original settlement of the town. Unfortunately, the addition of modern elements into the area such as telephone poles and electrical wires detract from this historically significant area. The Town Common Committee and the Historical Commission are working to improve the appearance of this area through landscaping improvements and exploring the possibility of placing the wires underground. The Douglas Town Common has been proposed for a National Register Historic District and is pending approval by the Massachusetts Historical Commission.

Resources that are considered to be significant due to their uniqueness and prominence include the Depot Street Mill, Hayward Woolen Mill and the Gilboa Street barn. The Whitin Reservoir, Wallum Lake, the East Douglas Town Square and the Northeast Main Street Cemetery are significant for providing community gathering places. In addition, Whitin Reservoir and Wallum Lake attract tourists and seasonal visitors.

The preservation and restoration of the town's agricultural land is valuable to preserving the rural character of Douglas. Farmland features such as stone walls and barns help to identify areas that were historically agricultural. Remnants of old farms such as those along Pine Street, West Street, Walnut Street and Franklin Street are no longer identifiable as agricultural land due to the overgrowth along the field edge and the forest that has reclaimed pasture land. These areas should be targeted for restoration if it is determined that preserving the agricultural character of the Douglas is a goal of the Town.

In addition to the local significance of many cultural and historic resources located in Douglas, many of these sites are important to the region. An inventory of sites within the Blackstone River Valley that are of the greatest importance for the development of the interpretative plan for the Corridor were inventoried in 1989. The *Historic Resources Inventory for the Blackstone River Valley National Heritage Corridor* identified the following historic and cultural resources in Douglas.

Table 32: Historic and Cultural Resources Relevant to the Blackstone River Valley National Heritage Corridor[47]

Name of site and date established	Location
Second Congregational Society Meeting House (1834)	Main Street
Douglas Axe Company (1835)	Mumford Street
Douglas Methodist Camp Meeting Grounds (1880)	Between South and South Main Street
Crystal Lake Sawmill (---)	Webster and Cedar Street
Hayward & Co. Woolen Mill (1890)	North Street
Knapp Mill	Cook Street
Haywood-Shuster Woolen Mill (1904)	Gilboa Street
North Street Stone Arch Bridge (1869)	North Street over Mumford River
E.N. Jenckes Store (1833)	Main Street
Mechanics Field (1930)	Mechanics Street

Historic Districts[48]

The Douglas Historic Commission has submitted nominations for two areas for designation on the National Register of Historic Places. The areas to be included are the Old Douglas Center Village and the East Douglas area. Approval by the Massachusetts Historical Commission is pending as of this writing. The Historic Commission submitted these areas for nomination due to the Commission's concern with balancing development with the preservation of these historic areas. Unlike a Local Historic District designation, the National Register recognition would not place constraints on what owners may do with their property when using private funds. While the National Register of Historic Places is not a design review program, it does provide limited protection from state and federal actions. The recognition of these areas by the National Register of Historic Places will provide eligibility for matching state and federal restoration and research grants and certain federal tax benefits for certified

[47] *Historic Resources Inventory for the Blackstone River Valley National Heritage Corridor*, by Slater Mill Historic Site, October 1989. Pages 40-41.

[48] Information regarding the proposed historic districts in Douglas was provided by the Douglas Historical Society and the Douglas Historical Commission.

rehabilitation projects.[49] The establishment of these districts will raise awareness and improve education of the historic significance of these areas.

Old Douglas Center

The Old Douglas Center National Historic District will be centered on the Town Common and will extend to the west to include the Joshua Thayer House on Southwest Main Street and to the east to include the Isaac Stone/Samuel Balcome House located at 30 Main Street. The District will also include several houses along Church Street as well as the First Congregational Church.[50] This area is also protected and enhanced through the efforts of the Town Common Committee and the Cemetery Expansion Committee.

East Douglas

The proposed East Douglas National Historic District extends roughly from the Jenckes Store to the Civil War Monument at the intersection of North Street and Main Street. This district will include significant historic structures such as the Jenckes Store, the Fire Station on Cottage Street, and the old Douglas Grammar School.

The Jenckes Store is undergoing an extensive rehabilitation and preservation effort. A $100,000 Massachusetts Historic Commission grant provided funds for the stabilization of the building. Several other smaller grants from sources such as the National Institute for the Conservation of Cultural Property and the National Parks Service have provided funds for research, inventory and a limited building survey. Funds are still needed for the restoration of the interior of the building. The Jenckes Store will serve as a museum and education center as well as an informational source for the Blackstone River Valley National Heritage Corridor. One of the primary objectives of the Douglas Historic Commission is to ensure that the Jenckes Store will continue to be used as a museum and public space.

The construction of a new fire station was approved at a Special Town Meeting in October 1997. The structure that has been used for the fire station up until this time is historically significant and should be preserved. It was built as a fire station, next door to the original Town Hall (demolished in 1984). One potential option for the use of this building is the conversion to a residence. A public use is most likely not feasible due to the lack of parking and lack of handicapped accessibility.[51]

The old Douglas Grammar School is located between the Post Office (formerly the Town Hall) and the new Elementary School. This entire area is owned by the Town. A committee was formed in the early 1990s to evaluate the potential reuse of the building. It was determined that there is some potential for adaptive reuse and funds were appropriated to secure the building (as opposed to demolishing the building) until an

[49] Information regarding the specifics of a National Register of Historic Places designation is from *Historic Preservation Programs,* by the Massachusetts Historical Commission, 1991. Page 4.

[50] A complete inventory of the properties to be included in the District is provided in the Appendix.

[51] Information provided by the Douglas Historical Commission 11/6/97

appropriate use was determined. The Historic Commission believes that it is important for the Town to retain ownership of this property as it is located on the largest Town-owned parcel.

Blackstone River Valley National Heritage Corridor

The Blackstone River Valley National Heritage Corridor Commission is unique in its efforts. While there are many cities and towns that have had long-term success in preserving the values that are important to them, there are few regions that have had success in diverse preservation and promotion efforts. The Blackstone Corridor is creating a long term, proactive effort across governmental boundaries and among organizations with differing missions to pursue six major priorities: education and interpretation, recreation development, ethnic and cultural conservation, historic preservation, economic development and land use management.[52]

The Corridor Commission has adopted a draft Development Strategy as a basis for a requested Congressional budget authorization of $5 million to be matched by $10 million of investment from a variety of sources. The Corridor has been authorized to receive up to $5 million in Federal Funds in fiscal years 1998, 1999 and 2000 and the Commission is required to show a 1:1 match for its investment. The key elements of the Development Strategy include:[53]

- **Heritage Infrastructure:** the signs, trails, gateways, exhibits and other elements that tell the story of the Blackstone River Valley.
- **Heritage Programming:** educational programs, living history, arts and crafts, festivals, tourism development and other elements that are linked to with the heritage infrastructure noted above.
- **Strategic Design and Planning Assistance:** technical assistance to guide new investment that preserves historic resources, helps communities manage growth and conserve natural open space, and responds to opportunities which preserve the Valley's special Character.
- **Blackstone Valley Institute:** a resource center to bring people together to respond to critical issues which shape the Valley's quality of life and its ability to preserve and interpret its historic and natural resources.
- **Preservation and Enhancement Programs:** targeted funds to support local preservation and revitalization efforts.
- **River Recovery and Recreational Development:** a broad-based effort to promote the health and recreational value of the Valley's riverway.
- **A Transitional Era for the Commission:** an examination of options for self-sustaining management framework to continue the mission of preserving and interpreting the Valley's cultural landscape beyond the Commission's current federal status, should that change.

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[52] *"The Next Ten Years: An Amendment to the Cultural Heritage and Land Management Plan."* Blackstone River Valley National Heritage Corridor Commission. November 1997. Page 39.

[53] Ibid. Page 2.

The Corridor's Land Management Plan states that there are literally hundreds of special places within the Corridor for residents and visitors to explore. Many sites are open on a regular basis with professional staff and many others are operated by volunteers during limited hours or special events. The Jenckes Store is one such example of a site that is solely dependent upon volunteers at this time. The Commission will encourage and look for opportunities to collaborate and strengthen these individual sites. The Jenckes Store, East Douglas and the Douglas State Forest were given as examples of some of the Corridor's public heritage sites.

The Natural Resources Inventory and Assessment was mandated by Congress as part of the Blackstone River Valley National Heritage Corridor Commission's 1996 reauthorization and will direct the environmental agenda of the Commission for the next ten years. For an examination of the smaller sections of the Valley and the context in which municipalities share common ecosystems, the communities of the Blackstone Valley were grouped into subregions. The study points out that there were no distinct criteria for organizing the subregions in a particular way and that some communities could have been classified in another subregion based on a connection with a different natural system. The importance of the subregions is to recognize that communities need to cooperate with their neighbors to manage and benefit from natural resources existing across political boundaries. For the purposes of the analysis, Douglas was included in Subregion 4: Sutton/Northbridge/Uxbridge/Douglas.

A description of the natural resources, corresponding issues, and recommendations for action were developed for sites grouped by subregion. The "River sites" are organized into two categories: sites determined to have significantly high value as either a natural or cultural resource, and sites where past and ongoing initiatives on the part of the Commission and other actors make them particularly noteworthy. The "Valley sites" are also organized into two areas: 1) sites determined to have high cultural or natural value and where past or continuing activities make them noteworthy; and 2) remaining high value sites, which are mentioned in the subregions section of the recommendations.[54] Sites are considered to be significant if they are a scenic resource, water resource or key open space. Sites of significance in Douglas include Whitinsville Reservoir System, Intact Western Forests and Wallum Lake.

The Commission recommendations for the Sutton/Northbridge/Uxbridge/Douglas subregion include the following:

- Encourage responsible development throughout the region in the form of compact growth patterns that respect traditional landscapes, built scale that respects community character, and uses that do not degrade natural resources.
- Encourage the adoption of Master Plans for Uxbridge and Douglas.
- Identify and support the protection of additional wild trout streams in the watershed; support "catch and release" angling to ensure sustainable wild trout populations.

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[54] *Natural Resources Inventory and Assessment* Blackstone River Valley National Heritage Corridor Commission. Page 14.

- Continue to oppose the proposed Douglas Landfill as an inappropriate land use that threatens to contaminate groundwater in two watersheds, despoil the Douglas State Forest, destroy cultural resources and add solid waste trucks to the increasing traffic on local roads.

The Commission also recommends working to protect viewsheds of the Blackstone River and hillsides of the Valley, including, in Douglas, views from Manchaug Pond and Wallum Lake.

Scenic Roads

The Town of Douglas designated Orange Street as a Scenic Road in May 1978. This is the only designated Scenic Road in Town as of this writing. The Town Common Committee is considering designation of the roads surrounding the Town Common as Scenic Roads but no formal proposal has been brought before Town Meeting.

Massachusetts General Law Chapter 40, Section 15 authorizes a municipality, upon recommendation of its planning board, conservation commission or historical commission, to designate "scenic roads." However, the statute does not indicate any standards or procedures for this designation and does not define "scenic road." Any road in a community, other than state numbered routes or highways, may be designated as a scenic road. The purpose of the statute is to provide an opportunity for the planning board to review the cutting or removal of trees or the alteration of stone walls within the road right of way of a designated scenic road.

In order to ensure that clear criteria are established for designating scenic roads as well as the maintenance and preservation of the scenic qualities of these roads, a community can adopt specific scenic road regulations or a scenic road bylaw. Both methods essentially provide a mechanism to formally adopt the provisions of the Scenic Road Act in the Mass. General Laws and allow the municipality to describe the designation process and define the criteria that will be used in review. The difference between scenic road regulations and a scenic road bylaw is the method of adopting the specific mechanism. A *regulation* is adopted by the planning board while a *bylaw* must be approved by Town Meeting vote. The use of a bylaw is preferable as it allows for more community involvement.

Our Rural Heritage and the Future identified roads that should be recognized and adopted as scenic roads. The criteria used to assess a road included the amount of lowlands, river plains, water bodies, town centers, farm land, and forest land. A rating was assigned to each road included in the analysis based on the number of features for which a road provided access. Based on this analysis, Route 16 was classified as "most significant" due to the amount of viewsheds and the diverse types of features that are visible from this road. This road is also significant as it links the Douglas Village Center to East Douglas, the historic centers of the town.

The assessment results from *Our Rural Heritage and the Future* are shown below.

Table 33: Scenic Roads in Douglas[55]

Most Significant	Very Significant	Significant
Route 16*	Birch Street	Riedell Street
Wallis Street	Glen Street	Locust Street
West Street	Yew Street	Southeast Main Street
Vine Street	Chestnut Street	North Street
Walnut Street	Franklin Street	Manchaug Street
Maple Street	Wallum Lake Road	Cross Street
Webster Street*	Grove Street	Oak Street
Northwest Main Street	Cedar Street	
Southwest Main Street	Pine Street	
	Monroe Street	

* As state numbered routes, these roads cannot be designated as scenic roads under M.G.L. Ch. 40, Sec. 15.

The Planning Board and participants in the Master Plan process reviewed the above list and were asked to make changes and additions. Due to the number of roads in Douglas that contain scenic qualities, it was determined that it would be in the town's best interest to designate all major roads in Douglas as "scenic roads." In addition., a scenic road bylaw should be created so that action may be taken to protect, preserve and maintain the roads that have been noted for their scenic qualities.

Designation of scenic roads only affects work within the public right of way, and does not provide any protection of scenic landscapes viewed from the road. In order to preserve important views, the Town must use some combination of land acquisition, zoning regulations, and incentives to landowners. It is important to identify those landscapes which, if lost, would diminish the Town's rural character.

Recommendations

Natural Resources

Impervious Surfaces

Douglas is linked to other communities through drainage basins and waterways. The actions of surrounding communities could impact the environmental quality in Douglas and vice versa. The Town must take an approach to development and planning that recognizes the larger region in which Douglas is located. Many environmental concerns have been raised as a result of the proposed regional landfill. Habitat for rare and endangered species are concentrated in the northwest section of Douglas and the presence of a geologic fault, first order streams and proximity to the Douglas State Forest have been identified as significant features of the area and are one of the factors

[55] *Our Rural Heritage and the Future, page 5-28.*

on which the proposed zoning change from Industrial to RC-II and RA is based (see *Land Use* element). In order to provide further protection for this area, it is recommended that the Town establish a 5% maximum impervious lot coverage for areas greater than 200 meters (656 feet) in elevation.

Although impervious surfaces do not generate pollution, they contribute to the hydrologic changes that degrade waterways due to surface runoff. Zoning ordinances limiting impervious surface cover have been enacted in San Antonio and Austin, Texas to protect the area's major drinking water supply. Brunswick, Maine adopted a maximum impervious-surface lot coverage of 5% within the Town's coastal protection zone. The coverage includes buildings, roads, driveways, parking areas, patios and other similar surfaces. According to *The Journal of the American Planning Association*, this approach was feasible because the total area affected was relatively small, the use was largely residential, and the specific pollutant of concern was nitrogen emanating from septic systems. It is also possible to allow for some flexibility from this lot coverage requirement and still achieve the desired result: more stringent on-site stormwater treatment requirements could be required if the development is unable to meet the 5% limit. or apply performance standards to specific elements of imperviousness within the landscape.[56]

Earth Removal

Douglas has a tremendous amount of sand and gravel deposits that provide economic opportunities when extracted and allow for further development. However, the Earth Removal Bylaw should be revised to address concerns regarding operations in residential areas and the impacts of excessive removal. A sample bylaw is included in Appendix A.

Water Features

The Town of Douglas contains many water bodies that provide opportunities for both recreation and aesthetic enjoyment. The Town must work to protect and enhance these features for these reasons and to ensure high quality drinking water. The Stream and Lake Protection Overlay District provided in Appendix A should be adopted to ensure that lands near flowing streams and standing open water bodies will not be used in a manner that jeopardizes the water quality. The overlay district would apply to any land within 200 feet of the bank or edge of every stream within the town identified in the Worcester County Soil Survey.

Cultural and Historic Resources

- Scenic roads add to the beauty and rural quality of the town. It is recommended that the Town designate all major roads in Douglas as "scenic roads" as authorized in M.G.L. Chapter 40, Section 15. In addition, Douglas should adopt a Scenic Road

[56] "Impervious Surface Coverage: The Emergence of a Key Environmental Indicator" by Chester L. Arnold and C. James Gibbons. *Journal of the American Planning Association.* Volume 62, no. 2. Spring 1996. pp. 254-255.

Bylaw so that the Town may stipulate the procedure and qualifying criteria for scenic road designation.

- There are many significant historical and cultural resources within the town. The brief inventory provided in this element should be updated and expanded so that resources are appropriately identified, recognized and targeted for protection and preservation.

- The proposed historic districts for the Old Douglas Center and East Douglas will allow for the recognition and protection of the town's character and many significant resources. It is recommended that the Town continue to pursue designation of a Nation Historic District in these areas. Future uses and preservation strategies are needed for specific structures within these districts such as the old fire station and the old Douglas Grammar school. The recommended zoning change from VR to VB for the old Douglas Grammar school will allow for a wider range of potential adaptive reuse for this structure.

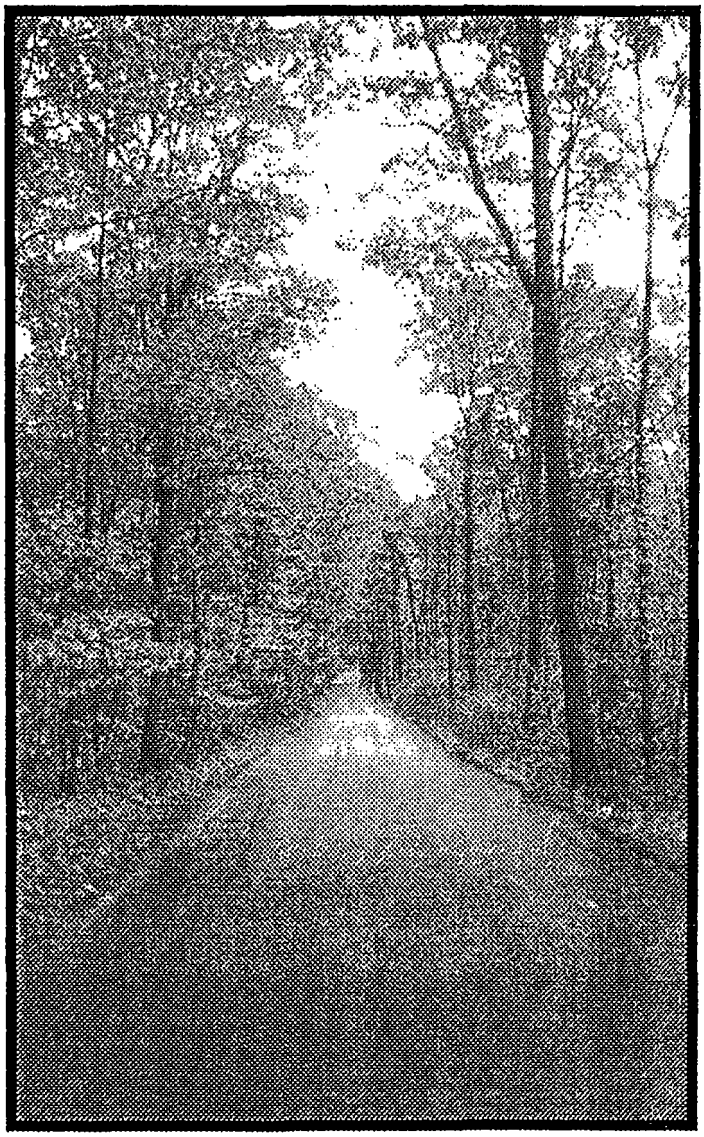
- It is recommended that the Town Common Committee and the Historical Commission continue efforts to improve the appearance of the Douglas Village. The Town should explore the possibility of placing wires underground in the historic villages to enhance the historical integrity of the areas.

- The Douglas Campground should be preserved as a valuable cultural and historic resource of the Town. Possibilities for creating a public-private partnership to protect and make better use of this site should be investigated.

The Blackstone River Valley National Heritage Corridor provides an exciting opportunity for Douglas to preserve its natural, historic and cultural resources as well as to actively participate in the promotion and protection of the larger region. Douglas should adopt the Corridor Commission recommendations for the subregion and strengthen the key attractions identified by the Land Management Plan. In addition, the town should pursue funding and other technical assistance that is available through the Corridor's designation.

Douglas Master Plan

Open Space and Recreation



VII. Open Space & Recreation

Introduction

The amount of open space in Douglas contributes to the town character. This open space is a mixture of public, semi-public and private land. A distinction must be made between *protected* and *unprotected* open space. Protection can come through a variety of methods such as acquisition, conservation restrictions, easements and regulations designed to preserve natural, cultural and historic resources. While much of the land in Douglas is protected, a significant amount could be sold for development in the future. Douglas must take action to protect key parcels in order to meet the open space and recreation needs of the community as well as to protect and preserve the town's rural character.

As described in the *Land Use* element, about 47% of Douglas' land (10,540 acres) is in an open state and in private ownership. Approximately 5,355 acres (24%) are owned by local, state and federal governments. The remainder, about 29% (6,495 acres), is in a developed state. It is the 10,540 acres of unprotected open space that are important in creating an open space planning, acquisition and management program.

Protected Open Space

"Public service" lands in Douglas total approximately 5,300 acres.[57] This includes conservation land as well as land utilized for churches, non-profit groups and town facilities. The Commonwealth of Massachusetts owns 4,989 acres, the most prominent example being the Douglas State Forest which comprises 4,594 acres, nearly one-fifth of the town's total land area. The Southern New England Trunk Line Trail is also an important state-owned parcel. The Town of Douglas owns 286 acres of land which consists of non-conservation land such as school parcels, the fire station, highway department garage, etc. Charitable organizations own 33 acres and religious facilities comprise 47 acres.

As of this writing, the Conservation Commission does not own any property in Douglas for preservation purposes. The Commission is currently assessing the possibility of acquiring a 110 acre parcel near Preservation Park on West Street but no formal agreement has been reached.

[57] The 5300 acre figure was derived from the Assessors database and includes properties with land use codes 901, 903 and 905.

Douglas State Forest[58]

The Douglas State Forest is located on the western side of Douglas and comprises 4,594 acres of land, the Massachusetts Department of Environmental Management's (DEM) largest holding in Worcester County. The southwest corner of the forest marks the tri-state boundary of Massachusetts, Connecticut and Rhode Island, and borders the towns of Burrillville, Rhode Island; East Thompson, Connecticut; and Webster, Massachusetts. Route 16 crosses the northern third of the forest and provides easy access from Interstate 395 and Route 146. The forest headquarters and the day use area are located off Wallum Lake Road, accessible via Route 16 and Cedar Street or Southwest Main Street.

The forest is an important regional asset, being about a 30 minute drive from population centers in Worcester, Providence and Woonsocket and a 1 hour drive from Boston. It is readily available to the population of the Massachusetts, Connecticut and Rhode Island tri-state area due to its location along the boundary of these three states. The Douglas State Forest is the largest continuous tract of public open space in south-central Massachusetts if state, local and public holdings are considered. The total extent of protected public open space is even larger if the abutting 2,075 acre Buck Hill Wildlife Management Area in Rhode Island is included.

The forest primarily consists of upland forest made up of oaks, birches, beeches and maple trees and has substantial amounts of shoreline along Wallum Lake, Whitin Reservoir and Wallis and Aldrich Ponds. The forest also contains a variety of significant habitats for rare and endangered species. In addition, the forest provides a significant source of clean aquifer recharge water for surrounding private wells, downstream town wells, and substantial water resource protection for surrounding water bodies and the wildlife located within its watershed.

History of Park Acquisition and Improvements

The Civilian Conservation Corps (CCC) was created to relieve unemployment in the 1930's. The Massachusetts Department of Conservation (now DEM) took steps to create recreation areas under this program which were determined to be compatible with the fire hazard reduction and water control projects they were conducting.

The Douglas State Forest was established in 1934 through the acquisition of approximately 1,245 acres of land. Additional holdings were acquired in 1935, 1936 and 1938, bringing the total forest acreage to 3,467.85 acres. The CCC made the following improvements to the State Forest:

- development of all or parts of Streeter Road South, Wallum Lake trail, Camp trail, and Ridge trail.
- construction of three bridges and several water holes for fire control.

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[58] Information from Bill Annese, Park Supervisor and *Guidelines for Operations and Land Stewardship (GOALS) Douglas State Forest.* Massachusetts Department of Environmental Management. November 1992.

- development of the Wallum Lake day use beach and picnic area, establishment of a picnic area, construction of a bath house, a small administration building and large pavilion, and construction of a 140 car parking lot.
- several hundred acres of forest land either cleared of stumps, thinned, treated for gypsy moth infestation, fire hazard reduction, or extensive plantings of a variety of tree species.

After the acquisition and improvement efforts of the CCC, an additional 284 acres were acquired between 1938 and 1977. An extensive acquisition effort between 1985 and 1988 has increased the total acreage to the current 4,594 acres. Overall, 657 acres of land and approximately 7,500 feet of shoreline along Wallum Lake and Whitin Reservoir have been acquired since 1984.

Park Resources

The Douglas State Forest provides year round outdoor recreational opportunities including hiking, cross country skiing, fishing, hunting, swimming and ice skating. The extensive trail network exceeds 27 miles and includes portions of two state trails: the Southern New England Trunk Line Trail (SNETT) and the southern terminus of the north-south Midstate Trail.

The majority of the forest trails and forest ways are considered part of the forest trail network and are gated to prevent vehicular access, but trail use is not restricted. The trails are used for hiking, cross-country skiing, mountain biking, and horseback riding.

Hunting and trapping of authorized game species is permitted within the majority of the forest but seasonal restrictions, licensing requirements and other state regulations must be followed. The white-tailed deer is the most sought after species in the forest. A deer checking station is located within three miles of the forest on Route 16 in Webster.

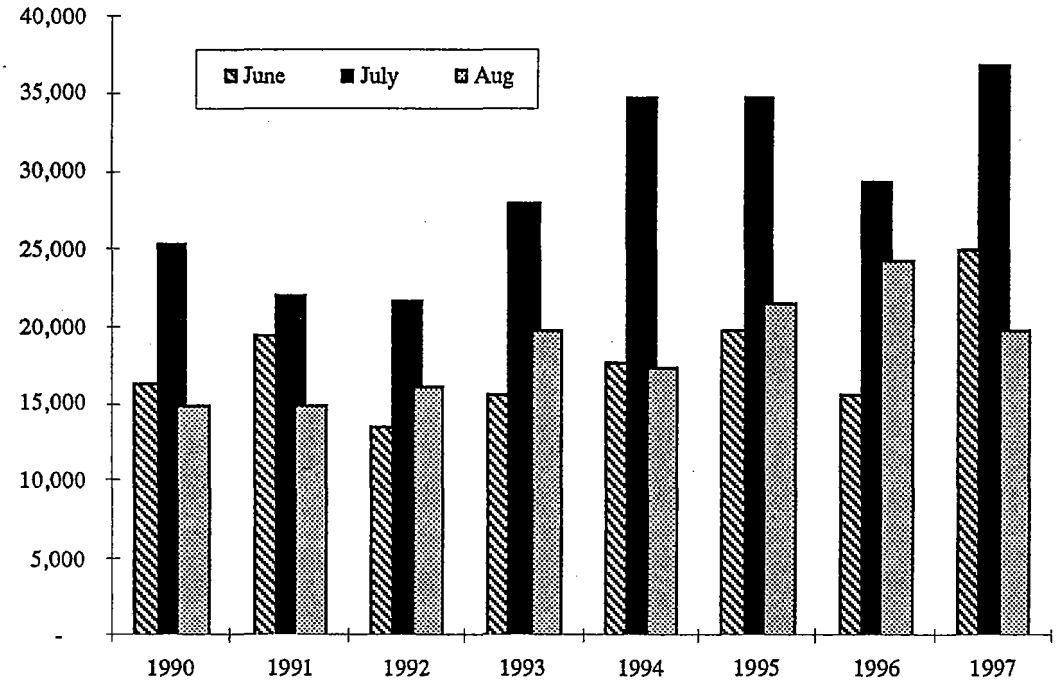
Wallum Lake is one of the forest's greatest assets. The extent of undeveloped shoreline makes the lake unique among great ponds in Massachusetts and provides a natural setting for recreational use. Approximately three-quarters of the shoreline is under Massachusetts or Rhode Island public ownership. The majority of the Massachusetts owned portion of the shoreline is under the DEM. Part of this area is the location of the Wallum Lake Day Use Area. It is a highly used recreation facility with 400 feet of beach and 225 picnic tables. A public boat ramp is also located within the day use area adjacent to the beach and picnic area with a separate parking lot that can accommodate up to 45 boat trailers and 10 car-top boats. The day use area is usually open from the middle of May through Labor Day. The boat ramp is open year-round for fishermen and winter recreational users.

Park Attendance

The Douglas State Forest is open year round with the peak attendance in the summer months. The cost per car is $2 or $15 for a season pass. The capacity of the State Forest is approximately 1500-1600 visitors per day based on staffing levels and parking availability. The State Forest is amenable to both Douglas residents and visitors who drive from destinations throughout the tri-state area and beyond. The State Forest does

not need to improve marketing efforts as the park is often filled to capacity during the summer months. In fact, the park had to turn away visitors on ten different days during the 1997 summer season (Fiscal Year 1998) due to capacity constraints. Park attendance has increased over the years as shown in the chart below.

Figure 6: Park Attendance by Calendar Year for Summer Season



The State Forest is also utilized by large organizational groups. Group users include organizations such as the Northbridge Parks and Recreation Department, Burrillville Summer Camp, Boys & Girls Clubs and YMCAs from various communities. During the 1997 summer season (Fiscal Year 1998), 63 group permits were issued for a total of 4,421 participants and 730 counselors. A special use permit for groups must have advance approval and a maximum of two groups are permitted per day.

Park Needs and Concerns

Planning in Douglas will have an impact on the Douglas State Forest due to the amount of undeveloped land surrounding the forest. The Park Supervisor, Bill Annese, is particularly concerned about the growth trends in the area and the potential adverse impact that the proposed regional landfill could have on the Douglas State Forest.

The amount of residential growth will increase the demand for recreation use and the resources that the State Forest provides. The park is already filled to capacity on most summer days and the growth in the region will further exacerbate this issue. In addition,

as vacant land is developed, the State Forest may be the only green belt in the Douglas area if action is not taken to preserve additional open space.

The pressures from increased use and population require that several issues be addressed within the State Forest:[59]

- Curtail unauthorized trail development, protect environmentally sensitive areas, and establish an official trail system with guidelines for appropriate use and protection of the forest's resources.
- Control access to the forest to prevent illegal dumping and vandalism.
- Improve staffing at the Douglas State Forest. Staffing levels are currently minimal and have not kept pace with year-round management needs and increased use.

The adjacent industrial district is not generally seen as a threat to the health of the forest. Light industry in this area would not create a significant impact on the quality of the forest and the Park Supervisor feels that it is unlikely that the area could be used for extensive development due to the lack of town services in the area and the amount of expensive ledge blasting that would be required to make development possible.

However, the proposed regional landfill could severely impact the forest. The Park Supervisor cited many of the reasons described in previous sections of this Master Plan regarding the environmental features of the potential site. In addition, the number of truck trips per day associated with the landfill will disrupt the quality of the forest experience. The prevailing winds over the hill from the landfill will impact the northern portion of the forest due to odors, dust and fumes from the landfill. Environmental and ecological degradation could occur as a result of increased gull and rodent populations and associated airborne refuse that could jeopardize the water quality in nearby lakes and ponds.

The 1992 *GOALS Plan* for the Douglas State Forest identified several priorities for implementing the recommendations identified within the Plan. They are listed in priority order as high, medium and low.

High

- Implement staffing plan by maintaining seasonal levels and establishing at least four new year-round positions.
- Address needed improvements, deferred maintenance and repairs to existing structures and facilities, including construction of a new handicapped accessible toilet/bathhouse facility in the day use area.
- Improve Wallum Lake Day Use Area by adding a 100 foot beach area and 150-vehicle parking area; loam and grade ball field
- Address minimum short term management, development and maintenance recommendations for the Southern New England Trunk Line Trail.

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[59] *Guidelines for Operations and Land Stewardship (GOALS) Douglas State Forest.*

- Trails Plan, Forestry, Fire Control, and Insect Pest Control recommendations should be implemented through progressive annual work program assignments, volunteer projects and special or on-going annual appropriations.

Medium

- Complete implementation of the Douglas Forest Acquisition Program.
- Develop the central Dyer cottage as an interpretive exhibit.
- Replace old equipment and acquire additional equipment for both forest operations and trail maintenance, management and emergency response.
- Address long term recommendations for the Southern New England Trunk Line Trail.

Low

- Potential development of new recreation facilities at the Dyer or Wallis areas.

Unprotected Open Space

The term "open space" often refers only to conservation land, land used for recreation, agricultural land and parks that are owned or operated by an agency dedicated to conservation. However, "open space" can also refer to any undeveloped land with conservation or recreation interest.

Parcels taxed under the Chapter 61 (Forestry), Chapter 61A (Agriculture) and Chapter 61B (Recreation) tax classifications are in private ownership and are not permanently protected open space areas. The tax classification enables the lands to be taxed at their use value rather than the full fair market value. The Town has the right of first refusal if the parcels are sold prior to the expiration of the tax abated status. This allows the Town to protect individual open space parcels as they enter the market or become threatened by development.

Forest Land- Chapter 61

There are 35 parcels in Douglas taxed under the Chapter 61 tax classification. The total parcel area equals 1,104 acres with an average parcel size of approximately 32 acres. Most of this land is concentrated in the northwest part of town, with 717 acres located in the Northwest Main Street area. The largest parcel is 170 acres and is located along Northwest Main Street. The table below summarizes the forest and wooded lands of Douglas that are currently under the Chapter 61 tax classification.

Table 34: Chapter 61 land

Map/Lot	Street	Land Area (acres)
29-10	Main Street	27
16-12	Manchaug Street	42
4-4	Cliff Street	19
5-14401	Northwest Main Street	1
1-14400	Northwest Main Street	9
1-14402	Northwest Main Street	10
1-9110	Northwest Main Street	12
1-14350	Northwest Main Street	13
1-14270	Northwest Main Street	15
1-11530	Northwest Main Street	20
1-14360	Northwest Main Street	20
5-4	Northwest Main Street	20
1-9140	Northwest Main Street	22
1-11540	Northwest Main Street	23
1-14300	Northwest Main Street	25
5-6	Northwest Main Street	32
5-5	Northwest Main Street	34
1-14390	Northwest Main Street	36
1-14340	Northwest Main Street	40
1-11550	Northwest Main Street	43
14-11	Northwest Main Street	73
1-14240	Northwest Main Street	100
6-6	Northwest Main Street	170
7-65	Oak Street	21
7-65A	Parker Road	5
12-2	Webster Street	12
12-4	Webster Street	15
12-3	Webster Street	35
52-5	Perry Street	50
37-25	Yew Street	18
37-24A	Yew Street	61
43-2B	Southeast Main Street	11
52-3	Southeast Main Street	21
9999-9120	Unknown	40
9999-6290		10

Source: Assessors database, January 1, 1997

Farm Land-Chapter 61A

There are several active farms under the Chapter 61A classification in Douglas, totaling 411 acres. The majority (237 acres) of the agricultural lands are classified as "productive woodlands and trees." Chapter 61A land can be found throughout Douglas but there is somewhat of a concentration in the center and southeast parts of town. The following table summarizes the agricultural land under the Chapter 61A classification.

Table 35: Chapter 61A land

Map/Lot	Street	Land Area (acres)
28-43	Church Street	10
28-27A	Church Street	11
21-11280	Church Street	13
2804-11390	Church Street	25
2804-16510	Church Street	43
28-27	Church Street	127
2804-16640	Riedell Road	20
14-3	Oak Street	72
44-9	Locust Street	30
42-4B	South Street	13
42-4	South Street	21
38-1	Yew Street	3
38-3	Yew Street	12
38-2	Yew Street	13

Source: Assessors database, January 1, 1997

Recreation-Chapter 61B

Private recreation areas protected by Chapter 61B total 715 acres. The specific uses include hiking, camping and nature study. The majority of parcels are located in the southern part of Douglas, along Chestnut Street and Wallum Lake Road.

Table 36: Chapter 61B land

Map/Lot	Street	Land Area (acres)
29-12C	Glen Street	6
29-12D	Glen Street	7
14-1	Oak Street	171
7-64	Parker Court	13
50-3310	Chestnut Street	7
50-2C	Chestnut Street	10
50-3260	Chestnut Street	10
50-3325	Chestnut Street	10
50-3290	Chestnut Street	12
50-3280	Chestnut Street	16
50-3270	Chestnut Street	17
50-3300	Chestnut Street	31
37-1	Bald Hill Road	96
36-37	Yew Street	11
37-12	Martin Road	18
54-372	Shore Road	80
35-3350	Wallum Lake Road	5
54-375	Wallum Lake Road	20
35-3320	Wallum Lake Road	34
55-2	Wallum Lake Road	140

Source: Assessors database, January 1, 1997

Private recreational facilities include Sanborns Campground, the waterslides, Blackstone Beagle Club and the Douglas Campground.

Potential Open Space Acquisition

The *1991 Master Plan* provided a list of proposed conservation areas that should be reconsidered in the preparation of this Master Plan:

- *Cedar Swamp Conservation Area:*
  At almost 1400 acres in size, this is one of the more extensive wetlands in town and is characterized by a significant stand of White Cedar. The area includes the swamp and all of the upland area between it, the State Forest, Laurel Lake and Webster Road (Route 16). This area could potentially be linked to the existing trail network in the Douglas State Forest.
- *Chase Pond Conservation Area:*
  The land between South Street and the pond should be protected. If possible, land

TOWN OF DOUGLAS
MASSACHUSETTS

1998 MASTER PLAN

Potential Open Space Acquisition

Legend:

1	Cedar Swamp
2	Chase Pond
3	Baiting Brook
4	Centerville Brook
5	Riedell Brook
6	Castle Caves
7	Lowland on Gilboa Street
8	Mumford River area
	Douglas State Forest

N

1800' 3600' 7200'

Whiteman & Taintor
Planning Consultants

Base map: Deanne Frederickson
Source: Department of Landscape Architecture and Regional Planning, University of Massachusetts, Amherst

Based on the *1991 Master Plan* recommendations, discussions from Master Plan meetings, and input from other town officials, the Town should pursue open space protection efforts for the areas mentioned above that have not yet been acquired or otherwise protected by the Town or the Douglas State Forest. In addition to this list, the Town should continue to pursue options for obtaining easements or acquiring property along the Mumford River (see Greenways, page 124).

It will be necessary for the Town to determine the criteria for selecting parcels for acquisition in case a desirable property becomes available. Developing a detailed open space plan will also allow for a comprehensive strategy for preservation so that land is not acquired in a piece-meal fashion with little relation to other parcels and not part of a town-wide open space system. The criteria should be based on the needs, goals and priorities of the town and listed in order of importance. Examples of criteria that could be used include the following:

- *Environmental sensitivity of the parcel:* Does the acquisition of this parcel protect the Town's waterways and aquifers? Will it preserve wildlife diversity and habitats? Does it protect scenic areas and vistas?
- *Location within Douglas:* Will the acquisition of this parcel provide additional recreational opportunities in a section of town that is in need of such facilities? Does the purchase of this parcel encourage town-wide distribution of open space and recreation?
- *Town wide vs. special group benefit:* Would the acquisition of this parcel benefit the Town as a whole or a select group of residents in need of additional opportunities? Does it provide a linkage to other areas of town?
- *Cost and availability of the parcel:* How much are residents willing to pay to purchase open space? Are there additional sources of funding that would be available if this particular parcel were targeted for acquisition?
- *Reduction of developed area:* How will the removal of this parcel from development affect the financial health of the Town ? For example, a residential parcel might cost the town in services while a commercial property might be a positive contribution to the tax base.

The Town has a Conservation Commission Fund which can be used for open space acquisition. The majority of this money has accumulated through fees and fines generated from the Wetland Bylaw and a portion from the general operating budget for the Conservation Commission is contributed each year. This fund currently has a balance of approximately $40,000. However, the Wetlands Protection Fund was established according to M.G.L Ch. 131, Sec 40 at the 1997 Annual Town Meeting and the fees and fines generated from the Wetland Bylaw will now be allocated to this account and will primarily be used for expenses incurred by the Conservation Commission.[60] The Conservation Commission Fund will remain as a source of funds for open space acquisition and will continue to accrue interest. Additional funding options for open space acquisition and protection include the use of grants, creating a Land

[60] Michael Balch, Town Administrator and Louise Redding, Town Accountant

Bank program through state legislation, working with non-profit organizations such as land trusts, and issuing a bond to purchase open space.

Greenways

Greenways are open space networks that can be used for preservation, natural corridors and linkages between destinations. Greenways can be established along a natural corridor such as a riverfront or stream valley or along man-made corridors such as an old railroad right of way, a canal or a scenic road. These areas become valuable to a community through the multitude of uses that a greenway can provide. Greenways may contain walking trails, bike paths, canoe launches as well as serve as a mechanism for preservation and environmental protection. The Blackstone River Valley Natural Heritage Corridor provides an opportunity to create a regional greenway that can create linkages within this area.

Our Rural Heritage and the Future identified two potential greenway linkages within Douglas. These greenways have the potential to link the Wallum Lake Day Use Area and continue east to connect to the center of Uxbridge, Millville and the Blackstone River Valley Natural Heritage Corridor. In order to make these linkages possible, Douglas would need to acquire and designate buffer zones along the Mumford River. [61] East Douglas and the Douglas Village should be included within this greenway network in order to preserve the historical and cultural resources contained in these areas.

Mumford River Greenway

The first of the two proposed greenways is located along the Mumford River, connecting the northern portion of the Douglas State Forest to the southern end of the Sutton State Forest and continuing east to the Blackstone River Valley.

The Douglas Conservation Commission is investigating the potential to receive grants or some other type of funding to create a Riverwalk along the Mumford River in conjunction with a beautification program for Main Street. The Blackstone River Valley National Heritage Corridor Commission may be able to assist with this effort. The Riverwalk is proposed to begin at Gilboa and North Street and follow the river to the St. Denis Cemetery on Manchaug Street. This would be a critical element of the first greenway possibility mentioned above.

