

**MODERN DAY DUDLEY:
A DEMOGRAPHIC PROFILE**

Presented below are a series of demographics and statistics aimed at helping the reader understand the modern day composition of Dudley's citizenry. All of the presented information comes from the 1990 US Census, unless otherwise specified.

<u>Population</u>								Change 1960-1998		
	<u>1960</u>	<u>1970</u>	<u>1980</u>	<u>1990</u>	<u>1996*</u>	<u>1998*</u>	<u>Number</u>	<u>Percent</u>		
Dudley	6,510	8,087	8,717	9,540	9,662	9,802	3,166	50.1%		
Charlton	3,685	4,654	6,719	9,576	10,058	10,345	6,660	181.0%		
Oxford	9,282	10,345	11,680	12,588	13,014	13,318	4,036	43.5%		
Southbridge	16,523	17,057	16,665	17,816	17,420		17,460		937	5.7%
Webster	13,680	14,917	14,480	16,196	16,065		16,115		2,435	17.8%

* = 1996 and 1998 population estimates provided by the US Census Bureau.

Population Growth - A Comparison: The table above indicates that Dudley's population has seen an increase of roughly 50% in the last 38 years. This represents an additional 83 people per year since 1960. Of the four towns surrounding Dudley (Charlton, Oxford, Southbridge and Webster), Dudley has the second highest growth rate (Charlton has the highest). Yet numerically speaking, Charlton and Oxford have added more new residents. The neighboring communities of Southbridge and Webster have a much lower growth rate, both percentage-wise and numerically. In terms of comparison to the CMRPC region (which covers 40 communities within Worcester County), Dudley's rate of growth for the past 38 years (50.1%) has been much higher than the region's rate of growth (19.7%) for the same time period.

Persons Per Square Mile: Dudley's total land area consists of 21.05 square miles (*not* including its waterbodies and streams). Dividing the Town's total population by its land area indicates that Dudley has roughly 466 people per square mile.

The Sexes: Dudley is fairly evenly split between women and men, with the 1990 Census reporting that 50.2% of its 9,540 residents were women, and 49.8% were men.

Politics: According to the Secretary of State, roughly half of Dudley's residents (4,787) were registered to vote in 1994. Of the registered voters, 43.9% were Democrats; 9.1% were Republicans; and 47% did not have a particular party affiliation.

Persons With Disabilities: It is interesting to note that roughly one in four Dudley residents considers themselves to have some sort of disability (ranging from mild to severe), according to

the 1990 Census. This represents roughly 25% of Dudley's population. Yet, of those persons under 65 years of age, only 191 people (or 2%) described themselves as completely prevented from working because of their disability.

Age Distribution (1990)

	Number <u>Of People</u>	Percentage of <u>Total Population</u>
Under 5 years of age:	605	6.3%
5 to 17:	1,617	17.0%
18 to 24:	1,382	14.5%
25 to 44:	2,955	31.0%
45 to 64:	1,757	18.4%
Over 64 years of age:	1,224	12.8%

Median Age: 33.1

Age Distribution - Changes Since the 1960 Census: Since 1960, Dudley's population has gotten older. In 1990, roughly 23% of the Town's population consisted of people 18 and younger. Back in 1960, this age group made up roughly 36% of Dudley's total population. In the same time period, Dudley's elderly population (65 and older) has grown from 7.3% of the Town's total population to roughly 13%.

Ethnicity: On the surface, Dudley does not appear to be very diverse (97% of the population is white); however, the table below indicates that the ancestries of Dudley's residents span the European continent.

Ancestry (1990) *

Polish: 2,660	French: 2,155	Irish: 1,707	English: 1,064
French Canadian: 875	Italian: 823	German: 693	Swedish: 289

* Please note that survey respondents could choose more than one ancestry. Many more ancestries were identified than those reported above. The ancestry categories above represent the larger ancestry groups reported.

Housing Units

Change 1960-1998

<u>1960</u>	<u>1970</u>	<u>1980</u>	<u>1990</u>	<u>1998*</u>	<u>Number</u>	<u>Percent</u>
	2,035	2,626	3,140	3,583	3,889	1,854
						91.1%

* = The 1998 housing unit figure was determined by adding the number of building permits for new houses issued from 1990 through 1998 to the 1990 Census housing unit count. Building permit information was obtained from the Building Inspector's

entry in the annual Town Reports.

Persons Per Household: The above table indicates that Dudley's housing supply has grown faster than its population. This is not surprising when one considers the national trend towards smaller household sizes. Couples are having fewer children today, and many households are of the single parent variety. Dudley's Census data confirms this trend. In 1960, the typical Dudley household contained 3.2 people. By 1990, the persons per household figure had decreased to 2.67. The figure is probably a bit lower today.

Households by Type (1990)

	<u># of Households</u>	<u>Percentage</u>
Married Couple Family:	2,120	62.6%
Male Householder:	102	3.0%
Female Householder:	330	9.7%
Non-Family Household:	835	24.7%

Household Type - A Comparison: Dudley's percentage of households made up of married couple families is a bit less than Charlton (70.4%): about the same as Oxford (62.7%); yet much higher than Southbridge (49.7%) and Webster (51.4%). This trend holds true for non-family households as well.

Household Type - Changes Since the 1980 Census: Back in 1980, the married couple family category comprised 68.4% of Dudley's households as compared to 62.6% in 1990. The largest increase has been in the non-family household category which grew from 21.2% in 1980 to 24.7% in 1990. The female head of household category also grew from 8.7% to 9.7% during the same timeframe.

Type of Housing Unit (1990)

	<u># of Units</u>	<u>Percentage</u>
Single Family Homes:	2,319	64.7%
Two to Four Units:	933	26.0%
Five or More Units:	300	8.4%
Other:	31	0.9%

Type of Housing - A Comparison: Dudley's percentage of single family homes is a bit less than Oxford (66%), much less than Charlton (79%); yet much higher than Southbridge (32%) and Webster (43%). Dudley's housing mix has been fairly stable from 1980 to 1990. The percentage of single family and multi-family housing units has remained relatively unchanged.

Occupancy (1990)

	<u># of Units</u>	<u>Percentage</u>
Owner Occupied Housing:	2,343	69.2%
Renter Occupied Housing:	1,044	30.8%

Occupancy - A Comparison: Of the four surrounding communities, Dudley ranks in the middle in regard to owner-occupied housing. Charlton and Oxford have higher owner-occupancy rates (78% and 73% respectively), while Southbridge and Webster have much lower owner-occupancy rates (45% and 53% respectively). From 1980 to 1990, the percentage of owner occupied housing has dropped roughly 5%, while the percentage of renter occupied housing has grown roughly 5%.

The previous tables indicate that Dudley consists primarily of married families living in owner-occupied single-family homes. Roughly two out of three residents live in this type of arrangement. Conversely, this also means that roughly one in three Dudley residents (a statistically significant portion) live in: non-family households, rental housing, and/or multi-family housing. Some of Dudley's households probably have all three of the above characteristics.

Population Mobility: The 1990 Census asked residents where they lived five years previously (1985), and the survey results are quite interesting. Roughly 66% of the respondents were living at the same house in Dudley, a good indication of residential stability. Roughly 24% were living somewhere else in Worcester County, 5% were living somewhere else in Massachusetts, 4% were living in another state, and 1% were living abroad. These figures indicate that one third of Dudley's residents came to Town within the last five years. It also means that if you meet three people in the street, chances are that one of them will move on in the next five years. The 1980 Census showed similar results.

Household Income (1990)

	<u>Number</u>	<u>Percentage of Total</u>
Less than \$10,000 per year:	467	13.8%
\$10,000 to \$24,999:	792	23.5%
\$25,000 to \$49,999:	1,141	33.8%
\$50,000 to \$99,999:	888	26.3%
Over \$100,000:	88	2.6%
Dudley Median Household Income for 1990:		\$34,139.
Worcester County Median Household Income for 1990:		\$35,774.
Massachusetts Median Household Income for 1990:		\$36,774.

Dudley Per Capita Income for 1990:	\$13,708.
Worcester County Per Capita Income for 1990:	\$15,500.
Massachusetts Per Capita Income for 1990:	\$17,224.

Household Income - A Comparison: Dudley had a slightly higher percentage of households making less than \$25,000 (37.3) as compared to the County (34.4%) and the State (31.6%). Dudley's percentage of households making \$100,000 or more is somewhat lower (2.6%) than the County (4.5%) and the State (6.6%).

Poverty Level (1990): Dudley's percentage of residents living at or below the national poverty level was 5.9% in 1990. This is considerably lower than the County (8.3%) and the State (8.9%). Thus, while Dudley's median household income is less than the County and State, Dudley's poverty level is lower than the County and State. This indicates that while the average Dudley household is not rich, they aren't poor either. This indicates a blue-collar working class environment where the local economy is stable. From 1980 to 1990, Dudley has seen a drop in the percentage of its population living at or below the poverty level. In 1990, 5.9% of the population lived at or below the poverty level, while in 1980 this figure was 7.3%.

Unemployment: Since 1990, Dudley's unemployment rate has decreased substantially from a high of 9.6% in 1991 to a low of 4.0% for the year 1998. Dudley's unemployment rate for 1998 was a bit higher than the County average (3.4%) and the overall State average (3.3%).

Dudley Residents - Occupation (1990)

<u>Type of Occupation</u>	<u>Number Employed</u>	<u>Percentage of Total</u>
Executive, administrative & managerial:	616	12.5%
Professional specialty occupations:	693	14.1%
Technical and support:	163	3.3%
Sales (wholesale & retail):	407	8.3%
Administrative support & clerical:	832	16.9%
Service occupations:	553	11.2%
Farming and forestry:	61	1.2%
Manufacturing:	1,083	22.0%
Transportation:	212	4.3%
Laborers & handlers:	218	4.4%
Other employment categories:	82	1.7%

Significant Changes Since the 1980 Census: The most significant change is in the manufacturing category. In 1990, 22% of Dudley's labor force was employed in manufacturing, while in 1980, roughly 35% of the local labor force was employed in manufacturing. Occupational categories showing modest growth since 1980 include: executive, administrative & managerial; professional; administrative support & clerical; and service occupations. It should be noted that manufacturing still represents the largest employment category for Dudley's labor force.

Jobs in Dudley (1998)

<u>Type of Occupation</u>	<u>Number Employed</u>	<u>Percentage of Total</u>
Agriculture:	22	Less than 1%
Construction:	107	4.0%
Manufacturing:	971	36.1%
Transportation:	23	Less than 1%
Sales (wholesale & retail):	509	18.9%
Finance:	42	1.6%
Service:	508	18.9%
Government:	501	18.6%

Significant Changes Since the 1990 Census: From 1990 through the year of 1998, the number of people working in Dudley has grown 29%, from 2,087 in 1990 to 2,689 in 1998. The manufacturing, construction, sales, finance and government sectors have all added new jobs since the 1990 Census. Manufacturing still represents the largest sector of the local economy (36%).

Commuting to Work: The 1990 Census reported that of those Dudley residents in the labor force, 80.5% drove to work alone, 11% carpoled, 0.3% used public transportation, 1.2% used other means, and 6.9% walked or worked at home. The average commuting time was approximately 23 minutes. There was a significant difference between the 1980 and the 1990 Census regarding commuter trends. Back in 1980, 67.5% of the labor force drove to work alone while 24.1% carpoled.

Educational Attainment of People 25 and Over (1990)

	<u>Number</u>	<u>Percentage of Total</u>
Less than high school graduate (no diploma):	1,647	27.7%
High school graduate:	2,004	33.8%
Some college (no degree):	831	14.0%
Associates degree:	375	6.3%

Bachelor's degree:	716	12.1%
Graduate or professional degree:	363	6.1%

Educational Attainment - A Comparison: The educational attainment of Dudley's citizens is right in line with that of its immediate neighbors. Southbridge has the lowest percentage of people obtaining some form of college degree (18.9% as compared to Dudley's 24.5%), while Charlton has the highest percentage of college educated citizens (25.7%, just slightly higher than Dudley's 24.5%). Dudley's percentage of college educated citizens, as well as its four Massachusetts neighbors, is somewhat less than the Worcester County average (30.2%) and the Statewide average (34.5%).

Educational Attainment - Changes Since the 1980 Census: It is clear that Dudley citizens are becoming better educated. In 1980, roughly 38% of respondents had less than a high school diploma. By 1990, this figure had dropped to roughly 28%. All other educational attainment categories showed an increase since the 1980 Census.

Public/Private School Attendance: The Massachusetts Department of Education reports that during the 1998/99 school year, roughly 91% of Dudley students went to public schools, while the remaining 9% went to private schools.

Dropout Rate: The Department of Education also reports on drop-out rates. From the five-year period between 1993 and 1997, Shepherd Hill Regional High School had an average drop-out rate of 4.7% which was higher than the Worcester County average (4.3%) and the Statewide average (3.7%) for the same time period.

College Bound: The Department of Education reports that between the five-year period between 1993 and 1997, roughly 75% of the graduating class from Shepherd Hill Regional High School went on to college or some other form of post-secondary education. Shepherd Hill's percentage of college-bound graduates is right in line with the overall statewide average.

ECONOMIC DEVELOPMENT

Dudley's Labor Force: The number of employed Dudley residents has grown steadily over the past fifteen years, growing from 4,291 employed people in 1983 to 5,175 people in 1998 (an overall increase of roughly 20%). There was a small decline in Dudley's labor force during the early part of the 1990's, as well as a surge in the local unemployment rate. However, this trend has reversed over the past five years. The small decline in employment during the 1990's was more the product of a slow down in the regional economy of New England, as opposed to factors specific to Dudley itself. The table below presents the number of employed/unemployed Dudley residents dating back to 1983. The table also allows for a comparison of Dudley's unemployment rate with the overall State unemployment rate.

Table ED-1

Employment Status of Dudley Residents

Year	Total Dudley Labor Force	Employed	Unemployed	Dudley Rate of Unemployment	State Rate
1983	4,589	4,291	298	6.5%	6.9%
1984	4,581	4,404	177	3.9%	4.8%
1985	4,645	4,501	144	3.1%	3.9%
1986	4,753	4,607	147	3.1%	3.8%
1987	4,862	4,743	119	2.4%	3.2%
1988	5,203	5,041	162	3.1%	3.3%
1989	5,206	5,017	189	3.6%	4.0%
1990	5,201	4,880	321	6.2%	6.0%
1991	5,176	4,679	497	9.6%	9.1%
1992	5,158	4,661	497	9.6%	8.6%
1993	5,173	4,797	376	7.3%	6.9%
1994	5,129	4,846	283	5.5%	6.0%
1995	5,068	4,824	244	4.8%	5.4%
1996	5,104	4,896	208	4.1%	4.3%

1997	5,276	5,609	207	3.9%	4.0%
1998	5,388	5,175	213	4.0%	3.3%

Source: Massachusetts Division of Employment and Training.

CMRPC projects that Dudley's labor force will grow to 5,943 by the year 2010. If this projection is correct, it will represent an increase of 14% in Dudley's labor force over a twenty year time period from 1990 to 2010.

Where Dudley Residents Work: According to the 1990 US Census (the most recent work-related origin/destination count), here's where Dudley residents work:

In Dudley: 1,043 Auburn: 160 Charlton: 74 Oxford: 226
 Southbridge: 259 Sturbridge: 90 Webster: 962 Worcester: 917
 Elsewhere in the immediate region: 447
 Elsewhere in Worcester County: 87
 Elsewhere in the State: 335
 Out of State: 280

The above numbers indicate that roughly 21% of Dudley's employed people work in town, while 20% work in nearby Webster and 19% work in Worcester. The number of workers going to Worcester is not surprising as the City serves as the region's center of commerce. Conversely, only 38 Worcester residents traveled to work in Dudley as of 1990.

The Number and Types of Jobs in Dudley: The number of business establishments operating in Dudley has grown steadily over the past fifteen years, from 116 establishments in 1983, to 159 establishments in 1998 (an increase of roughly 37%). The biggest increase was in the service sector, although the construction, manufacturing, and wholesale/retail trade sectors also increased during this timeframe. Table ED-2 below shows how the various sectors of Dudley's economy have changes over the past 15 years.

Table ED-2

Employment and Wages in Dudley

	Total Annual	Average Annual	Establishments	# of Workers	Agri./ Forest	Government	Construction	Manufacture		Wholesale/		
										FIRE	Service	

Year	Payroll	Wage			/ Fish		-tion		TCPU*	Retail Trade	*	e
1985	\$28 mill.	\$15,800	116	1,794	n/a	440	59	615	n/a	277	49	253
1986	\$33.5 m.	\$16,350	124	2,050	n/a	468	59	691	n/a	425	45	254
1987	\$39 mill.	\$18,000	142	2,180	27	504	72	762	n/a	421	41	281
1988	\$41 mill.	\$17,900	156	2,296	25	523	74	819	77	427	29	322
1989	\$42.5 m.	\$18,700	158	2,272	n/a	497	53	783	74	390	31	420
1990	\$44 mill.	\$19,100	146	2,305	n/a	506	49	792	67	356	28	484
1991	\$43 mill.	\$20,300	139	2,116	21	489	36	695	40	347	25	463
1992	\$44 mill.	\$20,950	134	2,120	n/a	466	63	699	42	349	26	452
1993	\$44 mill.	\$21,450	134	2,049	n/a	536	65	612	n/a	344	28	428
1994	\$49 mill.	\$21,400	142	2,305	n/a	563	98	648	n/a	360	37	558
1995	\$52.5 m.	\$22,500	145	2,336	n/a	448	75	766	22	412	38	548
1996	\$54.5 m.	\$22,000	154	2,471	n/a	473	79	732	19	492	39	611
1997	\$62 mill.	\$23,700	154	2,618	20	497	91	865	20	540	42	537
1998	\$69 mill.	\$25,600	159	2,689	22	501	107	971	23	509	42	508

TCPU = Transportation, Communication, and Public Utilities.

FIRE = Finance, Insurance, and Real Estate.

n/a = Data suppressed due to confidentiality.

Source: Massachusetts Division of Employment and Training.

The previous table indicates that manufacturing continues to make up one third of the total jobs in Dudley, as was the case in 1985. The service sector now accounts for 18% of the jobs in Dudley, as opposed to 13% in 1985. Overall total payroll and annual wages have risen steadily

over the past fifteen years.

Looking all the way back to 1950, the importance of Dudley's manufacturing base to the local economy has been in decline, yet still remains a substantial component. According to the 1950 US Census, manufacturing accounted for roughly half of the jobs in Dudley. This trend held steady until the 1970's when manufacturing began to decline, both in terms of the number of manufacturing jobs and its importance to the local and regional economy. By 1985, manufacturing accounted for roughly one third of the jobs in Dudley, and this trend has held steady up to today.

Other towns in the region have demonstrated a similar trend. Southbridge had manufacturing account for 59% of the local jobs in 1980, as compared with roughly 37% today. Webster had manufacturing account for 42% of the local jobs in 1980, as compared with roughly 20% today. Spencer is the *only* town in the region to demonstrate a significant growth in manufacturing jobs: 30% of local jobs were in manufacturing as of 1980, compared to roughly 39% today.

Dudley's Largest Employers: According to the annual census conducted by the Town Clerk, here are the five largest employers in Dudley:

Gentex Optics Inc.:	350 employees
Nichols College:	170 employees (figure obtained directly from Nichols College)
Ethan Allen Inc.:	150 employees
Guilford of Maine Inc.:	100 employees
Park and Shop:	75 employees

These five employers account for approximately one third of the jobs existing in Dudley.