Southern New England Trunk Line Trail

The second potential link identified by the study is located along the Southern New England Trunk Line Trail (SNETT) which connects state owned lands in Rhode Island and Connecticut and the southern edge of the Douglas State Forest.[62] This area was designated by the National Park Service as a "National Recreational Trail" in 1981.[63] A 22 mile section of the SNETT between Douglas and Franklin was acquired by the

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[61] *Our Rural Heritage and the Future, page 1-21.*

[62] *Our Rural Heritage and the Future, page 1-21.*

[63] *GOALS, Douglas State Forest.* Mass. DEM. November 1992. Page 9.

Massachusetts Department of Environmental Management in 1984. Approximately 2.7 miles of the DEM portion of the trail is within the Douglas State Forest. Although the eastern portion of the trail outside of the Douglas State Forest is not officially open, it currently receives substantial use. Access and continuity problems have to be addressed before this trail can become a continuous corridor of approximately 47 miles in length. There are four major river crossings and many bridges that need to be improved before the trail will be safe to use. When the trail is complete, it will link the communities of Douglas, Uxbridge, Millville, Blackstone, Bellingham and Franklin.[64]

Conservation Commission Needs and Concerns[65]

The Conservation Commission has taken an active interest in the creation of this Master Plan as many of the issues are directly related to the work of this Commission. The primary concerns of the Conservation Commission are discussed below as well as referenced throughout this document.

Residential Development

The Conservation Commission is very concerned about the rate of residential development and the implications this has on Douglas' environmental quality. The Commission is in favor of implementing alternatives to the traditional subdivision such as cluster zoning, flexible development, conservation subdivisions or other mechanisms which will provide for open space preservation and protection (see *Housing* element).

A five-year building moratorium was proposed at the 1996 Annual Town Meeting but it was defeated by a narrow margin. The Conservation Commission was in favor of this moratorium and feels that some type of growth management or subdivision phasing should be implemented. New housing developments are happening at such a rapid rate that is difficult for the Conservation Commission to keep up with the necessary inspections.

Route 146

Douglas contains a small portion of Route 146 but the planned improvements to this corridor will have both positive and negative impacts on Douglas. Many of the positive impacts are associated with improving business opportunities and were discussed in the *Land Use* and *Economic Development* elements of this Master Plan. The Conservation Commission is concerned with the environmental and aesthetic impacts of this corridor project. Wetlands and wildlife habitat are present on both sides of Route 146 and could be damaged if precautions are not taken.

School Involvement

Education regarding the importance, preservation and conservation of the environmental features of Douglas is important for the town's future. The Conservation Commission is

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[64] Ibid, Page 61-62

[65] Marylynne Dube, Conservation Commission, 11/6/97.

willing to work with the schools to provide opportunities for students to learn about the environment. This could involve nature walks, site visits and joint preservation efforts. A recycling effort could also be implemented through the school system.

Staffing Needs

The recent addition of a full time Building Inspector and the assistance that is provided by CME Associates as the Town Engineer has helped to improve the communication and coordination of the development process. However, the Conservation Commission feels that it is in need of at least one part time staff person to answer the public's questions and explain new procedures associated with revised regulations such as the storm water regulations and the Rivers Act. This staff person would also assist with site inspections.

Recreation

The majority of the recreational facilities in Douglas are associated with the school sites. However, the Recreation Commission is making an effort to expand opportunities throughout town through the addition of athletic fields and working with the schools to improve existing facilities.

Recreation Programs

The Recreation Commission has supervised and supported many recreational programs in town. These programs include the following:[66]

- Douglas Axmen Soccer Club
- Douglas Youth Basketball
- Slovak Catholic Sokol Organization
- Council on Aging
- Red Cross Instructional Swim Program
- Men's Winter Basketball
- Douglas Youth Baseball
- High School Athletics

Recreation Improvements[67]

The amount of existing athletic fields is not enough to meet the current demand. While there are enough facilities to operate games, the existing fields are under a scheduling burden which leaves very little time available for routine maintenance (re-seeding and re-

[66] 1996 Annual Report of the Recreation Commission. *Annual Reports of the Town of Douglas* , 1996.

[67] Information provided by Wayne Harris, Recreation Commission Chairman. Interview 8/11/97 and Board of Selectmen "Building Consensus" meeting 9/25/97.

generation) and a lack of adequate practice times. The Recreation Commission feels that there is a need to modify the existing fields in order to serve a growing population as well as create additional facilities.

The Martin Road Recreational Facility is the most recent effort by the Recreation Commission to provide additional facilities. Designs for the 21 acre site will provide 3 tennis courts, 2 Little League fields, 2 basketball courts, an amphitheater, walking track, and hiking trails. The total project cost is estimated to be $750,000. The Town is eligible for a maximum of $50,000 from the State but the grant has not been secured and the remainder of the money not yet raised. The Recreation Commission is hopeful that the project will be complete by 1999.

The State owned land near Wallum Lake has been targeted for a new facility. The Town is working with the State to construct 2 full size soccer fields which could accommodate up to 7 teams. The project was originally scheduled to be completed by the end of 1997 but there has been a delay due to the town not having an Open Space and Recreation Plan that conforms to state guidelines. The Douglas State Forest Park Supervisor stated that the Open Space and Recreation Plan must be completed before the State will consider allowing the project to proceed as the State's assistance in providing land to the Town for recreational purposes could set a precedent for other joint efforts in other communities in the future. As of this writing, the Town is in the process of establishing a committee to begin preparations of an Open Space and Recreation Plan. The total cost of developing the soccer fields is estimated to be $16,800 and the funds have been raised and appropriated by Town Meeting.

The key issues that the Recreation Commission feels must be addressed in the future are listed below in order of importance.

Items that Must be Done

- Immediate completion of the Wallum Lake Soccer Fields.
- Develop a minimum of 2 Little League fields (possibly Martin Road).
- Immediate completion of the gymnasium at the Municipal Center so that it may be used by the public as soon as possible.
- Aid in the completion of the soccer field located at the Elementary School.
- Aggressively pursue an experienced grant writer to aid in the development of the Martin Road Park Facility.
- Replace the outdoor basketball court at the Elementary School and create an additional court.

Items that Should be Done

- Seek and develop a location for outdoor tennis courts (possibly Martin Road).
- Utilize the "dead area" behind the Little League field at Soldiers Field as a possible playground.
- Replace broken and worn perimeter fencing at Soldiers Field.

- Develop and implement a plan to install underground sprinkler systems or irrigation at Soldiers Field.
- Determine a location for a "teen center;" help to establish a program and to secure grant monies to help fund and staff it.
- Establish and institute a summer recreational program that emphasizes non-sport related activities such as crafts, games, etc. (rather than team oriented sports).
- Reinstate the Red Cross instructional swim program.
- Create an outdoor skating rink.
- Build an additional gymnasium to support winter programs.

Recommendations

- The Town has many recreational opportunities through the use of school facilities and the State Forest but the Town is currently not able to meet the demand. The Recreation Commission has taken steps toward meeting this need but additional recreational facilities will be necessary to meet the demand of a growing population. The Town should develop an Open Space and Recreation Plan according to state requirements so that needs can be clearly identified, existing resources inventoried and an action strategy created. An Open Space and Recreation Plan will assist the Conservation Commission in preserving Open Space as well as increase the opportunities for state funding and allow the Douglas State Forest to work with the Town in providing additional recreation facilities.

Open Space

- In all likelihood, Douglas will continue to experience a significant amount of residential growth. This growth will result in the development of some existing open land, and will increase the impacts and pressures on the remaining undeveloped parcels. The Town should establish clear criteria for determining which parcels should be targeted for open space protection and when the Town should take action. The following list is a starting point for the Town's efforts to pursue direct acquisition, donation, easements or transfer of development rights:

    - Cedar Swamp
    - Chase Pond and frontage along South Street
    - Baiting Brook
    - Centerville Brook
    - Riedell Brook
    - Castle Caves
    - Lowland floodplain on Gilboa Street
    - Mumford River area

- Douglas should establish a local Land Trust and establish procedure for use of the Conservation Commission Fund through the Land Trust.

- The Douglas State Forest is a valuable resource to the town, the Blackstone Valley and the larger region in which it is located. Douglas should integrate the goals of the State Forest with those of the Town in order to provide coordinated efforts and mutually beneficial preservation and recreational opportunities. Specifically, it is recommended that the Town support the following actions:
  - Implementation of the Douglas State Forest Acquisition Program
  - Address needed improvements, deferred maintenance and repairs to existing Douglas State Forest structures and facilities, including construction of a new handicapped accessible toilet/bathhouse in the Day Use area.
  - Improve the Wallum Lake Day Use area by adding a 100-foot beach area and 150 vehicle parking area.
  - Address minimum short term management, development, and maintenance recommendations for the Southern New England Trunkline Trail (SNETT)
  - Implement recommendations for a Douglas State Forest trails plan, forestry plan, fire control plan, and insect control plan through progressive annual work program assignments, volunteer projects and special or on-going annual appropriations.
  - Implement a Douglas State Forest recreation staffing plan by maintaining seasonal levels and establishing at least four new year-round positions.
- The Blackstone River Valley National Heritage Corridor provides a regional greenway system. Douglas should take advantage of the opportunity to create additional open space networks that link into this system. In particular, the development of the Southern New England Trunk Line Trail and the efforts of the Town along the Mumford River are examples of how the Town can work to create greenways that provide recreation, linkages and preservation as well as alternative non-motorized transportation routes.

Recreation

- Expand recreation opportunities throughout town, including non-sport related activities, providing additional playing fields and athletic courts and improving and upgrading existing facilities. Specific actions include the following:
  - Complete the Wallum Lake Soccer fields
  - Develop additional Little League fields (possibly along Martin Road)
  - Replace the outdoor basketball court at the Elementary School and create an additional court
  - Complete the upgrade of the Elementary School soccer fields.
  - Improve existing and create additional trails along water bodies and railroad easements.
- Prioritize the facility investments identified by the Recreation Commission under "Items that Should be Done," continue planning and implement as funding becomes available.

Douglas Master Plan

Services and Facilities

VIII. Services & Facilities

Douglas' population will continue to grow over the coming decades and it is important to focus on the increased needs that this continued growth with bring. There are several major trends that are shaping the future capital facility and operation needs of Douglas. These trends can be summarized in three major categories:

- **Population and growth dynamics.** As shown in the buildout analysis presented in the *Land Use* element, Douglas is not expected to reach buildout until after the year 2045. Initial buildout estimates project a total of 7600 dwelling units with a population of approximately 22,000. While it is uncertain exactly where or how quickly this growth will occur, the increase in population will certainly create an increase in demand for Town services. This will result in an increase in the number and type of facilities in town and a corresponding increase in staff in both new and existing facilities.

- **Demands created by technological advances.** Technological improvements have changed the ways in which we communicate and conduct business. The majority of departments interviewed to complete this section of the Master Plan stated that upgrading computer systems and keeping pace with advancing technology is essential for the operation of their departments and the ability to provide efficient service. In addition, technological advances play a role in integrating and coordinating the information from these various departments for town wide use as well as inter-department communication.

  The increase in the trend for people to work out of their private residences and set up home-offices or home based businesses may also warrant improved infrastructure related to telecommunications. Additional phone, fax and modem lines are being utilized in residential areas while the needs of businesses have expanded. Some communities in Massachusetts have invested in fiberoptic cable and included telecommunication infrastructure as part of their capital planning. The increase in the number of cellular towers in towns throughout the country is one example of a technological advance that is likely to impact Douglas.

- **Increase in environmental protection and awareness.** "Protection of the town character" has been mentioned throughout this document and the planning process. The landfill issue has brought many of the environmental concerns to light. The location of public facilities should continue to respect the environmental integrity of Douglas, and infrastructure improvements should be targeted to protect and preserve the natural features of the town.

Many Town departments oversee facilities and services that will be affected by Douglas' future growth. For this element, each of the Douglas departments with major capital facilities and/or direct connection with likely growth impacts were contacted and interviewed. The Town must determine which needs are of the highest priority and how funding should be obtained in order to meet these needs.

Municipal Center[68]

The Municipal Center is located on Depot Street in East Douglas. The structure was formerly used as the Douglas High School and now houses Town Offices, the Police Station and a town gymnasium. It will be the home of the town's early childhood center for Kindergarten and Pre-K.

The Municipal Center's computer system was upgraded in fiscal years 1996-1998. The Town's computer system was inadequate for the needs of the Town prior to 1996 and almost all town records were kept manually or not at all. The $55,000 improvements are expected to be adequate until 2000-2002. The computer network will require periodic upgrades approximately every 3-5 years.

Anticipated future capital expenditures include upgrading the town's ability to copy and publish documents in house. This will expand opportunities for information to be distributed to the public and town departments and boards. Twenty thousand dollars was raised and appropriated for this purpose in 1996 and should be sufficient to meet the needs of the Town until 2005.

Police Department[69]

The Douglas Police Department is located in the Municipal Center. The facility was completed in 1993 and meets the current needs of the department. This $600,000 facility is projected to meet capacity needs through 2005 but a significant increase in population will cause a strain on providing services as general service calls and traffic will increase with the number of residents.

In order to accommodate the growth in population, some future improvements will be necessary but no major changes or capital expenditures are anticipated. One anticipated improvement is the redesign of the dispatch area in order to make it more user friendly and allow for better usage of the area and the potential to expand. It is estimated that the improvements would cost $25,000 and are expected to occur in 1998. Other periodic upgrades and expenses include the computer system ($5,000 per year) and vehicle replacement ($75,000 for 3 vehicles every 3-4 years).

The Police Department had an annual operating budget of $644,148 as of FY1997 and a staff of 30. There are currently 10 full time and 10 part time officers, providing 3 officers per shift. In order to provide the standard 2.5 officers per 1,000 residents, there is a need for 2 more full time officers. The average within the Blackstone Valley is 1.4-1.8 officers per 1,000 residents. The department is also supported by a full-time secretary and several full-time and part-time dispatchers.

Community growth has increased the Police Chief's concerns regarding traffic within Douglas. A primary concern is traffic along Main Street, especially in the morning between 6:30 a.m. and 9:00 a.m. when school children are crossing and traffic is backed up to West Street. It is his opinion that older back roads were built to accommodate

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[68] Information provided by Michael Balch, Town Administrator. Interview 8/13/97. Capital Expenditures and Selectmen/Administrator department description 9/17/97.

[69] Information provided by Patrick Foley, Police Chief. Interview 8/14/97. Board of Selectmen "Building Consensus" Meeting 9/25/97.

traffic levels 40 years ago and cannot accommodate the additional use that increased growth brings to these areas.

Fire Department[70]

The Douglas Fire Department provides a range of services to the Town including fire services, emergency services and rescue, and routine inspections. A Special Town Meeting in October 1997 voted to approve $865,000 for the land acquisition and construction of a new fire station. The lack of a modern facility with sufficient space has been a primary concern of the Fire Department in recent years. The new 6,800 square foot facility will be located adjacent to the Highway Department on Route 16 and is expected to serve the needs of the department and the town beyond the life of this Master Plan, although some adjustments may need to be made if rapid development occurs in a concentrated area of town.

One of the biggest challenges for the Fire Department is maintaining adequate staffing levels to meet an increasing demand for services. The Fire Department is staffed by 17 on-call fire fighters, a number the Fire Chief would like to increase to 25. The Town is also in need of Emergency Medical Technicians (EMTs), with only 10 registered and 7 active as of September 1997. There are currently 2 people on call as EMTs during the day time hours through Guilford Industries. By next year, there will be a need for at least 1 full time EMT/fire fighter. By the year 2000, it is projected that there will be a need for a total of 35 staff, and 40 staff members by the year 2005.

This volunteer department has seen a tremendous increase in routine calls and inspections, justifying the need for additional staff and full time support. Between January and September 1997, the department completed 206 inspections for smoke detectors and 176 oil burner inspections compared to 200 and 96, respectively, for the entire year of 1996. The department responds to an average of 250-300 ambulance calls and over 100 fire calls per year.

In addition to approving the funds for the construction of a new fire station, the October 1997 Special Town Meeting also approved $150,000 for the purchase of an attack pumper. This will replace a 35 year old attack pumper and the second attack pumper (26 years old) will be refurbished. Generally, attack pumpers should be replaced every 20-25 years. A new ambulance was recently purchased and air packs were upgraded. Ambulances should be replaced every 5-10 years and air packs every 10-15 years. Additional periodic replacement needs that have not been recently addressed include a rescue truck (every 20-25 years at $75,000), aerial ladder truck (every 25 years at $500,000), and hoses (an ongoing purchase at $4000 a piece).

Additional concerns of the fire department include the need to create a response plan for handling hazardous materials emergencies and the inefficiency of the water system in the downtown for fire fighting purposes. The current water system is designed for domestic use and results in a lower Insurance Services Office (ISO) rating for the Town. This issue is described in the next section.

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[70] Information provided by Donald Gonyor, Fire Chief. Interview 9/30/97. Board of Selectmen "Building Consensus Meeting" 9/25/97.

Water & Sewer Department

Water[71]

Town water service is provided in the northeast quadrant of Douglas. The western most point of the service area is along Southwest Main Street, half way between Cedar Street and Southeast Main Street. Service extends along Main Street, including portions of several cross streets, to Davis Street. The service area also includes North Street and Colonial Estates as well as much of Gilboa Street. The area in which the Municipal Center is located is also included. This area includes Depot Street to Railroad Avenue, Brookside Drive, Franklin Street and Eagle View. No expansion in the service area has been discussed by the Water and Sewer Commission as of this writing but this issue should be explored as it is an important aspect of economic development opportunities.

Water Supply

Douglas' water supply is obtained from two groundwater sources approximately 1000 feet from one another on opposite sides of West Street. These wells are located in an aquifer that extends over much of East Douglas. The Main Wellfield produces about 0.35 million gallons per day (mgd) and the second gravel-packed well produces approximately 0.29 mgd. The Town of Douglas began construction of two new wells (0.19 mgd and 0.23 mgd) and a pump station off Glen Road in 1994 and received DEP approval and went on line in January of 1996.[72] With the addition of the facilities on Glen Road, the Town has a total pumping capacity of 1.06 mgd.

As described above, water service is provided to a limited area in town. In 1990, 899 water services were in use. Dividing this number by the total number of housing units in that year, the service ratio is 0.42. This service ratio is then applied to population data and used to project future consumption of the water supplied by the town. The *Waterworks Facilities Master Plan* completed in February 1995 concluded that the Town of Douglas should be capable of supplying the maximum day requirement of 618,179 gallons per day by the year 2015. In 1994, the Town water supply facilities pumped approximately 250,000 gallons per day. According to the Water/Wastewater Systems Manager, this was also the average use in the town in 1996. The Plan's projected population for the year 2015 is 8045, 3460 of which would actually be serviced by the water system based on the service ratio. Improvements proposed are intended to be adequate through the year 2015 based on the town's water requirements. These requirements include the population served, domestic, commercial, municipal and industrial usage, unaccounted for usage (leakage, main flushing, etc.) and flows for fire protection. The estimated average daily water consumption rates for 2015 are 343,433 gallons per day (gpd), the maximum day rate of 618,179 gpd and the maximum hour rate of 789,896 while the capacity is 1,060,000 gpd.

It is recommended that a community's water supply system be able to meet the maximum daily demand with the largest well out of service. This is known as the "firm capacity" of the water system. The Main Wellfield is Douglas' largest well at 0.35 mgd.

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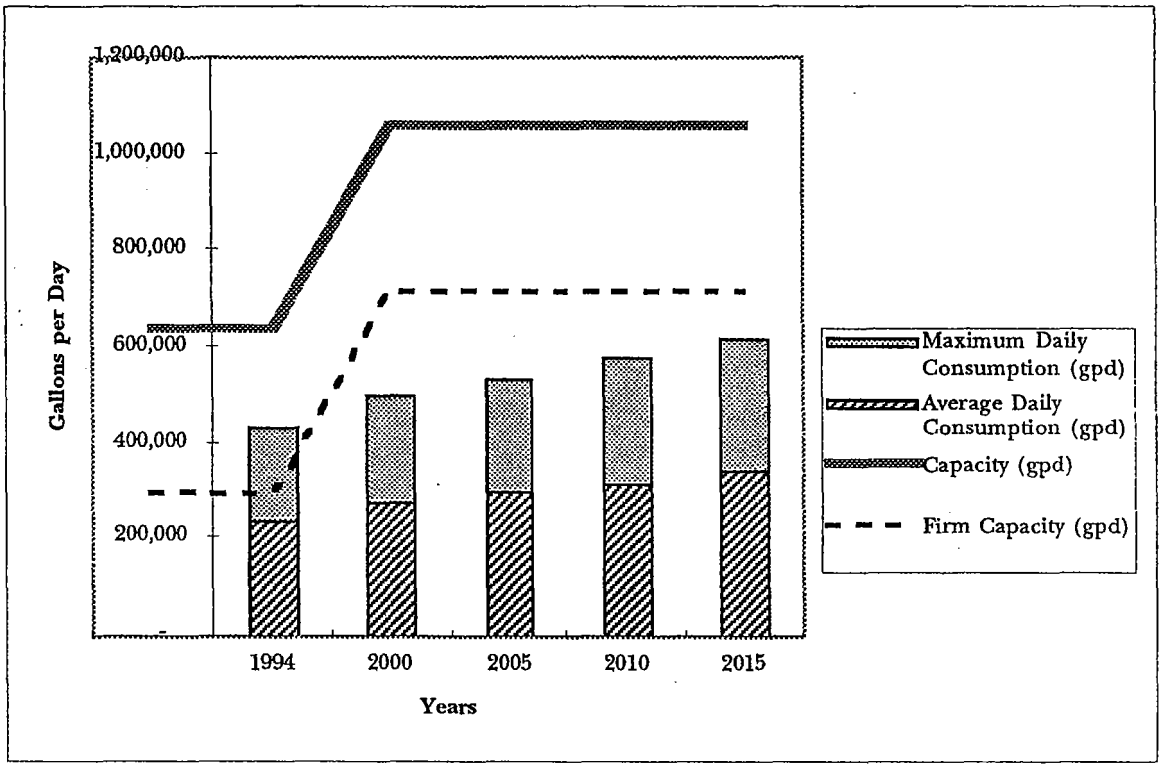
[71] Information summarized from *Waterworks Facilities Master Plan* prepared by Fay, Spofford & Thorndike, Inc., February 1995.

[72] *Annual Reports for the Town of Douglas*, December 31, 1996.

With the addition of the new wells off Glen Road, the firm capacity of the system is adequate to meet the future demand.

Figure 7: Water Supply and Projected Consumption Levels



Source: *Waterworks Facilities Master Plan*, 1995.

The *Waterworks Facilities Master Plan* concluded that the water sources currently produce excellent quality water with little chemical treatment needed. This combined with the capacity level resulted in the Plan's conclusion that the Town supply is sufficient and no new provisions for water supply need be considered as of 1994. The Water/Wastewater Systems Manager and the Water & Sewer Commission agree with the Plan's conclusion and predict that no new provisions for water supply are necessary in the foreseeable future. However, in order to protect the existing water supply, the Town should acquire land within the Zone 1 contribution area of the wellfield on West Street. The Town owns an adequate amount of the Zone 1 area surrounding the Glen Street wells but care should be taken to protect all wellfields and the Town's high water quality.

Water Distribution System and Fire Fighting Capabilities

There are two water storage tanks in the Town's distribution system. The first is the Common Street Standpipe with a capacity of 250,000 gallons and serves the high service area. The second tank is the Franklin Street Concrete Tank with a capacity of 234,000 gallons and serves the low service area. The high service zone consists mostly of residential housing units while the low service area serves the center of Town and all of the schools. The total storage available in 1995 was 484,000 gallons while the required storage for 1995 was 796,499 gallons and the required storage for 2015 is projected to be 843,600.

The Department of Environmental Protection (DEP) guidelines for Public Water Systems recommend that the normal working pressure in the distribution system should not be less than 35 pounds per square inch (psi). The ISO, the agency responsible for grading a municipality's fire fighting capabilities, requires fire flows to be available at a residual pressure of 20 psi. The *Waterworks Facilities Master Plan* concluded that the total volume of water in the high and low service tanks in Douglas is useable during fires while maintaining the required 20 psi in the system. However, the existing system creates some limitations for water usage for fire fighting.

Hydrant flow tests were conducted as part of the 1994 study. System pressure observed during the flow tests showed that on days of average consumption, distribution pressures were higher than 35 psi. However, there were exceptions in areas of higher elevations. With a water storage level of 714.5 feet in the Common Street Tank, a static pressure of 35 psi could be maintained to ground elevation 634 in the high service area. A static pressure of 35 psi could be maintained to ground elevation 491 in the low service area with a water surface level of 572 in the Franklin Street Tank. The Study suggested that the Town should not consider any new developments located above these elevations without provisions for booster pumping.

The piping of the current water system consists mostly of old cast iron pipe. New construction of water mains and engineering improvements have helped to loop some areas but many "dead ends" exist. In addition, much of the old unlined cast iron piping in Douglas has lost its carrying capacity due to tuberculation and age. Large pressure drops in various locations during the hydrant flow tests indicate that the system is not functioning efficiently due to these dead ends and decreasing pipe capacities. Deficiencies in eight of eleven hydrant flow tests resulted in the study's conclusion that the fire flows available in areas of large flow demands (schools, apartments, industry, etc.) were inadequate for these types of buildings. Problem areas within the system are located around Gilboa Street and Manchaug Street and the North Street area. These areas are located in high elevation areas that are distant from any supply source.

Recommended Improvement Program[73]

The *Waterworks Facilities Master Plan* provided a list of recommended improvements to the water system which is summarized below. Many of the recommendations have already been completed or will be completed in the near future.

1. Increase storage capacity and provide for improved flow from the new storage tank. Also, provide for replacement of hydrants and valves in the distribution system (Cost=$1,145,000).

    - Demolish the existing Franklin Street Tank and construct a new 0.75 MG prestressed concrete storage tank at the same site.
    - Install about 3,000 feet of 12-inch DI water main in Franklin Street.
    - Begin a 5-year annual program of valve and hydrant replacement.

[73] Status of recommendations provided by Anthony Gressak, Water & Sewer Department Systems Manager, 12/16/97.

Status: The new storage tank is expected to go on line the beginning of January. The 12-inch water main in Franklin Street has been completed. The process of providing replacement of hydrants and valves has been started.

2. Improve distribution system capacity to provide adequate fire flow capabilities and eliminate deficiencies in fire flows. Also, provide a reliable water supply to the high service area (Cost=$675,000).

   - Install about 5,100 feet of 12-inch DI water main in Main Street from Franklin Street to Charles Street and Northeast Main Street.
   - Install bout 2,700 feet of 12-inch DI water main in Main Street from Franklin Street to the existing booster station near Glen Road.
   - Automate the existing booster station on Main Street to operate on Common Street Tank water levels.

   Status: Not yet completed. The completion of these recommended actions will address the deficiencies in fire fighting capabilities.

3. Improve distribution system capacity and provide improved fire flows in localized areas (Cost=$595,000).

   - Install about 4,500 feet of 8-inch DI water main in Mechanic Street, Manchaug Street and Gilboa Street.
   - Install about 1,500 feet of 12-inch DI water main in North Street from Gilboa to Main Street.
   - Install about 200 feet of 8-inch DI water main connecting Towle Court off Colonial Estates.
   - Install about 720 feet of 8-inch DI water main in Depot Street from Railroad Avenue to Maple Street.
   - Install about 1,300 feet of 8-inch water main in Maple Street from Depot Street to Martin Street.

   Status: The 8-inch pipe connecting Towle Court off Colonial Estates will be completed in the Spring of 1998. All other recommendations to be completed.

Wastewater[74]

The Town's wastewater collection system is comprised of approximately 34,500 linear feet of gravity sewer and approximately 2,500 linear feet of force main and serves the East Douglas area. The original collection system and the wastewater treatment facility were constructed in the mid-1970s.There is one pump station located on Gilboa Street, across from Guilford Industries. The treatment facility is located on North Street and the existing sewer service area is in a densely developed section of Douglas. Due to the lack of vacant lots, it is unlikely that substantial new development will occur in the areas that are currently serviced by the existing system.

[74] Information summarized from the Draft *Facility Plan for Wastewater Treatment* prepared by Beta Engineering, December 1996.

The Douglas Wastewater Treatment Facility was "designed to achieve secondary treatment. This means that the facility should be capable of consistently producing an effluent which has BOD 5 [five-day biochemical oxygen demand] and suspended solid levels equal to or less than 30 mg/l."[75] The Town recently commissioned Beta Engineering to complete a Facility Plan for Wastewater Treatment for the purpose of defining and coordinating existing and future wastewater treatment needs of the town. The draft document was reviewed by the Water and Sewer Department and was sent to the Department of Environmental Protection for approval in December 1996. The Town is waiting for the DEP's official approval of the Plan.

The Town of Douglas Water and Sewer Department was issued an Authorization to Discharge under the National Pollutant Discharge Elimination System (NPDES Permit) in September 1995. The discharge permit requires that the monthly average influent flow be less than or equal to 0.18 mgd. This level was exceeded in five months of 1993, one month in 1994 and five months in 1996.

The Massachusetts Department of Environmental Protection requested that the Town of Douglas address problems with the Town's wastewater collection and treatment facilities. The problems noted in 1993 and the current status include:[76]

- Apparent excessive infiltration/inflow within the collection system *[status: ongoing]*
- Inability of the Town to meet their current discharge permit due to the deteriorated condition of the existing aeration system *[status: a diffused air system was installed]*
- Odors from the aerobic digester which resulted in complaints from nearby residents *[status: addressed through improvements]*
- The Town's inability to comply with more stringent discharge requirements, including phosphorus removal and total residual chlorine limits that would most likely be included in the new permit *[status: this was addressed through the new permit. There is a 24-hour monitoring of chlorine residual and the phosphorous removal is in place]*

The Town addressed the excessive infiltration/inflow problem and odor complaints in 1994. Short term improvements to address the inadequate aeration system were made in the spring of 1994. Long term improvements for the aeration system and the Town's ability to comply with the new discharge permit are addressed in the Wastewater Treatment Plan and are discussed at the end of this section.

Flow Rates and Capacity

The Plan estimates that the base sanitary flow is 140,000 gallons per day (gpd). The evaluation of facility flow and rainfall records indicate that the amount of infiltration varies throughout the year. Maximum infiltration generally occurs during the late winter and spring months when ground water levels are high while the minimum infiltration occurs during the summer months when groundwater levels are low. The average daily wastewater flow to the facility is estimated to be 0.22 million gallons per day (0.14 base flow plus 0.08 infiltration). Through an evaluation of treatment facility records and typical peaking factors, the Plan estimated the peak daily flow to be 0.47 mgd.

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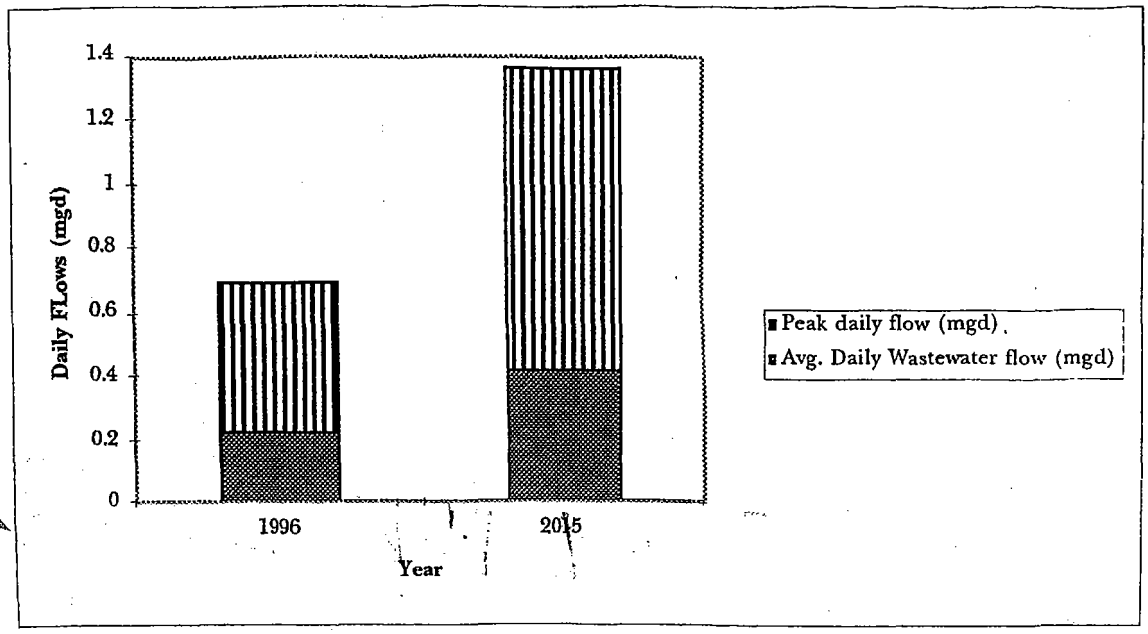
[75] Draft *Facility Plan for Wastewater Treatment* . December 1996. Page 2-7.

[76] Status of recommendations provided by Anthony Gressak, Water & Sewer Department Systems Manager, 12/16/97.

The population served by the existing system is estimated to be 2300. The Plan projects that the Town's population will increase by 20% by the year 2015. The majority of the projected growth is expected to occur in areas outside of the existing sewered area so the future increase in population within the service area was assumed to be 10%. Therefore, the resulting future sewered population within the existing sewered area is estimated to be 2530, an increase of 230 people. This is equivalent to approximately 12,000 gpd.

Figure 8: Wastewater Flows



Source: Facility Plan for Wastewater Treatment, 1996

Facility Expansion

Examining the potential for extending sewer service to areas for economic development is a primary purpose of the Plan. The possibility of extending the system into unsewered areas of the Town and to the Manchaug area in the adjacent Town of Sutton was evaluated for the *Facility Plan for Wastewater Treatment* through discussions with Town officials, a review of existing soils and groundwater conditions, and the location of the aquifer protection district. The areas into which the sewer system is most likely to extend are as follows:

- Area 1: Manchaug Street Area
- Area 2: West Street/Riedell Road
- Area 3: Charles Street/Northeast Main Street/Monroe Street
- Area 4: Davis Street - Commercial area
- Area 5: Route 146 Corridor - Industrial area
- Manchaug Area of Sutton

Areas 1, 2 and 3 and the Manchaug area of Sutton are currently zoned for residential use. Area 4 is zoned commercial and Area 5 is zoned industrial. The average daily flows generated from the system expansion are estimated to be as follows:

- Residential (Douglas) 0.10 mgd
- Commercial (Douglas) 0.05 mgd
- Residential (Sutton) 0.04 mgd

The total future flow is estimated to be 0.42 mgd. This accounts for the existing flow (0.22 mgd), increase in the future flow from the existing service area (0.01 mgd), and the system expansion (0.19).

Recommendations

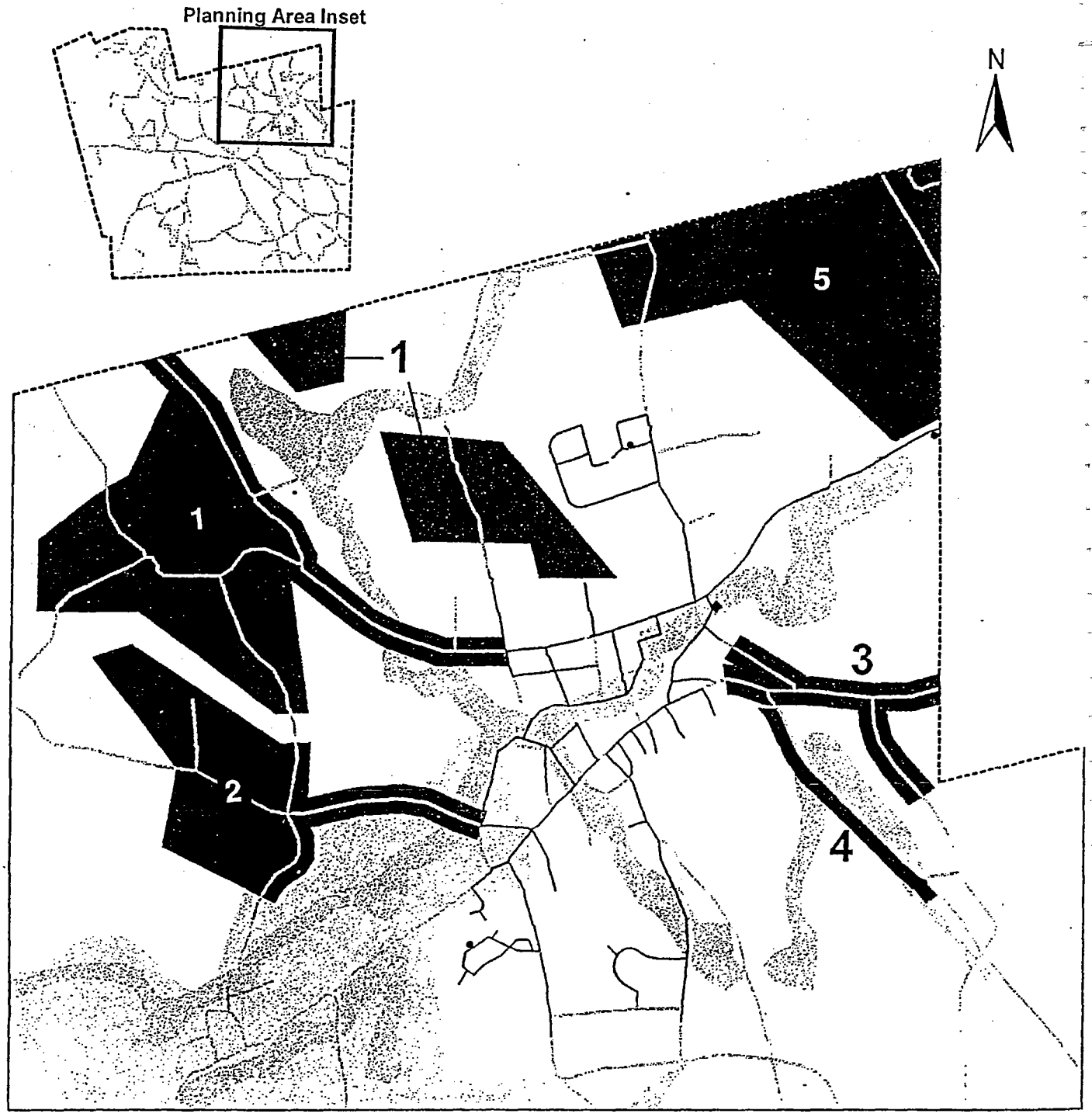
The *Facility Plan for Wastewater Treatment* recommends that the existing aeration treatment facility in Douglas be upgraded to a 0.42 mgd facility and that provisions be made for meeting the seasonal phosphorous and chlorine residual requirements. The recommended plan consists of the following improvements of the wastewater treatment facility:

- New preliminary treatment facilities consisting of grit removal using a vortex separator and screenings and solids removal using a comminutor
- New aeration tankage and improvements to the existing tankage, including full floor coverage with fine bubble aeration, and new blower facilities
- Demolition of the existing clarifiers and replacement with large units
- New return and waste sludge pumping station
- Emergency generator
- Chemical feed facilities for phosphorous removal
- New sodium hypochlorite and sodium bisulfite feed facilities for disinfection
- Replacement of aeration piping and diffusers in the waste sludge storage tank
- Continue to pursue infiltration reduction in the collection system

These recommendations will have beneficial impacts on the water quality of the Mumford River such as minimizing the potential for plant upsets, a reduction in the amount of BOD5 and solids discharged to the river in periods of wet weather, and a reduction in the amounts of phosphorous and chlorine discharged to the river during the summer months.

The capital costs for improvements to the facility are estimated to be $3.5 million with an annual operation and maintenance cost of approximately $180,000 in the initial year and $188,000 in the design year as flows increase. The *Facility Plan for Wastewater Treatment* assumed that funding for the capital costs required to design and construct the treatment plant improvements will be secured through the State Revolving Loan program. The Plan expects that Douglas would seek to borrow the funds for the design and construction for a term of 20 years and that approximately 80% of costs will be eligible for SRF funding at 0% interest. Under an intermunicipal agreement, Sutton's portion of the debt service will be paid directly to Douglas.

Once the Town of Sutton commits to reserving future capacity at the Douglas Treatment Facility, the Plan recommends that the towns enter into negotiations to develop an intermunicipal agreement which addresses allocation of construction costs for the proposed improvements and the operation and maintenance costs associated with the entire treatment facility.



Town of Douglas, MA
Wastewater Facility Plan

Legend

- Town Border
- Pump Station
- Wastewater Treatment Facility
- Existing Sewer
- Roads
- Sewer Expansion
- Floodplain
- Aquifer Protection District

Sewer Expansion Areas

1-Manchaug St. to Sutton
2-West St./Riedell Rd.
3-Charles St./N.E. Main St./Monroe St.
4-Davis St. (Commercial)
5-Rt. 146 (Industrial)

Proposed Sewer Extensions

Note:
1. Data shown is intended for general planning purposes only.
2. Data developed by MassGIS and supplied by the Central Mass. Regional Planning Commission.

Highway Department

The Douglas Highway Department maintains a staff of 8 and currently has a budget of $562,225. In addition to road maintenance and surfacing, the Highway Department is responsible for maintaining the brush along the roadways, repairing and replacing street signs, cleaning catch basins, repairing sidewalks, repairing bridges, maintaining machinery and snow removal.[77]

The Highway Department Superintendent projects a need for a moderate increase in staff and a 10% budget increase over the years. Anticipated replacement needs include a dump truck ($54,000), a dump truck with a catch basin cleaner ($90,000) and a 3-bay addition to the highway garage ($100,000). With an increase in staff and these improvements, the Highway Superintendent feels that the current department will be able to meet the needs of a growing population.[78]

The Highway Superintendent's concern regarding growth is related to accommodating an increase in traffic. It is his opinion that additional staff will be necessary to assist with snow removal and the sanding of roads and that many roads will have to be widened to accommodate an increase in traffic.

One particular roadway improvement that is under consideration is upgrading Route 16. Mass Highway will provide a right and left turn lane into the High School from Davis Street. Construction is expected to begin in the Spring of 1999. Once the State has completed these improvements, this portion of Route 16 will be discontinued as a State Highway and the Town will be responsible for future maintenance and improvements. The Town is considering the impacts and necessity of widening Main Street from Davis Street through East Douglas. Information available from Mass Highway indicate that the improvements along this section of Main Street are estimated to cost $800,000 and could potentially begin in the spring of 2000. The Town is responsible for the design of this project.[79] However, no formal decision has been made as to whether or not the Town-maintained portion of Route 16 will be widened. This issue is examined in greater detail in the *Circulation* element of the Master Plan.