In fiscal year 1999, Dudley levied \$4,249,191 in taxes, based on a local tax rate of \$10.80 per \$1,000 of assessed valuation (the tax rate for fiscal year 2000 is \$12.20). For 1999, Dudley homeowners accounted for approximately 90% of the tax base (\$3,822,057), while the businesses and industries in Town accounted for approximately 7.9% of the tax base (\$335,034). The remaining 2.1% of the tax base was derived from taxes on personal property (\$92,100). The table on the following page looks at how Dudley compares to its adjacent Massachusetts neighbors in terms of their non-residential tax base:

Table ED-3

Non-Residential Tax Base Comparison

FY 1999	Comm./Ind.	Percent of
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<u>Community</u>	<u>Local Tax Rate</u>	<u>Taxes Levied</u>	<u>Total Tax Levy</u>
Dudley	\$10.80	\$335,034	7.9%
Charlton	\$12.81	\$777,717	10.4%
Oxford	\$15.92	\$1,185,621	13.7%
Southbridge	\$15.78	\$1,630,716	20.2%
Webster	\$13.86	\$2,647,423	24.9%

Source: Massachusetts Department of Revenue.

The table above indicates that not only does Dudley raise the least amount of non-residential taxes (dollar-wise) of the five communities, but also the Town's non-residential tax revenue is the smallest percentage-wise of the compared communities. This situation cannot be solely attributed to the Town's low tax rate (second lowest in the region - only East Brookfield is lower); rather, it has more to do with the number of businesses/industries in Town and the amount of taxes they pay.

Home Occupations in Dudley: Currently, home occupations are allowed in every zoning district in Dudley, with the following restrictions:

- no non-resident employees are involved;
- not more than 25% of the dwelling unit's floor area can be used for the business;
- no change to the outside appearance of the structure (except for a small sign);
- no home occupation shall be conducted in any accessory building;
- no additional traffic or parking shall be generated by the home occupation; and
- the home occupation cannot create nuisance conditions for abutting neighbors.

It is a trend of our modern-day economy that more and more people are establishing home businesses and/or working from their homes. Increased numbers of people are employed by a company and yet spend a good deal of their work week working from home or, "tele-commuting". The Internet and advances in home computers have created conditions where people can be quite productive working out of their homes. There are no definitive rules or regulations governing tele-commuting, and the practice is still evolving. Dudley can expect to see an increase in the number of people working from their homes, whether they are starting home businesses or simply tele-commuting.

Opportunities for Economic Development: Dudley has made use of a number of State-sponsored economic development programs and has participated in a variety of inter-community efforts as well. Below is a description of Dudley's efforts to stimulate economic development.

1. *The Massachusetts Economic Development Incentive Program (EDIP)*: Created by the Legislature in 1993, the EDIP is designed to stimulate job creation in distressed areas, attract

new businesses, encourage existing businesses to expand, and increase overall economic readiness among Massachusetts towns and cities. The EDIP is administered by the Massachusetts Office of Business Development. The EDIP is overseen by the Economic Assistance Coordinating Council (EACC) which is charged with three responsibilities:

- designating Economic Target Areas (ETAs);
- designating Economic Opportunity Areas (EOAs) within an ETA; and
- designating Certified Projects within an EOA.

Dudley is a member of the South Central Massachusetts Economic Target Area (ETA), established in 1994. Other towns in this ETA include: Brimfield, Wales, Holland, Sturbridge, Southbridge, Charlton, Spencer, Webster and Oxford. Within this ETA, Dudley has established three Economic Opportunity Areas (EOAs): the Gentex property on West Main Street, the Toltec Fabrics site, and the Webco site. The businesses on these sites also represent the three Certified Projects existing in Dudley at this time.

Dudley has developed its own Tax Increment Financing (TIF) program to lure new economic development and retain existing businesses. Dudley's TIF program was utilized for all three of their Certified Projects. The way Dudley's TIF program works is that new businesses or existing businesses wishing to expand need to demonstrate that they will hire people from Dudley and the immediate area, and that they will utilize local businesses and construction firms for their new/expanded building. In return, the Town forgives a percentage of the taxes assessed on the new/expanded building over a period of ten years. The percentage of forgiven assessed taxes gets smaller over the ten year period. All TIF projects must be approved at Town Meeting. Selected details for Dudley's three existing TIF projects are provided below:

-- Gentex Optics, Inc. Certified by the State in June of 1998
Full-Time Jobs Created: 200 Full-Time Jobs Retained: 422
Private Investment: \$14,600,000

* note that the number of jobs created/retained is less than the total number of employees reported to the Town Clerk.

-- Webco Chemical Corp. Certified by the State in June of 1999
Full-Time Jobs Created: 18 Full-Time Jobs Retained: 43
Private Investment: \$1,400,000

-- Toltec Fabrics Inc. Certified by the State in June of 1999
Full-Time Jobs Created: 54 Full-Time Jobs Retained: 98
Private Investment: \$2,400,000

It should be noted that a new TIF project will be proposed for consideration at the May 2000 Town Meeting. This will be for KoKo's Machine Inc. on Oxford Avenue.

There are two benefits that the State confers on Certified Projects within designated EOAs: a 5% State Investment Tax Credit for qualifying tangible, depreciable investments; and a 10% Abandoned Building Tax Deduction for costs associated with renovating an abandoned building.

There has been some criticism about the tax revenue lost because of the TIF program; however, citizens need to realize that this program keeps jobs in Dudley (most of which are held by Dudley residents), promotes the use of local businesses for the building/expansion effort, and helps to attract new businesses that otherwise may not come to Dudley. The TIF program is essential to attracting new businesses when one considers that the Town cannot offer much in the way of infra-structure improvements (namely, municipal water service). Dudley's TIF program is a long-term community investment program and has served the Town well. Dudley should continue to utilize the TIF program to retain existing businesses and stimulate new economic development.

2. *The Central Massachusetts Economic Development Authority (CMEDA)*: Established in 1996, this regional organization was created to address former industrial sites that have been contaminated; specifically, their clean-up and re-use. Under Chapter 21-E of the Massachusetts General Laws, the State's Department of Environmental Protection has the authority to designate such sites for clean-up. Such sites are more commonly known as "brownfields". There are over 950 such sites in Central Massachusetts.

Dudley joined the CMEDA in 1999 in an effort to address the Town-owned "brownfield" properties. The Town's current brownfield clean-up project involves the old highway garage site on West Main Street owned by the Highway Department. The site is contaminated with petroleum products and VOC's. The Town submitted the first site assessment report for this property to DEP in late 1999. The redevelopment concept for this property is for Dudley and CMEDA to share the cost of clean-up and site work, and then split the proceeds once the property is sold. It should be noted that Dudley recently cleaned up some contamination at the West Main Street Fire Station on its own, without utilizing the CMEDA process. There was a small amount of contamination on this property; enough to have DEP designate the site as a "brownfield". There are nine remaining brownfield sites in Dudley, all under private ownership. Dudley should work with the owners of these contaminated properties to utilize the CMEDA process for clean-up and re-use.

3. *The Dudley-Oxford-Webster Chamber of Commerce*: The Chamber has been a valuable information resource for local businesses (business planning, grant opportunities), as well as for businesses considering a move to the tri-town area. The Chamber also acts as a promoter of local businesses. The Chamber provides a forum for business owners/operators to talk about the local business climate and economic development in general. The majority of businesses in Dudley are active Chamber members. Dudley should establish a dialogue with the Chamber in order to listen and respond to the concerns of its local businesses.

4. *The Quinebaug-Shetucket Rivers Valley National Heritage Corridor*: This Connecticut portion of this area was designated as a National Heritage Corridor by an act of Congress in 1994, and the Massachusetts portion was added in late 1999. The Massachusetts portion of the Corridor covers parts of nine towns including Dudley, Charlton, Webster, Oxford, Brimfield, Holland, Southbridge, Sturbridge, and East Brookfield. The National Heritage Corridor Program is managed at the federal level by the National Parks Service. The designated area covers

roughly 1,000 square miles in Massachusetts and Connecticut.

The Program's purpose is to encourage grassroots efforts for the preservation and restoration of significant historic and natural assets within the Corridor; foster compatible economic development (including tourism); and enhance recreational opportunities. The Program is administered on the regional level by the Quinebaug-Shetucket Rivers Valley Advisory Council which consists of local officials and residents, regional planning agencies and councils of governments, tourism districts and several state agencies. The operating body for the Council is Quinebaug-Shetucket Heritage Corridor, Inc., located in Putnam, Connecticut. The Council has prepared a Management Plan to guide their efforts. It is anticipated that approximately *one million dollars* in annual federal funds will be provided to the Council over the next decade.

The Corridor's recent expansion represents a significant economic development opportunity for the nine Massachusetts communities now included in the project area. These communities can now work with the Corridor's Advisory Council to obtain significant funds for developing recreation opportunities along the French and Quinebaug Rivers, preserving historic buildings, creating tourism attractions around old mill buildings and other sites of historical significance, and developing other history-related tourism projects. Dudley should take full advantage of this economic development opportunity to promote its historic buildings and sites, and become a player in the region's significant historic tourism market. One only has to look at Old Sturbridge Village as a successful example of such an effort.

Impediments to Economic Development:

1. *Lack of Access to Regional Interstates:* As mentioned in the Transportation chapter, Dudley does not have direct access to any of the region's interstate highways. Commercial vehicles have to travel through downtown Webster in order to reach Dudley from I-395; and such vehicles have to travel through downtown Southbridge in order to reach Dudley from I-90 and I-84. The lack of direct access to the interstates can be considered an impediment to economic development. Access to major roadways is high on the list of factors that spur economic development. Such is the nature of Dudley's geography.

2. *Lack of Capacity in the Municipal Water System:* Probably the single biggest impediment to future economic development in Dudley is the municipal water system's lack of capacity. The system's supply sources can provide water to existing connections, but would not be able to service much in the way of new economic development. Under current circumstances, new businesses and industries have to take care of their own water needs through drilling wells on their properties. Drilling a well can be an expensive proposition for a new business, and as such, they prefer to tie into municipal water lines when available. Maintaining an on-site well also represents a substantial cost for new businesses. Under the provisions of the federal Clean Water Act, businesses that provide daily water to 25 people or more (employees and/or customers) must test their well's water quality on a periodic basis. The annual costs associated with these water quality testing requirements are often more expensive than if the business purchased water from a municipal supplier. Also, the business assumes clean-up liability should their on-site water well become contaminated. Thus, new businesses prefer to tie into existing water lines. Dudley will simply not be able to accommodate new economic development (especially large-scale operations like Gentex) unless it finds a new water source and expands the capacity of the municipal water system.

3. *Residential Development within the Town's Industrial Zoning Districts:* Currently, the Zoning By-Laws allow residential development as a use by-right in all of the Town's industrial zoning districts. While it has been proven that residential uses and commercial uses can work well together as permitted uses in a single zoning district, the same cannot be said for residential uses and industrial uses. Industries, especially manufacturing and warehousing operations, are reluctant to set up shop in a zoning district where residential uses are also permitted by right. This reluctance is due to the possibility of having a new subdivision built next door to an industrial operation. Residences located next to industries have a tendency to complain about the industry next door. Balancing a homeowner's right to peace and quiet against an industry's right to conduct business can be quite difficult and the Town should not put itself in the position of being the arbitrator.

There is also a safety issue here. Some industries make use of hazardous chemicals and substances. In such cases, the industry in question is required to work out an emergency response plan with the municipality. In a case where there are houses adjacent to the regulated industry, the safety of the residential neighbors needs to be factored into the industry's emergency response plan. The Town's zoning scheme should not set up a situation where numerous residences need to be evacuated if there is a chemical spill or accident at a nearby industrial operation.

Another problem with allowing residential uses in the industrial zoning districts is that land zoned for industry is eaten up by residential development. This is already quite evident in some of Dudley's industrial zoning districts when one reviews the Existing Land Use Map against the Town's zoning scheme. The IND-43 District in the southeast corner of Town shows evidence of residential development with an additional 39 units (Perryville Farm Estates) on the way. Extensive residential development can also be seen in the IND-43 District located between Dresser Hill Road and Dudley Center Road. It should also be noted that half of the district's land (51 acres) is taken up by a permanently protected property (the Hall Farm). Dudley will continue to lose its industrially zoned land to residential development unless changes are made to the Town's Zoning By-Law.

Municipalities count on the tax dollars provided by industrial development. Thus, having a town's industrial land eaten up by residential development can result in decreased tax revenues. This phenomenon often results in the need for a town to find new areas for industrial development, which requires the rezoning of land currently zoned for other purposes. The Town should not have to search out new land suitable for industrial development due to its industrially-zoned land having been developed residentially.

4. *Lack of a Coordinated Municipal Site Plan Review Process:* As mentioned in the Housing chapter, the Town does not have a coordinated municipal review process for new large-scale development plans, be they residential or commercial/industrial. Currently, someone wanting to establish a new business/industry in Dudley would need to talk to the relevant town departments one at a time about their development plans, and await their response. This has resulted in an uncoordinated and time consuming process, both for the developer and the Town.

In some cases, the recommendations from one town department are in conflict with the recommendations of another town department. Resolving such a conflict also takes time, time the developer wants to use to get the business/industry up and running. The Town should have a coordinated municipal review process in place; one where a developer can drop off sets of plans at *one* municipal office and be assured that all of the relevant departments will review said plans, and the Town will provide comments to the developer in a single response.

Economic Development - Goals

1. Promote economic development that is in keeping with the Town's character and natural environment, and that results in long-term tax revenue and good paying local jobs.
2. Promote a business friendly environment where new businesses can find a streamlined regulatory process, modern high-speed communication availability, a qualified workforce, and a competitive tax rate.

Economic Development - Recommendations

1. Dudley should continue utilizing its Tax Increment Financing (TIF) program to create/retain jobs in Town, and stimulate the local economy. Dudley's TIF program should continue to insist that new businesses reserve a certain percentage of jobs for Dudley residents, that local contractors are used for building construction/rehabilitation, and that local businesses are used as service providers. Although it will be a few years before Dudley reaps the tax benefits from the TIF-created projects, the benefits to the local economy will be felt immediately. If Dudley wants to maintain a low tax rate while still providing quality municipal services, then it has to grow its non-residential tax base, even if the tax benefits get pushed ten years into the future. Since the Town cannot offer new businesses much in the way of infrastructure (no municipal water, poor interstate access, etc.), the TIF program is a significant draw for new economic development and should be continued. Responsible Municipal Entity: The Board of Selectmen and Town Administrator.
2. Dudley should continue to clean up its "brownfields", whether these properties are Town-owned or under private ownership. Dudley has aggressively addressed the known Town-owned brownfield sites, yet there are nine privately-owned brownfields where no clean up is occurring. Dudley should work with the Central Massachusetts Economic Development Authority (CMEDA) to develop a strategy for cleaning up the nine privately-owned brownfield sites in Dudley. Getting these contaminated properties cleaned up and back on the tax rolls will add to the Town's non-residential tax base and benefit the local economy. Responsible Municipal Entity: the Board of Selectmen and the Town Administrator.
3. Dudley should strengthen its ties with the Dudley-Oxford-Charlton Chamber of Commerce. The Chamber provides a forum for local businesses to discuss the economy and the problems they encounter doing business at their particular location. Dudley should establish a dialogue with the Chamber in order to listen and respond to the concerns of its local businesses. Responsible Municipal Entity: the Board of Selectmen and the Town Administrator. This could also be one of the duties of a local economic development committee (see Recommendation #7).
4. Dudley should take advantage of the economic development opportunity presented by the recent expansion of the Quinebaug-Shetucket Rivers Valley National Heritage Corridor, whether

on its own or in conjunction with the other eight Massachusetts communities now included in the project area. These communities can now work with the Corridor's Advisory Council to obtain funds for preserving historic buildings, creating tourism attractions around old mill buildings and other sites of historical significance, and developing other history-related tourism projects. As the Corridor is expected to receive over one million dollars a year in federal funds over the next ten years, Dudley should take full advantage of this economic development opportunity to promote its historic buildings and sites, and become a player in the region's significant historic tourism market. The Town could start the process by compiling a list and description of its historic resources and share this information with the Corridor's Executive Director. The Director has an office in Putnam, Connecticut and can be reached at: 860-963-7226. Responsible Municipal Entity: the Board of Selectmen and the Town Administrator. This could also be one of the duties of a local economic development committee (see Recommendation #8). Any attempt to develop historic-based tourism in Dudley should involve the Dudley Historical Commission, the Black Tavern Historical Society, and Nichols College.

5. The Zoning By-Law should be amended to remove residential development as a by-right permitted use within the Town's industrial zoning districts. Dudley will have a very hard time expanding its non-residential tax base when its industrially-zoned land continues to be eaten up by residential development. There are already two areas of Town where industrially-zoned land has been eaten up by residential development and land protection efforts: the IND-43 District in the southeast corner of Town, and the IND-43 District located between Dresser Hill Road and Dudley Center Road. It is further recommended that these two areas be re-zoned residentially. Responsible Municipal Entity: the Dudley Planning Board.

6. The Water Department should investigate its options for finding a new water supply source, whether this means looking for a new well site within Dudley, or working with a neighboring community on a shared water resource. The Town's options for growing its non-residential tax base will be quite limited until a new water source is found and the water system's capacity is expanded. As mentioned previously, finding a new water source and getting it up and running is a very expensive proposition, one that the Water Department cannot afford to handle on its own. Since the whole Town benefits from an expanded non-residential tax base, and the growth of this tax base cannot occur without an expanded municipal water system, it would be appropriate for the Water Department to seek funds at Town Meeting for the identification and development of a new water source. The Town may also want to pursue State grant opportunities for such a project. Responsible Municipal Entity: Dudley Water Commissioners in consultation with the Board of Selectmen.

7. The Town should establish a local economic development committee to coordinate all of the various elements of an economic development strategy for Dudley. Currently, there is no municipal entity whose sole role is to plan for, and act as an advocate of new economic development in Town. Finding volunteers for an economic development committee will be a challenge, as it usually is for local boards. The committee would need to begin by reviewing the Town's zoning scheme, tax policies, road improvement plans, and water/sewer expansion plans as they relate to the Town's ability to attract new businesses. This committee would then work with the various municipal boards and departments to develop an economic development strategy for Dudley. As part of an economic development strategy, the Town should designate a staff person in Town Hall to handle economic development issues. Once contact person is

essential, as businesses want straight answers fast. Responsible Municipal Entity: The Board of Selectmen would need to establish the economic development committee, and appoint its membership. The committee should be charged with developing an economic development strategy for Dudley and be prepared to work with the various municipal boards/departments to implement the strategy.

8. The Town should establish a Technical Review Community (TRC) to review large-scale commercial and industrial development plans, whether through a site plan review process or the building permit process. This was mentioned in the Housing chapter (Recommendation #4) within the context of reviewing large-scale residential developments, yet having a TRC in place would also facilitate the municipal review of large-scale commercial/industrial development proposals. A TRC would be composed of representatives from various municipal departments (water, sewer, health, highways, conservation, planning, building, fire and police), and would only meet as needed. Having the TRC review large-scale development plans would ensure that such plans are reviewed in a coordinated fashion and that all municipal concerns are addressed comprehensively. A coordinated TRC review process would also benefit the potential business/industry trying to establish themselves in Dudley. The Town's concerns would be presented to the developer all at once, instead of the time consuming department-by-department review that currently takes place in an uncoordinated fashion. Responsible Municipal Entity: since commercial/industrial development proposals are not currently reviewed by the Planning Board, it is the Building Inspector who would take the lead on reviewing such plans when the developer comes in for a building permit. Once again, the Board of Selectmen would have to instruct the departments under their jurisdiction to participate in the TRC process. Likewise, the Water Commission, Sewer Commission, and Board of Health.

9. The Town needs to influence local cable companies and telecommunication firms to provide access to high speed data and networking technologies in preparation for existing and new businesses that may want to take advantage of these technologies. Put quite simply, these technologies are the wave of the future, and if businesses can't find them in Dudley, they *will* look elsewhere. Responsible Municipal Entity: the Information Technology Committee (ITC), in conjunction with the Town Administrator.

TOWN GOVERNMENT: FACILITIES AND SERVICES

This chapter of the Master Plan presents a general description of Dudley's town government, municipal facilities and services. The map on the following page (Town-Owned Properties and Community Facilities) shows the locations of Dudley's various community facilities and town-owned properties, and a numerical index of Dudley's town-owned properties can be found in Appendix A.

A detailed analysis of how Dudley compares to neighboring communities in terms of municipal expenditures per department is beyond the scope of this study. However, a recent study of per capita municipal expenditures, prepared by the Massachusetts Department of Revenue, indicates that Dudley town government spent \$644 per person during fiscal year 1998 (including school expenditures). This was the third lowest per capita municipal expenditure rate in the entire State. It should be noted that water and sewer expenditures were not included in the figures for Dudley, as these services are provided under the enterprise system. Here is how Dudley compares with its immediate neighbors in regard to per capita municipal spending:

Table TG-1

1998 Per Capita Municipal Spending: A Comparison

<u>Community</u>	<u>General Fund Expenditures</u>	<u>Municipal Spending Per Capita</u>	<u>State Rank</u>
Dudley	\$6,315,000	\$644	349
Charlton	\$8,634,000	\$835	342
Oxford	\$17,651,000	\$1,325	265
Southbridge	\$14,958,000	\$1,410	240
Webster	\$20,124,000	\$1,249	279

Source: Massachusetts Department of Revenue.

The State average for municipal expenditures per person was \$1,769 for fiscal year 1998. What this means is that Dudley is at the bottom of municipal expenditures per person when compared to its neighbors and the State as a whole. In fact, there are only two Massachusetts communities (Royalston and Templeton) that spend less on per capita municipal expenditures. This is not surprising when one considers Dudley's low tax rate (\$11.13 for fiscal year 1998).

As will be demonstrated in the ensuing discussion, Dudley has quite a few capital equipment needs and new building needs that will need to be addressed in the upcoming decade. With the recent cut in State highway aid (Chapter 90 funds), it will be next to impossible for Dudley to address its capital equipment and building needs without an increase in the local tax rate. The descriptions presented below are for selected municipal services. The descriptions will discuss,

where appropriate, the following items: departmental organization; responsibilities; staffing; budget; equipment; programs; facilities; and anticipated capital needs. Please note that the Town's various recreation facilities will be described in the Conservation and Recreation chapter.

Highway Department:

Organization: The Highway Department is managed by the Board of Selectmen, operating under their capacity as Highway Commissioners. The Highway Superintendent, who is appointed by the Selectmen, is responsible for the actual day-to-day management of the Department.

Responsibilities: The Department is responsible for the upkeep and maintenance of roughly 80 miles of Town roads. In addition, the Department provides general maintenance and plowing for Route 31, a State road. The Department also handles roadside drainage problems.

Staffing: Other than the Superintendent position, the Department consists of a foreman, a mechanic, and seven laborers. The Clerk for the Board of Selectmen provides four hours a week of secretarial support for the Department.

Budget: For the fiscal year ending June 30, 1999, the Department received an operating budget appropriation of \$383,867 at the annual Town Meeting (May 1998). This was further supplemented by an additional appropriation of \$71,500 at a Special Town Meeting (October of 1998). Dudley will receive \$326,474 in State highway funds for the 98/99 fiscal year, just slightly more than what was received the previous fiscal year.

Equipment: The Department's equipment is bought as needed and purchase is usually handled through a Town Meeting warrant article. There is no long-range plan for equipment replacement or other anticipated capital needs. The Department's equipment currently consists of the following items:

- Six dump trucks in fair-to-excellent condition (one is brand new).
- Road grader, two years old, in excellent condition.
- Two loaders, both over 20 years old, both in fair condition.
- One catch basin cleaner, 15 years old, in fair condition.
- One paver, undetermined age, in good condition.
- Six sanders, all around 15 years old, all in fair condition.
- A brush mower, 13 years old, in good condition.
- One backhoe, 23 years old, in fair condition.
- One 10-ton roller, bought used, in fair condition.
- One street sweeper, 23 years old, in fair condition.

Facilities: The Town Garage facility is located a quarter of a mile down Indian Road and sits on

a 9.5 acre site. The site is shared with the dog pound, solid waste transfer station and recycling center. The garage building itself consists of roughly 12,600 square feet.

Upcoming Capital Needs: As mentioned previously, there is no long-range plan for equipment replacement or other anticipated capital needs. The Department hopes to replace one piece of equipment every year.

Solid Waste, Recycling, and Hazardous Waste:

Responsibilities: The transfer station and recycling center handles the waste disposal needs of participating Dudley citizens who pay an annual dump permit fee of \$70 per family. The facility currently serves roughly 25% of the community. The majority of Dudley citizens, especially in the rural north and west, handle their own waste disposal needs through private contractors. The recycling center currently accepts the following items: newspaper, office paper, magazines, phone books, glass, cans, #2 plastics, corrugated cardboard and scrap metal. The facility also accepts yard waste which is composted and then given away to Dudley residents. The facility also accepts old car batteries (sold to a dealer) and regular batteries (recycled off-site). The transfer station also holds household hazardous waste collection days on a periodic basis, the most recent being the spring of 1999. The last such effort was held over six years ago.

Staffing: There is only one full-time employee at the transfer station/recycling center, however, part-time help is usually hired for busy weekends (after holidays).

Budget: For the fiscal year ending on June 30, 1999, the transfer station/recycling center received an operating budget appropriation of \$101,018 at the annual Town Meeting (May 1998). This was further supplemented by an additional appropriation of \$8,600 at a Special Town Meeting (October of 1998). The Town has a contract with Pratt Trucking, a private waste hauler, to dispose of solid waste collected at the transfer center. The Town's contract with Pratt Trucking expires in June of 2000. The current charge per ton is \$68.00. Pratt currently disposes of Dudley's solid waste at the Southbridge landfill. It should be noted that a recent fee increase at the Southbridge landfill has resulted in Pratt paying more to dispose of Dudley's waste than what it charges the Town under the current contract.

Equipment: The Department's equipment is bought as needed, however, most of the equipment on-site is rented. Purchase of large capital items is usually handled through a Town Meeting warrant article. All of the site's equipment is in good shape and no deficiencies were noted.

Facilities: The transfer station/recycling center is located a quarter of a mile down Indian Road and sits on a 9.5 acre site. The site is shared with the highway garage and the dog pound.

Upcoming Capital Needs: None identified. The station is about to purchase a new baler (funds appropriated at the October 1998 Special Town Meeting). The cost of the baler will be paid for by selling recyclables, and the purchase cost is expected to be fully recovered over an 18-month period.

Sewer Department:

Organization: The Dudley Sewer Department is managed by a three-person elected Board of Sewer Commissioners. The Sewer Superintendent, who is appointed by the Commissioners, is responsible for the actual day-to-day management of the Department.

Staffing: The Department has a full-time staff of three (including the Superintendent) and a clerical support person for 33 hours a week.

Budget: For the fiscal year ending on June 30, 1998, the Department had an operating budget of \$835,140. As an enterprise system, the entirety of the Department's operating budget is derived from user fees. Sewer customers pay a sewer rate of \$2.70 per 100 cubic feet (750 gallons), and an annual maintenance fee of \$192.81. Non-metered customers pay an annual sewer charge of \$800. For newly extended sewer lines, a homeowner has a year to connect to the system without paying a connection fee. After a year, a connection costs \$1,200 plus a betterment fee. If a developer wants to extend a sewer line, he bears the cost of extending the line and is charged \$200 per household connection. The Department's debt service currently comprises roughly 16.5% of its operating budget.

System Description: The sewer system currently consists of numerous sewer lines having a total length of roughly 20 miles. The size of the sewer lines range from 8" to 18". There are 517 manholes in use and nine pumping stations. A map of the municipal sewer system service area can be found on the next page (Municipal Sewer System Map). There are 1,611 connections to the system, primarily residential, however several businesses, industries, institutions and municipal buildings are connected as well.

Dudley's sewage is treated at the Dudley/Webster sewage treatment plant, located off of Hill Street in Webster. The treatment plant has a capacity of six million gallons per day and is currently operating at 50-60% capacity. The plant was originally built in the mid-1960's, however, it was significantly upgraded in 1988. The system discharges an average of three million gallons of treated wastewater per day into the French River. Of this discharge, Dudley sewer customers generate 12% while Webster generates the remainder.

The Dudley/Webster sewer system is sewage only, and is not a combined sewer/stormwater system, although stormwater infiltration has been a chronic problem, especially for the older clay pipes. Sludge from the treatment plant is taken to an incinerator in Woonsocket, Rhode Island. Webster charges Dudley for the amount of sewage sent to its treatment plant, and this charge currently represents roughly 52% of the Department's budget. There is a small sewage treatment plant in Dudley, located off of Carol Way. Dudley's plant consists of five tanks that equalize the sewage flow to the Webster treatment plant. No treatment or discharge occurs at the Dudley plant, however, the plant can be used as a backup if problems occur at the Webster plant.

Dudley is in the middle of a multi-phase sewer line expansion plan. 1998 saw completion of the first phase, which connected several streets including a significant portion of the area surrounding Merino Pond. Several houses on Flax Field Road could not be connected due to ledge problems. The second phase is currently underway and will include parts of Sawmill Road, all of Konkell Drive and Lakeview Avenue Extension. The third and last phase will include Dudley Hill Road, Paglione Drive, Lynn Lane, Greenwood Avenue and Lawrence Road. Several upgrades to the system's various pump stations are also in the works. A flow-monitoring program was instituted in the spring of 1999. Such monitoring is required by the Massachusetts

Department of Environmental Protection (DEP) before large-scale private developments (a threshold of 15,000 gallons per day) can tie into the system.

Upcoming Capital Needs: The Department wants to continue upgrading its pump stations as funds permit. Large capital expenses are paid for through Town Meeting warrant articles.

Water Department:

Organization: The Dudley Water Department is managed by a three-person elected Board of Water Commissioners. The Water Superintendent, who is appointed by the Commissioners, is responsible for the actual day-to-day management of the Department.

Staffing: The Department has a full-time staff of four people (including the Superintendent), plus a full-time clerk for secretarial support.

Budget: For the fiscal year ending June 30, 1998, the Department had an operating budget of \$764,559. As an enterprise system, the entirety of the Department's operating budget is derived from user fees. A water permit, giving permission to tie into the system, costs \$250 and is good for one year. Connecting to a water line from a street curb costs \$500, while establishing a connection from a residence to a water line costs \$1,500. The Department charges \$3 per 100 cubic feet of water (750 gallons). The Department utilizes grant opportunities when available. The Department has recently received a \$664,000 no-interest loan from the DEP to institute a corrosion control plan that must be in place by the year 2000. The Department's debt service currently comprises roughly 38.6% of its operating budget.

System Description: Dudley's municipal water system currently provides roughly 650,000 gallons per day to approximately 2,100 customers (residential, commercial, industrial, municipal and institutional). The water system can presently provide roughly one million gallons of water per day, but only when the supply wells are pumping continuously over a 24-hour period. During the summer, water demand can peak at one million gallons per day, which pushes the system to its limit. The distribution system consists of roughly 35 miles of water pipes. The amount of water used by the system is much less than it used to be, due to an aggressive leak detection system as well as the golf course going off-line. A map of the municipal water system service area can be found on the previous page (Municipal Water System Service Area Map).

Water for the system comes from three well fields. The first well field (Station #1) is located at the southern most point of Merino Pond, near the corner of West Main Street and Mason Road. This is a tubular system, that is, 54 shallow wells (up to 30 feet deep) which produce small amounts of water (each well producing 6-10 gallons per minute). The Station #1 well field has a 250-foot protective radius, and the Department owns all of the land within the radius.

The other two well fields (Stations #3 & #6) are located off of Schofield Avenue, south of West Main Street. These two well fields consist of gravel-packed wells that can pump 300 gallons per minute each. Both wells have a 400-foot protective radius with the land owned by the Town. The Water Department has delineated the contribution zones for both well fields. Although the Department doesn't own much of this land, they do have an arrangement with the Town whereby the Department can veto a proposed land use within the zones of contribution if they feel the use would constitute a potential threat to water quality.

The Water System Service Area Map depicts the protective radii for all three well fields and the zones of contribution for the Station #3 & #6 well fields. Merino Pond falls within the zone of contribution for the West Main Street well field, and the French River falls within the zones of contribution for the Schofield Avenue well fields.

Upcoming Capital Needs: Large capital expenses are paid for through a warrant article at Town Meeting. Although not considered capital equipment needs, there are several system deficiencies the Department would like to correct:

- Most of the water mains (85%) are quite old, some going back to the time when the water system was first established (1909). The older water mains are made of transit which is composed of asbestos, cement and old papers. These pipes break quite easily and are subject to corrosion. The Department replaces the old pipes with ductile pipes when they can, usually when a break in one of the mains is detected. Ductile pipes are much more durable and don't corrode as easily.
- Many of the water lines are simply too small to meet existing service demands (especially during peak demand periods). Some of the water mains are as small as 6" in diameter. The result has been water pressure problems throughout the system. The Department would like to rectify this situation in the near future.
- The Department will eventually (5-10 years) have to replace the water tower at Bates Hill Reservoir because it has outlived its service life. This will be an expensive proposition. The Department recently replaced the Dresser Hill Road water tower at a cost of \$750,000 (this is why the Department's debt service is so high).
- Lastly, the Department needs to find a new water supply source to accommodate future demand. The system is currently at capacity and a water moratorium has been in effect since 1985. An aggressive leak detection program has reduced the amount of water used, and this enabled the Department to allow 30 new connections in 1999. However, future expansion of the water system is not possible until a new water source can be found. Searching for a new water source has been an on-going endeavor for the Department.

Police Department:

Staffing: The Department has 14 full-time police officers, including the Chief of Police. There are also 15 reserve officers and a dispatch team consisting of four full-time civilians. A part-time clerk provides secretarial support. Dudley can also utilize the Webster police force through a mutual aid agreement.

Budget: For the fiscal year 1998, the Department received an operating budget appropriation of \$826,379 at the annual Town Meeting (May 1998). This was further supplemented by an additional appropriation of \$21,500 at a Special Town Meeting (October of 1998). Federal grants have enabled the Department to expand its efforts and purchase new equipment. In 1998, the Department received a \$100,000 federal grant to install computers in their patrol cars.

Programs Offered: The Town's civil defense program is run from the Police Department and is closely coordinated with the regional Massachusetts Emergency Management Agency (MEMA) in Westborough. Dudley's civil defense program is currently staffed by two volunteers from the

Police staff. The Department also conducts an annual citizen's policy academy. This is the program where reserve officers are trained.

One of the more successful programs offered by the Department is their annual youth police academy. This is a ten-week program offering classes on Saturdays. The program is run by officers who are kind enough to volunteer their time for this effort. The youth program currently serves roughly 30 students of junior and high school age, however, the demand for program expansion is strong. Federal grant money is used to cover the program's expenses (equipment, supplies and travel). The youth academy program has been very successful in getting youths at risk to participate in community affairs, improve their behavior, boost their self-esteem and, in many cases, their grades. The Department hopes to be able to expand this program at some point.

Crime Trends: A review of the Department's crime statistics for the past ten years indicates that Dudley is far from a hotbed of crime. There has been only one homicide and only six armed robberies during the past decade. Distinctive trends are hard to identify as the numbers for a particular crime category fluctuate from year to year. However, there are two trends of note: the number of service calls has steadily increased over the past decade, from roughly 8,000 in 1990 to 9,917 in 1998. Also, domestic abuse calls have steadily increased over the past decade, from a low of 14 calls in 1992, to a high of 108 calls in 1998.

The Massachusetts State Police keep crime statistics that allow for a comparison with other communities. The 1995 Uniform Crime Report provides statistics regarding the crime rate per 1,000 residents. The table below takes a look at how Dudley compares to its abutting Massachusetts neighbors:

Table TG-2
Community Crime Rate per 1,000 Residents (1995)

<u>Municipality</u>	<u>Estimated 1995</u>		<u>Rate per</u> <u>1,000 Residents</u>
	<u>for Population</u>	<u>Total Crimes</u>	
Dudley	9,612	131	13.6
Charlton	10,646	146	13.7
Oxford	13,092	283	21.6
Southbridge	17,994	675	37.5
Webster	16,709	693	41.5

Source: Massachusetts State Police Uniform Crime Report for 1995 (the last available year). State Police use population estimates provided by the Massachusetts Institute for Social and Economic Research (MISER).

The previous table indicates that for 1995, Dudley had the lowest crime rate of its immediate

region. In fact, only five communities in Worcester County had lower crime rates during this period: Boylston (population: 3,816; crime rate per 1,000 residents: 7.9); Princeton (pop: 3,248; per 1,000 crime rate: 7.7); Rutland (pop: 5,046; per 1,000 crime rate: 6.5); Shrewsbury (pop: 26,718; per 1,000 crime rate: 8.3); and Sutton (pop: 7,338; per 1,000 crime rate: 3.3). The Massachusetts State Police also have statistics for the total number of crimes reported for communities having populations of 10,000 and over. Comparing Dudley to communities fitting this description reveals Dudley had the fifth lowest crime total for the entire State in 1997 (the last year that statistics were available). Only Harvard, Holliston, Medfield and Weston had fewer reported crimes for 1997.

Equipment: The Department's equipment is bought as needed and purchase is usually handled through a Town Meeting warrant article. The Department's equipment currently consists of the following items:

- Two 1998 police cruisers in good condition, and two 1995 police cruisers in poor condition.
- Two utility vehicles (96 & 97), both in good condition.
- The Department recently received a free jet ski from Action Marine that will be used for pond patrols during the summer months.

Facilities: The Department's headquarters is located at the Dudley Town Hall. The current Town Hall site does not have a lock-up facility. Instead Dudley Police make use of the jail in Webster and gets charged for the service.

Upcoming Capital Needs:

- The Department would like to replace the two 1995 cruisers in the near future.
- The Department needs a new headquarters, something large enough to have its own lock-up facility. A special Town Meeting was held in the fall of 1999 where the citizens rejected a proposal to build a new headquarters at the site of the West Main Street School. Thus, it appears the Police Department will have to evaluate other alternatives for a new headquarters.

Fire Department:

Organization: The Dudley Fire Department is managed by a three-person Board of Fire Engineers (appointed by the Selectmen), with the Fire Chief acting as head administrator. The Fire Chief also serves as the Forest Fire Warden. The Assistant Fire Chief is responsible for the actual day-to-day management of the Department.

Staffing: The Department has a full-time staff of five fire fighters, all of whom are trained emergency medical technicians (EMTs). The Department's staff is further supplemented by 45 volunteers, almost exclusively Dudley residents. The Department does not have any secretarial support. The Department is part of the District #7 fire/ambulance mutual aid compact, which consists of 26 Worcester County communities.

Budget: For the fiscal year ending June 30, 1999, the Department received an operating budget appropriation of \$314,420 at the May 1998 Town Meeting. This was further supplemented by an additional appropriation of \$20,000 at the October 1998 Special Town Meeting.

Responsibilities: Dudley’s Fire Department does a lot more than just fight fires. The Department provides inspections for smoke detectors, wood-stoves and fireboxes. The Department is also responsible for issuing the following types of permits: open burning permits; blasting permits; gas permits; flammable/combustible storage permits; permits to install/remove/abandon underground storage tanks; storage facility maintenance permits; permits for underground storage tank tightness testing; permits to install underground storage tank vapor recovery systems; permits to install underground storage tank spill containment systems; permits to install automatic fire suppression systems; permits for automatic sprinkler systems; permits to purchase and store black and smokeless powder; and permits to transport combustible liquids in transfer/cargo tanks.

The Department is licensed through the State’s Department of Public Health to operate two advanced life support ambulances, public fire education, in-house training of EMTs and firefighters, as well as hazardous materials response. The Department is the first line of response for hazardous waste spills. For such spills, the Department usually calls in the District #7 Hazardous Materials Response Team for clean up assistance.

Programs Offered: The Department offers fire safety programs to a variety of audiences, including: school-aged children, cub scouts & brownies, civic groups and adult groups. All told, 1,156 people participated in these programs during 1998.

Trends and Comparisons: In addition to records kept by the Dudley Fire Department, the Office of the Fire Marshall maintains an inventory of fire statistics for Massachusetts communities, the last available inventory year being 1997. The table below presents a listing of the total fires for Dudley and its Massachusetts neighbors for 1997.