Library[80]

The Simon Fairfield Public Library has a current budget of slightly over $80,000 and supports 5 staff members. It is difficult to determine how much of an increase in population or demand the current system will be able to handle, due to changes in technology which will assist in providing information. In addition to standard increases in departmental budgets, the library's operational budget will need to be increased in order to keep pace with the current technology to service the informational needs of Douglas residents.

The Simon Fairfield Public Library is located within East Douglas and would be included within the National Register District if the recommendation is approved (see

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[77] *Annual Reports for the Town of Douglas*, December 31, 1996.

[78] Edward Therrien, Highway Superintendent. Interview 8/14/97.

[79] Bill Coil, Projects Engineer, Mass. Highway, District 3. Telephone conversation 12/15/97.

[80] Information provided by Ann Carlsson, Library Director in an interview 8/11/97 and the Library Trustees at the Board of Selectmen "Building Consensus" Meeting 9/25/97.

Natural, Historic & Cultural Resources). This historic building adds to the character of the town and is an important landmark in Douglas but the age of the structure also brings maintenance and repair challenges. In 1997, $2400 was appropriated to replace part of the front steps to the building. Future capital expenditures include upgrading the facility in order to provide access to the disabled. These improvements are estimated to be $135,000. A listing on the National Register of Historic Places will make the library eligible to apply for various grants that could be used for exterior repairs.

In general, both the Library Director and the Library Trustees feel that the current facility is able to meet the needs of a growing population using the existing land and building space. The basement could provide additional space if renovations were undertaken. Periodic replacement needs include a copy machine at approximately $1000 every 5 years and upgrading the computer system.

School Department[81]

While most school related issues are under the jurisdiction of the school committee, schools are tied to the financial structure and growth of a community and should be addressed to some degree by the Master Plan. In particular, it is important to ensure that adequate land is available for necessary school expansion and that school capital planning is integrated into the Town's overall planning.

The School Department is in the process of evaluating future school facility needs but expansions appear necessary at all grade levels. In general, the elementary school enrollment has exceeded capacity and the middle school/high school is reaching its capacity level. The early childhood center located in the Municipal Center for Kindergarten and Pre-K will help alleviate crowding in the short term but additional space is still needed.

The current capacity and enrollment levels for Douglas schools as of the 1997 school year are presented below:

Table 37: Current School Capacity and Enrollment Levels

Grade Level	Enrollment	Existing School Capacity	Enrollment as % of Capacity	Planned Capacity	Enrollment as % of Planned Capacity
Pre K-K	97	*	*	80	121%
1-5	490	480	122%	705	70%
6-8	296	360	88%	360	82%
9-12	264	360	59%	360	73%
All Grades	1,147	1,200	88%	1,505	76%

*Included in Grades 1-5.

[81] Information provided by Concetta Verge, Superintendent of Schools in an interview 9/97 and Steve Walch, Chairman of the Douglas School Committee at the Board of Selectmen "Building Consensus" Meeting 9/25/97.

Capacity figures are based on the number of students per classroom. Ideally, the Superintendent would like to have a maximum of 20 students per classroom at the K-2 grade levels. At the current enrollment levels, there are 22 students in each class. Grades 3-8 should have a maximum of 25 students per classroom which is approximately the current enrollment level. Classroom size varies for high school courses due to the variety of subject matter that is offered. The planned capacity figure is based on the addition of the completion of the early childhood center and the addition to the elementary school.

The Town's Educational Alternatives Study Committee produced a report in May 1997 to evaluate the options for the school system to meet its projected space needs which was based on projected enrollments. The Committee felt that projections that have been provided by the New England School Development Council (NESDEC) in the past have been inaccurate due to the use of projections on a grade by grade break down which assumes that a given number of students will continue from one year's class to the next. The study concluded that "there appears to be no correlation between building permits, births and school usage" and that growth in a particular cohort occurred in waves which had some predictable pattern. Therefore, the study projected school enrollments on a school by school basis rather than a class by class method and focused efforts on using logical trends in the data to support the analysis rather than a statistical method.

The projections made by the Educational Alternatives Study Committee indicate the following school enrollments:

Table 38: EASC Projected School Enrollment

Year	Elementary School	Middle School	High School
2000	565	332	306
2005	666	349	354
2010	700	367	411
2015	736	386	476

The figures above account for a 7% annual increase in the elementary school in the years 1998-2004 and leveling off to a 1% increase each year after that time period. The middle school is expected to grow at 1% per year and the high school at 3% per year. Based on these projections, the Educational Alternatives Study Committee concluded that the "worst case" scenario would involve a new school building prior to the year 2010 to accommodate 219 students, or 9 classrooms for 25 students.

The following is a summary of the current and future issues facing the schools according to the School Superintendent as well as presented by the chairman of the Douglas School Committee at a workshop held by the Board of Selectmen in September 1997:

1. *Space at the Elementary School.* The capacity of the elementary school is approximately 481 students and the enrollment for the 1997-1998 school year is 493. This is an increase of 41 students or 9.1% in grades 1-5 since the previous year. A 1% annual increase in school population was projected by the EASC through 1997 before increasing to an annual growth rate of 7% for years 1998-2004. Current enrollment figures demonstrate that growth in the schools has occurred more rapidly than expected. All of the available space is being utilized and some classrooms have been subdivided in order to provide additional classroom space.

The School Committee has created an Elementary School Building Advisory Committee in order to work with an architect to design an expansion. The School Superintendent estimates that an additional 9 classrooms are needed as part of the expansion. It should be noted that the school expansion was identified as a "worst case" scenario that could occur prior to 2010. This is important in planning for future school needs as this worst case scenario is now a reality and has occurred well before the 2010 time horizon.

There is a June 1 deadline for submittal of projects to the State and the School Committee expects to have a plan for the school addition before Town Meeting in the spring. However, once the plan is submitted to the State, it could be up to 3 years before the Town is reimbursed for the project. The School Committee suggested that the Town could borrow the necessary funds to begin construction much sooner than the 3 year time period. If this is not possible, the temporary solution is to use portable classrooms.

2. *Additional School Building.* Both the School Superintendent and the School Committee feel that if the future growth of the town continues at the current rate and double digit increases are experienced in school population at the lower grades, construction of a new school will be necessary. It is envisioned that the new school could be used as a middle school for grades 6-8 and the current middle/high school would be used for grades 9-12 (high school only). It is expected that this new school may be warranted in as little as 5 years. The School Committee is closely monitoring school enrollment and will keep appropriate members of the community and government informed.

3. *Traffic congestion and safety at the Elementary School.* There is a need to alleviate congestion and improve the safety of students at the intersection of Route 16 and the Post Office. This is the only entrance/exit for the school and is extremely congested, both mornings and afternoons.

   The solution to this problem is to connect the road from the High School to the Elementary School and create a one-way road where traffic would enter the school campus on Davis Street by the High School and exit onto Main Street next to the Post Office. This is expected to improve traffic flow and congestion on both Route 16 and the school campus. The 1998 capital budget includes $115,000 for this purpose but funds have not yet been secured. The Town is waiting for the State to complete the improvements on Davis Street before the one-way road is created.

4. *School choice.* The School Committee stated that there is an excessive amount of money leaving the school budget to educate Douglas students in other towns. While it is necessary to determine why students are attending schools outside of Douglas and to implement plans to keep students in town, this could also place an additional strain on the capacity issue. Any additional students added to the current school population impacts the ability of the physical sites to accommodate them. A market study is being conducted to evaluate the situation and action plans must be developed to address the issues.

The projected town-wide housing and population growth will have a significant impact on the school system. Increased school enrollments will result in a need for additional classroom space, more teachers and possibly new school sites for additional schools. For this reason, the Growth Impacts Model was used to project future school enrollment for the Master Plan based on the number of expected housing units. The Growth Impacts Model was developed by Whiteman & Taintor and combines statistics from the U.S.

Census, Massachusetts Department of Revenue, Massachusetts Division of Employment Security, and school district information. This model serves as the framework to understand the impacts of future development based on current and expected growth trends.

These revised projections may allow for the Town to re-evaluate the potential for increased school enrollments since previous projections have proved to be lower than actual levels.

The model applies the average number of school age children (SAC) per household based on past trends (school enrollment figures divided by the number of households). For example, the average SAC per household was 0.47 in 1990 and was 0.49 in 1995. It is the general opinion of Town officials that the growth in new housing units is being absorbed by families with young children or couples who are purchasing their first homes and who plan to have children in the future. To account for this growth trend, an increase in the average SAC per household for new housing units was phased in over the 1995-2000 period. In order to project future school enrollments, the expected number of new housing units (as determined in the Buildout Analysis of the *Land Use* element) was multiplied by the increased SAC to determine the impact that larger families in new units could potentially have on school enrollments.

The projected enrollments are presented in 5-year intervals. For 1995, the 0.48 figure was used for existing units while an increased figure of 0.61 (25% greater than the average 1995 figure for all housing units in Town) was used for new housing units. This change reflects an increase in average household sizes during the late 1980s and early 1990s.[82] This analysis assumes that over the next ten years the average number of school children per *new* housing unit will increase to 0.90, based on trends in new subdivisions in other communities. It is also assumed that the ratio of children per *existing* housing unit will gradually increase as turnover occurs and larger families move in. The growth model assumes that 5% of the existing homes are sold each year, and that the new occupants have the same average number of school children as occupants of new homes.

[82] This sort of increase in the number of school children is being faced by communities across the nation: for example, a study of large urban areas in North Carolina found that the average number of children per single-family home had increased from 0.63 in 1990 to 0.97 in 1997, an increase of 54 percent (*Planning*, September 1997).

Table 39: Projected Number of School Age Children per Household per Time Period

School-Age Children per *New* Single-Family Home

	1990	1995	2000	2005	2010	2015
Pre K-K		0.0432	0.0533	0.0634	0.0634	0.0634
1-5		0.2747	0.3393	0.4039	0.4039	0.4039
6-8		0.1933	0.2387	0.2842	0.2842	0.2842
9-12		0.1295	0.1599	0.1903	0.1903	0.1903
All Grades		0.6122	0.7561	0.9000	0.9000	0.9000

School-Age Children per *Existing* Dwelling Unit

	1990	1995	2000	2005	2010	2015
Pre K-K	0.0476	0.0330	0.0381	0.0482	0.0558	0.0634
1-5	0.2313	0.2100	0.2423	0.3070	0.3554	0.4039
6-8	0.0963	0.1478	0.1705	0.2160	0.2501	0.2842
9-12	0.0926	0.0990	0.1142	0.1447	0.1675	0.1903
All Grades	0.4680	0.4897	0.5651	0.7158	0.8288	0.9419

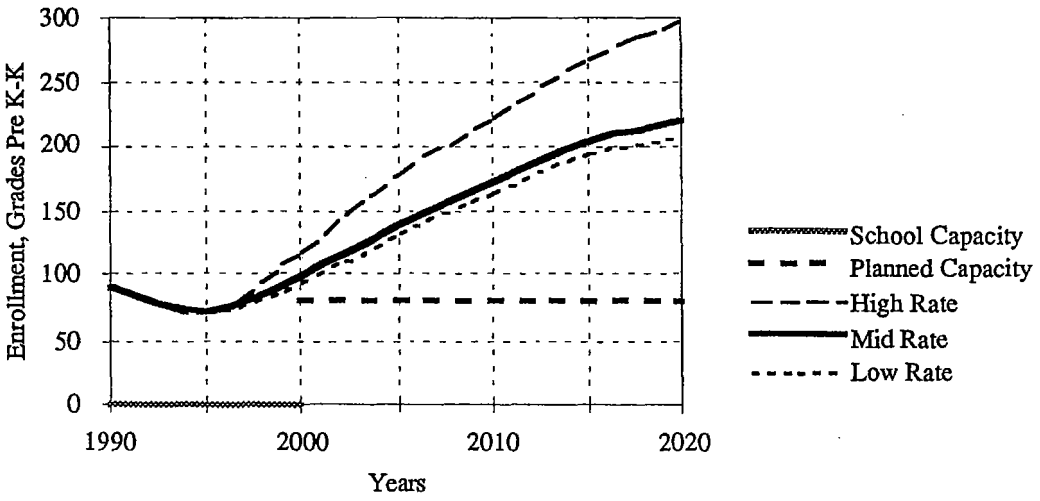
Using these assumptions, school enrollments are projected to follow the patterns presented in Figure 9 through Figure 12. The middle school is close to reaching its capacity level. A new 600 student facility is projected to be necessary by the year 2005. This will increase the total capacity for the middle school by 240 (360 existing moving into a facility to accommodate 600). A second middle school is projected to be needed by 2015.

The low, mid, and high rates of growth are based on variations in the number of new housing units that could be constructed in a given year. These rates were established in the Buildout Analysis of the *Land Use* element and utilizes a high rate of 100 dwelling units of year (the average growth rate for 1994-1996) and a low rate of 53 dwelling units per year (the average from 1985-1995).

The projections of enrollment growth based on housing and population growth rates indicate that the Town will need to construct a series of schools at the elementary and middle school levels over the next 25 years. The greatest expansion will be needed at the elementary level. The planned capacity level is based on the addition of a new school when the projections indicate that the current facilities are under capacity at the mid rate of growth.

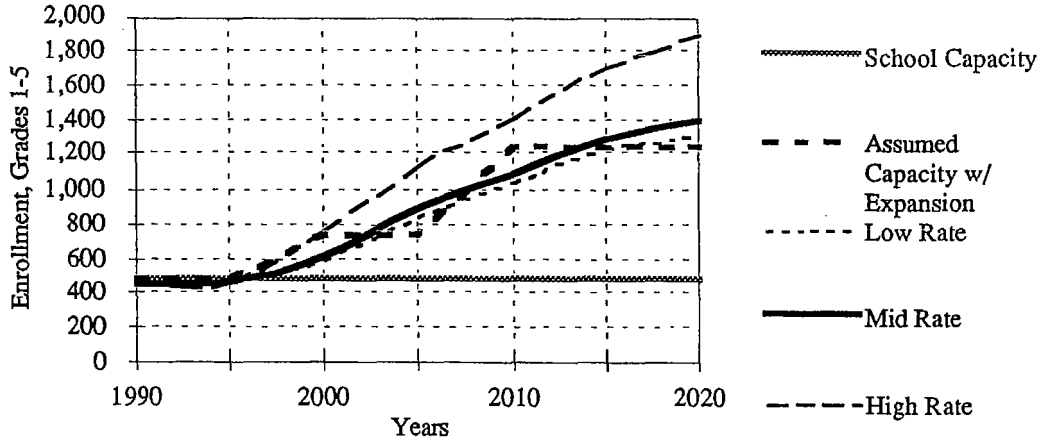
The addition of the early childhood center in the Municipal Center will create additional classroom space for the Pre K and Kindergarten grade levels as well as provide additional capacity in the elementary school. However, the facility will be close to capacity as soon as it opens.

Figure 9: Projected School Enrollment, Pre K-K



Based on the current status of the elementary school addition, it is expected that the capacity increase created by the addition and the relocation of the PreK-K grade levels will be available by the year 2000. The expansion will be sufficient to accommodate the student population for grades 1-5 for a few years but it is likely that a new 500 student school will be needed by the year 2010.

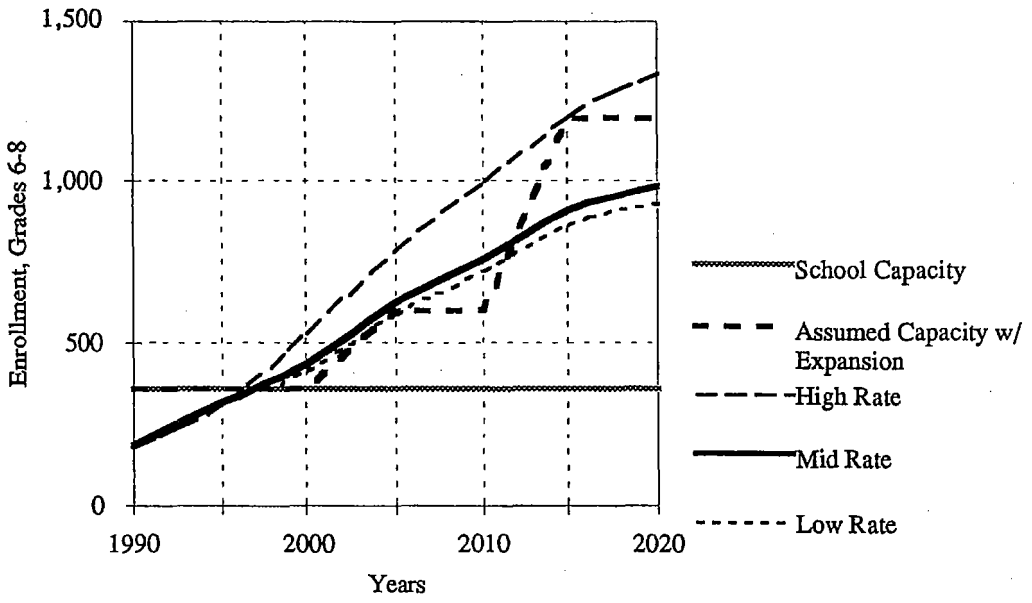
Figure 10: Projected School Enrollment, Grades 1-5



The middle school is close to reaching its capacity level. A new 600 student school is projected to be necessary by the year 2005. This will increase the total capacity for the

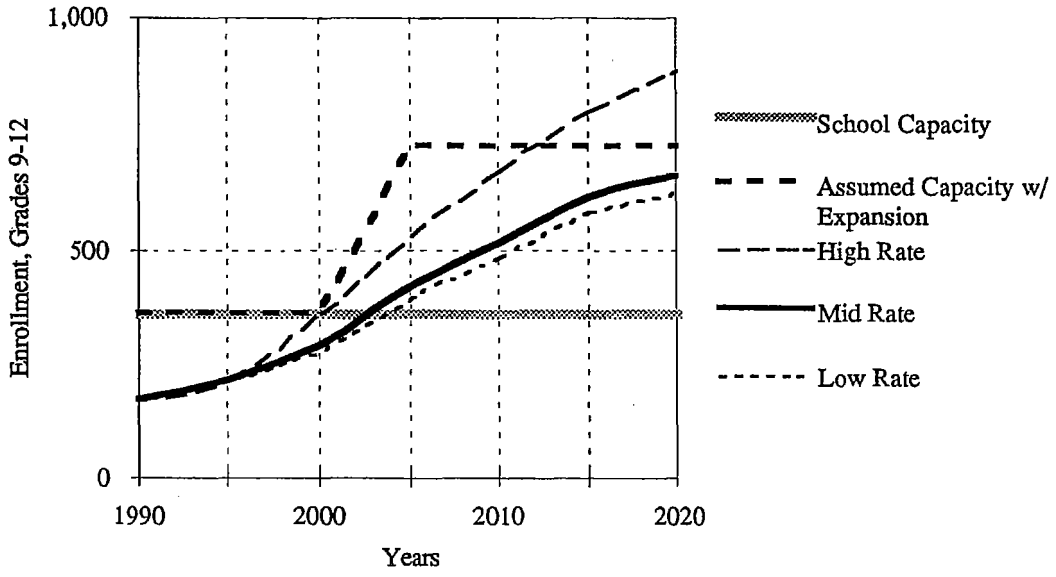
middle school by 240 (360 existing capacity moving into a facility to accommodate 600). A second middle school is projected to be needed by 2015.

Figure 11: Projected School Enrollment, Grades 6-8



If a new middle school is constructed in 2005, the high school capacity will increase by 360 because the middle school students will be leaving the facility that currently accommodates both middle and high school students. In other words, the current middle school/high school facility will become the high school. The increase in capacity created in the high school by the construction of a separate middle school is projected to be sufficient through the year 2020.

Figure 12: Projected School Enrollment, Grades 9-12



Since these projections are based on growth rates and buildout estimates, it is important to note that any changes in zoning or a reduction of buildable land (i.e. through land acquisition for open space or municipal facilities) will change the buildout estimates and thus the school projection figures. The findings of the School market study and the implementation of any growth management strategies that are adopted as a result of the Master Plan could warrant a change in the methodology used to project the school enrollments provided above.

The Fiscal Forecast Model

In order to forecast the impacts of growth on municipal expenditures and property tax burdens, a set of computer spreadsheets was adapted to provide a generalized model of Douglas' budget. The model combines estimates of residential and nonresidential growth rates, average expenditure levels drawn from state databases, and details from the Town's capital improvement program. The resulting forecasts can be used to test the impacts of varying municipal policies relating to growth and investment, as well as the impacts of changes in inflation and interest rates.

Structure of the Model

The fiscal impact model consists of four linked computer spreadsheets:

1 – Inputs

This one-page form presents the key variables that are used in the analysis: the number of residential units and commercial acres at the start of the analysis, the residential and commercial growth rates, average residential and commercial values, bond interest rates, and ratios of school and non-school expenditure increase to population growth.

2a – Capital–NonSchool

2b – Capital–School

These two tables list major capital expenditures that have been identified by Town officials and/or listed in the Capital Budget for FY1998-2002, approved by Town Meeting in May 1997. These include costs of maintaining, replacing and/or upgrading existing facilities and equipment as well as land acquisition for future facilities.

The expenditures listed represent what Town department heads and the Town Administrator believe to be required to address existing and projected future needs based on accepted service and facility management standards. The estimated expenditures present a reasonable estimate of the underlying baseline demand levels with which to compare the incremental costs due to growth.

In addition, the school table lists estimated expenditures for two schools, not identified by local officials, which the consultants determined will be required to accommodate projected school enrollment growth. These school projects were described above and are reflected in the capacity increases depicted in Figure 9 through Figure 12. In summary, these are:

Table 40: Projected School Capital Expenditures

Year	Project	Estimated Cost (1997 $)
2005	600 student Middle School	$30 million
2010	500 student Elem. School	$20 million
2015	600 student Middle School	$30 million

The capital expenditure tables project the estimated costs out over time in a variety of ways. For the majority of expenditures, Town department heads gave yearly cost estimates for Fiscal Year 1997 through FY 2005. Other large facilities were assumed to be bonded for either 20 years (for buildings and upgrading the wastewater treatment system) or 5 to 10 years (for fire trucks and upgrading existing facilities).

3. Forecast–Growth

This table presents a forecast of municipal costs and revenues based on existing conditions and continued residential and non-residential growth. Some of the key computations are as follows:

- Real estate valuation is increased according to the growth estimates (new dwelling units per year, and new acres of commercial/industrial development per year) and estimated average valuations of new development entered in the "Inputs" worksheet. For each year, both the prior year's valuation and the valuation of new growth are adjusted by applying the real estate appreciation factor from the "Inputs" worksheet.
- Municipal operating costs are projected by increasing the previous year's costs by the number of new dwelling units, and then applying the inflation factor from the "Inputs" table (i.e., "Local government operating expenses" in the "Inflation Rates" section of the table).
- School operating costs are projected by increasing the previous year's expenditures by the number of new school-age children, and then applying the inflation factor.
- Capital expenditures are carried forward from the total lines in the "Capital–NonSchool" and "Capital–School" worksheets.
- The annual appropriation to the stabilization fund is set at the maximum amount that will not result in an increase in the tax rate, in order to build up a balance that will cushion the tax impacts of major capital expenditures.

Assumptions and Simplifications

With the major conceptual issues presented above, a number of other important assumptions must be explained. The following are of particular importance to understand when using these forecasts:

(1) *Real estate values:* Total residential valuation in any year is computed as the sum of (a) the previous year's residential valuation adjusted by estimated average appreciation and (b) the number of new dwelling units multiplied by the estimated average value of a housing unit. Total commercial valuation is computed similarly.

- For purposes of this analysis it was assumed that all values (residential and nonresidential) will increase at an average rate of 3% per year.[83]
- A certain portion of the value of a new dwelling unit or new nonresidential development is already reflected in the tax base as the value of the land before development. Therefore, the increase in valuation from new development is the difference between the value of the newly developed property and the value of undeveloped land. The model assumes that $30,000 of average new residential value is attributable to land value which is already assessed and included in the town's residential valuation.
- For simplicity, the model assumes a yearly increase in valuation; however, in reality the Town is required to conduct a revaluation only once every three years, so the relationship between the growth of the tax base and the tax levy can be more complex than presented in the model.

(2) *Nonresidential growth rates:* Commercial and industrial land uses are grouped together in the model and assumed to increase at an arbitrary rate of 3 acres per year (no data were available on actual growth rates for these uses).

(3) *Municipal operating costs:* As noted earlier, municipal expenditure growth results from a combination of factors, including population and housing growth, inflation and changes in regulations and local expectations.

- The model uses an inflation rate of 3.0% per year, which is somewhat higher than the 1990-95 average rate of 2.4%.
- Non-school operating costs are increased proportionately to the projected number of residents.
- School operating costs are increased proportionately to the projected number of students. It is important to note that the growth projections carried out for this study assume a continuing increase in household size. Although the school enrollment in 1995 represented an average of only 0.49 school-age children per dwelling unit, the model assumes an ultimate level of 0.90 school-age children per unit during the period of this forecast. The model phases in this increase over a period of twenty years, so that the 0.90 level is reached in the year 2015. This assumption results in estimated school enrollments in 2015 that are 80% higher than what they would be at today's average household size, and translates into a doubling of projected operating costs *and* an accelerated need for construction of new schools.

[83] The average (mean) annual rate of increase in sales prices of existing single-family homes in the Northeast was 5% over the 1970–1993 period, excluding the five peak years of 1980, 1983, and 1985-87. If the ten peak years (1972-75, 1979-80, 1983 and 1985-87) are excluded, the mean rate of increase was 4% and the median rate was 5% per year. Thus, this estimate of a long-term appreciation rate of 3% per year is conservative.

(4) *Financing of capital expenditures:* It is assumed that major capital expenditures will be bonded for terms ranging from 5 to 20 years, depending on the size of the investment, and at an interest rate of 5%, regardless of the term of the bond.

(5) *Non-tax revenues* (state aid, local receipts, and "all other") are assumed to increase at a rate of 2.5% per year. Also, the model does not include specific allocation of capital costs to non-tax revenue sources such as water user fees; however, capital expenditures which were known to be financed from user fees (e.g., 80% of planned sewer system expansion) were not included in the analysis. It is important to note, therefore, that while the model estimates future property tax impacts, it does not reflect non-tax costs to residents.

(6) *Tax levy limitations and tax rate stabilization:* While the model includes an analysis of the tax levy limits set by Proposition $2^1/_2$, it does not attempt to predict the use of capital or debt exclusions for future projects. Also, the model assumes that the Town will make moderate use of its stabilization fund to avoid sharp jumps in the tax rate, but does not assume that this fund is funded to the maximum level possible in each year.

Model Estimates

The model presents forecasts of revenues and expenditures based on continued growth at recent rates, adding new housing units and nonresidential development to the baseline assumptions concerning household sizes, inflation, and appreciation in real estate values.

- The property tax base will increase as a result of new growth as well as appreciation of existing values;
- Municipal operating expenses will increase as a result of inflation plus the growth in population, which in turn is a function of new growth combined with increasing household sizes;
- Capital expenditures will include both those necessary to support existing development levels and expanded facilities to serve new growth.

The "bottom line" of the analysis is the average residential property tax bill necessary to support the projected municipal costs.

Housing Unit Growth:

Assuming a continuation of the recent growth rate of approximately 100 new homes per year, the number of housing units in Douglas will increase from 2,785 in 1998 to 3,985 in 2010, and to 4,885 units in 2019. This 21-year growth of 75 percent represents an average annual growth rate of 3.6 percent.

Commercial Acreage Growth:

Assuming that an average of 3 acres of land per year is developed for commercial and industrial uses, the amount of developed commercial and industrial land will rise from 580 acres to 643 acres during the 1998 to 2019 time frame. This is an increase of about 11 percent, or an average of 0.5 percent per year.

Real Estate Valuation:

Total real estate valuation in the year 2019 is projected to be $1.14 billion, an increase of $795 million (232%) over the 1998 total valuation of $342 million. This represents an annual growth rate of about 5.9 percent.

The model assumes that real estate values will appreciate at a long-term rate of 3.0 percent per year. Therefore, total real estate valuation in 2019 in constant (uninflated) 1998 dollars is estimated to be $612 million, or $270 million (79%) more than the 1998 valuation. That is, additional residential, commercial and industrial development will account for about 66 percent of the 21-year increase in valuation, with 34% of the increase being due to the general rise in real estate values. In other words, over this period new development will provide an additional $270 million of taxable values, while inflation will increase the total valuation by another $525 million.

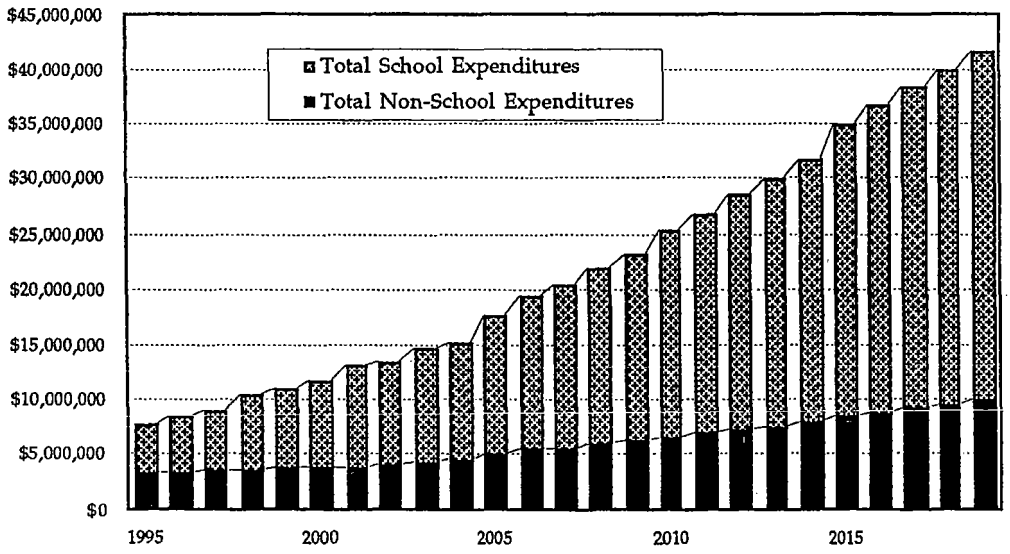
Projected residential development is projected to be responsible for 94 percent of the valuation increase ($750 million). Commercial and industrial growth will account for $45 million, or 6 percent of the total increase in valuation.

Total Expenditures:

Douglas's total annual costs are forecast to increase from $10.6 million in 1998 to $41.7 million in 2019. This represents an average increase of 6.8 percent per year.

As shown in Figure 13, the growth in educational spending is forecast to be much steeper than the growth in other municipal costs. From $6.8 million in Fiscal Year 1998, the model projects school expenditures to increase to $31.5 million in 2019, corresponding to an annual increase of 7.5 percent per year. In contrast, non-school expenditures are forecast to grow by only 4.9 percent annually. As a result of this difference in growth rates, the model suggests that school costs will represent 75 percent of total municipal spending in 2019, up from 65 percent in 1998.

Figure 13:
Projected Expenditures



As noted earlier, a large part of this dramatic increase in projected school spending results from the assumptions in the model regarding numbers of school-age children per dwelling unit. If, instead, school enrollment ratios were maintained at their 1998 levels, the estimated school operating costs in FY 2019 would be reduced by about one-half from the levels shown in Figure 13.

Property Tax Levy:

The model estimates that the combined effects of expected growth and inflation will add 295 percent to the Douglas's total annual expenditures between Fiscal Year 1998 and 2019, and that during the same period non-tax revenues will increase by 68% percent. As a result, property tax revenues will need to increase by 544 percent, and will constitute nearly 80 percent of the town's budget, compared to about 50 percent today.

Assuming that non-tax revenues increase by an average of 2.5% per year, Douglas's tax levy will need to rise from $5.1 million in FY 1998 to $33.2 million in the year 2019 in order to cover projected increases in operating and capital costs. This represents an average rate of growth of 9.3% in the property tax levy. The assumed inflation rate of 3.0 percent accounts for about 30 percent of this increase, and projected operating and capital cost increases associated with population growth (especially school enrollment growth) are responsible for the balance.

Property Tax Bill:

The average single familyresidential property tax bill will increase from the 1998 figure of $1,677 to $6,327 in 2019. Again, a large portion of this increase represents inflation: by the end of the forecast period the average tax bill will be about 2.9% of the average residential value (compared to 1.5% in 1998). In other words, the estimated residential tax rate in 2019 needed to pay for the costs of services and facilities to support the Town's increased population will be about $29 per $1,000 of valuation.

Conclusions

Douglas faces a significant amount of capital investment in the coming years, regardless of residential growth rates, and operating costs will increase dramatically if family sizes continue to increase as assumed in this model. Tax bills are projected to increase significantly to cover operating costs and capital expenditures.

A large component of the increase is due to increasing school enrollments: from the FY 1998 level of 1,193 students, enrollments are projected to grow to 3,166 (165%) in FY 2019. Given the assumptions that have been made about increasing family sizes over the next two decades, about 54% of the projected school enrollment growth is attributable solely to demographic shifts, and only about 46% to housing growth. As shown in Figure 13, these increasing school enrollments mean that school expenditures will grow more quickly than non-school expenditures, and will constitute increasing percentages of Town budgets.

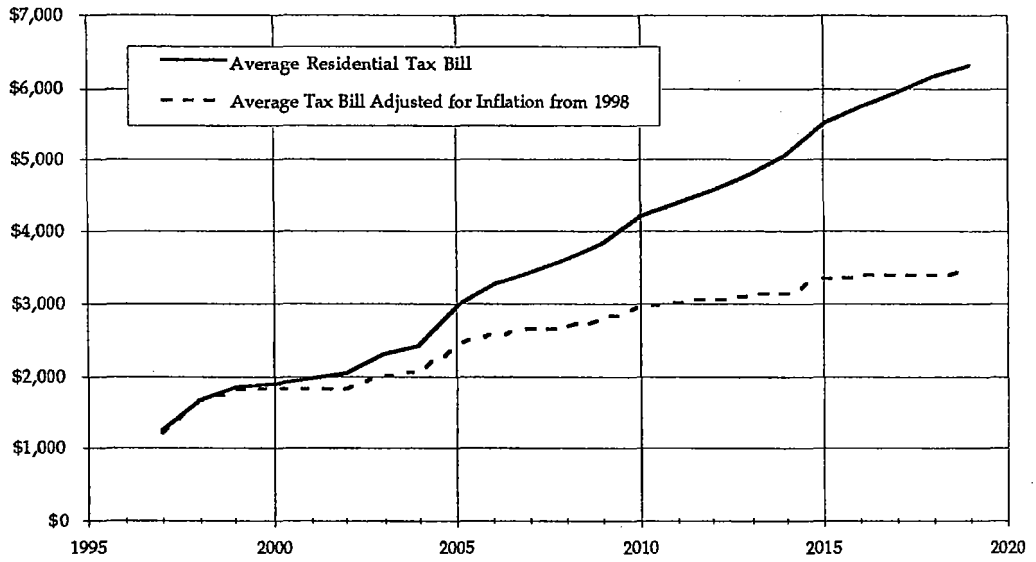
Table 41 presents the estimates generated by the model for expenditures, property valuation, property tax levy and average residential tax bills for Fiscal Year 2019.

Table 41: FY 2019 Fiscal Projections

	FY2019
Expenditures	
• Non-School	$10,219,000
• School	$31,456,100
• Total	$41,675,100
Total Valuation	$1,138,091,000
Property Tax Levy	$33,186,700
Residential Share of Levy	93%
Dwelling Units	4,885
Average Residential Tax Bill	$6,327

Figure 14 compares the projected average residential tax bills accounting for inflation and in 1998 dollars.

Figure 14: Projected Average Residential Tax Bills



The key findings of this analysis are as follows:

- Over the next twenty years, growth, inflation and other factors will add about $31.1 million (294%) to Town expenditures.
- Furthermore, because the model caps all non-tax revenues at an annual increase of 2.5%, it projects that this 294% differential in expenditures will be translated into a 544% increase in the property tax levy.

- However, growth also increases the number of taxpayers and spreads the total tax bill over a larger base: over the same period the number of dwelling units is expected to increase by 2,100 (75%).
- The net result will be an increase of $4,650, or about 277%, in the average residential tax bill by the year 2019. This is equivalent to a $1,724 increase in 1998 dollars, or 103%.

If the assumptions contained within the model prove correct (particularly those concerning increasing family size, and growth in non-tax revenues below the inflation rate), the Town will be experiencing significant fiscal strains from a burgeoning school-age population. The incremental fiscal impacts of growth will simply add to these underlying problems.

Finally, it is important to keep in mind that many variables are involved in this analysis, and to recognize how changes in these variables can alter the conclusions. For example:

- One of the most important assumptions in the analysis is that family sizes will continue to increase over the next decade and then stabilize at a level comparable to the levels that existed in the Northeast 15 to 20 years ago. This assumption results in significantly increased school operating and capital costs. It also tends to reduce the relative impact of growth: as the baseline fiscal impact increases, the cost of existing dwellings becomes more significant than the incremental cost of new dwellings.
- The analysis assumes that all property values will increase at a consistent and equal rate. However, if the regional economy suffers another setback similar to that of the late 1980s, in which commercial and industrial growth stalled and existing nonresidential properties lost value, residential taxpayers may have to shoulder a larger share of the total tax burden. In such a case, homeowners would receive a lower "subsidy" from business property owners (who pay for schools and other services that they do not use).

Recommendations

For the most part, Douglas departments are in a position to handle future growth due to recent improvements or needs that have already been identified and planned for. Most departments anticipate a need for more staffing and budget increases but these requests do not appear to be inconsistent with average growth trends in a community or annual inflation. The largest capital outlays that have already been identified or will be necessary in the future include improvements to the water distribution system, expanding wastewater treatment and new schools. The Town should continue to monitor and update the demographic trends and population increases that will have a significant effect on school enrollments and town services and facilities.

- The *Facility Plan for Wastewater Treatment* identified the necessary improvements to upgrade the facility and increase capacity. Economic development opportunities are directly linked to the implementation of the strategies identified in the Plan. Without an expansion of the service area and the necessary improvements, economic development options will continue to be limited (see *Economic Development* element). The Town should implement the recommendations of the *Facility Plan for Wastewater Treatment* in order to attract economic development and protect the environment.
- The Town should complete the recommendation of the *Waterworks Facilities Master Plan* and identify areas where water service should be extended to promote business development (see *Economic Development* element).

- The Douglas School Department has been impacted by recent growth trends and is currently facing a capacity problem. The addition to the elementary school and the creation of the early childhood center will temporarily relieve the symptoms of the problem but will not address the issue in its entirety for the next twenty years. New schools will be necessary which will require the purchase of land as well as increased school operational budgets, increased capital budgets and additional investments in staffing and curriculum. Based on current capacity constraints and enrollment figures, the need for additional schools is likely to be an issue even if future growth rates are lower than they have been in previous years. The growth rate will simply determine how quickly these needs must be addressed. It is recommended that the Town plan for school space needs and building needs based on demographic trends and the findings of the market study being commissioned to determine why students are attending schools in other towns. Based on the assessment of school needs, the Town should begin to acquire land for future school sites in high growth areas of town.
- Douglas is beginning to experience new demands from the fast-paced technological growth in computers and communication networks. The Municipal Center, Police Department, Fire Department, Simon Fairfield Public Library, and the School System all expressed needs for computer and technological improvements. Telecommunication infrastructure may also become an issue for business retention and recruitment. The Town should determine the necessity and feasibility of improving the Town's telecommunication infrastructure to improve school resources, inter-Town department communication and business recruitment.
- In spite of sound planning and the intentions of the Master Plan, the Town may still face fiscal strains in providing services to a growing population. Therefore, the Town should evaluate the potential and necessity for adopting impact fees to finance infrastructure related to growth.

DOUGLAS INPUTS

Starting Year	1995
Growth Interval (Years)	1

Development	1990	1995	Annual Increase	Buildout
Total Units	2,191	2,480	100	7,603
Population in Dwelling Units	5,438	6,155		22,624
Persons per Dwelling Unit	2.48	2.48		2.98
Commercial Acreage		571	3	1,062

School Children

	1990	1995	Projected
Total Enrollment	884	1,054	
• per Dwelling Unit	0.4035	0.4250	0.9000

Property Valuation

Total Residential Valuation	$260,408,900
Average Residential Value per Dwelling Unit (incl. condos)	$105,004
Average Valuation per Existing Single-Family Unit	$118,000
Average Valuation per New Single-Family Unit	$150,000
Average Valuation Increase per New Single-Family Unit*	$120,000
Total Commercial/Industrial/Personal Property Valuation	$24,981,900
Average Comm./Indus. Valuation per Acre (excl. gravel pits)	$72,202
Average Comm./Indus. Valuation per Developed Parcel	$328,709
Average Assessed Valuation Increase per Commercial Acre	$150,000

*It is assumed that $30,000 of average new residential value is attributable to land value which is already assessed and included in the town's residential valuation. Therefore, the increase in valuation from new development is assumed to be the difference between the average value of the newly developed property and the value of undeveloped land.

Inflation Rates

Real estate value appreciation:	3.00%
Revenues other than tax levy:	2.50%
Local government operating expenses:	3.00%
Construction costs:	3.00%

Target for Property Tax Rate Increases

From:	1995	2005	2010
To:	2004	2009	2020
Target Annual Tax Increase	$0.00	$0.00	$0.00

Bond Rates

Minimum Length of Bond	1	6	11
Interest Rate	5.00%	5.00%	5.00%

All debt repayments are calculated on bond basis.