Table TG-3

Total Fires by Community (1997)

	<u># of Fires</u>	<u>Per 1,000 Residents</u>	<u>Estimated Dollar Loss</u>
Dudley	13	1.34	\$150,300
Charlton	100	9.94	\$265,605
Oxford	31	2.38	\$145,125
Southbridge	33	1.89	\$259,600
Webster	106	6.60	\$563,710

Source: 1997 Annual Report of the Massachusetts State Fire Marshal.

For the past ten years (1989-1998), Dudley's Fire Department has averaged roughly 404 response calls a year, with a high of 571 calls in 1989, and a low of 254 in 1997. There has been a declining trend in the number of response calls per year, yet this is also true for the State as a whole during the past ten years. Although a thorough analysis has not been prepared, the State Fire Marshal believes that much of the drop can be attributed to the installation of sprinkler systems in newly constructed buildings. As tracked over the past decade, the table below shows the number of service calls responded to by Dudley's Fire Department and Ambulance Service.

Table TG-4

Fire/Emergency Responses (1989-1998)

	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>
Fire	571	508	504	490	352	386	328	356	254	290
Ambulance	532	442	498	466	550	633	633	683	660	641

Source: Dudley Annual Town Reports (1989-1998).

Dudley's fire and ambulance service calls cannot be directly compared to all of the five abutting communities because several of them have combined fire/ambulance services and keep a single tally of responses for both services. However, several other Worcester County communities do keep separate response statistics and this will allow for a direct comparison. The table below presents the fire and ambulance response rates (per 1,000 residents) for Dudley and several other Worcester County communities.

Table TG-5

Fire/Emergency Response Rates for Dudley and Selected Communities (1997)

	Fire Dept.	# Per 1,000	Ambulance	# Per 1,000
	<u># of Calls</u>	<u>Residents</u>	<u># of Calls</u>	<u>Residents</u>
Dudley	254	26.2	660	68.3
Milville	110	45.3	175	72.1
Oxford	305	23.4	1,280	98.4
Uxbridge	382	33.7	943	83.3
Warren	200	44.4	302	67.0

Source: 1997 Annual Town Reports for Dudley, Milville, Oxford, Uxbridge and Warren.

The current staffing of the call/career firefighters and EMTs is presently on target with existing community needs. There is no standard method to predict when staffing levels will need to be increased in the future. However, the Town should be observant and responsive to its growth trends as well as the ability of existing personnel to meet the community's fire and safety needs, both now and in the future.

Equipment: The Department's equipment is bought as needed and purchase is usually handled through a Town Meeting warrant article. The Department's equipment currently consists of the following items:

- Two customized pumper trucks (1996 & 1997), both in excellent condition with a projected 25-year service life; and a 1985 medium weight commercial pumper truck in fair condition. (all told, the three pumper trucks can deliver 2,400 gallons of water)
- A 1981 ladder truck in excellent condition.
- A 1994 ambulance in good condition, and a 1998 ambulance in excellent condition.
- A recently refurbished 1979 4-wheel drive forestry truck in good condition.
- A 1959 1 ¼ ton forestry truck in good condition.
- A 1999 4-wheel drive utility pick-up truck in excellent condition.

Facilities: The current fire station building is forty years old and is located at the corner of Mason Road and West Main Street. The building consists of two floors (the second being mostly unfinished) and has a total floor area of 7,000 square feet.

Upcoming Capital Needs: The Fire Department has quite a few capital needs for the near and not too distant future, these include:

- The Department wants to purchase the phase II portion of pagers for the firefighters (\$11,000) during the next fiscal year.
- Fire station improvements: new roof (\$16,000); grade, install drainage and pave in front of the station (\$35,000); and a new, larger water main leading to the station (\$4,000-\$6,000).
- The Department would like to extend the fire alarm system to the courthouse on West Main Street (\$5,000). As many as 25 businesses could tie into the alarm system if this happens.
- By 2002, the Department wants to install a master fire alarm box inside the Town Hall and tie it into the fire alarm system (\$2,000). This should be done before the Police Department relocates.
- By 2003, the Department wants to install fire alarm systems in the Library, the various Water Department buildings, and the Sewer Plant, and connect them via a master box to the fire alarm system (\$20,000).

- By 2001, the Department would like to purchase a new base radio and relocate it to the new Dresser Hill water tower on Route 31. The projected cost is \$30,000-\$40,000, however, much of the cost will be for installation. Once the fixed radio masts and utility sheds are in place, other town departments could also move their equipment to this site (at minimal cost) and derive the transmission benefits from this location.
- By 2002/2003, the Department wants to conduct a study to determine the cost of expanding and upgrading the existing fire station, compared to the cost of building a new station. The estimated cost of this study is \$20,000.
- By 2003, the Department wants to start installing underground fiberglass tanks (pods) in selected rural areas that do not have fire hydrant protection. The pods would range in size from 7-10 thousand gallons a piece. They would be used for water storage so that pumper trucks could draw from them in the event of a fire. The Department would like to purchase six or seven of these pods (\$8,000-\$10,000 a piece) and install them over a period of three-to-five years.
- By 2004, the Department wants to re-mount the body of the 1985 pumper truck onto a custom-designed chassis. This will cost roughly \$180,000 and will add 25 years to the vehicle's service life.
- The Department will need a new ambulance (\$130,000) by the year 2005.
- By the year 2010, the Department will need to replace one of its ladder trucks (today's cost: \$600,000).

Other Issues: Although not capital expenses, there are several issues the Department would like to address in the next few years:

- The Department would like to repair all broken fire hydrants and get them back in service.
- The Department would like to work with the Water Department to reduce the known water pressure problem along West Main Street, from Airport Road to the Courthouse.
- The Department wants to work with the Water Department to install 12" water mains along Mason Road, Mill Street, Pine Street, Oxford Avenue; loop Airport Road to Mason Road via Dudley-Oxford Road; and loop Charlton Road to Mason Road via Dudley-Oxford Road.
- The Department would like to work with the Planning Board to adopt a regulation which would allow the Town to require underground water pods to be installed by developers for new subdivisions in rural areas not served by the hydrant system.

Board of Health:

Organization: The Dudley Board of Health consists of three elected members who meet on a monthly basis. They maintain an office at the Town Hall.

Staff: There is a part-time health inspector (10 hours a week) and an office clerk (12 hours a week). There is a soil evaluator, operating under a consulting contract with the Board, who witnesses percolation tests for new and replaced septic systems. The Board also has a consulting contract with an engineer who provides Title V assistance by looking over septic system design plans and conducting installation inspections. In addition there is also an animal inspection consultant who handles rabies cases, livestock and horse inspections.

Budget: For the fiscal year ending on June 30, 1999, the Board received an operating budget appropriation of \$20,950 at the annual Town Meeting (May 1998).

Programs:

- The Health Inspector conducts bi-annual inspections of food services and investigates food-related complaints.
- The Animal Inspector offers an annual rabies clinic.
- The Board contracts with a private health care firm to conduct annual flu immunization clinics at the Town Hall and at Joshua Place.
- Through a grant from the Massachusetts Department of Public Health, the Dudley Board of Health administers the Massachusetts Tobacco Control Program for the towns of Dudley, Southbridge, Sturbridge and Webster.
- The Board makes available radon testing kits to interested residents.
- Through a grant from the Massachusetts Department of Environmental Protection, the Board offers a loan program to residents in need of new or upgraded septic systems. This program, known as the Community Septic System Management Program, was instituted in 1997. Administrative assistance is provided by the Central Massachusetts Regional Planning Commission. The Program currently has \$202,000 in loans available to residents with failed septic systems.

Building Inspections and Code Enforcement: There are four part-time construction-related inspectors working for Dudley: a building inspector, plumbing inspector, gas inspector and wire (electrical) inspector. All four inspectors are appointed by the Selectmen. The Building Inspector shares a part-time clerk (34 hours a week) with the Zoning Board of Appeals. This clerk works part-time out of the Building Department's Office at the Town Hall, and is available to hand out building permit applications, collect fees, and schedule appointments upon request. The plumbing and gas permit applications are now processed through the Building Department and fees are collected and turned over to the Town Treasurer. Gas and plumbing records are now kept in the Building Department's office at the Town Hall.

The electrical inspector does not have clerical assistance or office space at the Town Hall. Instead, he works independently out of his private residence, issues permits and collects fees on his own, and maintains a separate filing system at his residence. The Building Inspector puts in 20 hours a week for Dudley and reviews new building plans to ensure compliance with the Zoning By-Law's dimensional table and development standards (access, parking, etc.), as well as the State's building code. The other inspectors put in around 5-10 hours a week and only review

new and substantially remodeled buildings.

Cemetery Commission: The Commission consists of three elected members and they are charged with maintaining seven cemeteries in Dudley (see the Town-Owned Properties and Community Facilities Map for cemetery locations). Several of Dudley's cemeteries have historical significance, particularly Corbin Cemetery which dates back to 1735. Waldron Cemetery was recently expanded to allow for 200-300 new burial plots. This expansion should enable the Town to meet its interment needs for the next decade.

The Commission has no office space other than a file drawer at the Town Hall. None of the Commission's records are computerized, although they hope to rectify this situation in the near future. The Commission does have some clerical assistance on a very limited basis. The Commission has a contract with the Southern Worcester County Rehabilitation Center for cemetery maintenance. The Commission's \$12,197 budget for the 1998 fiscal year only allowed for "holiday" maintenance, meaning the cemeteries were mowed prior to a holiday and received no other maintenance during the year. However, the maintenance budget has been increased to \$43,661 for the 1999 fiscal year. This will allow for more landscaping and upkeep. Additional cemetery maintenance has been provided by the newly formed Cemetery Restoration Committee, a non-profit organization formed by local concerned citizens. This group recently restored the gates and repaired the stone walls for the Village Cemetery.

Pearle L. Crawford Memorial Library: Located on Village Street, the Library was built in 1901 and is only 2,900 square feet in size (approximately). Additional space has been a long-standing concern. Parking is limited and there are no sidewalks leading to the site. The Library recently received Town Meeting approval to form a committee to look at the Town's options for a new library, and their work should be completed prior to the May 2000 Town Meeting.

The Library staff consists of two full-time librarians and three part-time assistants. The Library has an ever-increasing circulation of 58,767 items. The Library staff is always willing to work with other lending libraries to obtain special order books on behalf of Dudley citizens. The Library's operating budget for fiscal year 1998 was \$111,646, although this was supplemented by grant money and funds raised by the Dudley Friends of the Library group. The Friends helped purchase two computers for the Library.

The Library offers a variety of programs, all at no charge. A children's story hour is offered six times a year and every Wednesday crafts classes are offered. The Junior Girl Scouts use the Library for a program every Thursday morning. Additionally, the Library offers a smoking education program in the summer.

Town-Sponsored Cultural Groups and Programs :

1. *Dudley Historical Commission:* The Commission consists of as many as seven members appointed by the Selectmen. The Commission operates on a budget of \$100 a year and meets periodically at the Town Hall. The Commission does not have any clerical support and their office space consists of a file cabinet at the Town Hall. Although dormant for many years, a reinvigorated Commission is now fully engaged. The Commission obtained \$5,000 at the October 1998 Special Town Meeting for the purpose of updating the Town's Historical Survey, originally prepared in the early 1970's. This money will be used as the Town's match when they

apply for a grant from the Massachusetts Historical Society. Once the grant is successful, the Commission will update the survey with the Society's assistance. The Commission's previous achievements include successfully nominating the Black Tavern (at Nichols College) for inclusion on the National Register of Historic Places. The Tavern, located at Nichols College, has its own historical society that is fairly active. There are numerous sites and structures in Dudley that are eligible for inclusion on the National Register of Historic Places, particularly in the old Dudley Center area (in and around Nichols College), Perryville and the area surrounding the Stevens Linen Mill.

2. *Cultural Council*: The Council currently consists of five members appointed by the Board of Selectmen and has been in existence since the early 1980's. The Council operates on an annual budget of roughly \$7,000, all of which is provided by the Massachusetts Cultural Council through a portion of the Megabucks proceeds. The Council sponsors a number of cultural events that change from year to year, such as trips to Boston and New York to see plays and tour the museums. They also use some of their funds to pay for performers at local events like the annual Strawberry Festival. They also offer some of their funding to local artists in the form of grants. They have an annual grant selection process that takes place every fall. Artists outside of Dudley are eligible to apply as long as their project will benefit the Town.

3. *Council on Aging*: The Council consists of nine people appointed by the Selectmen as well as a director and assistant director. The Council offers a number of programs for Dudley's senior citizens including: a meals program at Shepherd Hill; a blood pressure clinic at Hubbard Hospital; a quarterly newsletter; a weekly card game at the Town Hall; a swimming/exercise class twice a week; a weekly coffee and activities program; a needlework program; day trips and holiday parties. The Council also sponsored a "Three Little Kittens" program at the Mason Road School, where seniors made cookies and mittens, and read stories to the children. The Council would like to see a Senior Center established in Dudley and would also like to acquire a small van or bus for senior day trips.

4. *Youth Council*: Established at the October 1998 Special Town Meeting, this is a new entity consisting entirely of volunteers. The goals and objectives of the Youth Commission are to plan programs and special events for the youths of Dudley. To date, two events have taken place: an Easter Egg Hunt and a Luau at the Town's beach on Merino Pond. Planning is underway for additional events.

Public School System:

Dudley is part of the Dudley-Charlton Regional School District. A seven-person school committee sets school policies and manages the district's operations. The committee is elected and consists of three people from Charlton, three people from Dudley, and one person from the community having a larger school population at the start of the school year (this has been Charlton for the past several years). The school system currently consists of six schools, four in Dudley and two in Charlton. A brief description of the four schools that Dudley students attend is presented below.

Shepherd Hill Regional High School

Location: #68 Dudley-Oxford Road

Mason Road School

Location: Mason Road

Built in 1973, no additions
Currently complies with ADA code
(Americans with Disabilities Act)
Design capacity: 1,302 students
Student population (1998): 1,499
847-Charlton, 652-Dudley
Grades: 7-12, Classrooms: 76
Building square feet: 196,580
Size of school site: 96 acres
Facilities: auditorium, library, main gym,
practice gym, and cafeteria
Student-teacher ratio: 18-1

Dudley Elementary School

Location: West Main Street
Built in 1926, one addition (1930)
Building not ADA compliant
Design capacity: 275 students
Student population (1998): 269
Grades: second and third
Building square feet: 34,500
Size of school site: 4.35 acres
Facilities: 15 classrooms, library,
cafeteria/gym
Student-teacher ratio: 23-1

Built in 1963, no additions
Building not ADA compliant
Design capacity: 120 students
Student population (1998): 240
Grades: kindergarten and first
Building square feet: 19,700
Size of school site: 28 acres
Facilities: 8 classrooms and a
cafeteria
Student-teacher ratio: 23-1

Dudley Intermediate School

Location: #16 School Street
Built in 1957, no additions
Building not ADA compliant
Design capacity: 295 students
Student population (1998): 372
Grades: four, five and six
Building square feet: 43,360
Size of school site: 15 acres
Facilities: 18 classrooms, gym
and cafeteria
Student-teacher ratio: 23-1

Source: Dudley-Charlton Regional School District, Superintendent's Office, May 14, 1999.

The School District is in the midst of a four-part school expansion/construction project that will eventually result in a re-alignment of the grades attending each school. There is a new middle

school under construction near the High School that will serve roughly 600 Dudley students. A new middle school is also under construction in Charlton. Once completed, both schools will serve grades 5 through 8. Taking the seventh and eighth grades out of the High School will reduce the number of students at this site by more than 600.

An expansion of the Mason Road School is in progress. This expansion will add nine new classrooms and a library. The Mason school will continue to serve kindergarten and the first grade, but will also serve the pre-k population. An addition is also under construction for the Dudley Intermediate School that will add six new classrooms, a library and additional office space. Once completed, this school will serve grades 2, 3 & 4. Selected details for the three Dudley school construction/expansion projects are presented below.

<u>Mason Road School (w/ addition)</u>	<u>Dudley Intermediate School (w/addition)</u>
Current grades served: k & 1	Current grades served: 4, 5 & 6
Grades served after addition: pre-k, k & 1	Grades served after addition: 2, 3 & 4
Current building capacity: 120 students	Current building capacity: 295 students
Capacity to be added: 159 students	Capacity to be added: 94 students
Total new capacity: 279 students	Total new capacity: 389 students
Building square feet: 19,768	Building square feet: 43,363
Square feet of new addition: 19,285	Square feet of new addition: 10,810
Total facility sq. ft.: 39,053 (post addition)	Total facility sq. ft.: 54,673 (post addition)
Will be ADA compliant	Will be ADA compliant

New Dudley Middle School

Grades to be served: 5, 6, 7 & 8
 New building capacity: 600 students
 New building square feet: 83,800
 Will be ADA compliant

Source: School Facilities Study: Dudley-Charlton Regional School District, prepared by Alderman & Mac Neish - Architects and Engineers, May 25, 1995.

The four-part school construction/addition program (including the Charlton project) has a current estimated cost of 53.6 million dollars, of which the State will pay 76.3%. This represents the third largest school construction/addition project currently underway in all of Massachusetts. All four school construction/addition projects have broken ground.

In terms of evaluating whether the school construction/addition projects discussed above will be adequate to meet Dudley's needs for the next ten years, this exercise will use the school-age

population projections developed by the Massachusetts Institute for Social and Economic Research (MISER). Operating out of the University of Massachusetts in Amherst, MISER has been preparing population projections since 1983. MISER uses a complex projection formula, using such factors as historical birth/death trends, in and out population migration, aging and survival rates. The MISER projection methodology was last updated for Dudley in early 1999. The MISER projections can be broken down by specific age groups (school-aged children for this particular exercise).

When using the MISER methodology, it is important to remember that not all Dudley children will attend public schools. According to the Massachusetts Department of Education, 91% of Dudley children attended public schools during the 1996/97 school year (the last year that statistics are available), while 94% of Charlton children attended public schools. These percentages have been fairly stable over the last decade, and will be used with the MISER population projections for this exercise.

Another factor to account for is that MISER projects population in five-year intervals. These five year intervals will work fine when projecting the school-aged population for the Mason and Intermediate Schools because, when combined, these schools serve five grades (k, 1, 2, 3 & 4). However, the MISER five-year interval projections will overstate the population attending the New Middle School because the school will only serve four grades (5, 6, 7 & 8), while the MISER projection for this age group is expressed as a five-year interval (ages 10-14). The same holds true for the High School which also serves only four grades (9, 10, 11 & 12). Thus, in order to match the age-group projection to the grades served by the New Middle School and High School, their age-group projections should be reduced by one fifth. In an effort to account for the five-year-projection/four-grades-served discrepancy, the age-group projections for the New Middle School and High School will be reduced by 20%. This 20% reduction factor will be applied first, and then the percent-in-private-school reduction factor (described above) will be applied (9% for Dudley and 6% for Charlton).

There is yet another factor to account for when evaluating the High School's projected capacity. High school-aged children in Dudley and Charlton have the option of attending Bay Path Regional Vocational Technical High School, a vocational training school located in Charlton. For the current school year, roughly 12% of Dudley's high school-aged children attend Bay Path while roughly 22% of Charlton's high school-aged children are Bay Path students. The percentages of Dudley and Charlton students attending Bay Path have been fairly stable over the past decade. Thus, these respective percentages will be added to the percent-in-private-school reduction factor for the high school projection/capacity analysis.

Table TG-6

School-Aged Projections (MISER) vs. School Capacity

Age Group	Year 2000 Projection	Reduction Factors	# of Children in School System	School Capacity	Number Below (-)/ Above (+) Capacity
5 to 9	697	(9%)	634	668 - Mason & Intermediate	- 34

10 to 14 680 (20%)/(9%) 495 600 - New Middle Sch. - 105
 15 to 19 725 Dudley (20%)/(9% + 12%) 458 1,302 - High School - 353
 853 Charlton (20%)/(6% + 22%) 491
 949 total high school students

Age Group	Year 2005 Projection	Reduction Factors	# of Children in School System	School Capacity	Number Below (-)/Above (+) Capacity
5 to 9	712 (9%)	648	668 - Mason &	- 20	
				Intermediate	
10 to 14	725 (20%)/(9%)	528	600 - New Middle Sch.	- 72	
15 to 19	768 Dudley (20%)/(9% + 12%)	485	1,302 - High School	-206	
	1,060 Charlton (20%)/(6% + 22%)	<u>611</u>			
				1,096 total high school students	

Age Group	Year 2010 Projection	Reduction Factors	# of Children in School System	School Capacity	Number Below (-)/Above (+) Capacity
5 to 9	712 (9%)	648	668 - Mason &	- 20	
				Intermediate	
10 to 14	741 (20%)/(9%)	540	600 - New Middle Sch.	- 60	
15 to 19	816 Dudley (20%)/(9% + 12%)	516	1,302 - High School	-136	
	1,128 Charlton (20%)/(6% + 22%)	<u>650</u>			
				1,166 total high school students	

Using the modified MISER projections, the table above indicates that all of Dudley's public schools will be below capacity for the entirety of the upcoming decade.

In terms of funding per student, the Dudley/Charlton School Regional District (DCRSD) has, on average, spent less money per student over the past decade than the State average. For the 1997/98 school year (the last available year for state-wide statistics), the DCRSD spent \$5,073 per student while the state-wide average was \$6,356 per student. This trend has held steady throughout the decade. Although a state-wide cost per student average is not yet available for the 99/00 school year, it is a safe assumption that the state-wide average will be at least \$1,000 higher than the DCRSD average cost per pupil figure. For the 1997/98 school year, roughly 68% of the DCRSD's education budget was funded through State Aid, while the remaining 32% was raised through local taxes. For the 1998/99 school year, roughly 70% of DCRSD's education budget was funded through State Aid, with the remaining 30% being raised through local taxes.

Higher funding does not necessarily result in higher academic achievement; and this is the case for the DCRSD. Records from the Department of Education show that DCRSD students fared slightly better than the State average on the national Scholastic Aptitude Tests (better known as the SATs). The SATs are a two-part test designed to measure a student's verbal and math skills. For the 96/97 school year (the last year statistics are available), DCRSD students had an average verbal score of 518 (out of a possible 800 points), while the state-wide average was 502. For the math portion, DCRSD students had an average score of 505 (again, out of a possible 800 points), while the state-wide average was 502. The DCRSD student SAT participation rate (78%) was also higher than the State average (67%) for the 96/97 school year.

The spring of 1998 saw the first state-wide administration of the Massachusetts Comprehensive Assessment System (MCAS) tests. Developed by the Massachusetts Department of Education, these tests were administered to all students in grades 4, 8 and 10 across the State. At each grade level involved, pupils spent up to 17 hours being rigorously tested in English/Language Arts, Science/Technology and Mathematics. When the scores from all three subject matters were combined, the DCRSD came in 95th out of 208 school districts state-wide. The MCAS tests were administered for the second time in the spring of 1999, however, the state-wide results are not yet available.

The Department of Education also reports on drop-out rates. From the five-year period between 1993 and 1997, Shepherd Hill Regional High School had an average drop-out rate of 4.7% which is slightly higher than the Worcester County average (4.3%) and the state-wide average (3.7%) for the same time period. The Department's statistics regarding the future plans of graduating seniors indicates that from 1993 through 1997, roughly 75% of the Shepherd Hill graduating classes went on to college or some other form of post-secondary education. The state-wide average for this time frame is about the same, with roughly 74% of the State's graduating seniors going on to some form of post-secondary education.

Nichols College:

Located on picturesque Dudley Hill, Nichols College exists as a non-sectarian college of business administration. The history of Nichols College dates back to 1815 with the founding of Nichols Academy by Amasa Nichols. Intended as a boarding school for Universalist teenagers, the school served the region in this capacity until 1823, when it became a non-sectarian educational institution. The school underwent a significant expansion in the late 1880's when a former student and benefactor, Hezekiah Conant (a successful textile manufacturer) paid for the construction of several new buildings. The most significant structure built for the campus during

this time was the Conant Memorial Church (built in 1890 as the third church to occupy this prominent Dudley Hill site). Nichols Academy served the region until 1931, when the school was reorganized into a junior college of business.

Since the end of World War II, Nichols College has expanded both its curriculum and its physical plant. In 1958, the College was granted the authority to change from a junior to a senior college, and began issuing bachelor's degrees in business administration. The natural resource management program (initially forestry) became a four-year degree program in the early 1960's, but has since been discontinued. Nichols College has a current enrollment of 650 full-time day students and 1,000 part-time and night students.

The holdings of Nichols College extend over 200 acres in the Dudley Hill area and include numerous administration, academic, student services, recreation, residence halls, faculty homes and other buildings. College buildings of historical significance include: Academy Hall (built in 1884); Conant Library and Observatory (1884); the previously mentioned Conant Memorial Church (built in 1890); and Conant Hall (1888). Next to the College is the Black Tavern (1804) which was once part of Nichols' holdings. This is the Town's only building listed on the National and State Historic Registers. The College put in its own sewer system in the early 1960's, which immediately tied into a municipal sewer expansion.

Nichols College has long served as a valuable resource for the Town of Dudley. Significant numbers of Dudley and Webster students have attended Nichols, many on scholarship. Many of the College's 163 employees live in Dudley and are long-time residents. The College allows their athletic fields to be used by local sports organizations, and numerous cultural events open to the general public are held on campus.

The College and its students have worked with Dudley's town government on a number of projects including assisting the Police Department with the design of their internet "web" page, and setting up studio space in Davis Hall for the local cable television station. Nichols College students are currently collecting water quality data for the French River as part of the French-Quinebaug Watershed Management Plan. This plan is currently being prepared as a multi-agency effort, under the sponsorship of the Massachusetts Executive Office of Environmental Affairs (EOEA). Interns from the College are available to work on municipal projects initiated by the Town.

The College has recently completed a "master plan" for the campus. The plan is not a document, rather, it is a map of the campus showing future building sites and existing buildings. There are two building projects currently underway: the construction of a new residence hall (replacing three small dormitory buildings), and an addition to the athletic center. The College will pursue other elements of its master plan as funds permit.

There is one issue in particular that the College would like to address with the Town's help. Currently, parking is provided along the main street going through campus (Center Road). The College believes the current parking arrangement compromises pedestrian safety and takes away from the visual beauty of the commons and the campus grounds in general. The College would like to remedy this situation by taking parking off the street, installing curbing along Dudley Center Road, and planting shade trees all along the roadway. The College believes there is enough room on the side and rear of its buildings to make up for the parking lost on the main

road. Planning for this endeavor is just getting underway.

Town Government Issues in Dudley

1. Highway Issues: A more in-depth analysis of Dudley's transportation network can be found in the Transportation chapter of this document. However, it is clear from the results of the Master Plan Citizen Survey that Dudley citizens are not happy with the conditions of the local roads. In fact, the Town's maintenance of its roadways received the poorest rating out of all of Dudley's municipal services.

By the Highway Superintendent's own admission, the Department does not start the fiscal year with a definitive roadway improvement program; rather, road improvements are determined on an as-needed basis. There are some resources available that could help the Department develop a prioritized roadway improvement program. In December of 1997, the Central Massachusetts Regional Planning Commission (CMRPC) prepared a Local Pavement Management Study for Dudley. This study evaluated the pavement conditions of every Town road, noted needed improvements, and provided rough cost estimates for improvements. This document would be a good starting point for developing a town-wide roadway improvement plan. Other factors to take into account when developing such a plan are drainage issues (these were not addressed as part of the 1997 study), and safety considerations such as visibility and intersection safety.

Another factor complicating the Highway Department's efforts to maintain Dudley's road network is the lack of an "official town map" as defined in Section 81-E, Chapter 41 of the Massachusetts General Laws. Briefly stated, an official town map shows all of the town accepted and town maintained roadways (public ways), as well as all private ways used by more than two property owners. The lack of such a map has resulted in the Highway Department spending time and money to maintain several private ways, simply because they are not sure exactly where a town road ends and a private way begins.

The lack of an official town map could also be a potential liability issue for the Town. The Town should not be setting itself up to be liable for what happens on roads that are not Town-accepted roads (public ways). Having an official town map also helps when developing a street numbering system, which in turn helps in emergency response situations. Also, part of the State's formula for distributing highway monies to local municipalities is the amount of road miles each town is responsible for maintaining. Thus, from a funding standpoint, it is important for the Town to know the full extent of its public roadway network and share this information with Mass Highways.

The full extent of Dudley's public and private ways was determined as part of the 1997 Pavement Management Study completed by the CMRPC, although this information was not available in graphic form until recently. In the summer of 1999, Mass Highways amended Dudley's roadway network coverage to reflect the results of the 1997 study, and the amended coverage is now available to the Town. Dudley needs only to add those new town roads accepted since 1997 to have an accurate depiction of its transportation network. This information could be used to prepare an "official town map", as defined by Massachusetts General Law.

2. Inspection Services: Dudley's Building Department needs better coordination among its four inspectors, as well as better coordination with other municipal

boards/departments; especially the Health Department. Currently, someone wanting to build a home in Dudley may need to make several phone calls and arrange several inspection appointments. The potential exists to streamline the inspection process.

Better coordination with the Health Department is needed when additions/renovations are proposed to existing homes. Currently, someone wanting to add a bedroom may or may not have the septic system's capacity reviewed to see if it can accommodate the new bedroom. There should be a formalized mechanism in place to make sure that this review takes place.

Lastly, the housing of inspection records needs to be improved. As mentioned previously, the Electrical Inspector works out of his private residence and maintains his own filing system there. Under Massachusetts General Laws, these records are considered public, and thus should be maintained and available for review at a public building (normally the town hall). The space limitations of the existing Building Department's office in the Town Hall presents a problem in this respect.

3. Information Management Technology: The Town's plan for information management is moving along in several respects. The Town has just installed new computer software for the billing of property taxes, excise taxes, as well as water and sewer bills. New software has been installed in the Assessor's Office that allows for in-house information updates, including: parcel identification; new names, owners and addresses; tax collection status; and building permit status. The next step for the Assessor's Office will be the installation of a computer that will enable the general public to look up property information. Currently, such information needs to be obtained directly from the Assessor. The Town is investigating other software applications.

The installation of cable is almost complete for the Town Hall. Once this is done, an NT server (the main computer) will be installed and all offices within the Town Hall will be connected to this main server. This will allow for inter-departmental e-mail. The general public will also be able to e-mail departments in the Town Hall. This should be a marked improvement over the current method of inter-departmental communication which relies on phone tag and paper notes. The Town also hopes to establish a "web" page for the general public. Such a web page could contain information regarding public meetings, municipal services, and other items of town-wide interest.

The Town is also currently reviewing its options for a Geographic Information System (GIS), which is essentially a computerized method of graphically displaying data (computer generated maps). GIS technology allows for an infinite number of applications including: display of tax parcel boundaries; zoning districts, road network; water and sewer pipe locations; natural feature displays (including wetlands and floodplains); emergency response call box locations; and so many other applications that it is impossible to list them all. The Town's goal is to eventually make this technology available to all municipal departments. The purchase of a GIS computer and associated software will represent an up-front capital expense for the Town. Annual GIS system maintenance and user training will be ongoing expenses for the Town.

4. Water Needs: Dudley's municipal water system is currently operating at full capacity and the moratorium on new water service connections remains in effect. Lack of municipal water is the primary limiting factor for growth in a number of sectors, including: industrial and commercial development, affordable housing, and multi-family housing. The Town's options for

growing its non-residential tax base will be quite limited until a new water source is found and the water system's capacity is expanded. Establishing a new water source will represent a large-scale capital expense for the Water Department and its customers, and outside funding assistance will most definitely be needed. A suitable well site will have to be found; a well will have to be drilled; the water will have to be tested; and, if the water is clean and can be pumped in sufficient quantities, land will have to be bought around the well. The Water Department cannot afford to develop a new water source on its own and may have to obtain funding assistance from the Town at large and/or through State grant assistance.

5. Long Range Capital Planning: Dudley does not have a long-range capital improvements plan (CIP) in place at this time. A CIP is an on-going municipal plan that identifies upcoming capital needs, schedules their purchase, and outlines how they will be purchased. Such plans usually look five-to-ten years down the road in terms of identifying capital needs. A capital need is a tangible item (equipment, building, etc.) that is above and beyond the regular municipal operating budget. Dudley currently plans their large-scale capital improvements on a year-to-year basis. If a department head wants to replace a piece of equipment or purchase a new piece of equipment, he makes his case to the Finance Appropriations and Advisory Committee (FAAC), and if they approve, the capital need request is put in the form of a ballot question and appears as such at the autumn Town Meeting. Capital needs are usually paid through borrowing.

Dudley has a number of long-term financial matters (mostly large-scale capital needs) that will need to be attended to during the next decade. The following is a brief description of the Town's upcoming capital needs and financial concerns:

- New building needs - The Town is already planning for a new police station, and will soon begin planning for a new library. On the horizon for the next decade will be a new fire station and possibly some sort of expansion project for the high school. In addition, space at the existing Town Hall is at a premium for all departments. The Master Plan citizen survey also showed support for establishing a senior center and a youth center for the Town. Dudley now owns the vacant West Main Street School and perhaps this building could be utilized to address some of the above mentioned building needs.
- New vehicles and equipment - It is clear from reading the departmental overviews that Dudley will need to replace quite a few vehicles and purchase a number of new capital items over the next decade. Departments needing new capital equipment include: the Town Hall; Highway Department; and the Fire and Police Departments.
- New water source - As previously described above, the Town will need to find a new water source if wants to grow its non-residential tax base. Establishing a new water source will be a large-scale capital expense for the Town.
- New solid waste disposal contract - The Town's contract with its current solid waste hauler (Pratt Trucking) is set to expire in June of 2000. Pratt has been bringing waste from the Town's transfer station to the landfill in Southbridge. However, a recent fee increase at the Southbridge landfill has resulted in Pratt paying more to dispose of Dudley's waste than what it charge the Town under the current contract. Due to this situation, it is quite likely that Dudley's waste disposal costs will increase when the new contract is signed next summer.

The financial issues and capital needs described above should be planned for in a long-range and comprehensive manner. The Town should investigate its options for implementing a long-range capital needs planning process, including the possibility of preparing a Capital Improvements Program.

6. Municipal Government Organization: Dudley's current form of government has resulted in a situation where the various municipal departments operate independently of each other, and there is no single entity responsible for ensuring inter-departmental coordination or accountability. The Board of Assessors, Board of Health, Planning Board, Water Commissioners, Sewer Commissioners and Cemetery Commissioners are all directly elected by the voters and are not accountable to any single municipal entity. Ultimately, these boards and commissions are responsible only to the voters who put them in office. The creation of the Town Administrator position a few years ago has resulted in improved coordination among municipal departments, however, this position has no formal authority over any of the municipal departments. The Town should consider establishing a Charter Commission to investigate options for re-organizing town government with an eye towards improving accountability, improving inter-departmental coordination, eliminating duplications of service, and streamlining the local bureaucracy in general.

Town Government - Goal

Provide high quality municipal and educational services, facilities and infrastructure that are consistent with the fiscal health and environmental quality of the Town and that meet the current and future needs of Dudley's residents, businesses, industries and institutions.

Town Government - Recommendations

1. The Town should develop a prioritized, multi-year, town-wide roadway improvement program. Currently, local road improvements are determined on an as-needed basis by the Highway Superintendent. The Local Pavement Management Study prepared for Dudley in 1997 by CMRPC could be used as a starting point for prioritizing roads for a multi-year road improvement program. Responsible Municipal Entity: The Highway Superintendent and the Board of Selectmen acting under their capacity as Highway Commissioners. The Board and Superintendent may want to seek the advice of the Police Department when preparing said plan.

2. The Town should prepare an "official town map" as defined in Section 81-E, Chapter 41 of the Massachusetts General Laws. The full extent of Dudley's public and private ways was determined as part of the CMRPC 1997 Pavement Management Study for Dudley. In the summer of 1999, Mass Highways amended Dudley's roadway network coverage to reflect the results of the 1997 Study, and the amended coverage is now available to the Town. Dudley needs only to add those new town roads accepted since 1997 to have an accurate depiction of its transportation network. This information could be used to prepare an "official town map". Responsible Municipal Entity: The Highway Superintendent and the Board of Selectmen acting under their capacity as Highway Commissioners.

3. The Town should establish a centralized permitting/inspection/code enforcement department. The Town's various inspectors (building, plumbing, electrical and gas) would operate out of this department. The inspectors could share a clerk, and have all of their permit

applications and records on file at this office. A centralized inspection office would allow the Town to streamline its inspection process, which in turn benefits citizens who want to build in Dudley. Having all of the Town's inspection records in a centralized location would put the Town in compliance with the State's public records/right-to-know laws. Responsible Municipal Entity: The Board of Selectmen and the inspectors.

4. The Town should ensure that home addition/renovation plans are reviewed by the Health Department *prior* to issuing a building permit for said expansion. Currently, someone wanting to add a bedroom to an existing home may or may not have the septic system's capacity reviewed to see if it can accommodate the new bedroom. There should be a formalized mechanism in place to make sure that this review takes place. Building permit applications for new bedrooms should be reviewed by the Health Department (prior to the issuance of the permit) in order to ensure that the septic system's capacity can handle the additional loading and is still in compliance with the State's Title V septic system regulations. Additionally, building permit applications for home additions/ renovations should be reviewed by the Health Department (prior to the issuance of the permit) in order to make sure that the new foundation and/or footings will not encroach on a leachfield. Responsible Municipal Entity: the Building Inspector in conjunction with the Health Department.

5. The Town should continue implementing its information management plan. The next step for the Assessor's Office should be the installation of a computer that will enable the general public to look up property information. Perhaps as the technology improves, some of the Assessor's database can be made available on-line. Once the Town Hall has the cable network in place, an NT server (the main computer) should be installed and all municipal offices connected to this main server. This will allow for inter-departmental e-mail.

The Town should also set the parameters for establishing a municipal Geographic Information System (GIS). Such parameters should include: what departments would use GIS, how would they use GIS, what types of data to store, who would manage the data, what hardware/software to purchase, where to store the equipment and how to secure it, and training municipal personnel on how to use GIS. Lastly, as funds permit, The Town could also create its own community "web" page for the general public. Such a web page could contain information regarding public meetings, municipal services, and other items of town-wide interest. It is quite likely that the design and maintenance of the web page could be handled by an interested student from Shepherd Hill High School or perhaps a Nichols College student. Responsible Municipal Entity: the Town Administrator in conjunction with the Information Technology Committee (ITC).

6. The Water Department should investigate its options for finding a new water supply source, whether this means looking for a new well site within Dudley, or working with a neighboring community on a shared water resource. The Town's options for growing its non-residential tax base will be quite limited until a new water source is found and the water system's capacity is expanded. As mentioned previously, finding a new water source and getting it up and running is a very expensive proposition, one that the Water Department cannot afford to handle on its own. Since the whole Town benefits from an expanded non-residential tax base, and the growth of this tax base cannot occur without an expanded municipal water system, it would be appropriate for the Water Department to seek funds at Town Meeting for the identification and development of a new water source. The Town may also want to pursue State grant opportunities for such a project. Responsible Municipal Entity: Dudley Water Commissioners in consultation

with the Board of Selectmen.

7. The Town should investigate its long-term options for managing the municipal water system. The current situation has led to a state of affairs where the Water Department cannot afford to locate and develop a new water source, yet the Town's future development is dependent on the water system's expansion. Essentially, there are four options for managing the water system, and cost-benefit analysis should be conducted for each option as part of a larger, overall options study:

- Keep the existing enterprise system in place.
 - Do away with the existing enterprise system and have the Water Department funded by all of the tax payers as a regular municipal department.
- Privatize the water system.
 - Create some sort of hybrid system whereby the customers of the Water Department pay for the system's regular maintenance, and the Town as a whole pays for water line expansion and water source development.

Responsible Municipal Entity: Dudley Water Commissioners in consultation with the Board of Selectmen.