Revenues by Source

FY	Tax Levy	State Aid	Local Receipts	All Other	Total	As Percent of Total: Tax Levy	State Aid	Local Receipts	All Other
1990	$ 2,811,122	$ 2,233,772	$ 610,492	$ 445,524	$ 6,100,910	46.10	36.60	10.00	7.30
1991	$ 3,142,276	$ 2,055,273	$ 567,596	$ 472,174	$ 6,237,319	50.4	33.0	9.1	7.6
1992	$ 3,343,630	$ 1,964,791	$ 598,169	$ 350,495	$ 6,257,085	53.4	31.4	9.6	5.6
1993	$ 3,822,785	$ 2,308,910	$ 710,199	$ 536,510	$ 7,378,404	51.8	31.3	9.6	7.3
1994	$ 3,940,901	$ 2,698,344	$ 966,039	$ 293,671	$ 7,898,955	49.9	34.2	12.2	3.7
1995	$4,276,332	$3,121,786	$771,753	$166,901	$8,336,772	$51	$37	$9	$2
1996	$4,599,236	$3,605,363	$1,037,173	$503,593	$9,745,365	$47	$37	$11	$5
Annual Growth Rate	8.4%	9.7%	10.1%	-6.5%	8.2%				

FY	All Except Tax Levy
1990	$3,289,788
1991	$3,095,043
1992	$2,913,455
1993	$3,555,619
1994	$3,958,054
1995	$4,060,440
1996	$5,146,129
Annual Growth Rate	8.1%

CAPITAL IMPROVEMENT PLAN
NON-SCHOOL

Department	Description	Total Facility Cost (1997)	% of Total	Start Year	Term of Bond	Starting Balance (Town Share)	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Miscellaneous	Existing Bonded Debt					$0	$306,288	$295,660	$284,883	$273,993	$263,029	$179,314	$172,887	$166,460	$160,000	$153,508
Highway	Heavy backhoe loader	$80,000		1998		$80,000	$20,000	$20,000	$20,000	$20,000						
Highway	Heavy dump truck	$160,000		1998		$160,000	$70,000	$90,000								
Highway	Brush clipper	$25,000		1999		$25,000		$25,000								
Highway	Addition to garage - 3 bays	$100,000		1999		$100,000		$100,000								
Highway	Pickup truck, 1/2 ton	$20,000		1998		$20,000	$20,000									
Police	Duty weapons and leather gear	$10,500		2000		$10,500			$10,500							
Police	Defibrillators (2)	$6,100		1998		$6,100	$6,100									
Police	Vehicle 4WD/Utility	$25,000		2000		$25,000			$25,000							
Police	Mobile radio (3)	$5,000		1998		$5,000	$5,000									
Police	Improve dispatch center	$10,000		1999		$10,000		$10,000								
Police	Upgrade computer system	$10,000		1999		$10,000		$10,000								
Police	Redesign dispatch area*	$25,000		1998		$25,000										
Fire	Fire station	$865,000		1998	20	$865,000	$86,500	$84,338	$82,175	$80,013	$77,850	$75,688	$73,525	$71,363	$69,200	$67,038
Fire	Attack pumper	$150,000		1998	1	$150,000	$157,500									
Fire	Pumper used	$100,000		1999		$100,000		$100,000								
Fire	Improve paging system	$15,000		2000		$15,000			$15,000							
Fire	Hose 4"	$20,000		1998		$20,000	$20,000									
Fire	Ladder truck (used)	$100,000		1999		$100,000		$100,000								
Fire	Forestry truck	$50,000		2000		$50,000			$50,000							
Fire	Personal computer	$5,000		1999		$5,000		$5,000								
Fire	Rescue truck	$125,000		2000		$125,000			$125,000							
Fire	Tanker	$200,000		2002	5	$225,100					$56,275	$54,024	$51,773	$49,522	$47,271	
Assessor	Town wide remapping	$175,000		1998		$175,000	$175,000									
VFW	Furnace replacement	$10,000		1998		$10,000	$10,000									
VFW	Various	$26,000		1999		$26,000		$8,000	$8,000	$10,000						
General Gov't	Improve municipal computer system	$30,000		1998		$30,000	$5,000	$5,000	$10,000		$10,000					
General Gov't	Police drive and added parking	$25,000		1998		$25,000	$25,000									
General Gov't	Walk-in vault	$80,000		2001		$80,000				$80,000						
General Gov't	Recreation Commission - Wallum Road	$16,500		1998		$16,500	$16,500									
Sewer	Upgrade capacity to 0.42 mgd* -- 80% loan	$2,800,000		2005	20	$3,443,600								$172,180	$172,180	$172,180
Sewer	Upgrade capacity to 0.42 mgd* -- 20% bond	$700,000		2005	20	$860,900								$86,090	$83,938	$81,786
Library	Access for the disabled/create parking*	$200,000		2003	10	$231,900						$34,785	$33,626	$32,466	$31,307	$30,147
						$0										
* Not included in Capital Budget of 4/14/97. Information provided by Dept. Heads.						$0										
Total Non-School		$6,169,100				$7,030,600	$922,888	$852,998	$630,558	$464,006	$407,154	$343,811	$331,811	$578,081	$563,895	$504,658

CAPITAL IMPROVEMENT PLAN
NON-SCHOOL

Department	Description	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Miscellaneous	Existing Bonded Debt	$146,983	$135,426	$129,249	$63,072	$61,454	$59,837	$29,470	$29,448					
Highway	Heavy backhoe loader													
Highway	Heavy dump truck													
Highway	Brush clipper													
Highway	Addition to garage - 3 bays													
Highway	Pickup truck, 1/2 ton													
Police	Duty weapons and leather gear													
Police	Defibrillators (2)													
Police	Vehicle 4WD/Utility													
Police	Mobile radio (3)													
Police	Improve dispatch center													
Police	Upgrade computer system													
Police	Redesign dispatch area*													
Fire	Fire station	$64,875	$62,713	$60,550	$58,388	$56,225	$54,063	$51,900	$49,738	$47,575	$45,413			
Fire	Attack pumper													
Fire	Pumper used													
Fire	Improve paging system													
Fire	Hose 4"													
Fire	Ladder truck (used)													
Fire	Forestry truck													
Fire	Personal computer													
Fire	Rescue truck													
Fire	Tanker													
Assessor	Town wide remapping													
VFW	Furnace replacement													
VFW	Various													
General Gov't	Improve municipal computer system													
General Gov't	Police drive and added parking													
General Gov't	Walk-in vault													
General Gov't	Recreation Commission - Wallum Road													
Sewer	Upgrade capacity to 0.42 mgd* – 80% loan	$172,180	$172,180	$172,180	$172,180	$172,180	$172,180	$172,180	$172,180	$172,180	$172,180	$172,180	$172,180	$172,180
Sewer	Upgrade capacity to 0.42 mgd* – 20% bond	$79,633	$77,481	$75,329	$73,177	$71,024	$68,872	$66,720	$64,568	$62,415	$60,263	$58,111	$55,959	$53,806
Library	Access for the disabled/create parking*	$28,988	$27,828	$26,669	$25,509	$24,350								
Total Non-School		$492,659	$475,628	$463,976	$392,325	$385,233	$354,952	$320,270	$315,933	$282,170	$277,856	$230,291	$228,139	

* Not included in Capital Budget of 4/14/97. Information provided

CAPITAL IMPROVEMENT PLAN
SCHOOLS

Department	Detail	Total Facility Cost (1997)	% of Total	Start Year	Term of Bond	Starting Balance (Town Share)	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Schools	Existing Bonded Debt					$0	$726,430	$665,070	$595,250	$562,250							
Schools	Soundproof area of Middle/High School	$10,000		1998		$10,000	$10,000										
Schools	Improve athletic fields	$25,000		1998		$25,000	$25,000										
Schools	Road - High School to Elementary School	$115,000		1998		$115,000	$115,000										
Schools	Educational Market Study	$25,000		1998		$25,000	$25,000										
Schools	Addition to Elementary School	$7,400,000		2001	20	$8,086,200				$808,620	$788,405	$768,189	$747,974	$727,758	$707,543	$687,327	$667,112
Schools	Tile floor to replace carpet in Middle/High S	$70,000		2000		$70,000			$70,000								
Schools	Various.	$39,500		1999		$39,500		$19,500			$20,000						
Schools	New 500 student Elementary School	$20,000,000		2010	20	$28,515,200											
Schools	New 600 student Middle School	$30,000,000		2005	20	$36,896,200								$3,689,620	$3,597,380	$3,505,139	$3,412,899
Schools	New 600 student Middle School	$30,000,000		2015	20	$49,585,400											
						$0											
Schools	Elem. School Addition-Reimbursement	($5,624,000)		2004	20	($6,715,400)							($671,540)	($654,752)	($637,963)	($621,175)	($604,386)
Schools	New Elem. School-Reimbursement	($15,200,000)		2010	20	($21,671,600)											
Schools	New Middle School-Reimbursement	($22,800,000)		2005	20	($28,041,100)								($2,804,110)	($2,734,007)	($2,663,905)	($2,593,802)
Schools	New Middle School-Reimbursement	($22,800,000)		2015	20	($37,684,900)											
						$0											
						$0											
TOTAL		$21,260,500				$29,254,500	$901,430	$684,570	$665,250	$1,370,870	$808,405	$768,189	$76,434	$958,517	$932,952	$907,387	$881,822

CAPITAL IMPROVEMENT PLAN
SCHOOLS

Department	Detail	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Schools	Existing Bonded Debt												
Schools	Soundproof area of Middle/High School												
Schools	Improve athletic fields												
Schools	Road - High School to Elementary School												
Schools	Educational Market Study												
Schools	Addition to Elementary School	$646,896	$626,681	$606,465	$586,250	$566,034	$545,819	$525,603	$505,388	$485,172	$464,957	$444,741	$424,526
Schools	Tile floor to replace carpet in Middle/High S												
Schools	Various												
Schools	New 500 student Elementary School		$2,851,520	$2,780,232	$2,708,944	$2,637,656	$2,566,368	$2,495,080	$2,423,792	$2,352,504	$2,281,216	$2,209,928	$2,138,640
Schools	New 600 student Middle School	$3,320,658	$3,228,418	$3,136,177	$3,043,937	$2,951,696	$2,859,456	$2,767,215	$2,674,975	$2,582,734	$2,490,494	$2,398,253	$2,306,013
Schools	New 600 student Middle School							$4,958,540	$4,834,577	$4,710,613	$4,586,650	$4,462,686	$4,338,723
Schools	Elem. School Addition-Reimbursement	($587,598)	($570,809)	($554,021)	($537,232)	($520,444)	($503,655)	($486,867)	($470,078)	($453,290)	($436,501)	($419,713)	($402,924)
Schools	New Elem. School-Reimbursement		($2,167,160)	($2,112,981)	($2,058,802)	($2,004,623)	($1,950,444)	($1,896,265)	($1,842,086)	($1,787,907)	($1,733,728)	($1,679,549)	($1,625,370)
Schools	New Middle School-Reimbursement	($2,523,699)	($2,453,596)	($2,383,494)	($2,313,391)	($2,243,288)	($2,173,185)	($2,103,083)	($2,032,980)	($1,962,877)	($1,892,774)	($1,822,672)	($1,752,569)
Schools	New Middle School-Reimbursement							($3,768,490)	($3,674,278)	($3,580,066)	($3,485,853)	($3,391,641)	($3,297,429)
TOTAL		$856,258	$1,515,053	$1,472,379	$1,429,705	$1,387,032	$1,344,358	$2,491,734	$2,419,309	$2,346,884	$2,274,459	$2,202,034	$2,129,609

FISCAL FORECAST

GROWTH SCENARIO

	1998	1999	2000	2001	2002	2003
GROWTH						
Housing Units	2,785	2,885	2,985	3,085	3,185	3,285
Population Level	6,928	7,210	7,497	7,789	8,101	8,421
School-Attending Children	1,193	1,269	1,350	1,436	1,542	1,656
Commercial Acreage	580	583	586	589	592	595
REAL ESTATE VALUATION						
• Residentinl/Open Space Base	$297,827,400	$319,493,000	$342,190,500	$365,962,300	$390,852,500	$416,906,700
• Residential New Growth	$12,360,000	$12,730,800	$13,112,700	$13,506,100	$13,911,300	$14,328,600
• SUBTOTAL RESIDENTIAL	$310,187,400	$332,223,800	$355,303,200	$379,468,400	$404,763,800	$431,235,300
• Commercial/Industrial/Personal Property Base	$31,835,700	$33,268,200	$34,758,000	$36,307,200	$37,918,100	$39,593,000
• Commercial/Industrial New Growth	$463,500	$477,400	$491,700	$506,500	$521,700	$537,300
• SUBTOTAL COMMERCIAL/INDUSTRIAL	$32,299,200	$33,745,600	$35,249,700	$36,813,700	$38,439,800	$40,130,300
• Total Base	$329,663,100	$352,761,200	$376,948,500	$402,269,500	$428,770,600	$456,499,700
• Total New Growth	$12,823,500	$13,208,200	$13,604,400	$14,012,600	$14,433,000	$14,865,900
• TOTAL VALUATION	$342,486,600	$365,969,400	$390,552,900	$416,282,100	$443,203,600	$471,365,600
EXPENDITURES						
MUNICIPAL (NON-SCHOOL) EXPENDITURES						
Municipal Operating Costs (excluding debt service)	$2,813,011	$3,015,300	$3,229,400	$3,455,800	$3,702,100	$3,963,800
Capital Expenditures & Debt Service – Non-School	$922,900	$853,000	$630,600	$464,000	$407,200	$343,800
Other Debt Service (Not Itemized)						
Total Non-School Expenditures	$3,735,911	$3,868,300	$3,860,000	$3,919,800	$4,109,300	$4,307,600
SCHOOL EXPENDITURES						
Douglas School Department	$5,547,160	$6,077,600	$6,659,500	$7,296,200	$8,069,800	$8,926,400
Capital Expenditures & Debt Service – School	$901,400	$684,600	$665,300	$1,370,900	$808,400	$768,200
Regional School District	$378,517	$414,700	$454,400	$497,800	$550,600	$609,000
Total School Expenditures	$6,827,077	$7,176,900	$7,779,200	$9,164,900	$9,428,800	$10,303,600
GRAND TOTAL EXPENDITURES	$10,562,988	$11,045,200	$11,639,200	$13,084,700	$13,538,100	$14,611,200
STABILIZATION FUND						
• Maximum Allowed Appropriation to Stab. Fund	$369,600	$515,600	$586,300	$625,700	$666,900	$710,000
• Maximum Allowed Aggregate Amount in Stab. Fund	$34,248,700	$36,596,900	$39,055,300	$41,628,200	$44,320,400	$47,136,600
• Interest Earned on Stabilization Fund	$22,300	$23,400	$42,500	$59,600	$32,900	$11,000
• Appropriated to Stabilization Fund	$0	$359,400	$297,800	$0	$0	$0
• Expended from Stabilization Fund	$0	$0	$0	$593,461	$470,079	$230,979
• Stabilization Fund Balance	$467,919	$850,719	$1,191,019	$657,158	$219,979	$0
• Stab. Fund Increase as % of Previous Year's Levy	0.00%	6.97%	5.08%	0.00%	0.00%	0.00%
• Stab. Fund Balance as % of Total Valuation	0.14%	0.23%	0.30%	0.16%	0.05%	0.00%
TOTAL EXPENDITURES & TRANSFERS	$10,562,988	$11,404,600	$11,937,000	$12,491,239	$13,068,021	$14,380,221
REVENUE BY SOURCE						
Property Tax Levy	$5,156,288	$5,862,800	$6,256,600	$6,668,839	$7,100,121	$8,263,121
State Aid	$3,787,900	$3,882,600	$3,979,700	$4,079,200	$4,181,200	$4,285,700
Local Receipts, Other Than Property Tax	$1,089,700	$1,116,900	$1,144,800	$1,173,400	$1,202,700	$1,232,800
Other Available Funds	$529,100	$542,300	$555,900	$569,800	$584,000	$598,600
Total Revenues	$10,562,988	$11,404,600	$11,937,000	$12,491,239	$13,068,021	$14,380,221
PROPERTY TAXES						
Property Tax Rate	$16.02	$16.02	$16.02	$16.02	$16.02	$17.54
Property Tax Levy as % of Total Budget	48.81%	51.41%	52.41%	53.39%	54.33%	57.46%
Property Tax Rate Increase from Prior Year ($)	$0.00	$0.00	$0.00	$0.00	$0.00	$1.52
Property Tax Rate Increase from Prior Year (%)	0.00%	0.00%	0.00%	0.00%	0.00%	9.49%
Property Tax Levy Increase from Prior Year	39.51%	13.70%	6.72%	6.59%	6.47%	16.38%
Average Residential Tax Bill	$1,677	$1,845	$1,907	$1,971	$2,036	$2,301
Average Tax Bill as % of Average Res. Value	1.51%	1.60%	1.60%	1.60%	1.60%	1.75%
Average Tax Bill Adjusted for Inflation from 1998	$1,677	$1,791	$1,797	$1,803	$1,809	$1,985
LEVY LIMIT ANALYSIS						
Excluded Capital Outlay Expenditures	$296,409	$669,828	$630,600	$464,000	$407,200	$343,800
Property Tax Levy Less Capital Exclusions	$4,859,879	$5,192,972	$5,626,000	$6,204,839	$6,692,921	$7,919,321
Previous Year's Levy Limit + 2.5%	$4,654,447	$4,981,376	$5,322,796	$5,766,650	$6,359,960	$6,860,244
New Growth	$205,432	$211,595	$217,942	$224,482	$231,217	$238,152
Levy Limit Without Override	$4,859,879	$5,192,972	$5,540,739	$5,991,132	$6,591,177	$7,098,396
Proposition 2-1/2 Override (Levy Limit Increase)	$0	$0	$85,261	$213,707	$101,744	$820,925
New Levy Limit	$4,859,879	$5,192,972	$5,626,000	$6,204,839	$6,692,921	$7,919,321
Excess Levy Capacity	$0	$0	$0	$0	$0	$0
Levy Ceiling (2.5% of Total Property Value)	$8,562,165	$9,149,235	$9,763,823	$10,407,053	$11,080,090	$11,784,140

FISCAL FORECAST

GROWTH SCENARIO

	2004	2005	2006	2007	2008	2009
GROWTH						
Housing Units	3,385	3,485	3,585	3,685	3,785	3,885
Population Level	8,750	9,088	9,435	9,730	10,029	10,332
School-Attending Children	1,779	1,911	2,052	2,141	2,234	2,331
Commercial Acreage	598	601	604	607	610	613
REAL ESTATE VALUATION						
• Residential/Open Space Base	$444,172,400	$472,698,800	$502,537,000	$533,740,100	$566,363,100	$600,463,100
• Residential New Growth	$14,758,500	$15,201,200	$15,657,300	$16,127,000	$16,610,800	$17,109,100
• SUBTOTAL RESIDENTIAL	$458,930,900	$487,900,000	$518,194,300	$549,867,100	$582,973,900	$617,572,200
• Commercial/Industrial/Personal Property Base	$41,334,200	$43,144,200	$45,025,600	$46,981,100	$49,013,500	$51,125,500
• Commercial/Industrial New Growth	$553,400	$570,000	$587,100	$604,800	$622,900	$641,600
• SUBTOTAL COMMERCIAL/INDUSTRIAL	$41,887,600	$43,714,200	$45,612,700	$47,585,900	$49,636,400	$51,767,100
• Total Base	$485,506,600	$515,843,000	$547,562,600	$580,721,200	$615,376,600	$651,588,600
• Total New Growth	$15,311,900	$15,771,200	$16,244,400	$16,731,800	$17,233,700	$17,750,700
• TOTAL VALUATION	$500,818,500	$531,614,200	$563,807,000	$597,453,000	$632,610,300	$669,339,300
EXPENDITURES						
MUNICIPAL (NON-SCHOOL) EXPENDITURES						
Municipal Operating Costs (excluding debt service)	$4,242,200	$4,538,300	$4,852,900	$5,154,800	$5,472,600	$5,807,100
Capital Expenditures & Debt Service – Non-School	$331,800	$578,100	$563,900	$504,700	$492,700	$475,600
Other Debt Service (Not Itemized)						
Total Non-School Expenditures	$4,574,000	$5,116,400	$5,416,800	$5,659,500	$5,965,300	$6,282,700
SCHOOL EXPENDITURES						
Douglas School Department	$9,877,100	$10,928,300	$12,086,700	$12,989,300	$13,960,100	$15,003,200
Capital Expenditures & Debt Service – School	$76,400	$958,500	$933,000	$907,400	$881,800	$856,300
Regional School District	$673,900	$745,600	$824,600	$886,200	$952,400	$1,023,600
Total School Expenditures	$10,627,400	$12,632,400	$13,844,300	$14,782,900	$15,794,300	$16,883,100
GRAND TOTAL EXPENDITURES	$15,201,400	$17,748,800	$19,261,100	$20,442,400	$21,759,600	$23,165,800
STABILIZATION FUND						
• Maximum Allowed Appropriation to Stab. Fund	$826,300	$893,100	$1,132,200	$1,267,400	$1,369,000	$1,483,900
• Maximum Allowed Aggregate Amount in Stab. Fund	$50,081,900	$53,161,400	$56,380,700	$59,745,300	$63,261,000	$66,933,900
• Interest Earned on Stabilization Fund	$0	$0	$0	$0	$0	$0
• Appropriated to Stabilization Fund	$0	$0	$0	$0	$0	$0
• Expended from Stabilization Fund	$0	$0	$0	$0	$0	$0
• Stabilization Fund Balance	$0	$0	$0	$0	$0	$0
• Stab. Fund Increase as % of Previous Year's Levy	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
• Stab. Fund Balance as % of Total Valuation	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
TOTAL EXPENDITURES & TRANSFERS	$15,201,400	$17,748,800	$19,261,100	$20,442,400	$21,759,600	$23,165,800
REVENUE BY SOURCE						
Property Tax Levy	$8,931,400	$11,322,100	$12,673,700	$13,690,300	$14,838,700	$16,071,900
State Aid	$4,392,800	$4,502,600	$4,615,200	$4,730,600	$4,848,900	$4,970,100
Local Receipts, Other Than Property Tax	$1,263,600	$1,295,200	$1,327,600	$1,360,800	$1,394,800	$1,429,700
Other Available Funds	$613,600	$628,900	$644,600	$660,700	$677,200	$694,100
Total Revenues	$15,201,400	$17,748,800	$19,261,100	$20,442,400	$21,759,600	$23,165,800
PROPERTY TAXES						
Property Tax Rate	$17.84	$21.30	$22.48	$22.92	$23.46	$24.02
Property Tax Levy as % of Total Budget	58.75%	63.79%	65.80%	66.97%	68.19%	69.38%
Property Tax Rate Increase from Prior Year ($)	$0.30	$3.46	$1.18	$0.44	$0.54	$0.56
Property Tax Rate Increase from Prior Year (%)	1.71%	19.39%	5.54%	1.96%	2.36%	2.39%
Property Tax Levy Increase from Prior Year	8.09%	26.77%	11.94%	8.02%	8.39%	8.31%
Average Residential Tax Bill	$2,418	$2,982	$3,249	$3,419	$3,613	$3,817
Average Tax Bill as % of Average Res. Value	1.78%	2.13%	2.25%	2.29%	2.35%	2.40%
Average Tax Bill Adjusted for Inflation from 1998	$2,025	$2,424	$2,565	$2,621	$2,688	$2,757
LEVY LIMIT ANALYSIS						
Excluded Capital Outlay Expenditures	$331,800	$578,100	$563,900	$504,700	$492,700	$475,600
Property Tax Levy Less Capital Exclusions	$8,599,600	$10,744,000	$12,109,800	$13,185,600	$14,346,000	$15,596,300
Previous Year's Levy Limit + 2.5%	$8,117,304	$8,814,590	$11,012,600	$12,412,545	$13,515,240	$14,704,650
New Growth	$268,571	$281,358	$346,006	$376,131	$394,996	$416,431
Levy Limit Without Override	$8,385,875	$9,095,948	$11,358,606	$12,788,676	$13,910,236	$15,121,081
Proposition 2-1/2 Override (Levy Limit Increase)	$213,725	$1,648,052	$751,194	$396,924	$435,764	$475,219
New Levy Limit	$8,599,600	$10,744,000	$12,109,800	$13,185,600	$14,346,000	$15,596,300
Excess Levy Capacity	$0	$0	$0	$0	$0	$0
Levy Ceiling (2.5% of Total Property Value)	$12,520,463	$13,290,355	$14,095,175	$14,936,325	$15,815,258	$16,733,483

FISCAL FORECAST

GROWTH SCENARIO

	2010	2011	2012	2013	2014	2015
GROWTH						
Housing Units	3,985	4,085	4,185	4,285	4,385	4,485
Population Level	10,639	10,952	11,248	11,548	11,851	12,157
School-Attending Children	2,432	2,539	2,629	2,723	2,820	2,920
Commercial Acreage	616	619	622	625	628	631
REAL ESTATE VALUATION						
• Residential/Open Space Base	$636,099,400	$673,333,500	$712,229,100	$752,852,400	$795,272,200	$839,559,600
• Residential New Growth	$17,622,400	$18,151,100	$18,695,600	$19,256,500	$19,834,200	$20,429,200
• SUBTOTAL RESIDENTIAL	$653,721,800	$691,484,600	$730,924,700	$772,108,900	$815,106,400	$859,988,800
• Commercial/Industrial/Personal Property Base	$53,320,100	$55,600,300	$57,969,400	$60,430,600	$62,987,300	$65,643,000
• Commercial/Industrial New Growth	$660,800	$680,700	$701,100	$722,100	$743,800	$766,100
• SUBTOTAL COMMERCIAL/INDUSTRIAL	$53,980,900	$56,281,000	$58,670,500	$61,152,700	$63,731,100	$66,409,100
• Total Base	$689,419,500	$728,933,800	$770,198,500	$813,283,000	$858,259,500	$905,202,600
• Total New Growth	$18,283,200	$18,831,800	$19,396,700	$19,978,600	$20,578,000	$21,195,300
• TOTAL VALUATION	$707,702,700	$747,765,600	$789,595,200	$833,261,600	$878,837,500	$926,397,900
EXPENDITURES						
MUNICIPAL (NON-SCHOOL) EXPENDITURES						
Municipal Operating Costs (excluding debt service)	$6,159,000	$6,530,400	$6,908,100	$7,305,100	$7,721,700	$8,158,700
Capital Expenditures & Debt Service – Non-School	$464,000	$392,300	$385,200	$355,000	$320,300	$315,900
Other Debt Service (Not Itemized)						
Total Non-School Expenditures	$6,623,000	$6,922,700	$7,293,300	$7,660,100	$8,042,000	$8,474,600
SCHOOL EXPENDITURES						
Douglas School Department	$16,122,900	$17,337,200	$18,490,300	$19,726,000	$21,041,500	$22,441,300
Capital Expenditures & Debt Service – School	$1,515,100	$1,472,400	$1,429,700	$1,387,000	$1,344,400	$2,491,700
Regional School District	$1,100,000	$1,182,800	$1,261,500	$1,345,800	$1,435,600	$1,531,100
Total School Expenditures	$18,738,000	$19,992,400	$21,181,500	$22,458,800	$23,821,500	$26,464,100
GRAND TOTAL EXPENDITURES	$25,361,000	$26,915,100	$28,474,800	$30,118,900	$31,863,500	$34,938,700
STABILIZATION FUND						
• Maximum Allowed Appropriation to Stab. Fund	$1,607,200	$1,809,000	$1,946,200	$2,083,500	$2,228,900	$2,383,700
• Maximum Allowed Aggregate Amount in Stab. Fund	$70,770,300	$74,776,600	$78,959,500	$83,326,200	$87,883,800	$92,639,800
• Interest Earned on Stabilization Fund	$0	$0	$0	$0	$0	$0
• Appropriated to Stabilization Fund	$0	$0	$0	$0	$0	$0
• Expended from Stabilization Fund	$0	$0	$0	$0	$0	$0
• Stabilization Fund Balance	$0	$0	$0	$0	$0	$0
• Stab. Fund Increase as % of Previous Year's Levy	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
• Stab. Fund Balance as % of Total Valuation	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
TOTAL EXPENDITURES & TRANSFERS	$25,361,000	$26,915,100	$28,474,800	$30,118,900	$31,863,500	$34,938,700
REVENUE BY SOURCE						
Property Tax Levy	$18,089,700	$19,462,000	$20,835,400	$22,288,500	$23,837,200	$26,711,800
State Aid	$5,094,400	$5,221,800	$5,352,300	$5,486,100	$5,623,300	$5,763,900
Local Receipts, Other Than Property Tax	$1,465,400	$1,502,000	$1,539,600	$1,578,100	$1,617,600	$1,658,000
Other Available Funds	$711,500	$729,300	$747,500	$766,200	$785,400	$805,000
Total Revenues	$25,361,000	$26,915,100	$28,474,800	$30,118,900	$31,863,500	$34,938,700
PROPERTY TAXES						
Property Tax Rate	$25.57	$26.03	$26.39	$26.75	$27.13	$28.84
Property Tax Levy as % of Total Budget	71.33%	72.31%	73.17%	74.00%	74.81%	76.45%
Property Tax Rate Increase from Prior Year ($)	$1.55	$0.46	$0.36	$0.36	$0.38	$1.71
Property Tax Rate Increase from Prior Year (%)	6.45%	1.80%	1.38%	1.36%	1.42%	6.30%
Property Tax Levy Increase from Prior Year	12.55%	7.59%	7.06%	6.97%	6.95%	12.06%
Average Residential Tax Bill	$4,193	$4,406	$4,609	$4,820	$5,042	$5,529
Average Tax Bill as % of Average Res. Value	2.56%	2.60%	2.64%	2.67%	2.71%	2.88%
Average Tax Bill Adjusted for Inflation from 1998	$2,941	$3,000	$3,047	$3,094	$3,142	$3,345
LEVY LIMIT ANALYSIS						
Excluded Capital Outlay Expenditures	$464,000	$392,300	$385,200	$355,000	$320,300	$315,900
Property Tax Levy Less Capital Exclusions	$17,625,700	$19,069,700	$20,450,200	$21,933,500	$23,516,900	$26,395,900
Previous Year's Levy Limit + 2.5%	$15,986,208	$18,066,343	$19,546,443	$20,961,455	$22,481,838	$24,104,823
New Growth	$439,162	$481,529	$504,896	$527,235	$550,462	$575,028
Levy Limit Without Override	$16,425,370	$18,547,872	$20,051,339	$21,488,690	$23,032,299	$24,679,851
Proposition 2-1/2 Override (Levy Limit Increase)	$1,200,330	$521,828	$398,861	$444,810	$484,601	$1,716,049
New Levy Limit	$17,625,700	$19,069,700	$20,450,200	$21,933,500	$23,516,900	$26,395,900
Excess Levy Capacity	$0	$0	$0	$0	$0	$0
Levy Ceiling (2.5% of Total Property Value)	$17,692,568	$18,694,140	$19,739,880	$20,831,540	$21,970,938	$23,159,948

FISCAL FORECAST

GROWTH SCENARIO

	2016	2017	2018	2019
GROWTH				
Housing Units	4,585	4,685	4,785	4,885
Population Level	12,467	12,720	12,973	13,227
School-Attending Children	3,024	3,071	3,118	3,166
Commercial Acreage	634	637	640	643
REAL ESTATE VALUATION				
• Residential/Open Space Base	$885,788,500	$934,035,500	$984,380,100	$1,036,904,700
• Residential New Growth	$21,042,100	$21,673,300	$22,323,500	$22,993,200
• SUBTOTAL RESIDENTIAL	$906,830,600	$955,708,800	$1,006,703,600	$1,059,897,900
• Commercial/Industrial/Personal Property Base	$68,401,400	$71,266,200	$74,241,400	$77,330,900
• Commercial/Industrial New Growth	$789,100	$812,800	$837,100	$862,200
• SUBTOTAL COMMERCIAL/INDUSTRIAL	$69,190,500	$72,079,000	$75,078,500	$78,193,100
• Total Base	$954,189,900	$1,005,301,700	$1,058,621,500	$1,114,235,600
• Total New Growth	$21,831,200	$22,486,100	$23,160,600	$23,855,400
• TOTAL VALUATION	$976,021,100	$1,027,787,800	$1,081,782,100	$1,138,091,000
EXPENDITURES				
MUNICIPAL (NON-SCHOOL) EXPENDITURES				
Municipal Operating Costs (excluding debt service)	$8,617,700	$9,056,400	$9,513,600	$9,990,900
Capital Expenditures & Debt Service – Non-School	$282,200	$277,900	$230,300	$228,100
Other Debt Service (Not Itemized)				
Total Non-School Expenditures	$8,899,900	$9,334,300	$9,743,900	$10,219,000
SCHOOL EXPENDITURES				
Douglas School Department	$23,937,800	$25,039,100	$26,185,000	$27,385,700
Capital Expenditures & Debt Service – School	$2,419,300	$2,346,900	$2,274,500	$2,202,000
Regional School District	$1,633,200	$1,708,300	$1,786,500	$1,868,400
Total School Expenditures	$27,990,300	$29,094,300	$30,246,000	$31,456,100
GRAND TOTAL EXPENDITURES	$36,890,200	$38,428,600	$39,989,900	$41,675,100
STABILIZATION FUND				
• Maximum Allowed Appropriation to Stab. Fund	$2,671,200	$2,845,800	$2,997,000	$3,154,500
• Maximum Allowed Aggregate Amount in Stab. Fund	$97,602,100	$102,778,800	$108,178,200	$113,809,100
• Interest Earned on Stabilization Fund	$0	$0	$9,300	$30,400
• Appropriated to Stabilization Fund	$0	$185,000	$414,300	$592,600
• Expended from Stabilization Fund	$0	$0	$0	$0
• Stabilization Fund Balance	$0	$185,000	$608,600	$1,231,600
• Stab. Fund Increase as % of Previous Year's Levy	0.00%	0.65%	1.38%	1.88%
• Stab. Fund Balance as % of Total Valuation	0.00%	0.02%	0.06%	0.11%
TOTAL EXPENDITURES & TRANSFERS	$36,890,200	$38,613,600	$40,404,200	$42,267,700
REVENUE BY SOURCE				
Property Tax Levy	$28,457,600	$29,970,200	$31,544,700	$33,186,700
State Aid	$5,908,000	$6,055,700	$6,207,100	$6,362,300
Local Receipts, Other Than Property Tax	$1,699,500	$1,742,000	$1,785,600	$1,830,200
Other Available Funds	$825,100	$845,700	$866,800	$888,500
Total Revenues	$36,890,200	$38,613,600	$40,404,200	$42,267,700
PROPERTY TAXES				
Property Tax Rate	$29.16	$29.16	$29.16	$29.16
Property Tax Levy as % of Total Budget	77.14%	77.62%	78.07%	78.52%
Property Tax Rate Increase from Prior Year ($)	$0.32	$0.00	$0.00	$0.00
Property Tax Rate Increase from Prior Year (%)	1.11%	0.00%	0.00%	0.00%
Property Tax Levy Increase from Prior Year	6.54%	5.32%	5.25%	5.21%
Average Residential Tax Bill	$5,767	$5,948	$6,135	$6,327
Average Tax Bill as % of Average Res. Value	2.92%	2.92%	2.92%	2.92%
Average Tax Bill Adjusted for Inflation from 1998	$3,387	$3,392	$3,397	$3,401
LEVY LIMIT ANALYSIS				
Excluded Capital Outlay Expenditures	$282,200	$277,900	$230,300	$228,100
Property Tax Levy Less Capital Exclusions	$28,175,400	$29,692,300	$31,314,400	$32,958,600
Previous Year's Levy Limit + 2.5%	$27,055,798	$28,879,785	$30,434,608	$32,097,260
New Growth	$629,612	$655,695	$675,363	$695,623
Levy Limit Without Override	$27,685,409	$29,535,480	$31,109,971	$32,792,883
Proposition 2-1/2 Override (Levy Limit Increase)	$489,991	$156,820	$204,429	$165,717
New Levy Limit	$28,175,400	$29,692,300	$31,314,400	$32,958,600
Excess Levy Capacity	$0	$0	$0	$0
Levy Ceiling (2.5% of Total Property Value)	$24,400,528	$25,694,695	$27,044,553	$28,452,275

Douglas Master Plan

Circulation

IX. Circulation

The primary objective of the *Circulation* component of the Master Plan is to identify the deficiencies and needs of the current transportation system in Douglas and develop strategies to facilitate the orderly growth and development provided for within the Master Plan.

The transportation system in Douglas primarily consists of a network of two-lane roadways as well as sidewalks and trails. There is no passenger rail service to the town. While Douglas is a member of the Worcester Regional Transit Authority, the town does not receive bus service. Therefore, the focus of this transportation and circulation element should be on the following:

- Managing the road system and its impacts from increasing development such as residential growth, the Route 146/Mass. Pike interchange and associated improvements along Route 146, and the potential for increased economic development.
- Maintaining and building sidewalks, walking paths and bicycle routes.
- Balancing the need to move traffic safely along Route 16 while preserving the town character.

Regional Context

Douglas is strategically located between Worcester and Providence, which played a major role in the early industrial development within the region. Douglas is located south of Interstate 90 (Mass. Pike), west of I-495 and east of I-395. This location provides highway access to the ports, airports and intermodal facilities of Worcester, Providence and Boston. Worcester and Providence are approximately 30 to 40 minute drives from Douglas and Boston is approximately one hour and fifteen minutes from Douglas.

Route 128 linked Boston's neighboring towns enabling people to live in the suburbs and commute to Boston. As development expanded and mobility increased, the limits of the original beltway were exceeded and Interstate 495 provided a second beltway. Both beltways have stimulated new growth in both business locations and residential development. Routes 146 and 395 are beginning to accommodate larger amounts of traffic as development continues to move out from Boston. The proposed improvements to these two routes will allow travel to Boston, Worcester and Providence to become more convenient and could spur increased development in the Douglas area.[84]

Routes 146 and 190 are rapidly becoming the "third beltway" in eastern Massachusetts. Route 190 connects Worcester to Leominster, and Route 146 links Worcester to Providence. The fact that Douglas is located among a network of major transportation corridors is reason to believe that the town will be impacted by increasing development in the region.

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[84] *Our Rural Heritage and the Future,* page xvii.

Local Circulation

Street Network

The principal highways located within the town are State Routes 146, 16 and 96. Route 146 cuts through the northeast corner of town, providing a prime location for non-residential development. The improvements along this corridor, as well as the new interchange at the Mass Pike, will increase the desirability of sites situated along this transportation route for business locations.

Route 16 is Douglas' primary through route. It consists of Webster Street, Northeast Main Street, Main Street and Davis Street. In addition to serving as the main street for East Douglas, Route 16 serves the regional east-west traffic and links I-395 and Route 146. Route 96 (South Street) extends from Douglas Center on Route 16 to the Burrillville town line. Other roads that provide capacity and continuity for through traffic as well as local access include Southwest Main Street, Wallum Lake Road, Southeast Main Street, Northwest Main Street, Manchaug Street, North Street and Gilboa Street.

Traffic Volumes

The tables on the following pages present traffic count data for a 24-hour period for a number of locations within Douglas. These figures were collected by the Central Massachusetts Regional Planning Commission (CMRPC) and represent the most recent information on traffic volumes in town. The data reflect the total number of vehicles passing over the counters for the day noted in the left hand most column. No distinction is made between cars, trucks, and other vehicles and the data have *not* been factored for average daily trips (ADT).

The amount of traffic a road can carry is a function of the number of lanes, the speed limit, the number of curb cuts and the volume of turning traffic, and the number of intersections and traffic lights. The data indicate that the highest traffic volumes exist on roads in the northeast section of town, nearest Route 146 and East Douglas (see Map 5)

Table 42: Daily Traffic Volumes on Selected Douglas Roads

Street/Highway	Location	Total Volume	Count date
Gilboa Street	Uxbridge Town line	6,205	8/20/92
Gilboa Street	West of Route 146	5,655	5/10/90
Lackey Dam Road	Uxbridge Town line	6,963	8/1/95
Route 146	Sutton Town line	14,966	10/27/87
North Street	South of Gilboa Street	5,391	12/17/86
Northeast Main Street	East of Route 16	4,338	6/13/96
Route 16	East of Cook Street	9,078	12/17/86
Route 16	East of Mechanic Street	9,106	4/07/88
Route 16	East of Southeast Main Street	6,995	10/28/96

Source: CMRPC

Table 43: Traffic Volume on Route 146, 1970-1990

Date of Count	Traffic Volume
1970	8,850
1980	11,600
1990	14,500

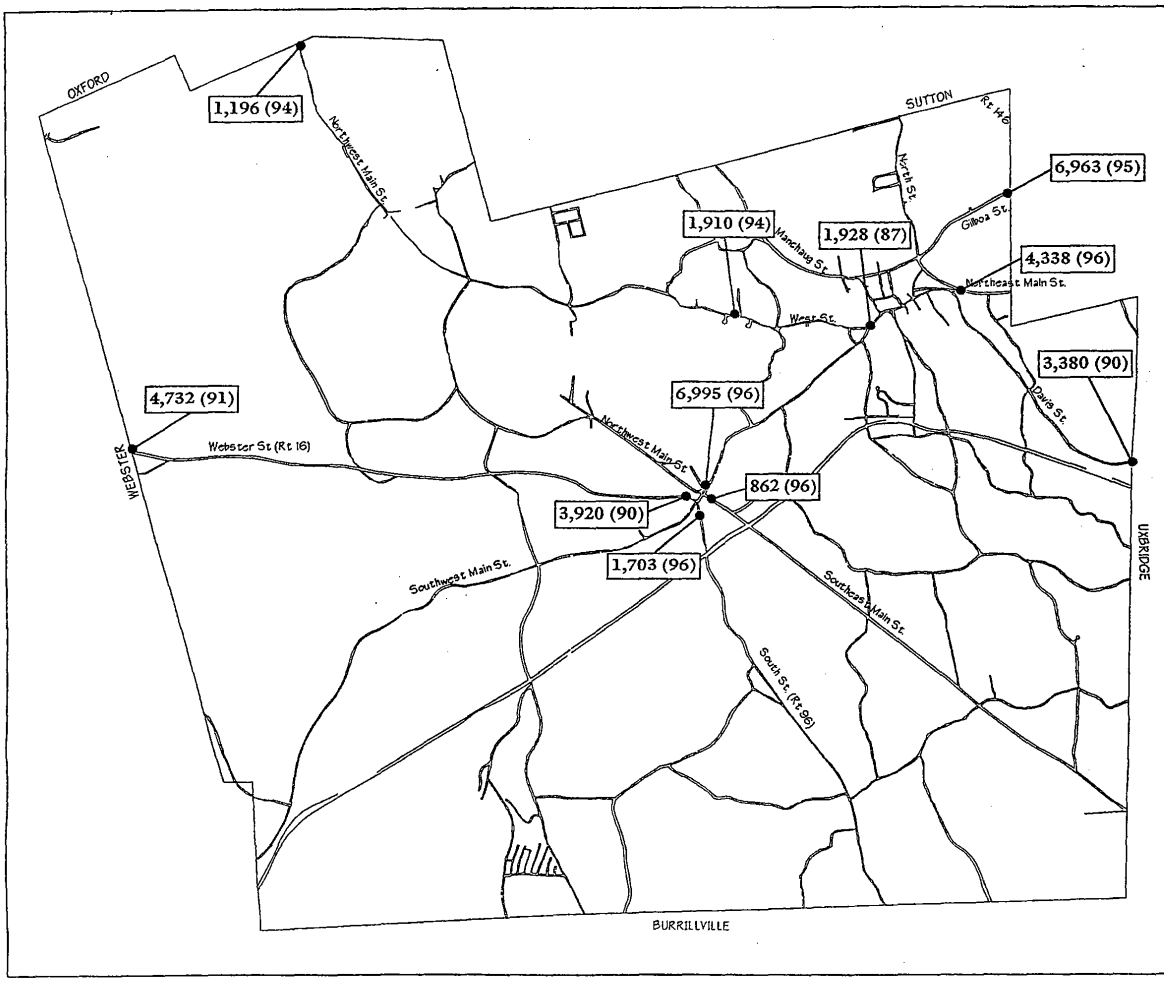
Source: *Our Rural Heritage and the Future*

Daily traffic volumes along Douglas' main roads appear to be increasing at annual rates of 4 to 7 percent, based on analyses of traffic counts at several locations for which comparison data are available:

- Northeast Main Street east of Route 16 experienced an increase of 163% between December 1986 and June 1996. Adjusting these counts for seasonal variation,[85] the estimated growth over the 10-year period is 86 percent, or about 6.4 percent per year.
- Between July 1987 and October 1996, traffic volumes on Route 16 east of Southeast Main Street increased by about 44 percent (after adjusting for seasonality), or about 4.2 percent per year.
- Volumes on Route 16 at the Uxbridge town line increased by about 7.3 percent between April 1988 and May 1990, or an average of 3.6 percent per year.
- Volumes on Route 96 south of Route 16 were 11 percent lower in October 1996 than in July 1987. However, after adjusting for seasonality, traffic on this route is estimated to have grown by 26 percent over the 9-year period, or about 2.6 percent per year.