8. The Town should establish a long-range capital planning committee and charge them with the responsibility of preparing a long-range Capital Improvement Program (CIP) for the Town. Dudley's municipal departments have numerous large-scale capital needs coming up very soon. The Town needs to plan for its capital needs in a comprehensive manner with an eye towards the long-term, rather than the current piece-by-piece, year-to-year method of evaluating capital requests. Responsible Municipal Entity: this should be a joint effort between the Board of Selectmen and the Finance Appropriations and Advisory Committee (FAAC).

9. The Town should establish a building needs committee to comprehensively review the building and space needs of Dudley's various municipal departments. The Town is already planning for a new police station, and will soon begin planning for a new library. On the horizon for the next decade will be a new fire station and possibly some sort of expansion project for the high school. In addition, space at the existing Town Hall is at a premium for all departments. As the Town has a number of new building needs, these needs should be planned for in a comprehensive manner, rather than establishing one committee to plan for a new police station, another committee to plan for a new library, etc.. Perhaps the West Main Street School building could be utilized to address some of the Town's municipal building needs. Responsible Municipal Entity: this should be a joint effort between the Board of Selectmen and the Finance Appropriations and Advisory Committee (FAAC). This could also be a responsibility of the long-range capital planning committee recommended in #7.

10. The Town should consider establishing a Town Government Charter Commission to investigate options for re-organizing town government with an eye towards improving accountability, improving inter-departmental coordination, eliminating duplications of service, and streamlining the local bureaucracy in general. Responsible Municipal Entity: the Board of Selectmen and the Town Administrator.

11. The Town should establish a local economic development committee to coordinate all of the various elements of an economic development strategy for Dudley. Currently, there is no municipal entity who's sole role is to plan for, and act as an advocate of new economic development in Town. Finding volunteers for an economic development committee will be a challenge, as it usually is for local boards. The committee would need to begin by reviewing the Town's zoning scheme, tax policies, road improvement plans, and water/sewer expansion plans as they relate to the Town's ability to attract new businesses. This committee would then work with the various municipal boards and departments to develop an economic development strategy for Dudley. As part of an economic development strategy, the Town should designate a staff person in Town Hall to handle economic development issues. Once contact person is essential, as businesses want straight answers fast. Responsible Municipal Entity: The Board of Selectmen would need to establish the economic development committee, and appoint its membership. The committee should be charged with developing an economic development strategy for Dudley and be prepared to work with the various municipal boards/departments to implement the strategy.

12. The Town should change its Town Meeting date to a Saturday in order to increase public participation, especially among seniors. Many interested citizens cannot participate (or participate as fully) during weekdays due to work and family schedules. Responsible Municipal Entity: the Board of Selectmen in consultation with the Town Clerk and Town Moderator.

13. The Town should institute a secret ballot approach to warrant articles at the Town Meetings, as opposed to the current show of hands during the meeting method. Moving to a secret ballot would ensure that a person's vote on a particular warrant article would be private, thus, there could be no recriminations from other parties regarding how someone voted. The secret ballot method would also ensure that people wouldn't leave the Town Meeting after their pet warrant article had been voted on. Responsible Municipal Entity: the Board of Selectmen in consultation with the Town Clerk and Town Moderator.

14. The Town should investigate its options for increasing its recycling program and solid waste disposal services, including holding the household hazardous waste disposal days on a more frequent basis. Responsible Municipal Entity: the Board of Selectmen in consultation with the transfer station personnel.

DUDLEY: A BRIEF HISTORY

English settlers made their way to Dudley beginning in the early 1720's. They initially settled in the vicinity of Dudley Hill, which was also occupied by the Pegan tribe, a branch of the Nipmuck Indians. The Indians called their homeland "Chobonokonomun" and the area covered parts of Dudley, Oxford and Webster, including a portion of Thompson, Connecticut. Spurred by the desire to establish a local church, Dudley Hill settlers petitioned the General Court for incorporation as a township in 1731. Final incorporation occurred on June 1, 1732 and the Town was named after Thomas Dudley, one of the earliest governors of Colonial Massachusetts. It is interesting to note that Governor Dudley never personally visited the Town! Dudley was the first town incorporated after the formation of Worcester County.

Dudley's first town meeting was held on June 20, 1732 at the William Carter House, located just north of Dudley Hill. Owing to an abundance of fertile soil and a gently sloping terrain, Dudley existed as an agrarian community until the start of the "industrial revolution" in the early 1800's. The emergence of the textile industry in New England brought about some major changes to Dudley's landscape. In particular, the community's economic base began to shift from farming in the Dudley Hill area, to textile manufacturing along the banks of the French River. Ranging from Merino Pond in the north to Perryville in the south, several textile mills set up shop in East Dudley between 1812 and 1825; most notably Merino Woolen Mill (eventually the Stevens Mill), Amasa Nichols Cotton Mill (the Chase Mill) and the Dudley Woolen Mill (the Perryville area).

Originally part of Dudley, the Town of Webster became incorporated in 1832. Webster's incorporation reduced Dudley's population by over a third, and Dudley also lost five cotton mills, three woolen mills and numerous mill-related enterprises. Dudley survived though, and the building of the Norwich and Worcester Railroad in the 1840's provided Dudley with access to new markets.

In 1846, Henry Hale Stevens bought the old Merino Mill and began a large-scale expansion effort. One can still see the monumental four-story stone buildings (made of granite from local quarries) constructed during the mid-1800's. Stevens Linen Works continued to prosper during and after the Civil War period, leading to the construction mill-worker's housing district (Merino Village). In addition to the mills in East Dudley, manufacturing centers of a smaller scale established themselves in the northeastern and western sections of Town. Tufts Village (between Gore and Shepherds Ponds) contained several stone buildings including a mill, grist mill, boarding house, several residences and a store. The Quinebaug River also saw some manufacturing activity with the establishment of the Eben Stevens Jute and Satinet mill (1872) and the Gleason and Weld Paper Mill (1864). Dudley's mills enjoyed great success until the Great Depression era, when several mills moved their operations to our nation's south, and several mills closed down altogether.

Dudley's landscape has seen modest changes in the last fifty years. The Stevens Linen Mill and the Chase Mill were able to survive the hardships of the Great Depression and are still in operation today, although at a reduced scale. Nichols College is still in operation on Dudley Hill. The construction of the Massachusetts Turnpike (Route 90) and Interstate 395 has not resulted in

a significant expansion of Dudley's economic base. The Gentex Corporation, an optics manufacturer employing roughly 250 people, is the most significant new industry to come to Dudley in the last fifty years.

Dudley never completely abandoned agriculture and there are numerous active farms scattered throughout the northern and western sections of Town. Numerous small vacation houses were built along the shorelines of Dudley's ponds during the 50's and 60's, particularly Pierpont Meadow and Hayden Ponds in the northeast. Many of these vacation houses have been converted to year-round residences.

Residential development has steadily increased during the last fifty years, as has Dudley's population. Since 1970 when Dudley's population consisted of 8,087 people, the Town has added roughly 60 new residents per year, bringing the total population to 9,676 by 1996. Dudley has been experiencing a higher growth rate during the past few years, with a record number of building permits being issued during 1997 and 1998. Dudley's rural character and quality schools, coupled with its accessibility, have made the Town a very desirable place to live.

Dudley typifies a New England small town where municipal officials work part-time and volunteerism is strong. Manufacturing and farming are still viable economic options, although the service sector of the economy has shown the largest increase in recent years (much like our nation's economy as a whole). Dudley stands at the threshold of the twenty-first century striving to retain the best elements of its past while planning for the world of tomorrow.

HOUSING

The most recent population estimate for Dudley comes from the US Census, which estimated that Dudley had 9,676 citizens as of 1996. This figure has undoubtedly grown in the last four years and the Town's population is probably closer to 10,000 today. In fact, population growth forecasts prepared by the CMRPC sees Dudley having 10,204 citizens by the turn of the century and 10,741 citizens by the year 2010. The table below presents Dudley's growth in population over the years, as well as projections for future growth.

Table H-1 (Population Growth)

<u>Year</u>	<u># of People</u>	<u>Numerical Change</u>	<u>% Change</u>
1920	3,701	----	----
1930	4,265	564	15.2%
1940	4,616	351	8.2%
1950	5,261	645	14.0%
1960	6,510	1,249	23.7%
1970	8,087	1,577	24.2%
1980	8,717	630	7.7%
1990	9,540	823	9.4%
1996+	9,662	136	1.3%
1998+	9,802	126	1.4%
2000*	10,204	528	5.5% (7% change from 1990-2000)
2010*	10,741	537	5.3%
2020*	11,144	403	3.7%

Sources: US Census Bureau; 1996 and 1998 population estimates provided by the US Census Bureau; forecasts for years 2000, 2010 and 2020 provided by the Massachusetts Institute for Social and Economic Research (MISER).

The table above shows that Dudley experienced a very high growth rate during the 50's and 60's. The growth rate has stabilized over the past thirty years and is projected to remain fairly stable for the next twenty years. Currently, Dudley has roughly 460 people per square mile. The table below allows us to compare the Town's rate of population growth against the growth in the number of housing units.

Table H-2 (Housing Unit Growth)

<u>Year</u>	<u># of Units</u>	<u>Numerical Change</u>	<u>% Change</u>
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1960	2,035	----	----
1970	2,626	591	29.0%
1980	3,140	514	19.6%
1990	3,583	443	14.1%
1998	3,889	306	8.5%

* = The 1998 housing unit figure was determined by adding the number of building permits for new houses issued from 1990 through 1998 to the 1990 Census housing unit count. Building permit information was obtained from the Building Inspector's entry in the annual Town Reports.

Comparing the two previous tables clearly indicates that Dudley's housing stock is growing faster than its population. This is not surprising when one considers the national trend towards smaller household sizes. Couples are having fewer children today, and many households are of the single parent variety. Dudley's Census data confirms this trend. In 1960, the typical Dudley household contained 3.2 people. By 1990, the persons per household figure had decreased to 2.67. The figure is probably a bit lower today.

Table H-3 (Type of Housing Unit-1990)

	<u># of Units</u>	<u>Percentage of Total</u>
Single Family Homes:	2,319	64.7%
Two to Four Units:	933	26.0%
Five or More Units:	300	8.4%
Other:	31	0.9%

Source: 1990 US Census.

The table above indicates that roughly two-thirds of Dudley's housing stock is of the single-family home variety, and one third is of the multi-family variety. This indicates a healthy mix of housing opportunities for Dudley citizens. The Town's housing mix has been fairly stable from 1980 to 1990. The percentage of single family and multi-family housing units has remained relatively unchanged.

The 1990 Census reported that 64.7% of Dudley's residents live in an "urban" environment, while the remainder live in a "rural" environment. In Dudley's case, there is a distinct concentration of residential density in the eastern sector, directly across the river from Webster. This increased density is evident from Pine Street south to the area known as "Chaseville", and towards the west in the area between Merino Pond, Larner Pond and Mason Road. There is also a significant amount of residential development between Airport Road and Dudley Hill Road.

Table H-4 (Age of Housing Stock)

<u>Year Structure Built</u>	<u>Number of Units</u>	<u>% of Housing Stock</u>
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1990-1998	306	7.9%
1980-1990	567	14.6%
1970-1980	751	19.3%
1960-1970	486	12.5%
1950-1960	492	12.6%
1940-1950	378	9.7%
1939 or earlier	909	23.4%

Sources: US Census and Dudley building permit records.

The table above indicates that roughly one quarter of Dudley’s housing stock was built before World War II. In terms of Dudley’s neighbors, Webster and Southbridge have a higher percentage of older houses (40% and 46% respectively), while Oxford has a slightly lower percentage (21%). Charlton has the lowest percentage of older housing (13%), although this is not surprising when one considers that Charlton has the highest population growth rate of the five communities.

In terms of the percent of housing units occupied versus the percentage of vacant units, the 1990 Census reported that 94.5% of Dudley’s housing units were occupied while 5.5% were vacant at this time (mostly rental units). This compares to a 9.1% vacancy rate for the State as a whole and a 6.9% vacancy rate for Worcester County during this timeframe. This indicates a healthy and stable housing market.

Table H-5

Type of Occupancy (Owner /Renter - 1990)

	<u># of Units</u>	<u>Percentage</u>
Owner Occupied Housing:	2,343	69.2%
Renter Occupied Housing:	1,044	30.8%

Source: 1990 US Census.

The table above indicates that more than two thirds of Dudley’s housing units are owner-occupied. Of the four surrounding communities, Dudley ranks in the middle in regard to owner-occupied housing. Charlton and Oxford have higher owner-occupancy rates (78% and 73% respectively), while Southbridge and Webster have much lower owner-occupancy rates (45% and 53% respectively). From 1980 to 1990, the percentage of owner occupied housing has dropped roughly 5%, while the percentage of renter occupied housing has grown roughly 5%.

Table H-6

Households by Type (1990)

	<u># of Households</u>	<u>Percentage</u>
Married Couple Family:	2,120	62.6%
Male Householder:	102	3.0%
Female Householder:	330	9.7%
Non-Family Household:	835	24.7%

Source: 1990 US Census.

The table above indicates that roughly two thirds of Dudley's households consist of married families. This represents a slight reduction since the 1980 Census. Back in 1980, the married couple family category comprised 68.4% of Dudley's households as compared to 62.6% in 1990. The largest increase has been in the non-family household category, which grew from 21.2% in 1980 to 24.7% in 1990. The female head of household category also grew from 8.7% to 9.7% during the same timeframe.

In terms of housing cost, the 1990 Census reported a median housing value of \$132,700. However, please keep in mind that the value was the respondent's estimate of how much the property would sell for if it were on sale. Remember: how you appraise your house, how a prospective buyer appraises your house, and how the local assessor appraises your house can be three entirely different numbers. The 1990 median contract rent-figure (\$378 per month) is probably a bit closer to reality.

Home sales have been on the rise in Dudley over the past decade. In 1990, there were 120 home sales in Dudley. By 1998, this had figure increased to 204 (source: Banker & Tradesman). As of the mid-way point of 1999, 77 home sales have occurred in Dudley with an average sales price of \$125,000 (source: Boston Globe real estate web site).

Housing-Related Issues in Dudley

1. Zoning Conflicts:

1-A. *Residential Uses in the Industrial Districts.* In terms of housing, the most serious conflict found in the Town's Zoning By-Law is that residential uses are allowed by right in Dudley's two industrial zoning districts. While it has been proven that residential uses and commercial uses can work well together as permitted uses in a single zoning district, the same cannot be said for residential uses and industrial uses. Industries, especially manufacturing and warehousing operations, are reluctant to set up shop in a zoning district where residential uses are also permitted by right. This reluctance is due to the possibility of having a new subdivision built next door to an industrial operation. Residences located next to industries have a tendency to complain about the industry next door. This is the old zoning maxim: 'if you don't like pigs, don't move next to a pig

farm'. Balancing a homeowner's right to peace and quiet against an industry's right to conduct business can be quite difficult and the Town should not put itself in the position of being the arbitrator.

There is also a safety issue here. Some industries make use of hazardous chemicals and substances. In such cases, the industry in question is required to work out an emergency response plan with the municipality. In a case where there are houses adjacent to the regulated industry, the safety of the residential neighbors needs to be factored into the industry's emergency response plan. The Town's zoning scheme should not set up a situation where numerous residences need to be evacuated if there is a chemical spill or accident at a nearby industrial operation.

Another problem with allowing residential uses in the industrial zoning districts is that land zoned for industry is eaten up by residential development. Municipalities count on the tax dollars provided by industrial development. Thus, having a town's industrial land eaten up by residential development can result in decreased tax revenues. This phenomenon often results in the need for a town to find new areas for industrial development, which requires the rezoning of land currently zoned for other purposes. The Town should not have to search out new land suitable for industrial development due to its industrially-zoned land having been developed residentially.

1-B. *Private Stables*. Currently, the Town's Zoning By-Law allows private stables in the residential zoning districts, regardless of lot size. Yet, someone who wanted to raise livestock in a residential district would need to get a Special Permit from the Zoning Board of Appeals, unless the lot was at least five acres in size. This has created a situation where a landowner in the Residential-10 district can have a private stable on a 10,000 square foot lot as a use by right, yet a landowner with four acres in the rural Residential-43 district needs a Special Permit to have a chicken coop. Since raising livestock and private stables involve similar issues (animal control, manure storage and disposal, neighborhood impact, etc.), the Town's zoning scheme should give them similar treatment. In addition, the Town's Zoning By-Law should be amended to include a definition for what constitutes a "private stable".

2. Deficiencies in the Subdivision Regulations:

2-A *Stormwater Management and Erosion Control*: Dudley's Subdivision Regulations have minimal standards for stormwater management and no erosion control standards whatsoever. When a site is developed, care must be taken to create drainage structures that can accommodate the expected levels of stormwater runoff. Also, down-slope drainage facilities must be evaluated to ensure that they can handle the additional stormwater generated by the newly developed site. Failure to adequately plan for a site's drainage and stormwater management needs can result in flooding of the property and adjacent properties, overloading down-slope drainage facilities, and soil erosion. Erosion control measures need to be in place during the construction phase in order to ensure that disturbed soil does not wash away. Failure to adequately plan for erosion control can lead to on-site soil erosion, on-site water infiltration problems and problems for down-slope drainage facilities if the erosion is severe enough. Stormwater control problems can be expensive to fix after the fact, and the Town should make sure that stormwater and

erosion control issues are adequately planned for during the development review phase and implemented during the construction phase.

2-B Subdivision Road Design Standards: The Subdivision Regulations currently require that new subdivision roads have a 50-foot right-of-way and a pavement width of 30 feet. These standards are suitable for large-scale subdivisions (20 lots or more), however, they are a bit excessive for small-scale subdivisions. Having these standards apply to all new subdivisions will result in an inefficient use of land and contribute to residential sprawl. The Planning Board should have the option of reducing the right-of-way and pavement widths if: the subdivision is small-scale, it is highly unlikely that a connection will ever be made to the new subdivision road (making it a through road), and/or the new subdivision road is intended to be a private right-of-way.

3. Small Lots Without Municipal Sewer: There are several residential zoning districts that have numerous small lots without municipal sewer service. Additionally, several of the residential zoning districts (R-15 & R-25) allow lot sizes to be so small that they may not be able to accommodate an on-site septic system and an on-site water well. In order to reduce the possibility of contamination, the State's septic system regulations (Title V) require septic systems to be located at least 100 feet away from a water well. This can be very difficult for a lot consisting of 25,000 square feet or less, especially once the various setbacks (front, side & rear) required by the Zoning By-Law are factored into the equation. The Town's zoning scheme should ensure that each lot intended for residential purposes has enough land to accommodate an on-site septic system and water well, unless a connection to the municipal sewer system can be made.

4. Older Homes in Need of Rehabilitation: As indicated in Table H-4, roughly one third of Dudley's housing stock was built prior to 1950. Much of this housing is old mill housing (now multi-family units) located in Dudley's "urban" area, between Merino Pond and the French River. Although no comprehensive inventory has been compiled, it is quite likely that many of these older residences would not meet today's various housing codes (plumbing, electricity, weather-proofing, building code, etc.). Our federal government offers numerous grant opportunities for building rehabilitation projects, especially when they benefit low and moderate-income families. A brief description of available federal housing rehab grants is provided below.

- *Community Development Block Grant Program:* This program was developed at the federal level by the US Department of Housing and Urban Development (HUD). The program is implemented at the State level by the Massachusetts Department of Housing and Community Development (DHCD). Offered annually, the Community Development Block Grant Program (CDBG) presently has two pots of money available to Massachusetts municipalities: Community Development Fund I (CDF-I) and Community Development Fund II (CDF-II). A community is eligible to apply for one or the other. In Dudley's case, the Town is eligible to apply for CDF-I Program. Be forewarned that communities interested in applying for CDF funds need to do a substantial amount of advance work prior to submitting a grant application.

Eligible activities include: economic development projects that create and/or retain local/regional jobs; community facilities; housing rehabilitation; and infrastructure improvements (including sewer and water lines). A CDF project must either benefit low and

moderate-income people, aid in the prevention and/or elimination of slums and/or blight, or meet an urgent condition posing a serious threat to the health and welfare of the community.

- *The HOME Program and the Housing Stabilization Fund:* Another set of programs offered by HUD and managed by the DHCD, these programs offer funds to support the acquisition and/or rehabilitation of existing structures. Acquisition funds are only available to low-income families. Eligible projects include: property acquisition; housing construction and/or rehabilitation; connecting to public utilities (sewer & water); and making essential improvements such as structural improvements, plumbing improvements and energy-related improvements. These programs are offered every two years (next funding opportunity is in 2001). Once again, interested communities need to do a substantial amount of advance work prior to submitting a grant application.
- *The 'Get the Lead Out' Program:* This HUD-sponsored program is managed at the State level by the Massachusetts Housing Finance Agency (MHFA). This is a lead abatement program available to single family homes and 2-4 family properties. The Town of Southbridge has used this program to great effect. Offered on an annual basis, these funds are generally easier to apply for than the above referenced CDBG funds.
- *Home Improvement Loan Program:* Another HUD program managed by the MHFA, this program offers funds to eligible owners of one-to-four unit residential properties so that they can make necessary improvements to their residential structures. Eligible improvements include: sewage disposal systems and plumbing needs; alterations and renovations that will enhance property safety; energy-related improvements; and repairs designed to bring the structure up to local building codes. Offered on an annual basis, these funds are generally easier to apply for than the above referenced CDBG funds.
- *Community Septic Management Program:* This program was developed at the federal level by the Environmental Protection Agency (EPA) and is administered at the State level by the Department of Environmental Protection (DEP). The program makes available to homeowners loan money (at 5% interest) for repairing failing septic systems. Dudley has been involved in this program since 1997, and currently has roughly \$202,000 available for septic system repairs. Dudley's Septic Management Program is administered at the local level by the Board of Health and the Town Treasurer as a betterment program. The Central Massachusetts Regional Planning Commission provides technical assistance for this program. Although Dudley's program has been in place for two years now, only a handful of property owners have applied for loan money. The Town should do more to publicize the availability of this money and the Town's Health Inspector should inform the owners of failed septic systems that this program is available to them.
- *Weatherization Assistance:* HUD provides funding assistance to regional non-profit organizations for fuel assistance and weatherization programs. The Worcester Community Action Council, Inc. is the regional agency that provides such services for Worcester County communities. In order to be eligible for the weatherization program, the applicant must receive some form of federal fuel assistance benefits.

All residential buildings in Dudley should be safe, sound, energy efficient and up to code.

Towards this end, the Town should examine its housing stock and work with property owners to identify needed improvements. Once this is done, the Town should further investigate the above mentioned grant opportunities and see if they make sense for Dudley.

5. Subsidized Housing and Affordable Housing: Chapter 40-B of Massachusetts General Laws outlines a municipality's responsibilities regarding the provision of low and moderate income housing. The law defines low and moderate-income housing as "...any housing subsidized by the federal or state government under any program...". Thus, by definition, a government housing subsidy is required in order to qualify as low and moderate-income housing. Please note that this is quite different from the issue commonly known as "affordable housing". Affordable housing is generally defined as housing that costs no more than one third of a person's total income. Thus, what is affordable for one person may not be affordable to another. Looking at the average home sale price and average contract rent in Dudley, it would be hard to argue that Dudley does not provide opportunities for affordable housing. Low and moderate-income housing opportunities are another issue altogether.

Regarding a municipality's responsibilities to provide low and moderate income housing, Chapter 40-B states that at least 10% of a community's housing stock must consist of low and moderate income housing (keep in mind the State's definition). Currently, there are only a handful of Massachusetts municipalities that have reached this 10% threshold. Currently, only 2.5% of Dudley's housing stock is considered low and moderate income. Joshua Place off of West Main Street is an example of low and moderate income housing in Dudley. For municipalities that do not meet the 10% threshold, the practical consequence is as follows: any developer proposing low and moderate income housing can have the project exempted from local zoning and subdivision requirements and the development could be built in any zoning district, regardless of suitability. In reality, low and moderate-income housing developments are usually built in areas that have suitable infrastructure and convenience amenities (water, sewer, close to public transportation, etc.). Chapter 40-B is popularly known as the "Anti-Snob Zoning Act".

The Town should review its options for providing low and moderate-income housing and make every effort to reach the 10% threshold. Towards this end, the Town may want to consider the Massachusetts Local Initiative Program (LIP). This program, administered by the DHCD, was established to give municipalities more flexibility in their efforts to provide low and moderate-income housing. The program provides technical assistance and other non-financial assistance to housing developed through the initiative of local government to serve households below 80% of the town's median household income. The program limits the State's review to the most basic aspects of affordable housing: the incomes of the people served, the minimum quality of the housing provided, fair marketing, and level of profit. LIP projects must be initiated by the municipality, either through zoning-based approvals (rezoning, special permits, density bonuses, etc.), financial assistance, and/or through the provision of land and/or buildings. LIP projects can include new construction, building conversion, adaptive re-use and building rehabilitation. LIP projects are usually administered at the local level by a local housing partnership or, in the absence of a housing partnership, the Board of Selectmen. Affordable housing units created by a

LIP project will be counted towards the municipality's 10% low and moderate income housing threshold.

6. Open Space and Preserving Rural Character: It is evident that Dudley citizens are concerned about maintaining the community's rural character. Although most of north and west Dudley currently consists of rolling hillsides, agricultural land, and old homesteads, development pressure does have the potential to alter the landscape in less than desirable ways. There are a variety of ways to protect land from development, and these methods will be discussed in the Open Space and Recreation chapter. There are a couple of ways to allow residential development in the north and west of Dudley that will be in keeping with the rural character of this area:

6-A *Cluster Housing*: Cluster housing allows for building houses closer together than would normally be allowed under the underlying zoning requirements, while preserving the remaining land as open space. This type of housing appeals to developers because it enables them to build shorter subdivision roads and (where available) extend public utilities at a reduced cost. Cluster housing can help to preserve rural character *if* the local by-law gives the Planning Board the flexibility to determine what areas of the property are to remain undeveloped as open space. Cluster housing can make economic sense for a municipality in several instances: having a central location for picking up school children instead of having the bus stop at every student's house; if municipal utilities are required, the lines for such utilities can be extended into a cluster subdivision cheaper than they can be extended down an existing road as part of a conventional development proposal; and a portion of the cluster development's open space can be used to provide recreation facilities for the residents instead of the Town having to acquire and develop recreational lands. Dudley has had a cluster development by-law on the books now for several years, however, it has yet to be applied to a subdivision proposal. The Planning Board should review its cluster housing by-law to determine why it has never been used, and should take steps to identify and correct any problems with the by-law.

6-B *Major Residential Development Review*: currently the Town does not have any mechanism to review development plans unless they are submitted to the Planning Board as a subdivision proposal (which means the construction of a new subdivision road). Thus, if a developer wanted to create 20 new lots along an existing Town road, the Town would have limited review authority. The plan would simply be submitted to the Planning Board for their signature as an Approval Not Required (ANR) subdivision. The only municipal review would occur when the developer applies for driveway permits from the Highway Superintendent or building permits from the Building Inspector; and these permits are issued *after* the lots have been created.

The current review process does not allow for a review of site drainage issues including: volume, degree of infiltration, flow direction, and the ability of down-slope drainage structures to accommodate the increase in surface water runoff created by the new lots. Many Massachusetts communities have Major Residential Development by-laws in place that provide for municipal review of site planning issues such as drainage, environmental impact and neighborhood impact. It is up to the community to determine what constitutes a "major" residential development; some local by-laws start the review process at four newly created lots while others don't kick in unless ten or more lots are proposed. The Town should have some sort of mechanism in place that allows for municipal review of

major residential development proposals.

Housing - Goals

1. Maintain the Town's 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 Town government's ability to provide public facilities and services, protect the environment, and preserve and enhance community character.

Housing - Recommendations

1. The Town's Zoning By-Law should be amended to remove residential development as a use by right in any industrial zoning district. The Town is slowly losing its prime industrial land to residential development, not to mention the incompatibility of having neighborhoods in close proximity to industries. Responsible Municipal Entity: the Planning Board.
2. The Town's Zoning By-Law should be amended to treat private stables in the residential zoning districts the same way as raising livestock. Private stables should be subject to obtaining a Special Permit from the Zoning Board of Appeals unless the property in question is at least five acres in size. The definitions section of the Zoning By-Law should also be amended to include a definition for what constitutes a "private stable". Responsible Municipal Entity: the Planning Board in consultation with the Zoning Board of Appeals.
3. The Town's Subdivision Regulations should be amended to require detailed stormwater management plans and erosion control plans as part of submitting a Definitive Subdivision Plan for review by the Planning Board. The design standards for such plans should be clearly stated within the regulations. Once submitted, such plans should be reviewed by a licensed and certified civil engineer. The plans should clearly outline what new drainage facilities will be constructed, the expected level of stormwater runoff from the site and the ability of down-slope drainage structures to accommodate the increased level of stormwater. Responsible Municipal Entity: the Planning Board in consultation with the Highway Superintendent and the Board of Selectmen under their capacity as Highway Commissioners.
4. The Town should establish a Technical Review Community (TRC) to review large-scale development plans whether this is done through a site plan review process or through the building permit process. Such a committee would be composed of representatives from various municipal departments (water, sewer, health, highways, conservation, planning, building, fire and police), and would only meet as needed. Having the TRC review large-scale development plans would ensure that such plans are reviewed in a coordinated fashion and that all municipal concerns are addressed comprehensively. Once a large-scale development plan was filed with the Planning Board, the Board's clerk would circulate copies of the plan to the various departments and ask each department to review the plan and be ready to share their comments at a meeting to be held *prior* to the Planning Board's public hearing on the proposal. Responsible Municipal Entity: the Planning Board would take the lead on this, however, the Board of Selectmen would have to instruct the departments under their jurisdiction to participate in the TRC process; likewise, the Water Commission, Sewer Commission, and Board of Health.

5. The Town should proactively examine its housing stock and work with property owners to identify needed improvements. Once this is done, the Town should further investigate the various federal and state grant opportunities and see if they make sense for Dudley and its property owners. Responsible Municipal Entity: the Board of Selectmen in conjunction with the Building Inspector. The Board of Selectmen may opt to establish a local housing needs committee to assist in this effort.

6. The Town should review its options for providing low and moderate-income housing and make every effort to see that 10% of Dudley's housing stock consists of low and moderate-income housing. Responsible Municipal Entity: the Board of Selectmen. Once again, the Board of Selectmen may opt to establish a local housing needs committee to assist in this effort. If Dudley wants to support a LIP project, the Selectmen will need to work with the Planning Board to make the necessary amendments to the Town's Zoning By-Law. Additionally, the Selectmen may want to approach the Dudley Housing Authority to see if they are willing to expand their role to include advocacy for low and moderate-income housing. Currently, the Dudley Housing Authority's primary responsibility is the management of Joshua Place.

7. The Zoning Board of Appeals should receive training on how to deal with Special Permits as they relate to low/moderate income housing projects as defined by Chapter 40-B of Massachusetts General Laws. Classes on this subject are periodically offered by UMass Extension's Citizen Planner Training Collaborative (CPTC), and a procedural "how to" booklet has been prepared by the Massachusetts Department of Housing and Community Development (DHCD). Responsible Municipal Entity: The Zoning Board of Appeals should include money to cover the cost of classes and training in their annual budget.

8. The Town should do more to publicize its Community Septic Management Program, which makes loan money available to homeowners with failed septic systems. A special outreach effort should be targeted to those property owners with land along Dudley's numerous ponds. Perhaps informational pamphlets could be created for this purpose. Responsible Municipal Entity: the Board of Health and the Health Inspector.

9. The Town should review its cluster housing by-law to determine why it has never been used, and should take steps to identify and correct any problems with the by-law. Responsible Municipal Entity: the Planning Board.

10. The Town should have a mechanism in place that allows for the municipal review of major residential development proposals, that is, multiple lots (five or more) being created along the frontage of an existing Town road. Currently, such development proposals receive no municipal review as they are created under the Approval Not Required (ANR) process. Having a major residential development review provision in the Town's Subdivision Regulations would allow for the municipal review of such site planning issues such as the cumulative impacts of the proposed development in regards to drainage, stormwater management, erosion control, environmental impact and neighborhood impact. Responsible Municipal Entity: the Planning Board.

DUDLEY MASTER PLAN 2000

IMPLEMENTATION PLAN

The following is a breakdown of the Master Plan recommendations for each municipal department, board, commission and committee. The Planning Board and Board of Selectmen should work with the Town's departments and volunteer boards to prioritize the recommendations into a multi-year work plan.

Board of Selectmen

1. Develop a prioritized, multi-year, town-wide roadway improvement program. (Transportation Recommendation #1 and Town Government Recommendation #1)
2. Address the Town's problem intersections. The first priority here is obviously the Route 12/197 intersection. (Transportation Recommendation #2)
3. Address the Town's structurally deficient and functionally obsolete bridges. (Transportation Recommendation #3)
4. Prepare a sidewalk improvement plan. (Transportation Recommendation #4)
5. Address the pedestrian safety issues at Intermediate School Site. Other entities to work with on this item: Dudley Little League and Police Department. (Transportation Recommendation #5)
6. Continue the Town's membership in the Worcester Regional Transit Authority (WRTA) and support its efforts to provide public transportation alternatives on a regional scale. Other entities to work with on this item: Dudley's representatives to the WRTA. (Transportation Recommendation #6 & Natural Features Recommendation #6)
7. Ensure that utility companies who dig up town-maintained roads for the placement of their utility lines incur the full cost of repairing the roadway to its previous condition. (Transportation Recommendation #8)
8. Prepare an "official town map" as defined in Section 81-E, Chapter 41 of the Massachusetts General Laws. (Town Government Recommendation #2)
9. Consider establishing a Town Government Charter Commission to investigate options for re-organizing town government with an eye towards improving accountability and inter-departmental coordination, eliminating duplications of service, and streamlining the local bureaucracy in general. Other entities to work with on this item: Town Administrator. (Town Government Recommendation #10)
10. Establish a local economic development committee to coordinate all of the various elements of an economic development strategy for Dudley. (Town Government

Recommendation #11 and Economic Development Recommendation #7)

11. Change the Town Meeting date to a Saturday in order to increase public participation, especially among seniors. Other entities to work with on this item: Town Clerk and Town Moderator. (Town Government Recommendation #12)
12. Institute a secret ballot approach to warrant articles at the Town Meetings, as opposed to the current show of hands method. Other entities to work with on this item: Town Clerk and Town Moderator. (Town Government Recommendation #13)
13. Investigate its options for increasing its recycling program and solid waste disposal services, including holding the household hazardous waste disposal days on a more frequent basis. (Town Government Recommendation #14)
14. Lobby Dudley's representatives to the State Legislature in support of purchasing the abandoned Southbridge Branch rail line, owned by the P&W Railroad, for use as a recreational trail. Other entities to work with on this item: Conservation Commission. (Open Space and Recreation Recommendation #7)
15. Proactively examine Dudley's housing stock and work with property owners to identify needed improvements. Other entities to work with on this item: Building Inspector. (Housing Recommendation #5)
16. Review the Town's options for providing low and moderate-income housing and make every effort to see that 10% of Dudley's housing stock consists of low and moderate-income housing. The Board of Selectmen may opt to establish a local housing needs committee to assist in this effort. (Housing Recommendation #6)
17. Continue utilizing the Tax Increment Financing (TIF) program to create/retain jobs in Town, and stimulate the local economy. Other entities to work with on this item: Town Administrator. (Economic Development Recommendation #1)
18. Continue to clean up the Town's "brownfields", whether these properties are Town-owned or under private ownership. Other entities to work with on this item: Town Administrator. (Economic Development Recommendation #2)
19. Strengthen Dudley's ties with the Dudley-Oxford-Charlton Chamber of Commerce. Other entities to work with on this item: Board of Selectmen and Town Administrator. This could also be one of the duties of a local economic development committee. (Economic Development Recommendation #3)
20. Take advantage of the economic development opportunity presented by the recent expansion of the Quinebaug-Shetucket Rivers Valley National Heritage Corridor, whether on its own or in conjunction with the other eight Massachusetts communities now included in the project area. Other entities to work with on this item: Town Administrator and Historical Commission. This could also be one of the duties of a local economic development committee. (Economic Development Recommendation #4)
21. Rename West Main Street to simply "Main Street. (Land Use Recommendation #1)

22. Pursue the "scenic road" designation for some of its more rural roads in the north and west sections of Dudley. (Open Space and Recreation Recommendation #13)

Planning Board

1. Implement the future land use plan.
2. Amend the Subdivision Regulations to require detailed stormwater management plans and erosion control plans as part of submitting a Definitive Subdivision Plan for review by the Planning Board. Other entities to work with on this item: Highway Superintendent. (Housing Recommendation #3 and Natural Features Recommendation #2)
3. Amend the Zoning By-Law to give the Planning Board the power to require conservation easements for large-scale residential and industrial development proposals that have frontage on the French and Quinebaug Rivers. (Open Space and Recreation Recommendation #6)
4. Amend the Zoning By-Law to remove residential development as a use by right in any industrial zoning district. (Housing Recommendation #1 and Economic Development Recommendation #5)
5. Amend the Zoning By-Law to treat private stables in the residential zoning districts the same way as raising livestock. Other entities to work with on this item: Zoning Board of Appeals and Code Enforcement Officer. (Housing Recommendation #2)
6. Establish a Technical Review Community (TRC) to review large-scale development plans either through implementing a site plan review process or through the current building permit process. Other entities to work with on this item: Board of Selectmen and all applicable municipal departments. (Housing Recommendation #4, Economic Development Recommendation #8, and Land Use Recommendation #3)
7. Review the cluster housing by-law to determine why it has never been used, and should take steps to identify and correct any problems with the by-law. (Housing Recommendation #9 and Land Use Recommendation #4)
8. Amend the Zoning By-Law to allow for the municipal review of major residential development proposals, that is, multiple lots (five or more) being created along the frontage of an existing Town road. (Housing Recommendation #10 and Land Use Recommendation #5)
9. Amend the Zoning By-Law to give the Planning Board more power to review how a site gets developed. Essentially, the Planning Board needs to institute a "site plan review" process. (Land Use Recommendation #2)
10. Investigate the Town's options for allowing backland development. Other entities to work with on this item: Zoning Board of Appeals. (Land Use Recommendation #6)
11. Adopt a telecommunications by-law so that the Town can regulate investigate the placement of cell towers. (Land Use Recommendation #7)

Conservation Commission

1. Investigate the Town's options for dealing with the aquatic weed problem that has affected Dudley's ponds, and develop a prioritized list of ponds for remediation. Other entities to work with on this item: Board of Selectmen. (Natural Features Recommendation #1)
2. Consider supporting an organization of interested citizens (or school groups) willing to participate in an annual water quality monitoring program. (Natural Features Recommendation #4)
3. Investigate the Town's options for protecting its "Prime Farmlands" as designated by the USDA's Natural Resources Conservation Service. Other entities to work with on this item: Dudley Land Trust. (Natural Features Recommendation #5)
4. Stringently enforce the provisions of the State's River Protection Act, particularly along the undisturbed portions of the Quinebaug River. (Natural Features Recommendation #7)
5. Create more open space for hiking/biking and focus such efforts on western Dudley, and along the banks of its two major rivers. (Open Space and Recreation Recommendation #1)
6. Update the Open Space and Recreation Plan of March 1988. Other entities to work with on this item: Recreation Commission. (Open Space and Recreation Recommendation #3)
7. Work with owners of environmentally sensitive properties to protect these resources through the various land protection programs offered by the State. Other entities to work with on this matter: Dudley Land Trust. (Natural Features Recommendation #3)
8. Have the regional USDA office work with Dudley's active farmers on smart farming practices, such as: enclosed manure storage facilities and low impact fertilization techniques. Other entities to work with on this item: Dudley Grange. (Natural Features Recommendation #3)
9. Encourage Dudley's active farmers to protect their land under the State's Agricultural Preservation Restriction (APR) Program, administered by the Massachusetts Department of Food and Agriculture (DFA). Other entities to work with on this item: Planning Board and Zoning Board of Appeals. (Open Space and Recreation Recommendation #8)
10. Encourage Dudley's active farmers to participate in the Farm Viability Enhancement Program offered by the Massachusetts Department of Food and Agriculture (DFA). Other entities to work with on this item: Planning Board and Zoning Board of Appeals. (Open Space and Recreation Recommendation #9)