In contrast to this moderate growth on the major routes, traffic increases on Northwest Main Street have been much greater: at the Sutton town line, volumes increased by 119 percent from 1988 to 1991 and by 211 percent from 1991 to 1994, representing average annual growth rates of 30 percent and 46 percent respectively. Wallum Pond Road at the Rhode Island border accommodates approximately 200 vehicles per day and did not change significantly between 1988 and 1994.

[85] These adjustments are based on the Highway Superintendent's estimates of 12,000 trips per day along Route 16 in East Douglas, increasing to 17,000 trips per day in the summer.



TOWN OF DOUGLAS
MASSACHUSETTS

1998 MASTER PLAN

Estimated Daily Traffic Volumes

Legend:

3,380 (90) — Estimated two-way traffic volume in a 24-hour period: ( )= year count was taken

N

1800' 3600' 7200'

Whiteman & Taintor
Planning Consultants

Base map: Deanne Frederickson
Source: Department of Landscape Architecture and Regional Planning, University of Massachusetts, Amherst

Table 44: Daily Traffic Volumes

Date	Municipality	Street/Highway	Location	Traffic Flow	Volume NB/EB or ON	Volume SB/WB or OFF	Volume Total	Reference ID	Source
6/13/96	Douglas	Depot St	S of Main St	NB	1378	1186	2564	1996072	CMRPC
8/20/92	Douglas	Gilboa St	Uxbridge TL	NB	3113	3092	6205	1992171	CMRPC
7/28/87	Douglas	Gilboa St	W of North St	EB	668	694	1362	1987168	CMRPC
5/10/90	Douglas	Gilboa St	W of Route 146	EB	2824	2831	5655	1990036	CMRPC
8/1/95	Douglas	Lackey Dam Rd	Uxbridge TL	EB	3514	3449	6963	1995116	CMRPC
12/17/86	Douglas	Mechanic St	N of Route 16	NB	788	1059	1847	Spec178	CMRPC
12/17/86	Douglas	North St	S of Gilboa St	NB	2859	2532	5391	Spec179	CMRPC
12/17/86	Douglas	Northeast Main St	E of Route 16	EB	787	865	1652	Spec181	CMRPC
6/13/96	Douglas	Northeast Main St	E of Route 16	EB	2170	2168	4338	1996073	CMRPC
10/13/88	Douglas	Northwest Main St	Sutton TL	NB	86	89	175	1988183	CMRPC
10/1/91	Douglas	Northwest Main St	Sutton TL	NB	188	196	384	1991155	CMRPC
11/10/94	Douglas	Northwest Main St	Sutton TL	NB	602	594	1196	1994070	CMRPC
10/28/96	Douglas	NW Main St	N of Route 16	NB	122	178	300	1996160	CMRPC
10/27/87	Douglas	Route 146	Sutton TL	NB	7582	7384	14966	1987252	CMRPC
12/17/86	Douglas	Route 16	E of Cook St	EB	4357	4721	9078	Spec177	CMRPC
4/30/87	Douglas	Route 16	E of Mechanic St	EB	4748	4355	9103	1987037	CMRPC
4/7/88	Douglas	Route 16	E of Mechanic St	EB	4828	4278	9106	1988030	CMRPC
12/17/86	Douglas	Route 16	E of Northeast Main St	EB	1387	1495	2882	Spec180	CMRPC
7/30/87	Douglas	Route 16	E of Southeast Main St	EB	3420	3402	6822	1987174	CMRPC
4/12/88	Douglas	Route 16	Uxbridge TL	EB	1557	1594	3151	1988032	CMRPC
5/10/90	Douglas	Route 16	Uxbridge TL	EB	1699	1681	3380	1990034	CMRPC
7/30/87	Douglas	Route 16	W of Route 96	EB	1932	1913	3845	1987172	CMRPC
5/10/90	Douglas	Route 16	W of Route 96	EB	1949	1971	3920	1990033	CMRPC
5/24/88	Douglas	Route 16	Webster TL	EB	1898	1981	3879		WH
7/30/91	Douglas	Route 16	Webster TL	EB	2034	2698	4732	1991114	CMRPC
10/28/96	Douglas	Route 16	E of SE Main S	NB	3569	3426	6995	1996158	CMRPC
6/27/91	Douglas	Route 96	RI SL	NB	268	280	548	1991104	CMRPC
7/30/87	Douglas	Route 96	S of Route 16	NB	954	965	1919	1987173	CMRPC
10/28/96	Douglas	Route 96	S of Route 16	NB	856	847	1703	1996157	CMRPC
10/28/96	Douglas	SE Main St	S of Route 16	NB	426	436	862	1996159	CMRPC
7/30/87	Douglas	Southwest Main St	W of Route 96	EB	481	506	987	1987171	CMRPC
4/12/88	Douglas	Wallum Pond St	RI SL	NB	136	65	201	1988036	CMRPC
10/27/94	Douglas	Wallum Pond St	RI SL	NB	101	90	191	1994059	CMRPC

Date	Municipality	Street/Highway	Location	Traffic Flow	Volume NB/EB or ON	Volume SB/WB or OFF	Volume Total	Reference ID	Source
4/12/88	Douglas	West St	W of Johnson Ct	EB	244	291	535	1988035	CMRPC
9/12/91	Douglas	West St	W of Johnson Ct	EB	387	392	779	1991154	CMRPC
11/10/94	Douglas	West St	W of Johnson Ct	EB	955	955	1910	1994069	CMRPC
7/28/87	Douglas	West St	W of Route 16	EB	1059	869	1928	1987169	CMRPC

Intersection Levels of Service

Another measure of traffic conditions is *Level of Service* (LOS). The LOS refers to the quality of traffic flow along roadways and at intersections. It is described in terms of levels A through F, where A represents the best possible conditions and F represents forced flow or failing conditions. LOS "D" or better is considered acceptable in urbanized areas, while LOS "C" is generally considered acceptable in rural areas.

The LOS of an unsignalized intersection is determined by calculating the reserve capacity of traffic movements to and from the minor street. "Reserve capacity" is defined as the number of additional vehicles that can be safely accommodated at an unsignalized intersection for a particular traffic movement. Negative reserve capacities indicate that vehicles are accepting gaps in traffic that are considered to be less than safe under prevailing conditions. Prevailing conditions are affected by the type of traffic control (i.e., stop sign or yield sign), traffic speeds, and sight distances. Based on the available gaps between vehicles on the major street, the reserve capacity of the left turns from the major street and traffic movements from the minor street approach can be determined.[86]

Table 45: Level of Service Criteria for Unsignalized Intersections

Reserve Capacity (vehicles per hour)	LOS	Expected Delay
400+	A	Little or no delay
300-399	B	Short traffic delays
200-299	C	Average traffic delays
100-199	D	Long traffic delays
1-99	E	Very long traffic delays
0	F	Extreme delays/congestion

Source: *1985 Highway Capacity Manual, Special Report #209* cited in the *1991 Town of Douglas Master Plan.*

The 1991 *Town of Douglas Master Plan* concluded that most of the streets in Douglas were functioning at an acceptable LOS at that time. Only a few roads were approaching "failing" conditions during peak hours. Main Street at peak hours was performing at only an LOS "D" for much of its length. The intersection of Main, Northeast Main and North Street (near the Civil War Monument) was operating at an LOS "E" at peak hours and the intersection of North Street and Gilboa/Manchaug Roads was at an LOS "D."

Updated LOS data was not available as of this writing. However, the above analysis supports the concerns regarding traffic in the downtown area. The Police Chief and the Highway Superintendent feel that this problem can be alleviated to a certain extent through proposed improvements along Route 16 (see Route 16 discussion, page 181) and no new traffic signals are warranted at this time.

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[86] *Town of Douglas Master Plan,* prepared by David A. Hulseberg and Pamela J. Brown, August 1991.

Road Repair and Maintenance

The Douglas Highway Department annually grades gravel roads, maintains brush along the roadsides, and uses sand and oil for sealing resurfaced roads with Chapter 90 funds.

In 1996, the Highway Department repaired and replaced catch basins and road drainage. The Department also used funds for purchasing salt, plowing, and snow removal from the Town's streets as well as downtown sidewalks and for the preparation of the Department's new snow dump.

Roads resurfaced (or in progress as of February 1998) in recent years using Chapter 90 funds include the following:

Table 46: Resurfaced Roads 1995-1997

Road	Year of Resurfacing	Road	Year of Resurfacing
Webster Road	1997	Cliff Street	1995
Northeast Main Street	1997	Maple Street	1995
Gilboa Street	1997	Mumford Street	1995
A Street	1997	Arch Street	1995
Cook Street	1997	Chestnut Street	1995
Southwest Main Street	1997	Walnut Street	1995
Wallum Lake Road	1997	High Street	1995
Yew Street	1997	West Street	1995
Southwest Main Street	1997	Birch Street	1995
Franklin Street	1997	Southeast Main Street	1995
Perry Street	1997	Gilboa Court	1995
Wixtead Court	1997	Yew Street	1995
Walnut Street	1997	Riedell Road	1995
Cook Street	1996	Locust Street	1995
Depot Street	1996	Hemlock Street	1995
Northwest Main Street	1996	Franklin Street	1995
North Street	1996	Southwest Main Street	1995
Wallum Lake Road	1996	Grove Street	1995
Linden Street	1995	Monroe Street	1995

Source: Annual Town Reports

In addition to the improvements completed by the Town, the Massachusetts Highway Department recently completed improvements along the "M-Route." This section of road includes Manchaug Street from Mechanic Street into Sutton. The road was

resurfaced, new sidewalks were installed and handicapped accessibility was improved. The total cost of the project was $500,000.[87]

Bridges

The Highway Department has undertaken bridge replacement and improvements in recent years. Planks and rails were replaced and minor repairs were completed in 1994 on several bridges in town. The Hemlock Street bridge was replaced in 1995 and temporary repairs to the upper West Street bridge were completed in 1996. The bridge on Potter Road over the Mumford River will be replaced in FY1999. The Highway Department has not identified other bridges that are in need of replacement or repairs at this time.

Sidewalks, Trails and Bike Routes

There is no specific sidewalk program in place in Douglas at this time. However, a developer is required to provide five-foot wide sidewalks as part of the subdivision process. Since the sidewalks are required when a new subdivision is created, the sidewalks may only exist for short distances and are generally not intended to be used to access areas outside of a particular housing development. The Town should create a network of pedestrian pathways that incorporate the subdivision sidewalks into the larger context of the town. This will improve linkages between residential areas, recreational resources, schools and commercial areas.

As stated in the *Open Space and Recreation* element, the Conservation Commission does not own any land with the town at this time. Consequently, there are no town maintained trails within Douglas but this type of activity is provided within the Douglas State Forest.

In addition to providing open space protection and recreational use, greenways can serve as transportation corridors for non-motorized vehicles and pedestrian activity. As noted in the *Open Space and Recreation* element, efforts are underway by the Conservation Commission to create a Riverwalk along the Mumford River. The Southern New England Trunkline Trail (SNETT) connects state owned lands in Rhode Island and Connecticut with the Douglas State Forest and will provide a regional greenway network.

There are currently no bike trails in Douglas, and no plans to create trails for this purpose in the future. However, a planning effort may be warranted for reviewing appropriate locations for bike paths and evaluating whether there are roads with shoulder wide enough to accommodate bicycles so that road improvement projects can consider this alternative mode of transportation.

The 1986 Massachusetts Bicycle Map was created by the Metropolitan Area Planning Council (MAPC) to indicate roads in the State that are most useful for experienced bicyclists. The routes were assessed by surveying the roads and obtaining feedback from cyclists and officials but the routes are generally not part of an official bicycle route. The map indicates that Wallum Pond Street, Webster Street, Main Street, Northeast Main Street and South Street are "routes" while Davis Street is an "alternative route." In addition, Route 16 from the Webster town line to Northeast Main Street and continuing into Sutton is shown as the "Maine to Virginia Route," an "official long distance route."

[87] Barry Lorion, Design Engineer, Mass. Highway Department. Telephone conversation 2/9/98.

In general, the "routes" are presented as the best available through routes in a given area. The "alternative routes" are considered to be less acceptable than the "routes," due to poorer pavement, curves, less width, or traffic conditions.

The proposed Blackstone Valley Bikeway is intended to be a recreational and commuting facility that connects Worcester to Blackstone, passing through Millbury, Sutton, Grafton, Northbridge, Uxbridge and Millville. The bikeway will then connect with the 19-mile Rhode Island Blackstone River Bikeway terminating in Providence. The bike route in both states will link urban areas, mill villages, state parks and historic sites within the Blackstone River Valley National Heritage Corridor. The first part of the bikeway will be completed as part of the new Mass. Pike/Route 146 interchange project.

Areas of Concern

Route 146 Improvements

Overview of the project

Construction on the Mass. Pike/Route 146 interchange is currently in progress. The project involves the redesign of a section of Route 146 in Millbury and Worcester. The project also involves the construction of two new interchanges providing connections to the Mass. Pike, Route 20 and Route 122A as well as the construction of two new partial interchanges to access local streets.

According to the Environmental Impact Statement for the project, the purpose of the improvements is to strengthen the regional highway system, improve the physical capacity of Route 146 and reduce the potential for accidents.[88] If the improvements were not undertaken (i.e. the "no-build" scenario), the surrounding roadways would experience increases in traffic volumes due to the constrained capacity conditions of Route 146. If the circulation system continued in its current state, traffic would continue to shift onto parallel routes and negatively affect the increasingly congested local streets.

With the implementation of the improvements, vehicular capacity and roadway safety of Route 146 are expected to improve. Traffic that would otherwise leave Route 146 is expected to remain on the route rather than use local streets. The addition of the Mass Pike/Route 146/Route 20 interchange is expected to attract traffic to and from the Mass. Pike. The anticipated shift in the travel patterns will encourage the use of major routes, improving local street traffic.

Traffic volume

The Mass. Pike, I-290 and Route 9 have the highest traffic volumes in the region as of 1994. Traffic on I-290 ranges from 35,000 vehicles per day (vpd) near I-495 to almost 100,000 vpd in downtown Worcester. Route 9 and the Mass. Pike carry about 50,000 vehicles per day. Route 146 (without improvements) averages 15,000 vpd near Route 16 and 35,000 near Brosihan Square in Worcester. The improvements are designed to

[88] *Mass Pike. Route 146 Interchange; Final Environmental Impact Statement/Environmental Impact Report.* Prepared by the U.S. Department of Transportation Federal Highway Administration and the Massachusetts Highway Department Mass. Turnpike Authority. August 1994.

upgrade Route 146 to a level where it is able to accommodate an increase in traffic volume thereby reducing the impacts of heavy traffic on other roads.

What this means for Douglas

The results of this project will improve accessibility to downtown Worcester and accessibility to the Mass. Pike from Route 146. The Environmental Impact Report for the project anticipates that the improvements will lead to additional and higher-density development of commercial and industrial uses along the corridor. However, it is unlikely that there will be an alteration in the established or forecasted patterns of residential land use. It is also projected that residential property values could potentially increase due to the diversion of traffic and improved access.

These improvements will increase accessibility from Douglas to Boston, Worcester, Providence and Springfield. This will benefit Douglas residents as major employment centers will become more accessible and it will improve Douglas' attractiveness as a business location due to the proximity of a major highway network. Many of these impacts are discussed in greater detail in the *Economic Development* element. While specific projections are not available, local roads in Douglas may experience an increase in traffic as faster development is induced by the enhanced accessibility of the Town to employment centers and as Route 16 and Gilboa Street become more important connectors to the Route 146 corridor.

Route 16

Route 16 is a two-lane road that bisects the town in an east-west direction and has been described as the "face of the community." Therefore, planning along and for this corridor is very important in planning for the future of Douglas. This corridor serves many purposes:

- An east-west connection for regional traffic from I-395 to Route 146 and I-495.
- An east-west collector within the Town of Douglas for local traffic.
- The main arterial in town into which the majority of primary roads feed.
- The location of businesses, residences, town services and facilities along its length between the Webster and Uxbridge town lines.
- The Main Street for East Douglas, and the Town Center of the community.

The primary concerns regarding this transportation route are the types of land uses that should be permitted along its length (see the *Land Use* and *Economic Development* elements) and traffic congestion within East Douglas between Franklin Street and Davis Street. The traffic congestion has been attributed to the narrow width of the road along the East Douglas section. Parking is permitted along both sides of Route 16 and the two travel lanes are narrower than is standard for this type of route. Consequently, when two large trucks pass through East Douglas, traffic in one lane usually must stop to let the other truck pass. Traffic turning from Route 16 to North Street also leads to backups, especially during peak commuting hours. This congestion combined with the amount of pedestrian activity associated with the Post Office and Elementary School have resulted in the Town exploring options for relieving traffic congestion in this area.

Traffic volumes in the East Douglas area are estimated to be approximately 12,000 trips per day. This figure increases to approximately 17,000 in the summer months.[89] Traffic in East Douglas has been cited as a problem for the town since at least 1974 when the Planning Board requested a study of the issue by the Central Massachusetts Regional Planning Commission. The problems perceived at that time were as follows:[90]

- The amount of truck traffic utilizing Northeast Main Street, which was seen as a threat to the local economy and jeopardized pedestrian safety.
- Summer tourist traffic with trailers and campers, which added to the congestion in East Douglas.
- Safety problems associated with high speed traffic as a result of residential development along Route 16.

These issues are still relevant in East Douglas today. The proposed relocation plan discussed within the *Douglas Corridor Planning Study* would reroute traffic from Route 16, west of the Centerville Brook area, to near the Uxbridge town line. This would involve the utilization of the New York, New Haven and Hartford Railroad right of way.

The Study concluded that it was unlikely that the proposed bypass would substantially reduce the perceived and potential problems evaluated in the report:

- Most of the traffic passing through East Douglas is centered in this area and would continue through East Douglas even if the bypass were built. This was confirmed by the finding that the average daily trip data on either side of East Douglas was half of the average daily trip figures within the downtown during this time period.
- The truck traffic in East Douglas would be reduced by the bypass route but the truck traffic at that time was not inordinately heavy for that type of road. In addition, the percentage of vehicle accidents involving trucks was relatively low.
- It is unlikely that the bypass would reduce the speed of vehicles approaching Northeast Main Street from Webster Street. In fact, the study concluded that the bypass would encourage speeding along its length if it were adequately designed and development along its length prohibited.
- Summer tourist traffic was not predicted to be reduced as a result of a bypass route as the East Douglas area would be utilized by tourists to access services and facilities in areas throughout town.
- Although there was evidence of regional traffic utilizing Route 16, it was not shown that it was great enough to warrant the expense of a bypass.

In addition, potential impacts from the proposed bypass route would be as follows:

- Dudley Pond could be impacted if any construction were required to connect Webster Street with the railroad right of way.

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[89] Ed Therrien, Highway Department Superintendent. 2/04/98. Confirmed by traffic count data from CMRPC.

[90] *Douglas Corridor Planning Study*. Prepared by the Central Massachusetts Regional Planning Commission, 1979. Page 1.

- New construction would impact the major aquifer and primary recharge area underlying the northeast portion of Douglas.
- Several wetland areas could be affected by construction or drainage problems associated with the building and operation of the bypass route.
- Approximately 50 residential properties would be impacted as they were located within the proposed right of way.

Although the study concluded that the bypass route was not warranted, the study did state that Main Street/Northeast Main Street does suffer from a traffic problem and numerous accidents. Therefore, the study recommended several mitigation measures, most of which have already been implemented:

- *A detailed accident analysis of Northeast Main Street and its approaches to determine specific problems.* Accident data provided by the Douglas Police Department indicate that there have been very few accidents in recent years. Data provided for the East Douglas area show that there was one accident at each of the following intersections with Route 16 between January 1996 and January 1998: Northeast Main Street, West Street and Franklin Street. There were two accidents during this time period at the intersection of North Street and Gilboa Street. All accidents occurred between the months of July and September.
- *Reduce parking on Northeast Main Street.* CMRPC completed a parking study in April 1982 which recommended improved delineation of parking areas and parking on one side of the street in certain locations. Most of these recommendations appear to have been implemented.
- *Road markings concentrating on center lines, no passing zones and pavement edge markings.* While this recommendation may have been implemented at one time, the area is now in need of new road markings. These improvements will not be completed until a final decision is made regarding the potential widening of Route 16.
- *Designated pedestrian crossing zones in the center of town to reduce accidents and traffic delay.* Crosswalks exist throughout East Douglas but they are in need of new paint or other identifying marks to make them more apparent. In addition, curb cuts to accommodate wheelchairs should be coordinated with crosswalk locations.
- *Better street signs and signs to direct people unfamiliar with Douglas to the State Forest or other recreation sites.* The number and type of signs have increased over the years which has improved wayfinding. However, concerns have been raised regarding the aesthetics of these signs and more coordination of various signs in a specific location may be necessary.
- *Signs indicating approaching traffic signals which would increase the effectiveness of these signals.*
- *A study to determine the need for standard traffic signs.*
- *Road maps of Douglas should be made available at stores and camp sites to reduce confusion.* This is one objective of the efforts of the Blackstone River Valley National Heritage Corridor Commission. The E.N. Jenckes store could serve as a potential source of information.
- *A study of a free shuttle bus service between recreation areas and the center of town on a regular basis during summer weekends.*

- *Improved commercial bus routing and scheduling during summer months.* At the time the study was prepared, bus service from Worcester was available but has since been discontinued.
- *A carpooling information center at Hayward Schuster Mills might help reduce traffic to and from the factory.* The mill is now operated by Guilford Industries and car pools to this location are not likely to significantly reduce traffic in East Douglas.

Since the bypass route did not prove to be a viable option for the Town, most of the previous recommendations for traffic mitigation have been implemented, and traffic continues to be a problem in East Douglas, the town is examining new alternatives.

Davis Street Improvements

The Massachusetts Highway Department is expected to begin construction in the Spring of 1999 to created a right and left turn lane into the Middle School/High School from Davis Street. This will alleviate some of the traffic congestion problems associated with turning traffic and will improve the safety of the area.

Connector Road Between the Middle School/High School and Elementary School

Congestion along Route 16 in front of the Post Office is due in part to traffic from the elementary school. This is the only entrance/exit for the school and is considered to be a safety hazard. The Town is considering the construction of a connection road between the Middle School/High School and the Elementary School. The road would be a one-way street, and traffic would enter on Davis Street by the High School and exit onto Main Street next to the Post Office. The feasibility of this option is enhanced by the improvements the State is making on Davis Street.

I-395/Route 146/I-495 Connector[91]

The Central Massachusetts Regional Planning Commission (CMRPC) is in the process of evaluating roadway improvement options in the region. The construction of a connector roadway between I-395 and I-495 has been suggested to improve east-west travel in the Blackstone Valley and to offer an alternative route to Route 16. The connector route would begin at I-395 in Oxford, follow Sutton Avenue to the Central Turnpike in Sutton, Sutton Street in Northbridge, to Hartford Avenue and Hopkinton Street in Upton, accessing I-495 in Hopkinton, to the east of the CMRPC region. The road would either follow a new alignment or consist of improved sections of existing roadway facilities.

CMRPC estimates that approximately 15,000 vehicles per day would utilize the proposed connector. However, CMRPC recommends that the proposal be studied further to determine the need for the connector and to evaluate the potential obstacles created by the topography of the area.

Route 16 Improvements

The Town is considering the possibility of widening Route 16 between Davis Street and Franklin Street in order to reduce traffic congestion. The current width of the right of

[91] Information is from excerpts of the *1997 Regional Transportation Plan* provided by Rich Rydant, Principal Planner, CMRPC transportation staff.

way (ROW) is approximately 60 feet which may include portions of existing buildings on abutting properties. Within this ROW, the pavement width varies between 28' 4" and 47' 3", with sidewalks 4 to 10 feet on both sides. Table 47 summarizes measurements at several specific locations along this segment of Route 16.

Table 47: Pavement Widths in East Douglas

Location	Road width
Cummings Court and Main Street	29' 6"
Cottage Street and Main Street	33' 4"
Pleasant Street and Main Street	47' 3"
Old Post Office/Vestos Package Store	43' 2"
Bowen Court @ west corner and Main Street	39' 7"
Bowen Court @ east corner to the grass at the monument	31' 5"
White Avenue and Northeast Main Street	35' 0"

Source: Unknown. Data available through Mass. Hwy., received July 2, 1997.

The improvement concept would involve widening the roadway to at least 32 feet throughout East Douglas, providing 5-foot wide sidewalks, and eliminating on-street parking (the 32-foot roadway could consist of two 12-foot travel lanes and two 4-foot shoulders). At the same time, the right of way could be reduced to 50 feet,[92] which would give abutting property owners additional land to make storefront improvements.

This project would provide additional capacity without greatly affecting the paved width of Route 16 as it passes through East Douglas. In general, the proposed pavement width is consistent with the road's function. For example, the Massachusetts Highway Department classifies Route 16 in the East Douglas area as a "rural major collector." Engineering standards for this type of road include travel lanes that are a minimum of 3.25 meters wide (10.67 feet) and a preferred width of 3.75 meters (12.3 feet). Parking lanes are generally 8-10 feet in width.[93]

However, the elimination of on-street parking could have a detrimental impact on the character and economic vitality of the village. Local businesses have few alternatives to on-street parking, and the creation of large off-street lots could detract from the close-knit physical structure of East Douglas. Furthermore, the provision of on-street parking has proven to reduce vehicular speeds. The 1982 CMRPC Parking Study found this to be true in East Douglas: "A speed and delay analysis showed that average travel speed on Northeast Main Street dropped from 38 mph to 18-20 mph between Cook Street and Depot Street. One of the contributing factors to this speed reduction were the parked vehicles."[94] This is an important consideration, as businesses often depend upon the use of signage and window displays to attract traffic. In addition, improving safety has been a primary concern in East Douglas. The slower vehicular traffic will create a safer

[92] The ROW contains the road pavement, sidewalks, street lighting, and utility easements at a minimum, and may also contain landscaping and benches.

[93] Barry Lorion, Design Engineer, Mass. Highway Department. Telephone conversation 2/9/98.

[94] *Douglas Parking Study.* Prepared by the Central Massachusetts Regional Planning Commission. April 1982. Page 8.

pedestrian environment and will reduce the severity of automobile accidents but still allow for the safe and efficient flow of traffic through East Douglas.

Therefore, for reasons of economic vitality, preservation of community character, and traffic calming, the roadway improvement project should include the preservation of as much parking as possible. Figure 15 provides one example of a potential street layout for the East Douglas area. The 11-meter (36-foot) roadway can accommodate two travel lanes and parking on one or both sides of the street, depending upon the traffic volume and corresponding width of the travel lane.[95] The ROW in the example is 20 meters or 65 feet. The proposed 50 foot ROW in East Douglas should be sufficient as the utility lines lie within this distance and the sidewalks are proposed to be 5 feet wide rather than the 6.5 feet (2 meters) shown in the example. Also, East Douglas has buildings closer to the street than shown in the illustration, with no tree line between sidewalks and private property.

As stated in the *Land Use* element, East Douglas contains many of the elements of a traditional town center that many communities are attempting to restore. There is a mix of commercial, residential and public uses; the buildings are oriented to address the street and are architecturally interesting; and the area is accessible by pedestrians from surrounding neighborhoods. This is an example of a successful and active "Main Street" which accommodates pedestrians, slows traffic, provides on-street parking and creates a pleasant shopping environment. In order to preserve and enhance the existing character of this area while still allowing for the proposed road improvements, several design issues should be addressed:

- Avoid the creation of a sterile, auto "strip" by adding street trees and other landscaping between the sidewalk and roadway or between the building frontage and the sidewalk.

- Enhance pedestrian amenities by providing decorative lighting, benches and improved sidewalks.

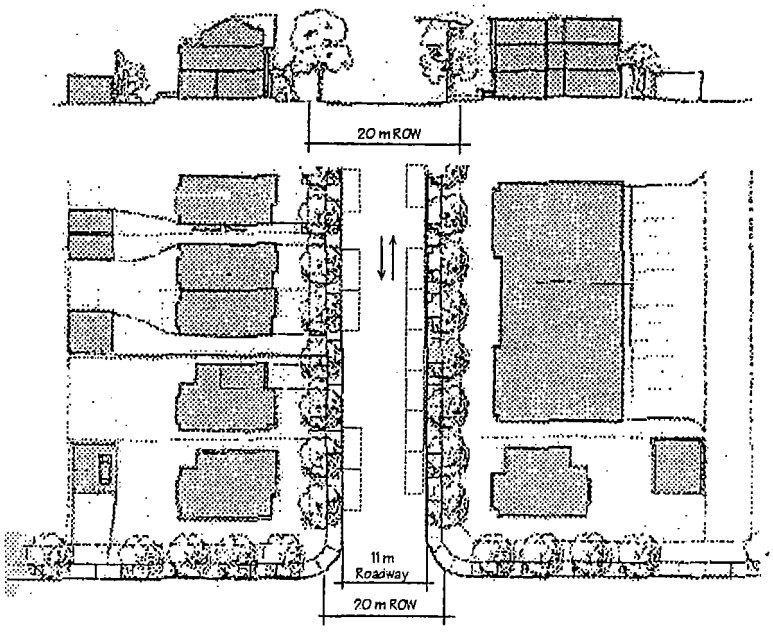
- Utilize pedestrian crossings that also serve as "traffic-calming" mechanisms to slow traffic, provide safe pedestrian access and create more attractive streetscapes. For example, brick or cobblestone crosswalks from extended curb edges can provide attractive, safe crossings for pedestrians as well as slow traffic. The curb and the sidewalk are extended to cover the parking lane (but not cross the travel lane) to reduce the amount of roadway which a pedestrian must travel in order to cross the street (see Figure 16)

[95] For example, two 12-foot travel lanes, an 8-foot parking lane on one side of the street, and a 4-foot shoulder – which could include a bike lane – on the opposite side.

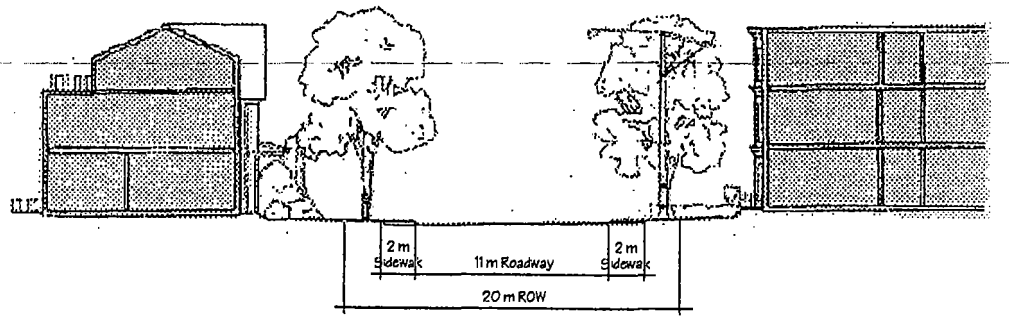
Figure 15: Design Guidelines for Main Street

Source: Alternative Development Standards: Making Choices. By the Planning Reform, Ontario. April 1995.

Main Street- Streetscape



Main Street - Plan View

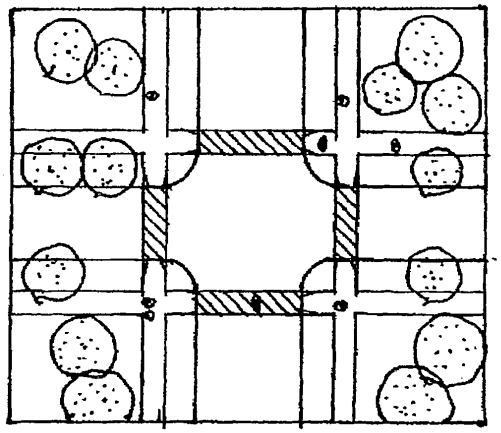


Main Street - Cross Section

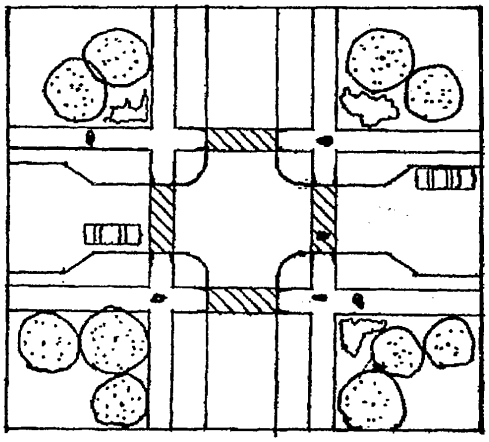
Design Standards for Main Street

- The width of the roadway should allow for two-way traffic and parking on at least one side of the street. It is preferable to permit parking on both sides of the street. When this is not possible, locate parking on both sides of the street in selected areas.
- Provide sidewalks on each side of the street. The sidewalks are located at the curb in the illustration above but could also be located in front of the building with a vegetative buffer between the sidewalk and the road edge.
- Enhance the appearance of the street through the use of street trees and decorative lighting.
- Continue to allow for minimal building setbacks in order to define the street edge.

Figure 16: Pedestrian "Safe Havens"



TYPICAL CROSSWALK PLAN



PEDESTRIAN SAFE HAVEN

- Pedestrian crosswalks are emphasized by painted pavement markings or through the use of different paving materials.
- Curb extensions, or "neck-downs," can be used to reduce the amount of roadway that a pedestrian must cross as well as slow vehicles as they approach and move through intersections.

Source: Urban Design Guidelines. City of Santa Fe, New Mexico. April 1993.

It is important to keep in mind that East Douglas is predominately a pedestrian oriented commercial street. While many customers may drive to East Douglas, they must park on the street and then *walk* to a business because little or no off-street parking is available. In order to preserve the quality and charm of the area, the speed of traffic must be self-enforcing through the above mentioned techniques, not just posted speed limits which are easy to exceed if the street is too wide and straight. Therefore, the proposed widening of Route 16 should only be approved if the related design recommendations are implemented as well. Otherwise, the benefit of creating the ease of traffic flow through East Douglas will be outweighed by a deteriorated downtown.

It is recommended that the Town seek assistance from the Blackstone River Valley National Heritage Corridor Commission in designing the improvements for the East Douglas area. A landscape architect (either the staff landscape architect for the Commission or another designer hired through grant funds potentially available through the Commission) can assist the Town in designing a downtown streetscape that accommodates the automobile while preserving the character of the village.

Recommendations

Douglas is located in a prime area due to the proximity to major employment and distribution centers of Worcester, Providence and Boston. The location within a regional highway network could spur future residential and business growth. The improvement of regional transportation corridors will encourage increased economic development but growth will also place an additional burden on Douglas' local road network. However, with the exception of East Douglas, the town's existing road system is generally in good shape and the Town does well in accessing state and federal funds to correct deficiencies.

- Improvements along the portion of Route 16 within East Douglas are needed to address safety and congestion problems. In making these improvements, it is essential not only to address vehicular circulation issues but also to preserve the character of the village and to support its economic vitality. For these reasons, the improvement plan must address issues of aesthetics, parking, traffic calming, and pedestrian convenience and safety. Design elements which should be incorporated in the plan include:

  - Provision for street trees and other landscaping between the sidewalk and roadway or between the building frontage and the sidewalk.
  - Provision for improved sidewalks, benches and pedestrian scale lighting.
  - Maintainance of on-street parking on at least one side of the street, preferably on both sides.
  - Creation of pedestrian crossings that also serve as "traffic-calming" mechanisms to slow traffic, provide safe pedestrian access and create more attractive streetscapes.

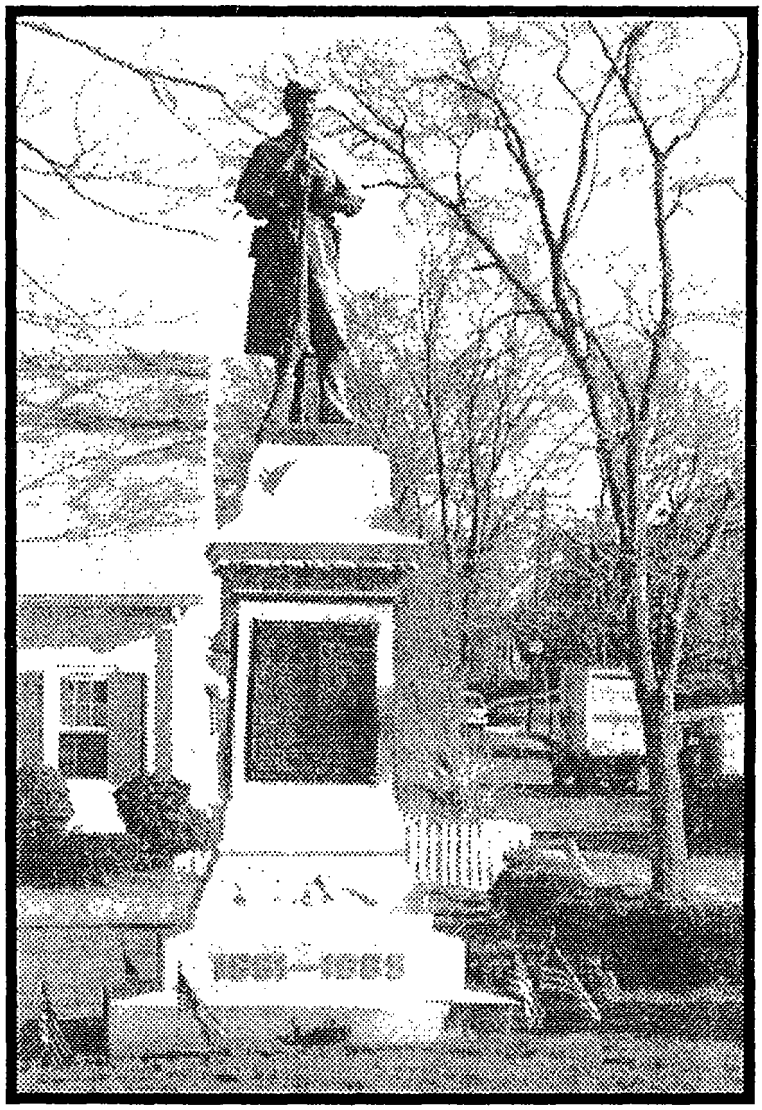
  It is recommended that the Town seek assistance from a landscape architect or urban designer (possibly through the Blackstone River Valley National Heritage Corridor Commission) in preparing the improvement plan.

- In order to improve vehicular circulation in the downtown, the Town should create a connector road between the Elementary School and Middle School/High School.

- There has been an interest in creating trails and greenways in town, as reflected in past planning studies and throughout the course of preparing the Master Plan. Alternative modes of transportation (including pedestrian, bicycle and transit) should be incorporated in all transportation planning and decision making. In addition, a plan for maintaining and constructing sidewalks should be created.

Douglas Master Plan

Implementation



X. Implementation Program

Each of the preceding elements of the Master Plan contains strategies and recommendations to implement the Plan's goals and policies. This final section of the Master Plan weaves the most important policies and action recommendations into an Implementation Program that integrates overlapping or related policies. The implementation strategy organizes these recommendations by type of activity and identifies the local boards and entities that will be most directly involved in carrying out the actions. These categories are adoption and implementation of the Master Plan, regulation, planning, land acquisition, public facility investment, or management. In order to have a workable program, we must set priorities and timelines so that we know which issues to tackle first. The timeline also allows us to have a sense of how well we are progressing on the implementation of the Master Plan.

The timeline involves the following classifications for each action:

Ongoing	Actions which are continuous or are already being carried out.
Short Term	Actions which should be undertaken in the next 2 years (i.e., by the 2001 Annual Town Meeting).
Medium Term	Actions which should be undertaken in the next 3-5 years (i.e., by the 2004 Annual Town Meeting)
Long Term	Actions which will take more than 5 years to be initiated or completed

The Implementation Program contains 87 actions, including 53 which are categorized in the "short term" timeframe. However, many of these short term actions are zoning changes for which draft wording has already been provided, and which can be grouped together and presented to Town Meeting as a single package.

In reviewing the Implementation Program, it is important to keep several points in mind:

- The Master Plan is one part of the Town's planning and management activity and complements and coordinates the actions and responsibilities of other Town boards and committees. The Master Plan includes broad recommendations for many areas of town government but detailed actions are the responsibility of each individual board or committee. For example, the Finance Committee's capital improvement program will provide the most up-to-date and comprehensive estimates of facility costs and timing.
- Specific boards or other entities are identified as responsible for carrying out the recommended actions but many other people will be involved in the implementation phase. Most importantly, residents will have to approve bylaw changes, land purchases and capital investments at Town Meeting.
- Progress on actions may be slow or uneven due to the constraints that a small town faces when depending upon volunteers for municipal functions. To compensate, Town officials and residents should periodically review the list of actions and update timelines where appropriate.

Adoption and Implementation of the Master Plan

A-1	The Planning Board should formally adopt the Master Plan as provided in M.G.L., Chapter 40, Section 81D.	Short term (June 1998)	Planning Board
A-2	The Planning Board (or Board of Selectmen) should appoint a Master Plan Implementation Committee to ensure that the goals, objectives and recommendations of the Master Plan are implemented. This Committee will also serve as a coordinating body to assist the various Town boards, committees and departments in implementing specific policies, programs and actions that are unique to each department but are consistent with the Master Plan objectives.	Short term (Summer 1998)	Planning Board
A-3	The Goals & Policies of the Master Plan should be adopted by Town Meeting in order to ensure that there is public support for the ideas and related recommendations of the Master Plan.	Short term (Fall 1998)	Planning Board, Master Plan Implementation Committee, Town Meeting

Regulatory Actions

Zoning Regulations

ZBL-1	Establish a Mixed Business district (MB) that permits general office buildings, professional and commercial services, insurance and real estate offices, financial institutions and restaurants. Retail uses to be allowed by special permit. Dimensional regulations should be as follows: • Minimum lot size of 30,000 square feet • Minimum front setbacks of 10 feet and maximum setbacks of 20 feet. • Maximum side setbacks of 15 feet • Maximum building footprint of 3,000 to 4,000 square feet. • Buildings must be at least 1-1/2 stories in height and a maximum of 2-1/2 stories or 35 feet.	Short term	Planning Board, Town Meeting
ZBL-2	Adopt site development standards relating to parking and landscaping for all commercial and industrial uses. Establish regulations to require buffers between parking areas and street lines; internal landscaping islands to break up expanses of paved areas within large parking lots; standards for driveway design and spacing.	Short term	Planning Board, Town Meeting
ZBL-3	Create an Open Space district (OS) to recognize the presence of the Douglas State Forest. Modify the Zoning Bylaw to reflect that conservation, forestry and public recreation uses are the only uses permitted within this district.	Short term	Planning Board, Massachusetts Department of Environmental Management, Town Meeting
ZBL-4	Change the name of the Central Business district (CB) to Village Business (VB) to reflect the existing village character of the area.	Short term	Planning Board, Town Meeting
ZBL-5	Reduce the minimum lot area required in a Residential Commercial One and Two (RC-I and RC-II) from 130,000 square feet to 45,000 square feet.	Short term	Planning Board, Town Meeting

ZBL-6	Revise the Use Regulations to distinguish between developments of differing sizes: allow retail and industrial uses in structures of 8,000 square feet or less by right in appropriate districts and require a special permit for uses in excess of 8,000 square feet.	Short term	Planning Board, Town Meeting
ZBL-7	Establish a 5% maximum impervious lot coverage for areas greater than 656 feet (200 meters) in elevation to protect the sensitive environmental features in Northwest Douglas.	Short term	Planning Board, Town Meeting
ZBL-8	Change the Use Table to allow gas stations and motor vehicle repair establishments by special permit (rather than by right) in the Central Business (CB) and Commercial (Comm) districts.	Short term	Planning Board, Town Meeting
ZBL-9	Revise the Use Regulations to allow golf courses, assisted living facilities, retirement homes and nursing homes in the Residential-Commercial Two (RC-II) district.	Short term	Planning Board, Town Meeting
ZBL-10	Create a Sign by-law to ensure that signage is consistent with the desired appearance of the site. Regulations should include the number, size, location and lighting of signs on a lot.	Short term	Planning Board, Town Meeting
ZBL-11	Adopt a Scenic Road Bylaw as described in the *Natural, Cultural and Historic Resources* element. Designate all major roads (other than numbered routes) in Douglas as "scenic roads."	Short term	Planning Board, Town Meeting
ZBL-12	Adopt a series of zoning amendments to rectify internal inconsistencies, noncompliance with statute or case law and obvious omissions, as identified in Appendix A of the Master Plan.	Short term	Planning Board, Town Meeting
ZBL-13	Revise Section 1.04 of the Zoning Bylaw to include or modify definitions for the following: • accessory use • frontage • farm • agriculture • family • nonconforming structure • home occupation (See Appendix A)	Short term	Planning Board, Town Meeting

ZBL-14	Delete Section 5.0 of the Zoning Bylaw–Limited Density Residential Development–as recommended in Appendix A of the Master Plan	Short term	Planning Board, Town Meeting
ZBL-15	Revise Section 6.02 of the Zoning Bylaw–Site Plan Review–as recommended in Appendix A of the Master Plan.	Short term	Planning Board, Town Meeting
ZBL-16	Amend the Zoning Bylaw to include a separate section for Special Permits, as recommended in Appendix A of the Master Plan.	Short term	Planning Board, Town Meeting
ZBL-17	Amend the Zoning Bylaw to include Open Space Options for residential development as described in Appendix A of the Master Plan.	Short term	Planning Board, Town Meeting
ZBL-18	Revise Section 1.05 of the Zoning Bylaw–Non–Conformities– as stated in Appendix A of the Master Plan.	Short term	Planning Board, Town Meeting
ZBL-19	Adopt a Wireless Communications Facilities Overlay District as recommended in Appendix A of the Master Plan.	Short term	Planning Board, Building Department, Town Meeting
ZBL-20	Adopt an Adult Use bylaw similar to the example in Appendix A of the Master Plan.	Short term	Planning Board, Town Meeting
ZBL-21	Adopt a Home Occupation bylaw as recommended in Appendix A of the Master Plan.	Short term	Planning Board, Town Meeting
ZBL-22	Adopt a Stream and Lake Protection Overlay District as recommended in Appendix A of the Master Plan.	Short term	Conservation Commission, Planning Board, Town Meeting
ZBL-23	Revise the Earth Removal Bylaw as indicated in Appendix A of the Master Plan.	Short term	Planning Board, Town Meeting

Zoning Map

ZM-1	Rezone a portion of the area along the east and west side of Route 146 from Industrial (Ind) to Mixed Business (MB). Require a 200-foot setback from Gilboa Street in order to establish a vegetative buffer along the roadway to preserve the existing open gateway leading up to the Guilford Industries mill building.	Short term	Planning Board, Town Meeting
ZM-2	Rezone the area located west of North Street, north of Springmeadow estates, and east of Castle Caves from Industrial (Ind) to Mixed Business (MB).	Short term	Planning Board, Town Meeting
ZM-3	Rezone the area of the Douglas State Forest from Rural-Agricultural (RA) to Open Space (OS).	Short term	Planning Board, Massachusetts Department of Environmental Management, Town Meeting
ZM-4	Rezone the Commercial district (C) located on the north side of Gilboa Street between North Street and the Industrial district to Village Residential (VR).	Short term	Planning Board, Town Meeting
ZM-5	Rezone the Central Business (CB) district located on the corner of Railroad Avenue and Depot Street to Village Residential (VR).	Short term	Planning Board, Town Meeting
ZM-6	Rezone the area north of Reidell Brook and the Highway Department from Commercial (C) to Rural-Agricultural (RA), reducing the existing Commercial zone from approximately 1800 feet to 600 feet north of Route 16.	Short term	Planning Board, Town Meeting
ZM-7	Rezone the Residential Commercial One (RC-I) district south of Route 16 and east of Southeast Main Street to Rural-Agricultural (RA).	Short term	Planning Board, Town Meeting
ZM-8	Rezone the Tassletop area on South Street from Rural-Agricultural (RA) to Village Business (VB).	Short term	Planning Board, Town Meeting

ZM-9	Rezone the Northwest section of Town, as recommended in the *Land Use* and *Economic Development* elements. Rezone the Industrial (Ind) district to (1) Residential Commercial OneI (RC-II) from Route 16 extending approximately 2000 feet north near the stream bed, and (2) Rural-Agricultural (RA) from the Oxford town line to the point 2000 feet north of Route 16. Rezone the Commercial (C) districts north and south of Route 16 near the Webster Town line to Residential Commercial OneI (RC-II)	Short term	Planning Board, Town Meeting
ZM-10	Rezone the Old Grammar School area from Village Residential (VR) to Central Business (CB).	Medium term	Planning Board, Elementary School Use Committee, Town Meeting

Planning Actions

PA-1	Monitor and update the demographic trends and population increases that will have a significant effect on school enrollments and town services and facilities.	Ongoing	Growth Study Committee, School Committee, Board of Selectmen, Planning Board
PA-2	Consider adopting Growth Management Tools as described in Appendix A of the Master Plan while the Town investigates methods to broaden the tax base and absorb new growth.	Short Term	Planning Board, Town Meeting
PA-3	Study and evaluate areas that could accomodate inns and bed & breakfasts, and develop zoning regulations to permit these uses in appropriate districts	Short Term	Planning Board, Town Meeting
PA-4	Evaluate the potential and necessity for adopting impact fees to finance infrastructure expansion related to growth.	Ongoing	Growth Study Committee, Board of Selectmen

PA-5	Identify areas where water service should be extended to promote business development.	Short Term	Planning Board, Water and Sewer Commission, Local Economic Opportunity Area Task Force
PA-6	Plan for school space and building needs based on demographic trends and on the findings of the market study commissioned to determine why students are attending schools in other towns.	Ongoing	School Committee, Board of Selectmen
PA-7	Determine the necessity and feasibility of improving the Town's telecommunication infrastructure to improve school resources, inter-Town department communication and business recruitment.	Medium Term	Board of Selectmen, School Committee, Local Economic Opportunity Area Task Force
PA-8	Continue to pursue the designation of a National Historic District in East Douglas and the Douglas Village.	Ongoing	Historical Commission, BRVNHC Commission
PA-9	Determine appropriate adaptive reuses for the old Douglas Grammar School and the fire station on Cottage Street.	Medium Term	Historical Commission, Elementary School Use Committee, Fire Station Study Committee
PA-10	Maintain and regularly update an inventory of cultural, natural and historic resources.	Ongoing	Historical Commission, Historical Society, Town Common Committee, Conservation Commission
PA-11	Preserve the Douglas Campground and investigate the possibilities of creating a public-private partnership to protect and make better use of this site.	Medium Term	Board of Selectmen, Historical Commission
PA-12	Explore the possibility of placing wires underground in East Douglas and Douglas Village in order to enhance the appearance and historical integrity of the areas.	Medium Term	Board of Selectmen, Highway Department

PA-13	Complete an Open Space and Recreation Plan according to State Requirements	Short Term	Recreation Commission, Conservation Commission, Board of Selectmen
PA-14	Establish clear criteria for determining which parcels should be targeted for open space protection and when the Town should take action.	Short term	Conservation Commission
PA-15	Support the regional planning effort to create the trail along the Southern New England Trunkline Trail.	Ongoing	Conservation Commission, Board of Selectmen, Planning Board
PA-16	Identify potential trails and pathways to link the village areas, open space and recreational resources.	Medium Term	Conservation Commission, Recreation Commission, Planning Board
PA-17	Create a plan for constructing and maintaining sidewalks.	Short Term	Highway Department, Planning Board
PA-18	Seek assistance from the BRVNHC Commission in designing the improvements for Route 16 in East Douglas.	Short Term	Planning Board, Chamber of Commerce, Highway Department
PA-19	Create a Route 16 Corridor Strategy to encourage appropriate development while preserving the character of the area.	Medium Term	Planning Board
PA-20	Study the Rural-Agricultural district (RA) east of North Street and west of the Industrial (Ind) district to determine if a zoning change is warranted based on access, topography, environmental impacts, surrounding uses, and the Town's fiscal and economic needs.	Medium Term	Planning Board, Local Economic Opportunity Area Task Force
PA-21	Study the Industrial district (Ind) between Gilboa Street and Northeast Main Street to determine if a zoning change to Mixed Business is appropriate.	Medium Term	Planning Board, Local Economic Opportunity Area Task Force

PA-22	Consider adopting a Townhouse Development Bylaw similar to what is presented in Appendix A of the Master Plan in order to provide a wider range of housing options that are consistent with the Town character.	Medium Term	Planning Board

Land Acquisition

LA-1	Acquire land for future school sites in high growth areas of town.	Medium Term	Board of Selectmen, School Committee
LA-2	Target the following areas for open space protection through direct acquisition, donation, easements or transfer of development rights: • Cedar Swamp • Chase Pond and frontage along South Street • Baiting Brook • Centerville Brook • Riedell Brook • Castle Caves • Lowland floodplain on Gilboa Street • Mumford River area	Medium Term	Conservation Commission
LA-3	Pursue grants and other public funding to provide additional athletic fields and active recreation sites.	Medium Term	Recreation Commission
LA-4	Implement the Douglas State Forest Acquisition Program	Ongoing	Department of Environmental Management

Public Facility Investment

PFI-1	Implement the recommendations of the *Facility Plan for Wastewater Treatment* in order to attract economic development and protect the environment.	Medium Term	Water and Sewer Commission, Board of Selectmen, Local Economic Opportunity Area Task Force

PFI-2	Complete the recommendations of the *Waterworks Facilities Master Plan.*	Ongoing	Water and Sewer Commission, Board of Selectmen, Fire Department
PFI-3	Create an addition to the Elementary School to increase capacity.	Short Term	School Committee
PFI-4	Improve handicapped accessibility and parking availability of the library.	Short term	Public Library Trustees
PFI-5	Create a connector road between the Elementary School and Middle School/High School, as discussed in the *Circulation* element.	Short term	Highway Department, School Committee, Board of Selectmen
PFI-6	Relieve the congestion and traffic problems on Route 16 in East Douglas according to the specifications provided in the *Circulation* element.	Medium term	Highway Department, Board of Selectmen, Planning Board, Chamber of Commerce, BRVNHC Commission
PFI-7	Complete the Wallum Lake Soccer Fields.	Short term	Recreation Commission
PFI-8	Develop additional Little League fields (possibly along Martin Road).	Short term	Recreation Commission
PFI-9	Prioritize the facility investments identified by the Recreation Commission under "Items that Should be Done" in the *Open Space and Recreation* element, continuing planning, and implement as funding becomes available.	Long Term	Recreation Commission
PFI-10	Replace the outdoor basketball court at the Elementary School and create an additional court.	Short term	Recreation Commission, School Department
PFI-11	Expand recreational opportunities throughout town including non-sport related activities, providing additional playing fields and athletic courts and improving and upgrading existing facilities.	Ongoing	Recreation Commission, School Committee

PFI-12	Improve existing and create additional trails along water bodies and railroad easements.	Ongoing	Conservation Commission, Recreation Commission
PFI-13	Continue to pursue the creation of a Riverwalk along the Mumford River.	Ongoing	Conservation Commission
PFI-14	Complete the upgrade of the Elementary School soccer fields.	Ongoing	School Committee, Recreation Commission
PFI-15	Address needed improvements, deferred maintenance and repairs to existing Douglas State Forest structures and facilities, including construction of a new handicapped accessible toilet/bathhouse in the Day Use area.	Short Term	Department of Environmental Management
PFI-16	Improve the Wallum Lake Day Use area by adding a 100-foot beach area and 150 vehicle parking area.	Short Term	Department of Environmental Management
PFI-17	Address minimum short term management, development and maintenance recommendations for the Southern New England Trunkline Trail (SNETT).	Short term	Department of Environmental Management

Management Actions

M-1	Establish a local Land Trust and establish procedures for use of the Conservation Commission Fund through the Land Trust.	Short Term	Conservation Commission, Board of Selectmen
M-2	If the regional landfill project is not defeated, dedicate revenues from the facility to make long term capital improvements to the Town's infrastructure.	Medium Term	Board of Selectmen
M-3	Promote Douglas as a tourist destination within the Blackstone River Valley National Heritage Corridor.	Short Term, Ongoing	Chamber of Commerce, BRVNHC Commission

M-4	Evaluate the needs of businesses and develop a business recruitment and retention program to attract and maintain appropriate business and industry to Douglas.	Medium Term, Ongoing	Local Economic Opportunity Area Task Force
M-5	Continue to strengthen the review process for new developments and enforcement of Town Bylaws and regulations.	Ongoing	Building Inspector, Town Engineer, Planning Department
M-6	Consider alternative modes of transportation (including pedestrian, bicycling and transit) in all transportation planning and decision making.	Ongoing	Highway Department, Board of Selectmen Planning Board
M-7	Implement recommendations for a Douglas State Forest trails plan, forestry plan, fire control plan, and insect pest control plan through progressive annual work program assignments, volunteer projects and special or on-going annual appropriations.	Medium Term, Ongoing	Department of Environmental Management
M-8	Implement a Douglas State Forest recreation staffing plan by maintaining seasonal levels and establishing at least four new year-round positions.	Short Term	Department of Environmental Management

Douglas Master Plan

Appendices

Appendix A

Review of Zoning Bylaw

MARK BOBROWSKI
ATTORNEY AT LAW
21 COCASSET STREET
FOXBOROUGH, MA 02035

(508) 543-0408
(508) 543-7936 Facsimile

February 11, 1998

TO: Douglas Planning Board
Whiteman & Taintor

FR: Mark Bobrowski

RE: Zoning Review and Recommendations

Per my subcontract with Whiteman & Taintor, I have reviewed the Douglas Zoning By-Law, the Wetlands By-Law and the Subdivision Rules and Regulations of the Planning Board. Using these sources, I have analyzed the zoning by-law to identify

* internal inconsistencies;
* noncompliance with statute or case law; and
* obvious omissions.

At the request of Whiteman & Taintor, I have also made substantive recommendations to improve the Douglas Zoning By-Law.

My proposed revisions and suggested amendments to promote new planning objectives are contained in the appendix.

ZONING REVIEW

1.01: The purpose clause ought to refer to Section 2A of 1975 Mass. Acts 808, which contains a broader statement of zoning objectives.

1.02: Zoning may also be authorized by the Home Rule Amendment, Article 89 of the Amendments to the Massachusetts Constitution.

1.03: The last sentence of this section should be deleted. G.L. c. 40A, s. 6 "grandfathers" a lot that was held in separate ownership at the time it became nonconforming, as long as it has 5,000 sq. ft. and 50 feet of frontage. Your provision would grandfather 3,000 sq. ft. lots as long as they were created prior to 1970. Nothing in the statute requires this result.

* A.2 The entry should more accurately state the statutory exemption: "Facilities for the sale of produce, and wine and dairy products, provided that during the months of June, July, August, and September of every year, the majority of such products for sale, based on either gross sales dollars or volume, have been produced by the owner of the land on which the facility is located."

* B.2 Is this a remnant of the Cold War?

* B.5 The home occupation prerequisites should be stated in a free-standing section of the by-law, not in the schedule.

* B.6 See B.5.

* B.9 These criteria ought to be stated in a footnote to the schedule.

* D.1 See B.9.

* E.1 The "use of land or structures for religious purposes" and the "use of land or structures for educational purposes on land owned or leased by the commonwealth or any of its agencies, subdivisions or bodies politic or by a religious sect or denomination, or by a nonprofit educational corporation" are exempt from special permit and site plan requirements, as set forth in G.L. c. 40A, s. 3. Similarly, the "use of land or structures or the expansion of existing structures for the primary accessory or incidental purpose of operating a child care facility" is exempt. All of these items should appear in the schedule as set forth herein, with a "P" in every District box.

4.02 Dimensional Schedule: I have the following comment:

* The entries for religious or educational uses are suspect throughout (there are six by my count). G.L. c. 40A, s. 3 states that such uses "may be subject to reasonable regulations concerning the bulk and height of structures and determining yard sizes, lot area, setbacks, open space, parking and building coverage requirements." To the extent that the school or church can comply, they probably must. Where they cannot comply, the bulk requirements may not be applicable. The Supreme Judicial Court has ruled that

> the question of reasonableness of a local zoning requirement, as applied to a proposed educational use, will depend on the particular facts of each case. Because local zoning laws are intended to be uniformly applied, an educational institution making challenges similar to those made by Tufts will bear the burden of proving that the local requirements are unreasonable as applied to its proposed project."

Trustees of Tufts College v. City of Medford, 33 Mass. App. Ct. 580 (1992). The court provided a test for reasonableness:

> The educational institution might do so by demonstrating that compliance would substantially diminish or detract from the usefulness of a proposed structure, or impair the character of the institution's campus, without appreciably advancing the municipality's legitimate concerns. Excessive cost of compliance with a requirement imposed on an educational institution, without significant gain in terms of municipal concerns, might also qualify as unreasonable regulation of an educational use. Id. at 759-60 (footnote omitted). "When compliance will involve no significant cost or other hardship to an educational institution, and does not interfere to any appreciable extent with the institution's plans, the institution has failed to make out a case that the requirement, as applied, is unreasonable." Id. at 763 (footnote omitted).

Finally, the court ruled that the institution need not apply for a variance from local regulations.

5.00 Limited Density Residential Development: In my opinion, this by-law could have disastrous consequences. Northbridge has a by-law much like this for its old mill village. When we recodified a few years ago, I urged them to take the by-law out, but they did not. I recently learned that a developer has proposed dozens of apartments and is threatening to sue the town if the special permit is not granted.

I have provided in the appendix a smaller scale townhouse by-law that reduces the tract size to ten acres and the number of dwelling units per building to four while requiring some open space.

6.01 Earth Removal: The numbering of this provision is weak. There is a caption for "1. Basic Provisions" - but then every item is alphabetically contained in that section. What happened to "2. Procedures", etc.?

* In **1.D.i**, define the term "incidental". I have seen developers propose subdivisions for the sole purpose of gaining an exemption from permit requirements, once with 400,000 cubic yards of gravel the target. Limit "incidental" to not more than 5,000 cubic yards in the aggregate.

* In **1.E**, the fine may be raised to $300.00 per violation, with each day constituting a new offense.

* In **1.K.ii**, make provision for the 200 foot buffer in the new Rivers Act.

6.02 Site Plan Review: This by-law has several big problems. First, it equates site plan approval and special permits. The Supreme Judicial Court has defined its understanding of site plan review as: "regulation of a use rather than its prohibition . . . (guiding) us in interpreting the (by-law) . . . as contemplating primarily the imposition for the public protection of reasonable terms and conditions." Y.D. Dugout v. Board of Appeals of Canton, 357 Mass. 25, 31 (1970). In short, site plan review can only be used to shape a project, while special permit review may result in a denial. In Prudential Insurance Co. of America v. Board of Appeals of Westwood, 23 Mass. App. Ct. 278 (1986), the Appeals Court clearly stated site plan review powers: boards may (1) reject a site plan that fails to furnish adequate information required by the by-law; (2) impose reasonable conditions in connection with site plan approval, even at the expense of the applicant; and (3) reject site plans where "although proper in form, (the site plan) may be so intrusive on the needs of the public in one regulated aspect or another that rejection by the board would be tenable." Id. at 283-284 n.9. As to the latter power, the court explained that "this would typically be a case in which, despite best efforts, no form of reasonable conditions could be devised to satisfy the problem with the plan . . . ." Accordingly, your Section 6.02 goes too far.

Second, the review board should be the planning board. Its familiarity with design issues far exceeds that of the board of appeals.

Third, in **E.**, the board is without authority to require yards, screening, parking or loading in excess of that stated in the zoning by-law. To do so would violate the due process rights of the applicant. Every person has a right to know the rules of the game before it starts.

Finally, churches, schools, and child care facilities are exempt from site plan review. See, Trustees of Tufts College v. City of Medford, 33 Mass. App. Ct. 580 (1992).

I have provided a new model in the appendix.

6.05.A: Multiple principal uses and/or structures in the nonresidential districts is not a bad idea. But what is "clearly complementary"? I have provided a model in the appendix.

7.01: As Judge Sullivan of the Land Court once informed the Town of Lexington, "If I'm getting frustrated looking at this chart, I imagine that just about everyone else is too."

7.03 B: The power to grant a special permit should be here stated. However, the criteria for decision making ought to be placed in a free-standing section entitled "Special Permits," somewhere in Section VII. Furthermore, the criteria should be expanded and stated more clearly, along with the balancing test to be used by

the special permit granting authority. I have provided a model in the appendix.

7.05: The fine may be raised to $300.00 per violation, with each day constituting a new offense.

Page 42: I note that this by-law is not numbered to fit into the zoning by-laws. With regard to Section **IV**, is it your intent to limit the availability of a zoning administrator to this water resource by-law? If not, this is better housed in Section VII with the other administrative matters.

Other matters: I have provided an adult use by-law, a wireless communications facilities by-law, and several options for open space development, all missing from the current regulations.

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I hope this review has been useful. Please let me know if I can be of any further assistance.

APPENDICES

1. SITE PLAN REVIEW
2. SPECIAL PERMITS
3. GROWTH MANAGEMENT TOOLS
4. REAR LOTS
5. NONCONFORMITIES
6. WIRELESS COMMUNICATIONS OVERLAY DISTRICT
7. ADULT USES
8. HOME OCCUPATIONS
9. STREAM AND LAKE PROTECTION
10. DEFINITIONS
11. TOWNHOUSE BY-LAW
12. MULTIPLE PRINCIPAL USES
13. EARTH REMOVAL

the Building Inspector without the written approval of the site plan by the Planning Board, or unless 60 days lapse from the date of the submittal of the site plan without action by the Planning Board.

2. Use or Structure Available by Special Permit or Variance. An application for a special permit or a variance to perform work as set forth above shall be accompanied by an approved Site Plan. Applicants for site plan approval shall submit five (5) copies of the site plan to the Planning Board for review, and within three (3) days thereafter shall also submit a copy of the site plan to the Town Engineer, the Board of Health, Director of Public Works, Police Chief, Fire Chief, the Building Inspector, and the Conservation Commission for their advisory review and comments. The Planning Board shall review and act upon the site plan, with such conditions as may be deemed appropriate, within sixty (60) days of its receipt, and notify the applicant of its decision. The decision of the Planning Board shall be upon a majority of those present and shall be in writing. No special permit or variance shall be issued by the Board of Appeals without the written approval of the site plan by the Planning Board, or unless 60 days lapse from the date of the submittal of the site plan without action by the Planning Board. Where the Planning Board approves a site plan "with conditions", and said site plan accompanies a special permit or variance application to the Board of Appeals, the conditions imposed by the Planning Board shall be incorporated into the issuance, if any, of a special permit or variance by the Board of Appeals.

3. Where the Planning Board serves as the special permit granting authority, it shall consolidate its site plan review and special permit procedures.

4. An application for site plan approval shall be accompanied by a fee, as set forth in the Planning Board's Rules and Regulations.

D. Submittals. The Planning Board may require narrative assessments of the on-site and off-site impacts of the proposed project, including traffic, drainage, noise, and other environmental factors. The Planning Board may require that such narrative assessments be prepared by qualified experts. In addition, a site plan shall show:

1. All boundary line information pertaining to the land sufficient to permit location of same on ground with existing and proposed topography at 2 foot contour intervals;

2. Existing and proposed buildings and structures, including fences, loading areas, accessory buildings, signs, waste disposal areas, and storage areas. Existing building elevations or renderings shall be submitted;

3. Water provision, including fire protection measures;

4. Sanitary sewerage;

5. Storm drainage, including means of ultimate disposal and calculations to support maintenance of the requirements in the Planning Board's Subdivision Rules and Regulations;

6. Parking, walkways, driveways, and other access and egress provisions;

7. Existing trees 10" caliper or better and existing tree/shrub masses; proposed planting, landscaping, and screening;

8. Existing and proposed exterior lighting;

9. Compliance with all applicable provisions of this Zoning By-Law.

E. Preparation of Plan. Site Plans shall be submitted on 24-inch by 36-inch sheets. Plans shall be prepared by a Registered Professional Engineer, Registered Land Surveyor, Architect, or Landscape Architect, as appropriate. Dimensions and scales shall be adequate to determine that all requirements are met and to make a complete analysis and evaluation of the proposal. All plans shall have a minimum scale of 1"=40'.

F. Waiver of Technical Compliance. The Planning Board may, upon written request of the applicant, waive any of the technical submittal where the project involves relatively simple development plans or constitutes a minor site plan. Applications for permits to build, alter or expand any nonresidential building, structure or use in any district where such construction will exceed a total gross floor area of 500 square feet but not exceed a total gross floor area of 2000 square feet, or will not generate the need for more than 10 parking spaces, shall be deemed a minor site plan. For the purposes of computing the total gross floor area of a minor site plan, the Planning Board shall aggregate all such applications made within the five (5) previous calendar years. Minor site plans shall set forth all of the information required by Section D, provided, however, that the scale of the site plan may be 1' = 80', and the plan may depict topographical contours at intervals available on maps provided by the United States Geological Survey.

F. Approval. Site Plan approval shall be granted upon determination by the Planning Board that the following conditions have been satisfied. The Planning Board may impose reasonable conditions at the expense of the applicant, including performance guarantees, to ensure that the following conditions have been satisfied. Any new building construction or other site alteration shall provide adequate access to each structure for fire and service equipment and adequate provision for utilities and stormwater drainage consistent with the functional requirements of

the Planning Board's Subdivision Rules and Regulations. New building construction or other site alteration shall be designed in the Site Plan, after considering the qualities of the specific location, the proposed land use, the design of building form, grading, egress points, and other aspects of the development, so as to:

1. Minimize the volume of cut and fill, the number of removed trees 6" caliper or larger, the length of removed stone walls, the area of wetland vegetation displaced, the extent of stormwater flow increase from the site, soil erosion, and threat of air and water pollution;

2. Maximize pedestrian and vehicular safety both on the site and egressing from it;

3. Minimize obstruction of scenic views from publicly accessible locations;

4. Minimize visual intrusion by controlling the visibility of parking, storage, or other outdoor service areas viewed from public ways or premises residentially used or zoned;

5. Minimize glare from headlights through plantings or other screening;

6. Minimize lighting intrusion through use of such devices as cut-off luminaires confining direct rays to the site, with fixture mounting not higher than 12 feet;

7. Minimize unreasonable departure from the character and scale of building in the vicinity, as viewed from public ways. Principal buildings shall be oriented so that longest sides face the street providing frontage for the lot. The front building facade facing a street shall be articulated to achieve a human scale and interest. The use of different textures, shadow lines, detailing and contrasting shapes is required. Not more than 50 feet of a building front shall be in the same vertical plane. A main business entrance to each ground floor business, identified by the larger doors, signs, canopy or similar means of highlighting, shall be located in the fron of the building. Building fronts shall contain windows covering at least 15% of the facade's surface. Windows shall be highlighted with frames, lintels and sills or equivalent frame features. Windows and doors shall be arranged to give the facade a sense of balance and symmetry.

8. Minimize contamination of groundwater from on-site waste-water disposal systems or operations on the premises involving the use, storage, handling, or containment of hazardous substances;

9. Compliance with the provisions of this Zoning By-Law, including parking and landscaping.

G. Lapse. Site plan approval shall lapse after one year from the grant thereof if a substantial use thereof has not sooner commenced except for good cause. Such approval may, for good cause, be extended in writing by the Planning Board upon the written request of the applicant.

H. Regulations. The Planning Board may adopt and from time to time amend reasonable regulations for the administration of these Site Plan guidelines.

copies of required information and documentation have been filed with the special permit granting authority. Said authority shall notify applicants by registered mail, within 14 days of submittal, of incomplete application status, and the applicant shall have 14 days from the mailing of such notice to complete an application. Failure to complete an application within such time shall result in a return of all materials to the applicant, without prejudice. Reports from other boards and officials shall be submitted to the special permit granting authority by the date of the public hearing, but in any case within thirty-five (35) days of receipt of the reviewing party of all of the required materials; failure of these reviewing parties to make recommendations after having received copies of all such required materials shall be deemed a lack of opposition thereto. In the event that the public hearing by the special permit granting authority is held prior to the expiration of the 35 day period, said authority shall continue the Public Hearing to permit the formal submission of reports and recommendations within that 35 day period. The Decision/Findings of the special permit granting authority shall contain, in writing, an explanation for any departures from the recommendations of any reviewing party.

D. Conditions. Special permits may be granted with such reasonable conditions, safeguards, or limitations on time or use, including performance guarantees, as the Special Permit Granting Authority may deem necessary to serve the purposes of this By-Law.

E. Plans. An applicant for a special permit shall submit a plan in substantial conformance with the requirements of Section 6.02, herein.

F. Lapse. Special permits shall lapse if a substantial use thereof or construction thereunder has not begun, except for good cause, within 24 months following the filing of the special permit approval (plus such time required to pursue or await the determination of an appeal referred to in G.L. c. 40A, s. 17, from the grant thereof) with the Town Clerk.

APPENDIX 3
GROWTH MANAGEMENT TOOLS

3.03 RATE OF DEVELOPMENT.

A. Purpose. The purpose of this section, "Rate of Development," is to promote orderly growth in the Town of Douglas, consistent with the rate of residential growth over the last (*) calendar years, to phase growth so that it will not unduly strain the community's ability to provide basic public facilities and services, to provide the Town, its boards and its agencies information, time, and capacity to incorporate such growth into the Master Plan for the community, and to preserve and enhance existing community character and the value of property.

B. General. Beginning on *, building permits for not more than seventy (70) dwelling units shall be issued in each of the five full calendar years following said date, for the construction of new residential dwellings. For the purposes of this section, an accessory apartment shall constitute a dwelling unit.

C. Procedures. Any building permits issued shall be issued in accordance with the following procedures:

1. The Building Inspector shall act on each permit in order of submittal. Any permit application that is incomplete or inaccurate shall be returned to the applicant and shall require new submittal.

2. The Building Inspector shall mark each application with the time and date of submittal, and shall act on each application in a timely manner.

3. Any building permits not issued in any calendar year shall not be available for issuance in any subsequent year.

4. At the end of the calendar year in which this by-law is in effect, the Building Inspector shall retain all applications for which a building permit has not been issued. Upon being informed in writing by the applicant before the tenth of January of the succeeding calendar year that the applicant desires the application to remain in effect, the Building Inspector shall treat said application in accordance with this section.

D. Special Permit Exemption. Upon a determination by the Planning Board under a special permit application that the building permits will be issued for dwelling units within a development that will provide special benefits to the community, said permits shall be exempt from this section in its entirety, and shall not count toward the seventy (70) permits to be issued annually. The Planning Board may grant a special permit under this section only if the Board determines that the probable

benefits to the community outweigh the probable adverse effects resulting from granting such permit, considering the impact on schools, other public facilities, traffic and pedestrian travel, recreational facilities, open spaces and agricultural resources, traffic hazards, preservation of unique natural features, planned rate of development, and housing for senior citizens and people of low or moderate income, as well conformance with Master Plan or Growth Management Plans prepared by the Planning Board pursuant to G.L. c. 41, s. 81D. The Planning Board shall give particular consideration to proposals that demonstrate a reduction in allowable density of fifty percent (50%) or more.

E. Exemptions. The provisions of this section shall not apply to, nor limit in any way, the granting of building or occupancy permits required for enlargement, restoration, or reconstruction of dwellings existing on lots as of the date of passage of this by-law, but shall apply to the conversion of single-family to two-family dwellings.

F. Time Limitation and Extension. This section shall expire on *; provided, however, that this section may be extended without lapse of its provisions and limitations, by vote of the Town Meeting prior to *.

3.04 SUBDIVISION PHASING.

A. Purpose. The purpose of this section, "Subdivision Phasing," is to assure that growth shall be phased so as not to unduly strain the town's ability to provide public facilities and services, so that it will not disturb the social fabric of the community, so that it will be in keeping with the community's desired rate of growth; and so that the town can study the impact of growth and plan accordingly.

B. Applicability. The issuance of building permits for any tract of land divided pursuant to any provision of G.L. c. 41, ss. 81K - 81GG, the Subdivision Control Act, into more than ten (10) lots after the effective date of this by-law shall be subject to the regulations and conditions set forth herein. This provision shall apply to any proposed division or combination of properties which were in the same ownership and contiguous as of *.

C. Phasing. Not more than ten (10) building permits shall be issued in any twelve month period for construction of residential dwellings on any tract of land divided into more than ten (10) lots pursuant to any provision of G.L. c. 41, ss. 81K - 81GG, the Subdivision Control Act.

D. Exceptions. Issuance of more than ten (10) building permits for the same tract of land in a twelve month period may be allowed in the following circumstances:

1. The owner of said land may apply for a special permit from the Planning Board for the issuance of more ten building permits in any 12 month period. The Planning Board may grant a special permit only if the Board determines that the probable benefits to the community outweigh the probable adverse effects resulting from granting such permit, considering the impact on schools, other public facilities, traffic and pedestrian travel, recreational facilities, open spaces and agricultural resources, traffic hazards, preservation of unique natural features, planned rate of development, and housing for senior citizens and people of low or moderate income, as well conformance with Master Plan or Growth Management Plans prepared by the Planning Board pursuant to G.L. c. 41, s. 81D. The Planning Board shall give particular consideration to proposals that demonstrate a reduction in allowable density of fifty percent (50%) or more. Where such special permit is granted, any building permits issued for dwelling units within the division of land shall not count toward the 100 permits to be issued annually in Section 3.03.

2. Where the tract of land will be divided into more than one hundred (100) lots, the Planning Board may, by special permit, authorize development at a rate not to exceed ten percent (10%) of the units per year.

E. Zoning Change Protection. The protection against subsequent zoning change granted by G.L. c. 40A, s.6 to land in a subdivision shall, in the case of a development whose completion has been constrained by this section, be extended to ten years.

F. Relation to Real Estate Assessment. Any land owner denied a building permit because of these provisions may appeal to the Board of Assessors, in conformity with G.L. c. 59, s. 59, for a determination as to the extent to which the temporary restriction on development use of such land shall affect the assessed valuation placed on such land for purposes of real estate taxation, and for abatement as determined to be appropriate.

views along the public ways in the Town of Douglas; to protect the natural environment; to protect the value of real property; to promote more sensitive siting of buildings and better overall site planning; to preserve Douglas' traditional New England landscape; and to allow landowners a reasonable return on their investment.

B. Applicability. Any creation of five (5) or more lots in a residence district, whether a subdivision or not, from a parcel or set of contiguous parcels held in common ownership may proceed under this Section 4.04, Flexible Development, subject to site plan review under Section 6.02, hereunder.

C. Procedures. Applicants for Flexible Development shall file with the Planning Board six (6) copies of a Development Plan conforming to the requirements for a preliminary subdivision plan under the Subdivision Regulations of the Planning Board. The Planning Board may also require as part of the Development Plan any additional information necessary to make the determinations and assessments cited herein.

D. Modification of Lots - Requirements. The Planning Board may authorize modification of lot size, shape, and other bulk requirements for lots within a Flexible Development, subject to the following limitations:

1. Lots having reduced area or frontage shall not have frontage on a street other than a street created by a subdivision involved.

2. Lots may be reduced in area to a minimum of 85% of the otherwise applicable requirement for the district.

3. Lot frontage may be reduced to 65% of the frontage required in the district, provided that all lots located within the Flexible Development shall average 85% of the frontage required in the district.

4. Each lot shall have at least 85% of the required yards for the district.

E. Number of Dwelling Units. The maximum number of single-family dwelling units allowed shall be equal to the number of lots which could reasonably be expected to be developed upon that parcel under a conventional plan in full conformance with all zoning, subdivision regulations, health regulations, wetlands regulations and other applicable requirements. The proponent shall have the burden of proof with regard to the design and engineering specifications for such conventional plan.

F. Visual Buffer Requirements. A buffer area, not less than 200 feet in width, shall be provided between any public way adjacent to the Flexible Development and any home constructed therein. The buffer may be constituted as a "no build" zone within the site,

and may serve as area for individual lots contained therein. No indigenous vegetation shall be removed from this buffer zone before or after the development of the residential compound (except for removal necessary for the construction of subdivision roadways and services and ordinary maintenance), nor shall any building or structure be placed therein.

G. Relation to Other Requirements. The submittals and permits of this Section shall be in addition to any other requirements of the Subdivision Control Law or any other provisions of this Zoning By-Law.

CONSERVATION SUBDIVISION

3.05 Conservation Subdivision

A. Purpose. The purpose of the Conservation Subdivision is to encourage the development of single-family detached dwellings that promote the preservation of open land for its scenic beauty and enhance agricultural, open space, forestry, and recreational use; to preserve historical and archeological resources; to protect the natural environment; to protect the value of real property; to promote more sensitive siting of buildings and better overall site planning; to perpetuate the appearance of Douglas' traditional New England landscape; to allow landowners a reasonable return on their investment; to facilitate the construction and maintenance of streets, utilities, and public services in a more economical and efficient manner; and to promote the development of housing affordable to low and moderate income families.

B. Applicability. Any creation of five (5) or more lots, whether a subdivision or not, from a parcel or set of contiguous parcels held in common ownership and located entirely within the Residence Districts, may proceed under this Section 3.05, Conservation Subdivision, pursuant to the issuance of a special permit by the Planning Board. Such special permits shall be acted upon in accordance with the following provisions.

C. Procedures. Applicants for a Conservation Subdivision shall file with the Planning Board twenty (20) copies of the following:

1. A Development Plan conforming to the requirements for a preliminary subdivision plan under the Subdivision Regulations of the Planning Board. Such plan shall indicate proposed topography, wetlands, and, unless the development is to be sewered, the results of deep soil test pits and percolation tests at the rate of one per acre, but in no case fewer than four (4) per Conservation Subdivision. Where wetland delineation is in doubt or dispute, the Planning Board may require the applicant to submit to the Conservation Commission a request for determination of applicability pursuant to G.L. c. 131, s.40 and 310 CMR 10.05(3). The Planning Board shall refer data on proposed wastewater

disposal to the Board of Health for their review and recommendation. The Planning Board may also require as part of the Development Plan any additional information necessary to make the determinations and assessments cited herein.

2. Four-Step Design Process. Each Development Plan shall follow a four-step design process, as described below. When the Development Plan is submitted, applicants shall be prepared to demonstrate to the Planning Board that these four design steps were followed by their site designers in determining the layout of their proposed streets, houselots, and open space.

a. *Designating the Open Space.* First, the open space is identified. The open space shall include, to the extent feasible, the most sensitive and noteworthy natural, scenic, and cultural resources on the property.

b. *Location of House Sites.* Second, potential house sites are tentatively located. House sites should generally be located not closer than 100 feet to wetlands areas, but may be situated within 50 feet of open space areas, in order to enjoy views of the latter without negatively impacting the former.

c. *Street and Lot Layout.* Third, align the proposed streets to provide vehicular access to each house in the most reasonable and economical way. When lots and access streets are laid out, they shall be located in a way that avoids or at least minimizes adverse impacts on open space. To the greatest extent practicable, wetland crossings and streets traversing existing slopes over 15% shall be strongly discouraged.

d. *Lot Lines.* Fourth, draw in the lot lines (where applicable). These are generally drawn midway between house locations.

D. Modification of Lot Requirements. The Planning Board may authorize modification of lot size, shape, and other bulk requirements for lots within a Conservation Subdivision, subject to the following limitations:

1. Lots having reduced area or frontage shall not have frontage on a street other than a street created by a subdivision involved.

2. Each lot shall contain not less than 15,000 square feet, and have frontage of not less than 50 feet.

3. No structure shall be placed within 10 feet of any front, side, or rear lot line.

E. Number of Dwelling Units. The maximum number of single-family dwelling units allowed shall be equal to the number of lots which could reasonably be expected to be developed upon that parcel under a conventional plan in full conformance with all zoning, subdivision regulations, health regulations, wetlands regulations and other applicable requirements. The proponent shall have the burden of proof with regard to the design and engineering specifications for such conventional plan.

F. Open Space Requirements. A minimum of 10% of the parcel shown on the Development Plan shall be contiguous open space, excluding required yards and buffer areas. Such open space may be separated by the road(s) constructed within the Conservation Subdivision. The percentage of the open space which is wetlands, as defined pursuant to G.L. c. 131, s. 40, shall not normally exceed the percentage of the tract which is wetlands; provided, however, that the applicant may include a greater percentage of wetlands in the open space upon a demonstration that such inclusion promotes the purposes set forth above.

1. The required open space shall be used for conservation, historic preservation and education, outdoor education, recreation, park purposes, agriculture, horticulture, forestry, or for a combination of these uses, and shall be served by suitable access for such purposes.

2. The required open space shall remain unbuilt upon, provided that ten percent (10%) of such open space may be paved or built upon for structures accessory to the dedicated use or uses of such open space, pedestrian walks, and bikepaths.

3. Underground utilities to serve the Conservation Subdivision site may be located within the required open space.

4. The required open space shall, at the Planning Board's election, be conveyed to

a. the Town of Douglas or its Conservation Commission;

b. a nonprofit organization, the principal purpose of which is the conservation of open space and any of the purposes for such open space set forth above;

c. a corporation or trust owned jointly or in common by the owners of lots within the Conservation Subdivision. If such corporation or trust is utilized, ownership thereof shall pass with conveyance of the lots in perpetuity. Maintenance of the open space and facilities shall be permanently guaranteed by such corporation or trust which shall provide for mandatory assessments for maintenance expenses to each lot. Each

such trust or corporation shall be deemed to have assented to allow the Town of Douglas to perform maintenance of the open space and facilities, if the trust or corporation fails to provide adequate maintenance, and shall grant the town an easement for this purpose. In such event, the town shall first provide fourteen (14) days written notice to the trust or corporation as to the inadequate maintenance, and, if the trust or corporation fails to complete such maintenance, the town may perform it. The owner of each lot shall be deemed to have assented to the town filing a lien against each lot in the development for the full cost of such maintenance, which liens shall be released upon payment to the town of same. Each individual deed, and the deed or trust or articles of incorporation, shall include provisions designed to effect these provisions. Documents creating such trust or corporation shall be submitted to the Planning Board for approval, and shall thereafter be recorded in the Registry of Deeds.

5. Any proposed open space, unless conveyed to the Town or its Conservation Commission, shall be subject to a recorded restriction enforceable by the Town, providing that such land shall be perpetually kept in an open state, that it shall be preserved for exclusively agricultural, horticultural, educational or recreational purposes, and that it shall be maintained in a manner which will ensure its suitability for its intended purposes.

F. Buffer Areas. All dwellings and structures shall be located a minimum of 50 feet from adjacent properties, and 100 feet from adjacent surface waters or wetlands. Buffer areas shall be composed of native and compatible species, except where adjacent to agriculturally used property.

G. Decision. The Planning Board may approve, approve with conditions, or deny an application for a Conservation Subdivision, after assessing whether the Conservation Subdivision better promotes the objectives of this Section, than would orthodox development.

H. Relation to Other Requirements. The submittals and permits of this section shall be in addition to any other requirements of the Subdivision Control Law or any other provisions of this Zoning By-Law.

APPENDIX 5
NONCONFORMITIES

1.05 Nonconforming Uses and Structures.

A. Applicability. This zoning by-law shall not apply to structures or uses lawfully in existence or lawfully begun, or to a building or special permit issued before the first publication of notice of the public hearing required by G.L. c. 40A, s. 5 at which this zoning by-law, or any relevant part thereof, was adopted. Such prior, lawfully existing nonconforming uses and structures may continue, provided that no modification of the use or structure is accomplished, unless authorized hereunder.

B. Nonconforming Uses. The Board of Appeals may award a special permit to change a nonconforming use in accordance with this section only if it determines that such change or extension shall not be substantially more detrimental than the existing nonconforming use to the neighborhood. The following types of changes to nonconforming uses may be considered by the Board of Appeals:

1. Change or substantial extension of the use;

2. Change from one nonconforming use to another, less detrimental, nonconforming use.

C. Nonconforming Structures. The Board of Appeals may award a special permit to reconstruct, extend, alter, or change a nonconforming structure in accordance with this section only if it determines that such reconstruction, extension, alteration, or change shall not be substantially more detrimental than the existing nonconforming structure to the neighborhood. The following types of changes to nonconforming structures may be considered by the Board of Appeals:

1. Reconstructed, extended or structurally changed;

2. Altered to provide for a substantially different purpose or for the same purpose in a substantially different manner or to a substantially greater extent;

3. Reconstructed after a catastrophe, provided that the owner shall apply for a building permit and start operations for reconstruction on said premises within eighteen (18) months after such catastrophe, and provided that the building(s) as reconstructed shall be only as great in volume or area as the original nonconforming structure.

4. The reconstruction, extension or structural change of a nonconforming structure in such a manner as to increase an existing nonconformity, or create a new nonconformity,

including the extension of an exterior wall at or along the same nonconforming distance within a required yard, shall require the issuance of a variance from the Board of Appeals.

D. Nonconforming Single and Two Family Residential Structures. Nonconforming single and two family residential structures may be reconstructed, extended, altered, or structurally changed upon a determination by the Building Commissioner that such proposed reconstruction, extension, alteration, or change does not increase the nonconforming nature of said structure, and the issuance of a building permit, where applicable. In the event that the Building Commissioner determines that the nonconforming nature of such structure would be increased by the proposed reconstruction, extension, alteration, or change, the Board of Appeals may, by special permit, allow such reconstruction, extension, alteration, or change where it determines that the proposed modification will not be substantially more detrimental than the existing nonconforming structure to the neighborhood.

E. Abandonment or Non-Use. A nonconforming use or structure which has been abandoned, or not used for a period of two years, shall lose its protected status and be subject to all of the provisions of this zoning by-law.

F. Reversion to Nonconformity. No nonconforming use shall, if changed to a conforming use, revert back to a nonconforming use.

APPENDIX 6
WIRELESS COMMUNICATIONS

6.06 WIRELESS COMMUNICATIONS FACILITIES (WCF) OVERLAY DISTRICT

A. Purpose. The purpose of this section is to establish areas in which wireless communications facilities may be provided while protecting Douglas' unique community character. The WCF Overlay District has been created (a) to provide for safe and appropriate siting of wireless communications facilities consistent with the Telecommunications Act of 1996, and (b) to minimize visual impacts from such facilities on residential districts and scenic areas within Douglas.

B. Location. The WCF District shall be located as follows:

[describe]

C. Applicability. The WCF District shall be construed as an overlay district with regard to said locations. All requirements of the underlying zoning shall remain in full force and effect, except as may be specifically superseded herein.

D. Submittal Requirements. As part of any application for a special permit, applicants shall submit, at a minimum, the information required for site plan approval, as set forth herein at 6.02. Applicants shall also describe the capacity of the facility, including the number and types of antennas that it can accommodate and the basis for the calculation of capacity.

E. Special Permit. A wireless communications facility may be erected in the WCF District upon the issuance of a special permit by the Planning Board if the Board determines that the adverse effects of the proposed facility will not outweigh its beneficial impacts as to the town or the neighborhood, in view of the particular characteristics of the site, and of the proposal in relation to that site. The determination shall include consideration of each of the following:

1. communications needs served by the facility;

2. traffic flow and safety, including parking and loading;

3. adequacy of utilities and other public services;

4. impact on neighborhood character, including aesthetics;

5. impacts on the natural environment, including visual impacts;

6. potential fiscal impact, including impact on town services, tax base, and employment;

7. new monopoles shall be considered only upon a finding that existing or approved monopoles or facilities cannot accommodate the equipment planned for the proposed monopole.

F. Conditions. All wireless communications facilities shall be subject to the following conditions:

1. To the extent feasible, service providers shall co-locate on a single facility. Monopoles shall be designed to structurally accommodate forseeable users (within a ten year period) where technically practicable.

2. New free-standing facilities shall be limited to monopoles; no lattice towers shall be permitted. Monopole height shall not exceed 100 feet above mean finished ground elevation at the base of the mounting structure; provided, however, that a monopole may be erected higher than 100 feet where co-location is approved or proposed, not to exceed a height of 130 feet above mean finished ground elevation at the base of the mounting structure.

3. Wireless communications facilities may be placed upon or inside existing buildings or structures, including water tanks and towers, church spires, electrical transmission lines, and the like. In such cases, the facility height shall not exceed twenty (20) feet above the height of the existing structure or building.

4. All structures associated with wireless communications facilities shall be removed within one year of cessation of use. The Board may require a performance guarantee to effect this result.

5. To the extent feasible, all network interconnections from the communications facility shall be via land lines.

6. The facility shall minimize, to the extent feasible, adverse visual effects on the environment. The Planning Board may impose reasonable conditions to ensure this result, including painting, lighting standards, landscaping, and screening. Existing on-site vegetation shall be preserved to the maximum extent practicable.

7. Traffic associated with the facility shall not adversely affect public ways.

8. Fencing may be required to control unauthorized entry to wireless communications facilities.

9. The setback of the wireless communication facility from the property line shall not be less than forty (40) feet.

APPENDIX 7
ADULT USES

ADULT USES

ARTICLE ____. TO SEE IF THE TOWN WILL VOTE TO AMEND THE ZONING BY-LAW BY PROVIDING FOR REGULATIONS GOVERNING ADULT USES AS FOLLOWS:

Item 1. In Section 11, add the following new definitions, alphabetically situated:

Adult Bookstore: An establishment having as a substantial or significant portion of its stock in trade, books, magazines, and other matter which are distinguished or characterized by their emphasis depicting, describing, or relating to sexual conduct or sexual excitement as defined in G.L. c. 272, s. 31.

Adult Cabaret: A nightclub, bar, restaurant, tavern, dance hall, or similar commercial establishment which regularly features persons or entertainers who appear in a state of nudity, or live performances which are distinguished or characterized by nudity, sexual conduct or sexual excitement as defined in G.L. c. 272, s. 31.

Adult Motion Picture Theater: An enclosed building or any portion thereof used for presenting material (motion picture films, video cassettes, cable television, slides or any other such visual media) distinguished by an emphasis on matter depicting, describing, or relating to sexual conduct or sexual excitement as defined in G.L c. 272, s. 31.

Adult Paraphernalia Store: An establishment having as a substantial or significant portion of its stock devices, object, tools, or toys which are distinguished or characterized by their association with sexual activity, including sexual conduct or sexual excitement as defined in G.L. c. 272, s. 31.

Adult Video Store: An establishment having a substantial or significant portion of its stock in trade - for sale or rent - motion picture films, video cassettes, and similar audio/visual media, which are distinguished or characterized by their emphasis depicting, describing, or relating to sexual conduct or sexual excitement as defined in G.L c. 272, s. 31.

Adult Use: Adult Bookstores, Adult Cabarets, Adult Motion Picture Theaters, Adult Paraphernalia Stores, and Adult Video Stores as defined in this bylaw.

Item 2. Add the following new Section 8.8:

8.8 Adult Uses. The following regulations shall apply to adult uses as defined herein.

8.8.1 Separation Distances

Adult uses may be permitted only when located outside the area circumscribed by a circle which has a radius consisting of the following distances from specified uses or zoning district boundaries:

a. One Thousand feet (1000') from the district boundary line of any residence zone;

b. One Thousand feet (1000') from any other adult use as defined herein;

c. Five Hundred feet (500') from any establishment licensed under G.L c. 138, s. 12.

8.8.2 Measurement of Radius

The radius distance shall be measured by following a straight line from the nearest point of the property parcel upon which the proposed adult use is to be located, to the nearest point of the parcel of property or the zoning district boundary line from which the proposed adult use is to be separated. In the case of the distance between adult uses (Section 8.8.1.b.) and between an adult use and an establishment licensed under G.L c. 138, s. 12 (section 8.8.1.c.) such distances shall be measured between the closet points of the buildings in which such uses are located.

8.8.3 Maximum Useable Floor Area

With the exception of an adult cabaret or an adult motion picture theater, adult uses may not exceed two thousand five hundred (2,500) square feet of gross floor area.

8.8.4 Parking Requirements

The following parking requirement shall apply:

a. Parking for adult bookstores, adult paraphernalia stores, and adult video stores shall meet the requirements of Section 6.5 for retail stores.

b. Parking for adult cabarets and adult motion picture theaters shall meet the requirements of Section 6.5 for private clubs.

c. Parking shall be provided in the side or rear yard area only.

d. All parking areas shall be illuminated, and all lighting shall be contained on the property.

e. Parking areas shall be landscaped in conformance with the appropriate provisions of this Zoning By-law.

8.8.5 Screening and Buffers

A five (5) foot wide landscaped buffer shall be provided along the side and rear property lines of an adult use establishment consisting of evergreen shrubs or trees not less than five (5) feet in height at the time of planting, or solid fence not less than five (5) feet in height.

8.8.6 Visual Access

All building openings, entries and windows shall be screened in such a manner as to prevent visual access to the interior of the establishment by the public.

8.8.7 Application for Special Permit

The Planning Board shall be the special permit granting authority for the purposes of this Section 8.8. An application for a special permit for an adult use establishment shall include the following information:

a. Name and address of the legal owner of the establishment;

b. Name and address of all persons having lawful equity or security interest in the establishment;

c. Name and address of the manager;

d. Number of employees;

e. Proposed provisions for security within and without the establishment;

f. The physical layout of the interior of the establishment.

8.8.8 Prohibition

No adult use special permit shall be issued to any person convicted of violating the provisions of G.L c. 119, s. 63 or G.L c. 272, s. 28.

8.8.9 Public Hearing

An adult use special permit shall only be issued following a public hearing held within sixty-five (65) days after the filing of an application with the special permit granting authority, a copy of which shall forthwith be given to the Town Clerk by the applicant.

8.8.10 Lapse

Any adult use special permit issued under this bylaw shall lapse within one (1) year, not including such time required to pursue or await the determination of an appeal from the grant thereof, if substantial use thereof has not sooner commenced except for good cause or, in the case of a permit for construction, if construction has not begun by such date except for good cause.

8.8.11 Severability

Any provision of this Section 8.8, or portion thereof, declared invalid shall not affect the validity or application of the remainder of said section or this Zoning By-Law.

Item 3. In Section 4, add the following new entry to the Table of Principal Uses, before the entry "Automotive Related Garage":

	R	LB	GB	MB	LI	FH	WS	RE	SW	OS	CP	MU
Adult Use	N	N	N	N	SP	N	N	N	N	N	N	SP

OR WHAT IT WILL DO IN RELATION THERETO.

APPENDIX 8
HOME OCCUPATIONS

3.06 HOME OCCUPATIONS

A Home Occupations As of Right. Businesses or professions incidental to and customarily associated with the principal residential use of premises may be engaged in as an accessory use by a resident of that dwelling; provided, however, that all of the following conditions shall be satisfied:

1. The occupation or profession shall be carried on wholly within the principal building or within a building or other structure accessory thereto which has been in existence at least five (5) years, without extension thereof.

2. Not more than thirty (30) percent of the combined floor area of the residence and any qualified accessory structures shall be used in the home occupation.

3. No person not a member of the household shall be employed on the premises in the home occupation.

4. The home occupation shall not serve clients, customers, pupils, salespersons, or the like on the premises.

5. There shall be no sign, exterior display, no exterior storage of materials, and no other exterior indication of the home occupation, or other variation from the residential character of the premises.

6. No disturbance, as defined in Section 3410, shall be caused, nor shall the home occupation use or store hazardous materials in quantities greater than associated with normal household use.

7. Traffic generated shall not exceed volumes normally expected in a residential neighborhood.

B. Home Occupations by Special Permit. Businesses or professions incidental to and customarily associated with the principal residential use of premises may be engaged in as an accessory use by a resident of that dwelling upon the issuance of a special permit by the Board of Selectmen; provided, however, that all of the following conditions shall be satisfied:

1. All of the requirements of Section A.1, A.2, and A.7.

2. Not more than one (1) person not a member of the household shall be employed on the premises in the home occupation.

3. An unlighted sign of not more than three (3) square feet in area may be permitted. The visibility of exterior storage of materials and other exterior indications of the home occupation, or other variation from the residential character of the premises, shall be minimized through screening and other appropriate devices.

4. Parking generated by the home occupation shall be accommodated off-street, other than in a required front yard, and shall not occupy more than 35% of lot area.

5. No disturbance shall be caused. The use or storage of hazardous materials in quantities greater than associated with normal household use shall be subject to design requirements to protect against discharge to the environment.

APPENDIX 9
STREAM AND LAKE PROTECTION

6.07 Stream and Lake Protection District

A. Purpose. This overlay district is established to ensure that lands near flowing streams and standing open water bodies shall not be used in such a manner as to endanger the health or safety of Douglas residents.

B. Applicability. The following areas shall be included in the Stream and Lake Protection District:

1. Land lying within a horizontal distance of two hundred (200) feet on each side of the bank and/or edge of each and every flowing stream in the Town of Douglas, as shown on the Douglas section of the base map used in the Worcester County Soil Survey, including both streams shown as solid lines and those shown as broken lines on this map. Said map issued by the Soil Conservation Service of the United States Department of Agriculture in [date] is hereby appended to and made a part of this by-law.

2. All land that lies within a horizontal distance of two hundred (200) feet from the normal highwater line of all standing open bodies of water in the town, except dug ponds of less than one acre in water surface.

C. Restrictions. The Stream and Lake Protection District shall be considered an overlay district. Land lying within a Stream and Lake Protection District may be used for any purpose otherwise permitted in the underlying zoning district, with the following exceptions:

1. No septic tank or septic tank leach field or other component of an individual astewater disposal system shall be constructed within the district;

2. No dumping, filling, dredging, excavation, transfer or removal of any material which will alter the natural flood water storage capacity of the land, interfere with the natural flow of the water over the land, or increase stream bank erosion shall be permitted except by a written order of conditions from the Douglas Conservation Commission;

3. No building or structure shall be erected in this district without the issuance of a special permit from the Board of Appeals.

D. Special Permits. The Board of Appeals may grant a special permit for a building or structure provided that all of the following conditions have been satisfied, in lieu of those set forth in Section 7.11.

1. The building or structure is not intended for and shall not be used for human residence;

2. The construction of the building or structure shall not substantially interfere with the natural flow of water or constitute a danger to the public safety or health.

APPENDIX 10
DEFINITIONS

1. ACCESSORY USE

Accessory Use shall mean a use customarily incidental to and located on the same lot with the principal use. A use is accessory only where a principal use exists on the same lot.

2. FRONTAGE

Frontage shall mean the boundary of a lot coinciding with the street line, being an unbroken distance along a way currently maintained by the town, county, or state, or along ways shown on the Definitive Plans of approved subdivisions, through which actual access to the potential building site shall be required. A street may provide frontage only upon a determination by the Planning Board that it provides adequate access for fire, police, and emergency vehicles. Lot frontage shall be measured continuously along one street line between side lot lines, or, in the case of corner lots, between one side lot line and the mid-point of the corner. Lots with interrupted or discontinuous frontage must demonstrate that the required length along the street may be obtained from one (1) continuous frontage section, without any totalling of discontinuous frontage sections.

3. NONCONFORMING USE OR STRUCTURE

Nonconforming Uses or Structures shall mean any structure or use of land lawfully existing at the effective date of this by-law or subsequent amendment which does not conform to one or provisions of the by-law.

4. FAMILY

Family shall mean a number of individuals living and cooking together on the premises as a single unit.

OR

Family shall mean an individual or two or more persons related by genetics, adoption or marriage, or a group of # or fewer persons who are not so related.

APPENDIX 11
TOWNHOUSE BY-LAW

3.07 TOWNHOUSE DEVELOPMENT

A. Purpose. The purpose of this Section 3.07 Townhouse Development, is to encourage the preservation of open land for its scenic beauty and to enhance agricultural, open space, forestry, and recreational use; to preserve historical and archeological resources; to protect the natural environment; to protect the value of real property; to promote more sensitive siting of buildings and better overall site planning; to perpetuate the appearance of Douglas' traditional New England landscape; to allow landowners a reasonable return on their investment; to facilitate the construction and maintenance of streets, utilities, and public services in a more economical and efficient manner; and to promote the development of varied housing opportunities, including housing affordable to low and moderate income families.

B. Applicability. Any parcel of larger than ten acres and located entirely within the Residential Commercial Two or Village Residential District, may proceed under this Section 3.07, Townhouse Development, pursuant to the issuance of a special permit by the Planning Board. Such special permits shall be acted upon in accordance with the following provisions.

C. Procedures. Applicants for Town House Development shall file with the Planning Board six (6) copies of a Development Plan conforming to the requirements for a preliminary subdivision plan under the Subdivision Regulations of the Planning Board. Such plan shall also indicate:

1. existing and proposed proposed topography;

2. wetland areas; where wetland delineation is in doubt or dispute, the Planning Board shall require the applicant to submit to the Conservation Commission a request for determination of applicability pursuant to G.L. c. 131, s.40 and 310 CMR 10.05(3), the Wetalnds Protection Act.

3. unless the development is to be sewered, the results of deep soil test pits and percolation tests. The Planning Board shall refer data on proposed wastewater disposal to the Board of Health for their review and recommendation.

4. specifications demonstrating that access roads and drainage facilities shall meet the functional requirements of the Planning Board's rules and regulations.

5. any additional information necessary to make the determinations and assessments cited herein.

D. Number of Dwelling Units. The maximum number of bedrooms allowed in a Townhouse Development shall be equal to two and one half (2.5) times the number of lots which could reasonably be expected to be developed upon that parcel under a conventional plan in full conformance with all zoning, subdivision regulations, health regulations, wetlands regulations and other applicable requirements. The proponent shall have the burden of proof with regard to the design and engineering specifications for such conventional plan.

1. No individual structure within a Townhouse Development shall contain more than four (4) dwelling units.

2. Dwelling units reserved for occupancy by persons or families of low or moderate income, or for occupancy by a single individual, shall not be segregrated from market rate or larger dwelling units in the Townhouse Development.

E. Open Space Requirements. A minimum of 20% of the parcel shown on the Development Plan shall be contiguous open space, excluding required yards and buffer areas. Such open space may be separated by the road(s) constructed within the Townhouse Development. Not more than 25% of such open space shall be wetlands, as defined pursuant to G.L. c. 131, s. 40.

1. The required open space shall be used for conservation, historic preservation and education, outdoor education, recreation, park purposes, agriculture, horticulture, forestry, or for a combination of these uses, and shall be served by suitable access for such purposes.

2. The required open space shall remain unbuilt upon, provided that ten percent (10%) of such open space may be paved or built upon for structures accessory to the dedicated use or uses of such open space, pedestrian walks, and bikepaths, and agriculture.

3. Underground utilities to serve the Townhouse Development site may be located within the required open space.

4. The required open space shall, at the owner's election, be conveyed to

a. the Town of Douglas or its Conservation Commission;

b. a nonprofit organization, the principal purpose of which is the conservation of open space and any of the purposes for such open space set forth above;

c. a corporation or trust owned jointly or in common by the owners of units within the

Townhouse Development. If such corporation or trust is utilized, ownership thereof shall pass with conveyance of the units in perpetuity. Maintenance of the open space and facilities shall be permanently guaranteed by such corporation or trust which shall provide for mandatory assessments for maintenance expenses to each unit. Each such trust or corporation shall be deemed to have assented to allow the Town of Douglas to perform maintenance of the open space and facilities, if the trust or corporation fails to provide adequate maintenance, and shall grant the town an easement for this purpose. In such event, the town shall first provide fourteen (14) days written notice to the trust or corporation as to the inadequate maintenance, and, if the trust or corporation fails to complete such maintenance, the town may perform it. The owner of each unit shall be deemed to have assented to the town filing a lien against each lot in the development for the full cost of such maintenance, which liens shall be released upon payment to the town of same. Each individual deed, and the deed or trust or articles of incorporation, shall include provisions designed to effect these provisions. Documents creating such trust or corporation shall be submitted to the Planning Board for approval, and shall thereafter be recorded in the Registry of Deeds.

5. Any proposed open space, unless conveyed to the Town or its Conservation Commission, shall be subject to a recorded restriction enforceable by the Town, providing that such land shall be perpetually kept in an open state, that it shall be preserved for exclusively agricultural, horticultural, educational or recreational purposes, and that it shall be maintained in a manner which will ensure its suitability for its intended purposes.

F. Buffer Areas. All dwellings and structures shall be located a minimum of 50 feet from adjacent properties, and 100 feet from adjacent surface waters or wetlands. Buffer areas shall be retained in their natural vegetative state to the maximum extent feasible, except where adjacent to agriculturally used property.

G. Decision. The Planning Board may approve, approve with conditions, or deny an application for a Townhosue Development, after assessing whether the Townhosue Development better promotes the objectives of this section, than would orthodox development.

H. Relation to Other Requirements. The submittals and permits of this section shall be in addition to any other requirements of the Subdivision Control Law or any other provisions of this Zoning By-Law.

APPENDIX 12
MULTIPLE PRINCIPAL STRUCTURES

6.05 A. Multiple Principal Structures. Except in the Residential Districts, more than one principal nonresidential structure may be erected on a lot, pursuant to a special permit issued by the Planning Board in accordance with Section 7.11 herein and the following conditions:

1. No principal building shall be located in relation to another principal building on the same lot, or on an adjacent lot, so as to cause danger from fire;

2. All principal buildings on the lot shall be served by access ways suitable for fire, police, and emergency vehicles.

EARTH REMOVAL

§ 134-1. Approval required.
§ 134-2. Procedures and standards to be followed.
§ 134-3. Permits.
§ 134-4. Application; public hearing.
§ 134-5. Lanitations on permits.
§ 134-6. Permit issuance.
§ 134-7. Conditions on exercise of permit.
§ 134-8. Rules and regulations.
§ 134-9. Surety and performance bond.
§ 134-9.1. Permit subject to Town Meeting approval; exceptions.
§ 134-10. Exemptions.
§ 134-11. Special permits.
§ 134-12. Earth Removal Advisory Committee.
§ 134-13. Violations and penalties.
§ 134-14. When effective.
§ 134-15. Construal of provisions.
§ 134-16. Severability.

[HISTORY: Adopted by the Town of Groton 3-18-1963 Annual Town Meeting, Art. 24; amended in its entirety 11-19-1984 Special Town Meeting, Art. 20. Subsequent amendments noted where appliable.]

§134-1. Approval required. [Amended 1-11-1988 STM, Art 15]

The removal of soil, loam, sand, gravel or other earth materials from land located within the Residential-Agricultural, Residential Business, Conservancy or Official Open-Space Districts, as defined in the Zoning Bylaw and shown on the Zoning Map of the Town of Groton, as from time to time amended, is expressly prohibited subject to the following exceptions:

A. Removals otherwise authorized under provisions of law.

B. Removals conducted following approval by the Board of Selectmen for the use of the town and all of the earth materials removed are so used.

C. Removals conducted on land owned by the town but not for town use, subject to the provisions of § 134-2.

§134-2. Procedures and standards to be followed. [Amended 1-11-1988 STM, Art 151]

If the removal of soil, loam, sand or gravel or other earth removal from land located within the Residential-Agricultural, Residential Business, Conservancy or Official Open-Space District, as defined in the Zoning Bylaw and shown on the Zoning Map of the Town of Groton, as from time to time amended,2 is authorized or provided by law, such removal shall be subject to the standards, procedures and requirements,of §§ 134-4 through 134-9 hereof; provided, however, that provisions of those sections shall not apply to removals conducted under § 134-IB or 134-3A.

§ 134-3. Permits.

A. The removal of soil, loam, sand, gravel or other earth materials from land located within the Business or Manufacturing-Industrial District, as defined in the Zoning Bylaw and shown on the Zoning Map of the Town of Groton, as from time to time amended,3 may be allowed by the issuance of a permit by the Board of Selectmen, subject, however, to the standards, procedures and requirements set forth in §§ 134-4 through 134-9 hereof.

B. Existing operations. Permits for the removal of soil, loam, sand, gravel or other earth material from any parcel of land not in public use by operations in existence at the time of adoption of the original Earth

Removal Bylaw of the Town of Groton by vote of the town on March 18, 1963, and carried on continuously and legally under said bylaw, as amended from time to time, shall be issued subject to and in compliance with the following conditions:

(1) That no area shall be excavated so as to allow the accumulation of freestanding water.

(2) That no final finished slope shall be greater than a gradient of thirty degrees (30').

(3) That such earth-removal shall be governed by earth removal regulations as may be promulgated from time to time by the Board of Selectmen.

§134-4. Application; public hearing.

A. Applications and fees. Written application must be made to the Board of Selectmen upon a form approved by it and the payment of a reasonable filing fee established by it to be adequate to defray the costs to the town of such application, its administration, review and evaluation and the giving of notice of the public hearing. Such application shall include but not be limited to a removal plan for the entire area of proposed removal, including possible future applications, and a restoration plan approved by the Planning Board regarding appropriateness of future land use and compatibility of the restoration plan with that future use.

B. Public hearing. The Board of Selectmen shall fix a reasonable time for a hearing upon such application and shall cause the notice of the time and place thereof and of the subject matter, sufficient for identification, to be published in a newspaper of general circulation in the town once in each of two (2) successive weeks, the first publication to be not less than fourteen (14) days before the day of the hearing, and shall also send notice thereof by registered or certified mail, at least ten (10) days before the day of the hearing, to the petitioner, to the owners of all land abutting the parcel as to which such permit is sought, including land across any public or private street or way or any body of water or watercourse from such parcel, as they appear on the most recent tax list, to the Earth Removal Advisory Committee, to the Planning Board, to the Conservation Commission and to all other persons and agencies deemed by the Board to be affected thereby. At the hearing, any party, whether entitled to notice thereof or not, may appear in person or by agent or by attorney.

§134-5. Limitations on permits.

No permit may allow removal from a parcel of more than five (5) acres in size; or be in force for a period in excess of two (2) years, but this provision shall not be deemed to prohibit extensions of time, upon written application and after public hearing, notice of which has been given in accordance with the foregoing provisions, provided that no such extension shall be for a period in excess of two (2) years; or be modified, except upon written application and after a public hearing, in accordance with § 134-4 above. The concurring vote of all members of the Board of Selectmen shall be necessary for the issuance of a permit

§134-6. Permit issuance.

The Board of Selectmen may issue a permit for the removal of earth materials from those areas of the town hereinbefore authorized, provided that the Board makes the following findings:

A. That such removal will not adversely affect the quality of ground- or surface water or the natural or engineered drainage in the town.

B. That such removal will not create unreasonable or excessive noise, dust, fumes, pollution or other effects which are detrimental to the public health, safety and welfare or to the neighborhood.

C. That such removal operations will be conducted so as to minimize the area devoid of vegetation at all times and that such removal will not create an area with insufficient vegetative cover to prevent erosion of or further damage to the land.

D. That such removal will be consistent with the subsequent use of the land as specified in the application and as approved by the Planning Board.

§134-7. Conditions on exercise of permit

As part of and as set forth in any such permit, the Board of Selectmen shall impose such reasonable restrictions and conditions on the exercise of the permit as it deems to be in the public interest, including but not limited to:

A. The extent of the time of the excavation.

B. The extent of the area and depth of the excavation.

C. The hours of operation.

D. The distance of the excavation from street and lot lines.

E. The type and location of temporary structures.

F. The reestablishment of ground levels and graded.

G. The provisions for temporary and permanent drainage.

H. The steepness of slopes excavated.

I. The disposition of boulders, tree stumps and other debris.

J. The routes for transporting the material through the town.

K. The replacement of loam over the area of removal.

L. The planting of the area with suitable cover.

M. The proper screening of the area from public ways.

N. The handling, storage and/or disposal of hazardous or toxic substances on the premises.

0. The inspection of the premises at any time by the board or its representatives.

§134-8. Rules and regulations.

The Board of Selectmen shall adopt rules and regulations not inconsistent with the provisions of this chapter for conducting its business and otherwise carrying out the purposes of this chapter.

§ 134-9. Surety and performance bond.

The Board of Selectmen shall require a surety and performance bond, cash or other adequate security to insure compliance with the terms, conditions, limitations and safeguards of such permit and such regulations and to indemnify the town for any harm to any public well, road, wetland or other resource caused by such removal, the removal operations, the equipment used on the premises or by ancillary activities.

§ 134-9-1. Permit subject to Town Meeting approval; exceptions. [Added 1-11-1988 STM, Art. 151

No permit for the removal of soil, loam, sand or gravel or other earth removal shall become effective until its issuance has been approved by a two-thirds vote at an Annual or Special Town Meeting. This provision shall not apply to removals conducted under § 134-1B or 134-3A or to extensions of time or renewals of existing permits under the provisions of § 134-5.

§ 134-10. Exemptions.

This chapter shall not apply to the removal of soil, loam, sand, gravel or other earth material incidental to and reasonably required in connection with the construction of any building and appurtenant walk or driveway for which a permit has been granted by the Board of Selectmen or other licensing body or the construction of a street that has been approved by the Planning Board, provided that the quantity of material removed does not exceed that displaced by the portion of building, walk, driveway, street or similar appurtenance below finished grade, or to removal in the course of customary use of the land for a farm, garden or nursery. The above exemptions do not cover removal of earth materials from the premises involving topographical changes or soil-stripping or loam-stripping activities, nor shall the tentative or final approval of a subdivision plan be construed as authorizing the removal of earth material from the premises, even though in connection with the construction of streets as shown on the plan.

§ 134-11. Special permits.

Special permits may be issued by the Selectmen without a public hearing covering removals of a maximum of fifty (50) cubic yards of earth material in any twelve-month period or removal of earth material necessary in conjunction with the reclamation of a silted pond or waterway, as authorized by the Conservation Commission,

subject to any further conditions or limitations the Selectmen may impose.

§ 134-12. Earth Removal Advisory Committee.

The Earth Removal Advisory Committee (hereinafter referred to as the "Committee") shall be constituted and shall have the following powers and duties:

A. The Committee shall consist of five (5) members, all residents of the town. One (1) member shall be chosen annually by and from the Planning Board to serve a one-year term. One (1) member shall be chosen by and from the Conservation Commission to serve a one-year term. Three (3) members shall be appointed initially for one (1), two (2) and three (3) years, respectively, and as their terms expire their successors shall be appointed for terms of three (3) years. The terms of the members appointed by the Selectmen shall begin and end at the Annual Town Meeting nearest to the date of their appointment and the third anniversary thereof, respectively. Any member may be appointed to succeed himself.

B. The Committee shall file with the Board of Selectmen a written report, with recommendations, at or within twenty one (21) days of each hearing held pursuant to the provisions of this chapter, and no such permit may be granted until such report has been so filed or until such Committee has allowed twenty-one (21) days to elapse after such hearing without filing a report.

C. The Committee shall from time to time file such reports relating to earth removal as the Selectmen may require or as the Committee shall deem necessary or desirable.

§134-13. Violations and penalties.

The Board may revoke or suspend at any time any permit issued hereunder for violation of any provisions or conditions of this chapter. Penalties for violation of any provision or conditions of this chapter shall be provided under MGL C. 40, § 21, Clause 17.

§ 134-14. When effective.

This chapter shall take effect upon its approval by the Attorney General, as provided by law.

§ 134-15. Construal of provisions.

Nothing in this chapter shall be construed as repealing or modifying any existing town bylaw, rule or regulation but shall be in addition thereto.

§135-16. Severability.

The invalidity of any section or provision of this chapter shall not invalidate any other section or provision thereof

Chapter 239

EARTH REMOVAL

§239-1. Authority to adopt regulations.
§239-2. Purpose.
§239-3. Definitions.
§239-4. Scope.
§239-5. Permit applications.
§239-6. Review of application.
§239-7. Enforcement.
§239-8. Terms, conditions and restrictions on permits.
§239-9. Inspections.
§239-10. Compliance with permits required.
§239-11. Amendment of regulations.
§239-12. Certificate of exemption.

[HISTORY:Adopted by the Board of Selectmen of the Town of Groton 3-18-1963, as amended through 9-27-1993. Subsequent amendments noted where applicable.]

§ 239-1. Authority to adopt regulations.

These regulations are adopted by the Board of Selectmen of the town under the power granted to it by the Earth Removal Bylaw (Chapter 134 of the Code of the town) adopted by the Town Meeting in 1963 and amended in 1967, 1968 and 1984.

These regulations are adopted for the purpose of.

A. Establishing the form of the written application which must be submitted to the Board of Selectmen by persons seeking earth removal permits, earth removal special permits or the extension of permits.

B. Describing the conditions, limitations and safeguards relating to earth removal activities which have been established by the Board of Selectmen as a matter of policy, together with such further conditions, limitations and safeguards which said Board may impose from time to time when granting earth removal permits.

C. Establishing procedures which will be followed by the Board of Selectmen in giving notice of proceedings relating to applications for earth removal permits, on holding hearings on such applications, in entering into a binding agreement with the applicant when permission for a specific earth removal activity is granted and for enforcing the terms of said agreement and of the Earth Removal Bylaw.

§ 239-3. Definitions.

The following terms are defined as they are used in the Earth Removal Bylaw and in these regulations:

EARTH MATERIAL - Soil, loam, sand, gravel or other earth material.

EARTH MATERIAL REMOVAL ACTIVITY - The process by which earth materials are removed from their natural location, stored or stockpiled, loaded upon means of transportation and conveyed from the earth materials site, including, without limitation, any one (1) or more of the following: stripping, digging, excavating, washing,stockpiling, loading or unloading.

EARTH MATERIALS SITE - The location which is described in an earth removal permit or earth removal permit application at which earth materials occur in their natural state.

EARTH REMOVAL PERMIT - Any permit issued under the Earth Removal Bylaw by the Board of Selectmen at any time before or after the adoption of these regulations.

EARTH REMOVAL PERMIT APPLICATION - The information required of or submitted by any person seeking an earth removal permit. An application under the bylaws submitted after the adoption of these regulations shall not be considered to be an application or as having been filed unless it is submitted on the form specified in § 239-5 of these regulations and is accompanied by all of the supplementary data and documents required by these regulations and by the form of application.

LOT - Any parcel of land referred to on the most recent tax list of the town prior to the filing of the earth removal application shall be deemed to be a "lot" as that term is used with reference to such application. The bounds of such "lot" shall be as shown on the Assessors' plans upon which such tax list is based.

LOTS ABUTTING - Includes:

A. In the case of a lot having frontage on a public or private way, the lot or lots directly opposite on any such public or private way and those lots abutting said lot or lots within three hundred (300) feet of the property line of the site shown on the application as they appear on the most recent applicable tax list, notwithstanding that said lot or lots are located in another city or town.

B. In the case of a lot having frontage on a body of water such as a lake or pond, any other lot or lots having frontage on said body of water which are not owned directly or indirectly by the applicant and which are within, two thousand (2,000) feet of said lot.

C. In the case of a lot having frontage on a watercourse such as a stream or river, the lot or lots directly opposite on any such stream or river and those lots abutting said lot or lots within three hundred (300) feet of the property line of the site shown on the application as they appear on the most recent applicable tax list, notwithstanding that said lot or lots are located in another city or town.

STREET LINE - The limits of any public way as shown on the layout thereof as adopted by the Board of Selectmen, by the County Commissioners or other public agency responsible for determining the location of such way or, in the case of a way shown on a subdivision plan approved under the Subdivision Control Law, the limits of such way as shown on said plan.

§ 239-4. Scope.

These regulations apply to all earth removal activities within the Town of Groton except where modified in the case of sites clearly falling under the category of "existing operations" §134-3B or specifically exempt by bylaw (see § 134-10) or by statute.

§ 239-5. Permit applications.

A. Applications for earth removal permits shall be submitted on the form attached to these regulations as

Exhibit A.[1]

B. Each application may be accompanied by photographs of the site and of the neighborhood.

C. Each application shall be accompanied by separate plans as follows:

(1) A site plan, which shall show:

(a) Lot lines and ownership of the earth materials site, with notation that perimeter within five hundred(500) feet of the excavation is to be marked on the site with blue markers.

(b) The perimeter of the existing excavation, if any, as of the date of the application.

(c) The location of walls, fences, test pits, test borings, observation wells with logs, structures and buildings, streams and ponds and vegetated wetlands on the land, property bounds, access roads and adjacent public and private ways, if any.

(d) The names of owners of lots abutting, as defined in § 239-3 above.

(e) The location of dwellings and wells, if any, on abutting land and lying within two hundred (200) feet of the property line or five hundred (500) feet of the removal site.

(f) The location of the perimeter of the proposed excavation, to be marked on the site with red markers.

(2) A removal site plan, which shall show:

(a) Topography by five-foot contours at the area to be excavated or altered and to at least two hundred(200) feet beyond the perimeter of that area.

(b) Topography of existing excavation, if any.

(c) The location and dimensions of the area from which the removal is to take place.

(d) The depth of removal within the area, shown by five foot contours, and final elevation.

(e) Proposed lateral support to all adjacent property.

(f) Routes for vehicular traffic, location of service roads and entrances and exits to highways.

(g) The location of water supply and sanitary sewerage, if any.

(h) Grading and structure or installations required for temporary and permanent drainage of the area.

(i) Existing natural features such as trees and other vegetation to be preserved.

(j) At least three (3) permanent bench marks with elevations marked thereon on Town of Groton datum.

(3) A restoration site plan, showing:

(a) Topography by five-foot contours of the area of removal as restored and to at least two hundred (200) feet beyond the perimeter of that area.

(b) The location and method to be used in providing permanent drainage and erosion and

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[1]Editor's Note: Exhibit B is on file in the office of the Board of Selectmen and may be examined there during regular office hours.

sediment control.

(c) Notations as to ground cover to be provided, including areas to be covered with topsoil to a depth of not less than four (4) inches and seeded or otherwise planted with trees or other vegetation.

(d) The location of any fences or other protective barriers or enclosures.

(e) The location of proposed lot lines, if any, as shown on a preliminary or definitive subdivision plan filed with the Planning Board of the Town of Groton.

(4) A locus plan, United States Geological Survey 7.5 minute series (topographic).

D. The following requirements shall be applicable to plans filed in compliance with Subsection C:

(1) Each plan, except the locus plan, shall be drawn to a scale of one (1) inch equals forty (40) feet and shall be drawn with the title designating the site location, the name of the person preparing the plan, the date prepared and the latest revision date and the name and seal of a registered land surveyor or registered professional engineer of the Commonwealth of Massachusetts.

(2) Seven (7) sets of plans shall be submitted, and the reproducible linen or master shall be retained by the applicant until a certificate of compliance has been issued, when it shall be filed with the Board of Selectmen.

(3) Plans shall show such other information reasonably necessary to indicate the complete physical characteristics of the site, including, without limitation, brooks, creeks, rivers, streams, ponds, lakes, wetlands, banks, flats, marshes, meadows or swamps bordering such area, whether or not such watercourse or body of water is itself located on the site; water table elevations at appropriate intervals; the location of the earth removal activity to be conducted; the location of any structures to be erected in connection with the earth removal activity; and all areas in which any fixed or mobile equipment used in the earth removal activity will be placed, stored or operated.

(4) Plans shall be supplemented by the applicant, without further request of the Board of Selectmen, in the event of any departure or deviation from conditions shown on the plans filed with the application, including, without limitation, changes in the topographical conditions discovered during removal of earth materials.

§239-6. Review of application.

A. An earth removal permit application will be considered to have been filed with the Board of Selectmen only when the following have been received:

(1) An application form fully completed.

(2) Seven (7) sets of plans, including plot plan of land, removal site plan, restoration site plan and locus plan.

(3) A list, including names and addresses, of all owners of all lots abutting (as that term is defined in these regulations) the parcel as to which the earth removal permit is sought.

(4) Application fee: a certified check or cash in the amount of five hundred dollars ($500.) to cover the cost of processing the application and for professional services, including but not limited to engineering fees, incurred by the town.

(a) In the event that a permit is issued, the application fee will stand as a credit to the fees charged for the material to be removed. [That fee is calculated at the rate of fifteen cents ($.15) per cubic yard.]

(b) In the event that a permit is not issued, that portion of the application fee remaining unspent shall be returned to the applicant.

(5) The applicant will be required to pay the cost of publication of the notices of the hearing plus the cost of mailing notices of the hearing by certified mail, return receipt requested, to each abutter shown on such list before a permit may be issued.

(6) Review by boards, commissions and committees.

(a) The following boards, commissions and committees are designated recipients of the four (4) copies of the completed application when filed:

[1] The Board of Selectmen.

[2] The Earth Removal Advisory Committee.

[3] The Planning Board.

[4] The Conservation Commission.

(b) At the time of the acceptance of the application for processing, the Selectmen shall give notice of the same to the Zoning Board of Appeals, the Water Department, the Highway Department, the Board of Assessors, the Police Department and the Board of Health.

(7) Proposed specifications describing, in detail, the location, quantity, nature and quality of all materials to be used in the work shown on the restoration site plan, including, without limitation, fill, loam, sod, vegetation, shrubs and trees.

(8) A consent, in writing, by the owner of the earth materials site shown on the earth removal permit application for members of the Board of Selectmen, the Earth Removal Advisory Committee, the Earth Removal Inspector or any other persons authorized by the Board of Selectmen to act for it, to enter the site and to make or have made, at the applicants expense, such tests and observations and record such data as they may deem necessary and which are clearly pertinent to the earth removal activity at any time during the duration of the permit.

B. At their next meeting after they have received a copy of the earth removal permit application, the boards listed in Subsection A(6)(a) shall each establish a date by which they will be prepared to submit a recommendation relative to said application to the Board of Selectmen, which date shall not be later than thirty (30) days after each such Board has received a copy of the earth removal permit application, and shall promptly inform the Board of Selectmen of that date.

C. The following procedure and timetable for processing earth removal applications shall apply:

(1) The application shall be submitted to the Selectmen's office, where it shall be date stamped.

(2) The Earth Removal Advisory Committee shall review the application and provide written certification to the Selectmen as to the completeness and adequacy of the application.

(3) The Board of Selectmen shall have ninety (90) days from the date of certified completeness to the day a written decision is rendered by the Selectmen to the applicant.

(a) If an application is not certified, it shall be returned to the applicant, with a written explanation of deficiencies, within thirty (30) days. The ninety-day time limit referred to above shall not begin to run until such application is resubmitted and certified as complete and adequate.

(b) If the application is certified, the Selectmen shall set a public hearing date at their next regularly scheduled meeting.

(4) The Board of Selectmen shall advertise the public hearing for two (2) successive weeks; the first publication date shall be at least fourteen (14) days before the day of the hearing. Public notice will also be given to abutters by certified mail at least ten (10) days before the public hearing date.

(5) The Selectmen shall announce their decision at a public, regularly scheduled or special meeting, and shall deliver the decision, in writing, to the applicant within ninety (90) days of the date the application was certified.

D. At the hearing on the earth removal permit application, the applicant shall be prepared to answer questions concerning the application and the proposed earth removal activity. The Board of Selectmen

will hear from the applicant and will make available the recommendations which it has received from the Boards and Committees listed in Subsection A(6)(a). The Board will hear from any persons to whom notice was required to be given by mail under the Earth Removal ByLaw and may hear from any other persons likely to be affected by the proposed earth removal.

E. The Board of Selectmen may require persons speaking at the hearing to make their statements under oath and may require the applicant to submit a written response to any recommendations, comments or questions presented at the hearing.

F. If the Board denies the permit, it shall provide a statement of its reasons for denial. If the Board grants the permit, it will do so in writing, following the form of contract appended to these regulations as Exhibit B, entitled "Earth Removal Agreement."[2] This agreement, to which the permit form is attached, will include such conditions, terms and restrictions as the Board of Selectmen deems necessary. These conditions, terms and restrictions may deal with but need not be limited to the matters set out in these regulations in § 239-8.

G. If the Board of Selectmen denies the application, the applicant may resubmit the application and accompanying plans, modified to conform to the reasons for denial. Such resubmission, if made within thirty (30) days after the date of the written statement of reasons for denial, will be subject to procedures applicable to an original submission, except that the recommendations of the boards referred to in Subsection A(1)(a) shall be made to the Board of Selectmen within thirty (30) days of resubmission, and the hearing by the Board of Selectmen will be within thirty (30) days of the date of resubmission. If no such resubmission is made until after thirty (30) days, it will be deemed to be a new application.

H. The holder of a permit who wishes to have the terms, conditions or restrictions of an earth removal permit modified or wishes to alter the removal site plan or restoration site plan or seeks an extension of the duration of the permit shall file a modification application which, unless the Board of Selectmen otherwise votes, will be treated as an application for a new permit and will be subject to the procedures set out in § 239-6. In any event, a public hearing in accordance with the Earth Removal Bylaw will be held on every request for an extension of the duration of the permit.

239-7. Enforcement.

A. Enforcement of the terms and conditions of earth removal activities shall be the primary responsibility of the Earth Removal Inspector in accordance with the provisions of these regulations and the Earth Removal Bylaw, and the Earth Removal Inspector shall have the authority, upon becoming aware of a violation, to order the immediate suspension of operations pending final disposition of the matter.

B. Notwithstanding any other terms or provisions of these regulations to the contrary, violations of the Earth Removal Bylaw may be enforced by all available means consistent with applicable provisions of law, including, without limitation thereof, resort to injunctive relief, assessment of damages and imposition of fines and penalties.

§ 239-8. Terms, conditions and restrictions on permits.

A. The Board of Selectmen, at the time of issuing an earth removal permit, will impose such special terms, conditions and restrictions as it may deem necessary to accomplish the purposes of the Earth Removal Bylaw in the particular circumstances. In addition to the special terms, conditions and restrictions, the permit will be considered to be issued subject to the terms, conditions and restrictions set out in Subsection C of these regulations, unless specifically waived by the Board with the reasons for the waiver action clearly stated in writing. In the event of changes in these regulations after the date of an earth removal permit and before a certificate of compliance with such permit has been issued, the terms of the regulations as changed will apply to any renewal of such permit.

B. Fees.

(1) The Board of Selectmen, with the issuance of these regulations as amended, hereby establishes a schedule of fees payable by the applicant as a condition of the issuance of an earth removal permit and at the time of the issuance of said permit. As of the date of the adoption of these

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[2]Editor's Note: Exhibit B is on file in the office of the Board of Selectmen and may be examined there during regular office hours.

regulations as amended, the fee is to be calculated at the rate of fifteen cents ($0.15) per cubic yard of material to be removed.

(2) This sum is to be applied to the estimated volume of material as calculated by a registered land surveyor or a registered professional engineer employed by the applicant. The Selectmen, at their discretion, may require and obtain independent professional confirmation of this volume estimate.

(3) The proceeds of all fees so charged are designated to cover the salary of the Earth Removal Inspector, together with such engineering and other professional services which the town may require to assure the proper enforcement of the provisions of the agreement and all other costs to the town arising out of the granting of the earth removal permit.

C. The following terms and restrictions will apply to all earth removal permits issued hereafter by the Board of Selectmen unless otherwise stated in the permit:

(1) Earth removal operations shall be conducted only between the hours of 7:00 a.m. and 5:00 p.m., Monday through Friday, and loaded trucks will be permitted to depart from the site only within such hours as the Board of Selectmen may from time to time prescribe in the interests of public safety.

(2) All trucks and trailers will be suitably covered to prevent their contents from falling upon streets or highways. All stones, sand, gravel or other material resulting from the removal operation shall be removed from the traveled part of the highway at the close of each day's operation or sooner if a dangerous condition arises during the day's operation.

(3) All equipment and all temporary structures to be erected or brought upon the premises for the shelter of working personnel or equipment shall be removed from the site when no longer required for earth removal activities before the certificate of compliance shall be issued.

(4) No excavation proceeding under the provisions of these regulations shall deviate from the provisions of the removal site plan or shall be closer than three hundred (300) feet to an existing swelling or well or closer than two hundred (200) feet to an existing public way or closer than two hundred (200) feet to an existing side or rear lot line. Notwithstanding the foregoing, however, in special circumstances when, in the opinion of the Board of Selectmen, natural or topographical features provide adequate screening of the removal site, the Board may reduce the distance of the excavation from a side or rear lot line but in no event to a distance of less than one hundred (100) feet. In no event shall the excavation go below a point of eight (8) feet above the level of the established water table. Exceptions to this requirement may be made by the Board when the creation of a pond is contemplated in conjunction with the earth removal activity and when necessary permits have been secured from the Conservation Commission of the Town of Groton and from such other county and state and federal agencies as have jurisdiction.

(5) All excavation will be conducted, maintained and secured so as not to endanger the stability or utility of contiguous property.

(6) All boundaries are to be marked in accordance with the removal site plan, indicating the permitted areas of operation. @t lines within five hundred (500) feet of the excavation site are to be marked at appropriate intervals with blue tapes or ribbon or painted stakes. The area to be excavated is to be marked at appropriate intervals with red tapes, ribbon or painted stakes. Setback markers, which will not be disturbed and which will be visible during the removal activity, shall be installed at specified locations. As promptly as earth removal activities are completed on any portion of the site and, in any event, no later than the termination date of the permit, grades and elevations shall be established in accordance with the restoration site plan.

(7) Temporary drainage shall be provided to avoid the creation of any standing water of the site and shall be in the manner and in the locations shown on the removal site plan.

(8) Permanent drainage shall be provided in accordance with good engineering practices prior to the expiration date of the permit and shall conform to the provisions of the restoration site plan. In no event shall the lowest grade of final elevation be below eight (8) feet above the high groundwater level as determined by reliable engineering data.

(9) No permanent slope will be established greater than thirty degrees (30').

(10) Any work face or bank which slopes more than thirty degrees (30') downward will be adequately fenced at the top as may be required from time to time by the Earth Removal Inspector.

(11) All machinery and equipment, while not in operation, shall be properly secured so as not to represent a danger to the public.

(12) At the commencement of the earth removal operations, the applicant shall see to it that the first one hundred(100) feet of driveway or accessway leading from the public way to the removal site is paved with a bituminous surface of adequate dimensions and specifications so as to minimize the hazard to the public way from the site by transporting vehicles; further, during removal operations, the applicant shall make every reasonable effort to keep dust, noise, fumes, smoke, vibration or other noxious conditions from affecting abutting land and dwellings.

(13) Temporary off-street parking for motor vehicles shall be provided during the life of the permit.

(14) Any access to excavated areas or areas in the process of excavation shall be blocked off with adequate barriers and posted with 'No Trespassing' signs during all periods when removal operations are shut down.

(15) Under no circumstances are explosives to be used in connection with the within permit. Any use of explosives must be in strict compliance with state statutes and by separate permit from appropriate authority.

(16) The within permit shall be personal to the applicant and may not be sold, assigned or otherwise transferred, mortgaged, pledged or encumbered without the approval of the Board of Selectmen upon such terms and conditions as it may deem necessary to assure compliance with the terms of the permit, the bylaw and these regulations.

(17) Trees, stumps, boulders and other debris resulting from the earth removal operation will be removed, buried or otherwise destroyed as required by the Earth Removal Inspector. No open burning will be permitted except by permission of the Fire Chief.

(18) Any backfill material utilized in connection with the restoration site plan will be clean and free of rubbish, refuse or other similar matter. No dumping or disposal of refuse will be allowed on the site at any time.

(19) The site work and specifications noted on the restoration site plan shall be performed in accordance with said plan. Topsoil cover shall be retained, replaced or introduced suitable for plant growth over all areas disturbed by the removal operation to a depth of not less than four (4) inches, and the area shall be replanted with trees, grass or other suitable ground cover as specified in said plan. Upon completion of the operation, the applicant shall have taken such steps as are necessary to ensure that the planted area is protected from erosion until its growth is established.

§239-9. Inspections.

The Board of Selectmen has established the post of Earth Removal Inspector. This official, acting as an agent of the Board of Selectmen, has full authority to enter upon the earth removal site at any time and to determine whether the terms, conditions and restrictions of the earth removal permit are being complied with. Among the duties of the Earth Removal Inspector are the responsibilities of determining whether the perimeter of the excavation is in accordance with the provisions of the removal site plan as determined by the prescribed permanent monuments. It shall also be his obligation to see that all requirements of the permit are met within the duration of the permit and to report to the Selectmen from time to time as to the degree of compliance and the general nature of the removal activity. He shall also investigate all complaints of any nature having to do with a

given earth removal activity and report, in writing, to the Board of Selectmen. See separate job descriptions.[3]

§ 239-10. Compliance with permits required.

A. At the time of issuing an earth removal permit and entering into an earth removal agreement with the applicant, the Board of Selectmen will require that compliance by the applicant with the conditions, terms and restrictions of the permit be secured by one (1), or in part by one (1) and in part by the other, of the methods described in the following Subsection A(l) and (2), which method, in whole or in part, shall be selected initially by the Board of Selectmen and which may, during the term of the permit, upon the request of the holder of the permit, be varied by the Board of Selectmen:

(1) By a proper bond or a deposit of money or negotiable securities, sufficient in the opinion of the Board of Selectmen to pay the cost of doing the work necessary to make the site conform to the restoration site plan. The penal sum of any such bond or the amount of any deposit required may be decreased by the Board from time to time as the progress of earth removal or the restoration work warrants in order that said penal sum or the amount of the deposit shall be and remain reasonably approximate to the cost of doing such necessary work. Any such bond may be enforced and any such deposit may be applied by the Board of Selectmen for the benefit of the town upon failure of the performance for which said bond or deposit is given, including the cost of work done by or on behalf of the town under the terms of §§ 239-6A(8) and 239-8C(19) to the extent of the actual cost to the town for completing such performance.

(2) By a covenant, executed and duly recorded by the owner of record of the earth removal site, running with the land and in favor and the town, of the owners from time to time of the lots abutting the earth removal site, whereby the earth removal site shall be made to conform to the restoration site plan before the portion of the lot upon which the earth removal site is located may be conveyed or mortgaged.

B. Restoration of site.

(1) Upon restoration of the site to the condition shown in the restoration site plan and upon full compliance by the holder of the permit with all conditions, terms and restrictions contained therein, the Board of Selectmen, upon being satisfied, by such investigation as it shall deem necessary, that the required restoration has been completed, will issue a certificate of compliance which will conclusively establish such compliance and shall release the interest of the town in any bond and return the bond or deposit to the person entitled to receive the same.

(2) In the event that the funds provided by either the performance bond or cash deposit shall prove inadequate to complete the restoration of the land to contract specifications, the property owner shall be held liable for the deficiency, and, should he fail to meet the same, the town shall attach the land for the amount of said deficiency.

§239-11. Amendment of regulations.

These earth removal regulations may be amended by the Board of Selectmen at any scheduled regular or special meeting of the Board of Selectmen upon seven (7) days' notice posted in the Town Hall and in such other place and manner as it deems appropriate.

§239-12. Certificate of exemption. [Amended 10-4-1993]

A. Prior to removing any earth materials from the premises under Chapter 134, Earth Removal, § 134-10, Exemptions, (Note: See Code of the Town of Groton, available in the Town Clerk's office.) the landowner shall submit a request for a certificate of exemption to the Board of Selectmen. Such requests shall include the information on the form entitled "Request for Certificate of Exemption" (Note: Forms are available in the Selectmen's office in the Town Hall.) and a sketch plan (with dimensions) showing the following information:

(1) Approximate location of property lines.

(2) Approximate location of any existing or proposed structures.

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[3]Editor's Note: Said job description is on file in the office of the Board of Selectmen and may be examined there during regular office hours.

(3) Approximate location of any wells (including those of abutters) within one hundred (100) feet of the area to be excavated.

(4) Approximate location of any existing or proposed sewage disposal systems (including those of abutters) within one hundred (100) feet of the area to be excavated.

(5) Identification of any area which normally collects standing water.

(6) Approximate location of any wetlands.

(7) Location of area to be excavated, filled or otherwise modified.

(8) Proposed or existing location of stockpiled material.

B. If the quantity to be removed from the premises is more than fifty (50) cubic yards, the applicant must demonstrate compliance with § 134-10 of Chapter 134, Earth Removal, by submitting an explanation of the calculations used to arrive at the quantity of material to be removed. The amount of material to be removed in conjunction with new construction or subdivision roads shall be calculated and stamped by a registered land surveyor or professional engineer. The Board of Selectmen and its agents shall verify that the maximum quantity does not exceed that displaced by the portions of the building, walk, driveway, street or similar appurtenances below finished grade and is otherwise in conformance with the provisions of § 134-10. The displaced earth material shall be stockpiled on the site and shall not be removed until construction of the structure has commenced. In the case of a subdivision, the material shall not be removed until the subdivision road has been paved. No material shall be removed from the premises until a certificate of exemption is granted by the Board of Selectmen. [For quantities less than fifty (50) cubic yards, see Chapter 134, Earth Removal, § 134-11, Special permits.]

C. A copy of the regulations on exemptions to Chapter 134, Earth Removal, shall be provided to each applicant when a building permit application is submitted to the Building Inspector. A copy of the regulations on exemptions shall be provided to the developer when an application for approval of a definitive subdivision plan is submitted to the Planning Board.

D. The Board of Selectmen shall issue a certificate of exemption only if the final plan qualifies as an exemption under § 134-10 of Chapter 134, Earth Removal. The Board of Selectmen shall consult with the Earth Removal Inspector, Earth Removal Advisory Committee, Building Inspector, Planning Board, Conservation Commission, Board of Health, Highway Surveyor, Police Chief, Fire Chief or any other appropriate licensing body prior to acting on the application. The Board of Selectmen shall act on the request for a certificate of exemption within thirty (30) days of receipt of the application at the Selectmen's office. Copies of the certificates of exemption shall be forwarded to the Earth Removal Inspector, Earth Removal Advisory Committee, Building Inspector, Planning Board, Conservation Commission, Board of Health, Highway Surveyor, Police Chief and Fire Chief. The application and certificate of exemption shall be kept on file in the Selectmen's office. A certificate of exemption shall expire one (1) year from the date of issuance.

E. Strict compliance with these regulations may be waived when, in the judgment of the Board of Selectmen, such action is in the public interest and not inconsistent with the intent of Chapter 134, Earth Removal.

Appendix B

Inventory of Property

Old Douglas Center National Historic District
East Douglas National Historic District

DISTRICT DATA SHEET
Douglas, Old Douglas Center Historic District

MAP #	MHC #		HISTORIC NAME	STREET ADDRESS **Verify all of the following:**	DATE OF CONSTRUCTION	STATUS	STYLE	RESOURCE
C-1	DOU.1	28-14	First Congregational Church Parsonage	12 Church St.	c. 1845	C	Greek Revival	B
C-2	DOU.2	28-17	Balcome-Parker House	15 Church St.	c. 1890	C	Victorian	B
C-3	DOU.3	28-27A	Wm. Dudley/John Robbins House	17 Church St.	c. 1829	C	Federal	B
C-4	DOU.4	28-15	Norval Dixson House	14 Church St.	1924	C	Craftsman	B
C-5	DOU.5	28-16	Douglas Pastime (Fish & Game) Club	22 Church St.	1909	C	Craftsman	B
C-6	DOU.6	28-13	Kenneth Parker House	10 Church St.	1926	C	Colonial Revival	B
C-7	DOU.900	22-24	Douglas Common	Common, Church & NE Main Streets	1746 – founding of town	C	New England town common	S
C-8	DOU.901	22-24	Soldiers Monument	Douglas Common	1908	C	--	O
C-9	DOU.9	28-19	Dudley/Amidon House	1 Common St.	1813	C	Federal	B
C-10	DOU.10	28-11	First Congregational Church	Church & Common Streets	1834	C	Greek Revival	B
C-11	DOU.11	28-10	Rev. David Holman House	5 Common St.	c. 1809	C	Federal	B
C-12	DOU.12	28-39	Dudley Tavern	8 Main St.	c. 1770-1780	C	Federal	B
C-13	DOU.812	28-37	Douglas Center Cemetery	Main St.	c. 1746	C	--	S
C-14	DOU.14	28-36		19 Main St.	c. 1830	C	Vernacular early 19th c.	B
C-15	DOU.15	28-35	Douglas Center School (VFW Hall)	21 Main St.	1921	C	Colonial Revival	B
C-16	DOU.16	28-34	George Lindley House	27 Main St.	c. 1805-1810	C	Cape, brick	B
C-17	DOU.17	28-21	Thayer House	28 Main St.	c. 1820	C	Federal	B
C-18	DOU.18	28-22	Isaac Stone/Samuel Balcome House	30 Main St.	c. 1765-1770	C	Georgian?	B
C-32	DOU.32	?	Manning House	8 NW Main St.	c. 1860	C	Vernacular	B

C-43	DOU.43	35-01	Chandler-Balcome House	1 SW Main St.	c. 1835	C	Greek Revival	B
C-44	DOU.44	35-19	John Dudley House	2 Main St.	1820	C	Federal	B
C-45	DOU.45	35-05		4 SE Main St.	c. 1850	C	Vernacular	B
C-46	DOU.46	35-19A	Joshua Thayer House	1 SW Main St.	c. 1820	C	Cape	B
C-49	DOU.49	28-39	Douglas Center Post Office/Store	8 Webster Road	c. 1850	C	Greek Revival	B
		28-12	New house	6 Church St.	1980	N	Ranch	B
		28-20	Land	26 Main				
		28-19C	Land	24 Main				
		28-19B	Land	22 Main				
		28-33	Land	?				
		28-37	Land	?				

DISTRICT DATA SHEET
Douglas, East Douglas Historic District

MAP #	MHC #		HISTORIC NAME	STREET ADDRESS **Verify all of the following, need real street addresses:**	DATE OF CONSTRUCTION	STATUS	STYLE	RESOURCE
E-74	DOU.74		Dexter Whipple House	2 Bowen Court	c.1835	C	Greek Revival	B
E-75	DOU.75		Condon House and Meat Mkt	4 Bowen Court	1909	C	Vernacular Cape	B
E-76	DOU.76		Hammond House	5 Bowen Court	c. 1860	C	Greek Revival	B
E-77	DOU.77		Methodist Parsonage	7 Bowen Court	1858	C	Greek Revival	B
E-78	DOU.78		McKay House	6 Bowen Court	1904	C	Victorian	B
E-79	DOU.79		Bowen House	8 Bowen Court	1877	C	Second Empire	B
E-80	DOU.80		Francisco Bowen House	9 Bowen Court	1884	C	Second Empire	B
E-81	DOU.81		Charles McKay House	10 Bowen Court	1909	C	Vernacular	B
E-107	DOU.107		Lovett Mill/Douglas Axe Factory	3 Cook Street	1827	C	Vernacular	B
E-108	DOU.108		E. Douglas Fire Station	5 Cottage Street	1884	C	Vernacular	B
E-109	DOU.109		William Hunt House	9 Cottage St	1851	C	Greek Revival	B
E-110	DOU.110		Edwin Hunt House	13 Cottage St	1851	C	Greek Revival	B
E-111	DOU.111		George Reynolds Hosue	14 Cottage Street	1837	C	Vernacular cape	B
E-117	DOU.117		Fielder Converse House	3 Depot Street	1886	C	Vernacular Victorian	B
E-118	DOU.118		Bayliss Aldrich House	5 Depot Street	1879	C	Vernacular Victorian	B
E-119	DOU.119		Douglas Academy/Masonic Lodge	7 Depot Street	1845	C	Greek Revival	B
E-120	DOU.120		Deacon Hunt House	12 Depot Street	c.1830	C	Greek Revival	B
E-121	DOU.121		Stone House	9 Depot Street	c. 1837	C	Greek Revival	B
E-122	DOU.122		Alanson Park House	11 Depot Street	c. 1855	C	Greek Revival	B
E-123	DOU.123		Moses Hill House	13 Depot Street	c. 1830	C	Vernacular cape	B
E-124	DOU.124		John B. Hunt House	16 Depot Street	1838	C	Vernacular cape	B
E-125	DOU.125		Lyman Parsons House	15 Depot Street	c. 1850	C	Cape modified to Colonial Rev.	
E-126	DOU.126		Knowlton House	17 Depot Street	c. 1850	C	Greek Revival w. Victorian	B

							modifications	
E-127	DOU.127		James Cunliffe House	18 Depot Street	1874		Second Empire	B
E-128	DOU.128		Brigham Morse House	20 Depot Street	c. 1855		Greek Revival	B
E-191	DOU.191		Douglas Grammar School	17 Gleason Court	1898	C	Neoclassical	B
E-194	DOU.194		Royal Keith House	6 Mechanic St	c.1850	C	Greek Revival	B
E-195	DOU.195		Luther Stone House	7 Mechanic St	c. 1825	C	Italianate	B
E-196	DOU.196		Schuster Woolen Co Stable/Garage (behind Funeral Home)	284 Main St.? is it Mechanic	1910	C	Colonial Revival	B
E-197	DOU.902		Mechanic Street Bridge	Mechanic St.	c. 1850	C		O
E-269	DOU.269		Robert J. Frost House (Schuster)	175 Main St.	1928	C	Colonial Revival	B
E-270	DOU.270		Cragin-Southwick House	196 Main St.	c. 1800	C	Federal w. Colonial Revival renovation	B
E-271	DOU.271		Carrick House	206 Main St.	1925	C	Colonial Revival	B
E-272	DOU.272		John Irving House	207 Main St.	c. 1885	C	Italianate	B
E-273	DOU.273		Luther Hill House	209 Main St.	c. 1860	C	Vernacular, Victorian additions	B
E-274	DOU.274		Charles Hunt House	215 Main St.	c. 1840	C	Greek Revival	B
E-275	DOU.275		Deacon Albert Butler House	216 Main St.	1849	C	Greek Revival	B
E-276	DOU.276		Oliver Hunt House	228 Main St.	c. 1850	C	Greek Revival	B
E-277	DOU.277		Aaron Jones House	238 Main St.	1873	C	Second Empire	B
E-278	DOU.278			244 Main St.	c. 1840	C	Greek Revival	B
E-279	DOU.279		Hunt House	249 Main St.	c. 1800	C	Vernacular cape	B
E-280	DOU.280		Jones Store (torn down, 1990)	250 Main St.				
E-281	DOU.281		Samuel Lovett House	257 Main St.	1852	C	Greek Revival	B
E-282	DOU.282		Edwin Moore House	262 Main St.	1832	C	Federal, Italianate modifications	B
E-283	DOU.283		Theodore Stone House	265 Main St.	c. 1830	C	Greek Revival	B
E-284	DOU.284		Warren Hunt House	274 Main St.	c. 1825	C	Federal, Italianate modifications	B
E-285	DOU.285		Otis Hunt House	271 Main St.	c. 1830	C	Greek Revival	B
E-286	DOU.286		Lovett House	275 Main St.	1871	C	Italianate	B
E-287	DOU.287		E.N. Jenckes Store/Museum	283 Main St.	1833	C	Greek Revival	B
E-288	DOU.288		Simon Fairfield Public Library	290 Main St.	1904	C	Neoclassical	B
E-289	DOU.289		2nd Congregational Church	289 Main St.	1834	C	Greek Revival	B
E-290	DOU.290		Macuga Store	296 Main St.	c. 1850	C	Greek Revival	B

E-291	DOU.291		Thayer Hotel	300 Main St.	1833	C	Vernacular	B
E-292	DOU.292		Aaron M. Hill Drug Store	295 Main St.	1847	C	Greek Revival	B
E-293	DOU.293		Old building, now convenience store	306 Main St.	c. 1833-40		Vernacular	B
E-294	DOU.294		Wixtead Building	297-303 Main St.	1910	C	Vernacular	B
E-295	DOU.295		Buffum and Tucker Bake-House	312 Main St.	c. 1840	C	Greek Revival	B
E-296	DOU.296		Dr. Ezekiel Wood House	314/316 Main St.	1837	C	Vernacular	B
E-297	DOU.297		Herman S. Baker Dry Goods Store	318/320 Main St.	c. 1850	C	Greek Revival	B
E-298	DOU.298		Corydon Prentice House	324 Main St.	1837	C	Vernacular	B
E-299	DOU.299		Amos Goodness Store	328 Main St.	1928	C	Vernacular	B
E-300	DOU.300		Batcheller House	317-325 Main St.	c. 1800	C	Vernacular cape	B
E-301	DOU.301		Douglas Town Hall (Post Office)	331 Main St.	1923	C	Neoclassical	B
E-302	DOU.302		Douglas Methodist Church	33 Main St.	1905	C	Colonial Revival	B
E-303	DOU.303		Douglas Axe Manufacturing Company Business Office (Elmwood Club)	338 Main St.	c. 1865	C	Second Empire	B
E-304	DOU.304		Hayward-Schuster Co, Credit Union	340 Main St.	c. 1880	C	Vernacular	B
E-305	DOU.305		Balcome Block	335-343 Main St.	1882	C	Second Empire	B
E-306	DOU.306		Long School	348-352 Main St.	Early 19th c.	C	Vernacular	B
E-307	DOU.307		Hayward Woolen Mill Worker Housing	349 Main St.	mid-19th c.	C	Vernacular	B
E-308	DOU.308		Heath Store	347 Main St.	1839	C	Vernacular	B
E-309	DOU.309		James Sutton House	358-360 Main St.	c. 1800	C	Vernacular cape	B
E-310	DOU.310		James Alrich House	355 Main St.	c. 1860	C	Greek Revival	B
E-311	DOU.311		Hayward Woolen Co Worker Housing	353 Main St.	c. 1860	C	Vernacular	B
E-312	DOU.312		Luther Wing House	362 Main St.	c. 1860	C	Vernacular	B
E-314	DOU.314		Hammond-Turner House	359-361 Main St.	c. 1840's	C	Vernacular	B
E-315	DOU.315		Cora Casey House	365 Main St.	1903	C	Colonial Revival	B
E-316	DOU.316		Col Horace Emerson House	367 Main St.	c. 1850	C	Greek Revival	B
E-317	DOU.317		Col. Horace Emerson House	369-377 NE Main	c. 1840	C	Vernacular	B
E-318	DOU.318		Civil War Monument	Main & North	?	C		O

				Sts.				
E-319	DOU.319		Dr. David White House	382 Main	c. 1825	C	Vernacular cape	B
E-313	DOU.313		McDonough Whipple House	2 North St.	c. 1875	C	Italianate/Colonial Rev modifications	B
E-337	DOU.337		Samuel Heath House	6 Pleasant St.	c. 1840	C	Greek Revival	B
E-338	DOU.338		Fenner Bacheller House	10 Pleasant St.	1836	C	Greek Revival	B
E-339	DOU.339		Andrew Richardson House	14 Pleasant St.	1878	C	Italianate	B

Appendix C
Public Workshop

Are you concerned about.....

- ❑ *The rate of residential growth*
- ❑ *The cost of town services*
- ❑ *School enrollment levels*
- ❑ *Economic development*
- ❑ *Open space preservation*
- ❑ *Quality of life in Douglas*

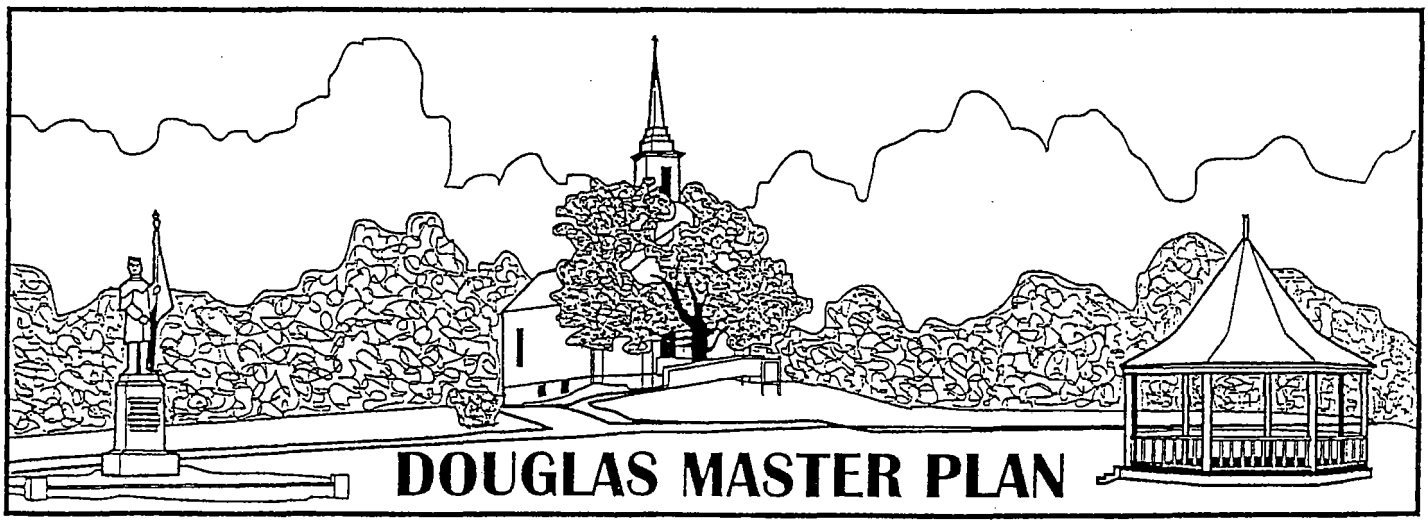
We need to hear from you at the Public Workshop!

Wednesday, March 18 ✶ 7:00 – 9:30 p.m.
Douglas Middle School/High School Cafeteria

Town of Douglas
29 Depot Street
Douglas, MA 01516

PERMIT NO.

RESIDENT
Douglas, MA 01516



The Douglas Master Plan

What is the Master Plan?

The Planning Board and its consultants are developing a Master Plan to guide Douglas' development and management for the coming decades. It is based on the assessments of existing resources, problems and projections of future conditions and needs. In other words, the Plan will describe ***where Douglas is today and where we want to be in the future.*** Its purpose is to enable municipal officials to manage growth and set goals that will bring about desirable changes in the town.

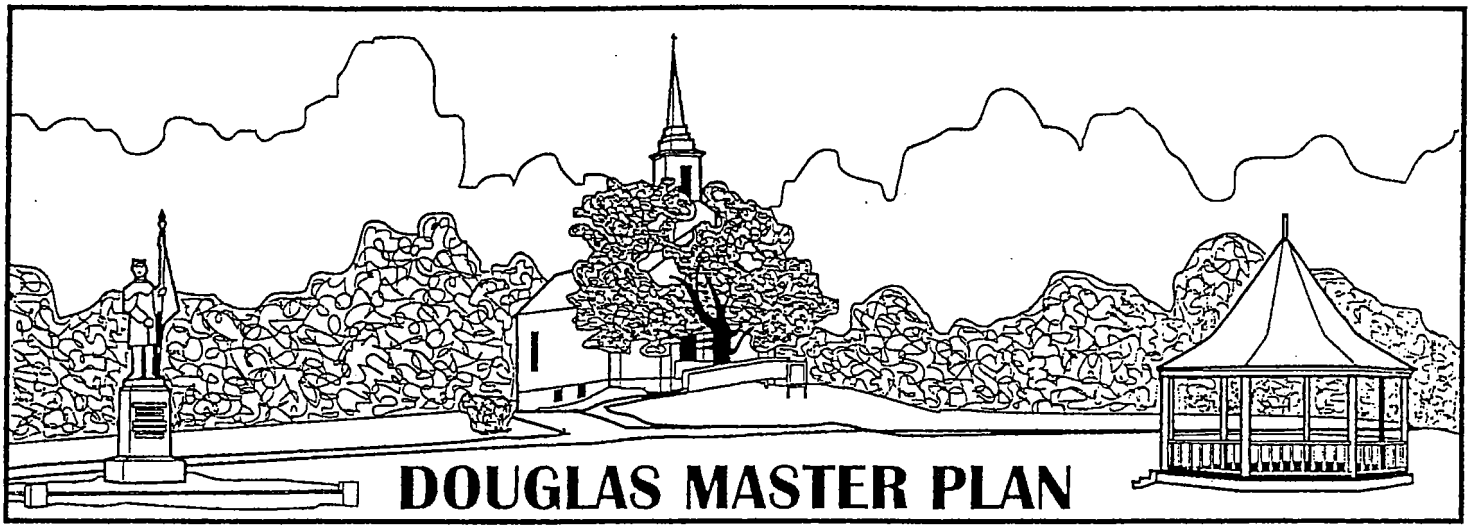
How is the plan being developed?

Whiteman & Taintor, a Hopkinton-based consulting firm, has been working with the Planning Board to prepare this Plan. Over the past 6 months, the consultants have prepared a detailed analysis of the current conditions of the town and have identified ***key issues, opportunities and constraints*** that the Town of Douglas should address in the future. The Planning Board and other Town officials and residents who have attended the Planning Board meetings have been an integral part of this process. By the end of April 1998, a final plan that incorporates the views and opinions of town residents and public officials will be produced.

What this means to you and how to get involved

As a Douglas resident, you have a vested interest in the quality of life your town has to offer for you, your family and generations to come. The March 18 public workshop is an important opportunity for ***you – the residents of Douglas*** to share your ideas, opinions, and suggestions for how the future of Douglas should be shaped. Our consultants will present key findings and recommendations that we must evaluate to determine if these ***goals, policies and strategies*** will guide us toward a ***desirable future.***

Summary Sheets on topics discussed in the Master Plan are also available for your review in the Simon Fairfield Library and the Municipal Center. The Planning Board's monthly meetings with the consultants are televised and the public is invited to attend.



Public Workshop

Douglas Middle School/High School Cafeteria
Wednesday, March 18, 1998
7:00-9:30 p.m.

Agenda

Workshop Purpose:

- To present findings from the inventory and analysis phase of the Master Plan
- To discuss preliminary recommendations for policy changes and actions
- To identify priorities for future action

7:00 Registration, refreshment tables open

7:15 Welcome and Introductions — *Our Task This Evening*

7:30 Presentation: Overview of the Master Plan

8:00 Small Group Discussions
Responses to the Master Plan's Vision and Strategies
Areas of Consensus and Priorities
Issues on Which More Work is Needed

8:45 Comparing Notes: — *Where Is There General Agreement?*

9:15 Wrap-Up – Next Steps

9:30 Adjourn

Public Workshop
Questions for Discussion Groups

Question 1

From what you have heard from the Master Plan tonight, is it moving in the right direction to protect Douglas' community character?

As you are answering this question, think about the following issues:
- Residential and commercial growth
- Open space preservation
- Recreation facilities
- Transportation
- Town services

Question 2

The Master Plan recommends that economic development be focused more in the northeast part of town and that industrial development in the northwest be de-emphasized in favor of providing less intensive commercial uses. In addition, the Plan recommends that standards for commercial development be enhanced to improve the appearance and quality of these areas.

Do you think these recommendations will move the Town toward promoting economic development that promotes Douglas' quality of life?

Discussion Group Procedures

1. Each person speaks *briefly*, so that everyone has time to state his or her opinion.

2. Avoid feeling you have to justify your opinion.

3. If time allows, ask each other questions to clarify opinions, but no cross examination is allowed!

4. The Recorder's job is to listen carefully and make notes and help keep the group moving through the discussion questions.

5. The group has a total of 45 minutes to address the issues raised in the discussion questions. Use the first 5 minutes to review the materials you have been given (maps, goals, zoning changes). Allow 15 minutes for each discussion question and 5 minutes to summarize the key ideas that were discussed. The consultants will keep track of the time and keep the groups moving.

6. As the group approaches the last 5 minutes of the time allotted for each question, the group helps as the Recorder writes on their newsprint pad summary sheets key phrases that summarize what most of the group agreed on.

Help your group get the most done by respecting each other's time and helping the Recorder confirm your points of general agreement!