Inspections and Permitting

1. Ensure that home addition/renovation plans are reviewed by the Health Department *prior*

to issuing a building permit for said expansion. Other entities to work with on this item: Health Department. (Town Government Recommendation #4)

2. Establish a centralized permitting/inspection/code enforcement department. Other entities to work with on this item: Board of Selectmen, Planning Board and Dudley's various inspectors. (Town Government Recommendation #3)

Health Department

1. Have household hazardous waste education pamphlets available at the Town Hall. (Natural Features Recommendation #3)

2. Have pamphlets on the proper maintenance of septic systems/ leachfields available at the Town Hall. (Natural Features Recommendation #3)

3. Do more to publicize its Community Septic Management Program. A special outreach effort should be targeted to those property owners with land along Dudley's numerous ponds. (Housing Recommendation #8)

Highway Department

1. Reduce the amount of road salt used within the groundwater contribution areas of Dudley's three municipal wells. (Natural Feature Recommendation #3)

Transfer Station Personnel

1. Participate in any regional or inter-community household hazardous waste collection day, or sponsoring such a day on its own. (Natural Feature Recommendation #3)

Water Department

1. Investigate its options for finding a new water supply source. Other entities to work with on this item: Board of Selectmen. (Town Government Recommendation #6 and Economic Development Recommendation #6)

2. Investigate its long-term options for managing the municipal water system. Other entities to work with on this item: Board of Selectmen. (Town Government Recommendation #7)

3. Prevent all further development of the woodland it owns within the Town Beach Conservation District. Other entities to work with on this item: the Department, Board of Selectmen, Recreation Commission and Conservation Commission to protect this area. (Open Space and Recreation Recommendation #11)

Finance Appropriations and Advisory Committee

1. Establish a long-range capital planning committee and charge them with the responsibility of preparing a long-range Capital Improvement Program (CIP) for the Town. Other entities to work with on this item: Board of Selectmen. (Town Government Recommendation #8)

2. Establish a building needs committee to comprehensively review the building and space needs of Dudley's various municipal departments. Other entities to work with on this item: Board of Selectmen. (Town Government Recommendation #9)

Recreation Commission

1. Take advantage of the recreation funding opportunities offered by the Quinebaug-Shetucket Rivers Valley National Heritage Corridor. Other entities to work with on this item: Conservation Commission. (Open Space and Recreation Recommendation #4)

2. Put together a brochure that outlines what the Town has for recreation programs/facilities and have them available at the Town Hall. Other entities to work with on this item: Conservation Commission. (Open Space and Recreation Recommendation #5)

3. Acquire land for, and develop additional active recreation facilities. (Open Space and Recreation Recommendation #2)

4. Designate Perryville Road and its bridge as a trail for walking and biking. Other entities to work with on this item: the Board of Selectmen. (Open Space and Recreation Recommendation #12)

Zoning Board of Appeals

1. Obtain training on how to deal with Special Permits as they relate to low/moderate income housing projects as defined by Chapter 40-B of Massachusetts General Laws. (Housing Recommendation #7)

2. Investigate the Town's options for allowing very small-scale commercial uses in its residential districts by Special Permit. Other entities to work with on this item: Planning Board. (Land Use Recommendation #8)

Town Administrator

1. Continue implementing the Town's information management plan. Other entities to work with on this item: Information Technology Committee. (Town Government Recommendation #5)

Information Technology Committee

1. Influence local cable companies and telecommunication firms to provide access to high speed data and networking technologies in preparation for existing and new businesses that may want to take advantage of these technologies. Other entities to work with on this item: Town Administrator. (Economic Development Recommendation #9)

Historical Commission

1. Update the Town's Historical Survey and then pursue historic district designations for some of Dudley's more historic areas, such as Dudley Center and some of the Town's older cemeteries. Other entities to work with on this item: Planning Board. (Open Space and Recreation Recommendation #10)

Dudley's WRTA Representatives

1. Continue Dudley's membership in the Worcester Regional Transit Authority (WRTA) and support its efforts to provide public transportation alternatives on a regional scale. Other entities to work with on this item: Board of Selectmen. (Transportation Recommendation #6)
2. Continue to brief the Board of Selectmen on regional transportation projects and issues that may have relevance to Dudley. (Transportation Recommendation #7)

INTRODUCTION

Why Dudley Needs a Master Plan: It is a fact of life that communities grow, whether through an increase in population, housing, and/or economic development activity. Managing growth has always been a considerable challenge for those in charge of handling community affairs. Dudley town planners recognize that the Town needs a community Master Plan in order to help local officials act in concert on a common agenda for the long-range good of the Town.

Chapter 41, Section 81-D of Massachusetts General law states that a community Master Plan shall be "...a basis for decision making regarding the long-term physical development of the municipality." It further states that such a plan "...identifies the goals and policies of the municipality for its future growth and development." In a practical sense, community Master Plans have always been intended to serve as a land use and future development policy guide for local decision makers. Typically, a community Master Plan does five things:

- Articulates the goals and objectives of the community (i.e., what the community wants for its future, what type of community it wants to be);
- Outlines the existing resources and conditions of a community (this is usually done through a review of existing data sources, collection of new data, and updates of inventory information);
- Evaluates and assesses the existing resources and conditions with an eye towards identifying shortfalls and deficiencies;
- Projects the current trends and conditions into the future in an effort to identify shortcomings that can be corrected through advanced planning, as well as the future needs of the community;
- Sets forth a strategy for addressing the needs of the community and helping the community become what it wants to be.

Although a community Master Plan has the latitude to deal with a variety of issues and concerns, there are several subjects that such a plan must address by law. Chapter 41, Section 81-D states that community Master Plans must contain the following elements: a goals and policies statement; a land use plan; chapters that deal with economic development, traffic circulation, natural and cultural resources, open space and recreation, community services and facilities; and an implementation plan.

This community Master Plan for the Town of Dudley sets forth the community's goals and provides the background data and analysis necessary for developing strategies to employ when guiding Dudley as it continues to grow and develop over the coming decades.

The Master Planning Process in Dudley: The Dudley Master Plan was prepared by the Dudley Master Plan Committee, which was appointed by the Dudley Planning Board. The Committee is composed of Dudley residents, some with experience on local boards, and some with no previous municipal experience. The Central Massachusetts Regional Planning Commission (CMRPC)

provided technical assistance throughout the entirety of this project. The Master Plan Committee met on a monthly basis (sometimes twice a month) and all meetings were open to the public. These meetings were occasionally attended by representatives from other municipal boards and committees including the Board of Selectmen, Planning Board, Water Commissioners, Sewer Commissioners and the Cemetery Commission. Interested citizens also stopped in periodically to provide their input.

During the initial stages of Master Plan preparation, interviews were conducted with all key municipal committees, boards, commissions and personnel. Everyone contacted was very helpful in terms of assisting with the update of inventory information, identifying upcoming needs, and providing candid assessments of the challenges they face. The Master Plan Committee reviewed this input in detail.

To further increase the public's involvement in the Master Plan update process, the Committee prepared a citizen survey to solicit the opinions and desires of the people and businesses residing in Dudley. The survey was publicized on the local cable access channel, as well as through a variety of press releases. The survey was sent to every household and business in Dudley in July of 1999. The survey results were tabulated over the summer. The survey results were presented to the Dudley Board of Selectmen at their evening meeting on October 4, 1999. Another presentation was made to the Dudley Grange on October 12, 1999. The survey results were also reviewed at the first Master Plan public forum held on January 26, 2000.

All told, the Master Plan Committee held 21 evening meetings (all open to the public) and two well-attended public forums. CMRPC staff interviewed over 27 Dudley department heads and committee/board chairmen. Joint meetings were held with the Planning Board during the preparation of the Land Use chapter.

EXISTING AND FUTURE LAND USE

Existing Land Use Pattern: Dudley’s land use pattern can be broken down into two segments: the densely-settled east and southeast, and the sparsely-developed rural north and west. The Town’s multi-family housing units are located almost exclusively in the east, while single family homes are the dominant land use in the north and west. Residential development is fairly extensive around Merino Pond, Hayden Pond and Pierpoint Pond.

West Main Street (Route 197) is the Town’s primary commercial corridor, although there are several small-scale businesses along Schofield Avenue (Route 12) heading towards Thompson, Connecticut. Industrial uses are scattered throughout Town, primarily along Southbridge Road (Route 131), Mill Street, Oxford Avenue and Schofield Avenue. Gentex, the Town’s largest manufacturing operation, is located off of West Main Street. The Town’s various institutional uses are located along West Main Street and Schofield Avenue.

The table below outlines how Dudley’s land is currently used. The land use totals were taken from an orthophotograph of Dudley taken in April of 1997, using CMRPC’s Geographic Information System (GIS). A graphic depiction of Dudley’s land use Pattern can be seen on the map on the following page (Existing Land Use Map).

Table LU-1

Dudley Land Use

<u>Developed Land</u>	<u>Permanently Protected Land*</u>	<u>Land With Environmental Constraints (non-buildable)***</u>
2,593 acres	1,777 acres	2,219 acres
2,198 acres of residential		600 acres of waterbodies
194 acres of institutional**		509 acres of wetlands
104 acres of industrial		456 acres of wetland buffers
97 of commercial		(State Wetlands Law)
		516 acres covered by State River Protection Act
		138 acres of steep slopes

* Permanently protected lands: farmland protected by the State, Conservation Commission and Audubon Society lands.

** Institutional lands: active municipal properties; churches; and schools (including Nichols).

*** In some cases, land may be covered by more than one environmental constraint.

According to the table above, Dudley's developed land currently accounts for 18% of the Town's total land area (14,004 acres). This represents quite an increase from the days of the last Dudley Master Plan (1966), when roughly 5% (or 700 acres) of the Town's total land area was developed. In 1952, Dudley had 3% (or 420 acres) of its total land area developed.

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Zoning Scheme: A graphic depiction of Dudley's zoning scheme can be found on the following page (Zoning Map). It is clear from reviewing the land use pattern that the Town's zoning scheme has been the determining factor as to the location and density of Dudley's various land uses. The Residential-10 zoning district is located in the eastern part of Town. This district requires the smallest lot size in Town (10,000 sq. ft.), and thus has the highest density of people. The vast majority of the Residential-10 district is served by municipal sewer and water. The Town has several business districts (Business-15) are located along West Main Street, although small business districts can be found along Oxford Avenue and along Schofield Avenue in the southeast corner of Town.

The residential development density slightly decreases in the Residential-15 districts (15,000 sq. ft. minimum lot size requirement) as one heads away from West Main Street. The largest Residential-15 district is located in an area encircled by Charlton Road, Dudley Center Road and West Main Street. The majority of frontage along Mason Road, Airport Road Tanyard Road and Dudley Hill Road has been developed residentially. Although the bulk of this district is served by municipal water and sewer, the area north of Dudley Center Road (and the road itself) does not have municipal sewer service at this time. The Town's other Residential-15 district is located south of West Main Street along Lyons Road.

The density of residential development further decreases in the Residential-25 districts, which have a minimum lot size requirement of 25,000 sq. ft. There are several Residential-25 districts in the north along either side of Pierpoint and Hayden Ponds, and along the eastern side of New Pond. These northern Residential-25 districts are not served by municipal sewer or water. There is a Residential-25 district in the southeast corner of Town, just south of Rocky Hill Road. Municipal water serves only a small portion of this district. The last Residential-25 district is a small area encircled by Dresser Hill Road, Mill Road and Southbridge Road. The entirety of this district is served by municipal water. The vast majority of north and west Dudley is covered by the Residential-43 district, which has a one-acre minimum lot size requirement. This is the Town's largest lot size requirement and has lead to a rural, low-density development pattern. There are still large stretches of roadways in these areas that have yet to be built upon. The Residential-43 district is not serviced by municipal sewer, and only Healy Road and a small stretch of Dresser Hill Road is served by municipal water.

Dudley has two types of industrial zoning districts: Industrial-43 (one acre required minimum lot size), and Industrial-130 (three acre required minimum lot size). These industrial zoning districts are scattered throughout Town, with Southbridge Road and Oxford Avenue being the primary concentrations. There are two industrial zoning districts on the north side of West Main Street, located between Dresser Hill Road and Hall Road. There is a large industrial zoning district on the south side of West Main Street, located between Indian Hill Road and Prospect Avenue.

Municipal water and sewer is not available for the industrial districts along Southbridge Road, or the I-43 district south of Farley Road. The Town's other industrial zoning districts are, for the most part, served by municipal water and sewer; the only exception being the IND-130 district in the eastern corner that abuts Oxford. This district does not have municipal sewer and the municipal water lines only go as far north as Sunnyside Road.

Many of the industrial zoning districts show evidence of residential development. Currently, residential development is a permitted use by right in the Town's industrial zoning districts. Much of the IND-43 district south of Carpenter Road will be residentially developed after the construction of the Perryville Estates subdivision. The Farley Road IND-43 district also contains a substantial amount of residential development. It should be noted that roughly half of this particular zoning district is taken up by a permanently protected property (APR protected farmland). This district does have some available frontage along Dudley Hill Road, although the other side of the street is residentially developed.

EOEA-Sponsored Build-Out Analysis for Dudley: In 1999, the Massachusetts Executive Office of Environmental Affairs (EOEA) started a state-wide effort to prepare a build-out analysis for each community in the State. In short, a build-out analysis attempts to determine the number of developable lots and the town's total population at full build-out, that is, if the town were completely developed under the standards of the current zoning scheme. Existing developed lands, protected lands and land with environmental constraints are taken out of the equation, and the remaining developable land is divided by the standards of the local zoning by-law. The regional planning commissions across the State were contracted to perform build-out studies for each community in their respective regions. The project will achieve state-wide coverage by the end of 2002. In Dudley's case, the CMRPC completed a build-out analysis for the Town in early 2000.

Dudley's current population stands at just under 10,000 people. The build-out analysis indicates that Dudley could accommodate another 16,017 residents under the current zoning scheme. Based on the Town's growth rate over the last fifty years (9.6% growth per decade), Dudley can expect to be fully built out in roughly 110 years under the standards of the current zoning by-law. The table below shows a district-by-district breakdown of where growth can occur in Dudley. The amount of buildable land in the second column is the amount of land left after all of the developed land, protected land and unbuildable land is removed.

Table LU-2

Build-Out Analysis Summary

Zoning District	Amount of Buildable Land	Number of Buildable Lots	Amount of New Floor Space	Additional Population	Additional Students
BUS-15	52 acres	116	124,156 sq. ft.	-----	-----
IND-43	401 acres	245	2,155,783 sq. ft.	-----	-----

IND-130	395 acres	68	4,002,607 sq. ft.	-----	-----
RES-10	81 acres	186	-----	496	95
RES-15	1,300 acres	2,251	-----	6,011	1,148
RES-25	569 acres	654	-----	1,746	334
RES-43	5,309 acres	2,908	-----	7,764	1,483
Totals:	8,107 acres	6,428 lots	6,282,546 sq. ft.	16,017	3,060
		(5,999 residential)			

Source: CMRPC February 2000.

The previous table indicates that Dudley's RES-43 District has the largest amount of land available for future development. As can be seen from the Zoning Map, the RES-43 District covers the majority of north and west Dudley. The RES-15 District can also accommodate quite a few new house lots, however, this is more a function of the district's small minimum lot size requirement (15,000 sq. ft.) than the amount of land available for development.

Land Use - Goal

Promote the most efficient use of Dudley's land resources. This includes the most effective placement of commercial/industrial ventures while complimenting the established pattern of residential development and Dudley's agricultural heritage.

Land Use - Recommendations

The single most important recommendation of the Land Use chapter is the Future Land Use Plan. The Future Land Use Plan looks at each of the Town's zoning districts and evaluates how the land is used; identifies the available municipal services (sewer/water); identifies the problems that have been created under the current zoning scheme; and evaluates the future development potential of the district. Based on this analysis, a plan for the future development of the Town is prepared. The plan outlines a series of regulatory changes (Zoning By-Law and Subdivision Regulations) that, if implemented, will move the Town closer to where it wants to be. The direction of the plan is shaped by the public input received throughout the Master Planning process. A graphic depiction of Dudley's Future Land Use Plan can be seen on the map on the following page.

Future Land Use Plan for Dudley - A Rationale: The intent of Dudley's Future Land Use Plan is to strengthen the existing land use pattern while limiting opportunities for sprawling residential development. Dudley's land use pattern has remained fairly consistent during the past century: densely developed (houses, businesses & industries) in the east, and rural (farms) in the north and west. The Plan strives to strike a balance between the two stated goals of maintaining the rural character of the north and west while increasing the Town's non-residential tax base. These goals are not mutually exclusive; rather, they are complimentary. Slowing down development in the rural north and west enables the Town to plan for and provide municipal services to these areas in an orderly fashion. Having these areas grow too fast puts a burden on Town services and the taxpayers who support these services. Growing the non-residential tax base provides the

Town with additional tax revenues to upgrade the identified deficiencies in its municipal infrastructure for the densely settled eastern section. Having the non-residential tax base remain stagnant will mean that Dudley tax payers will be relied upon more and more to cover the cost of municipal services.

Problems Created by the Current Zoning Scheme: This discussion looks at the problems of Dudley's current zoning scheme as it affects residential development, commercial development and industrial development.

Residential Development: The primary problem with the current residential zoning scheme is that it allows the creation of small lots (10,000 sq. ft., 15,000 sq. ft.) located outside of the municipal water/sewer services areas. Such lots have to accommodate a house, a well and an on-site septic system. The practical implications of the State's Title V Regulations is that in order to build a three-bedroom home you need 30,000 square feet of land. The result of Dudley's small residential zoning districts has been that a number of lots have been created that either can't be built upon or that require a great deal of expensive site preparation in order to meet the State's Title V requirements. The environmental implications of having concentrations of small lots with wells and septic systems in close proximity are obvious: the quality of the well water will suffer and the health of residents may be jeopardized. Dudley needs to change its residential zoning scheme in such a way that every newly created lot can be built upon. This means having enough land to build a decent home with a well and an on-site septic system. It also means having enough land to protect the well's water quality (and your neighbor's well) from the negative effects of a septic system's leachfield. The Future Land Use Plan proposes increasing the minimum lot size requirement and decreasing the density for those portions of Town located outside of the municipal water/sewer systems.

Commercial Development: The Town's commercial zoning scheme does not adequately distinguish between small-scale commercial development (e.g., the country store) and large-scale development (e.g., big-box retailers). Nor does the zoning scheme differentiate between the intensity of use. Town planners have expressed the desire to create commercial districts that look like and feel like the traditional New England village. This requires a zoning scheme that permits both small-scale commercial development and high-density residential development. In terms of infrastructure, municipal water and sewer service needs to be in place. The Future Land Use Plan proposes a mixed-use type of district that will replace the existing Business districts in the eastern section of Town. Limits will be placed on the amount of new commercial square feet and the number of parking spaces in order to prevent inappropriate large-scale commercial development. The minimum lot size requirement for these districts will not change as these areas are served by municipal sewer/water.

In an effort to compliment the small-scale village commerce areas, the Future Land Use Plan proposes creating an area for more intensive, large-scale commercial development. The current reality of our nation's retail sector is that many commercial operations look for land on the side of a heavily traveled highway in order to take advantage of the passing traffic. This type of development can create sprawl unless carefully managed. Sprawl is a development pattern where

large amounts of frontage land is developed and keeps radiating further and further down the road. Sprawl creates an inefficient land use pattern (what do you do with the backland?) and requires that municipal infrastructure be extended further and further down the road (a costly proposition for the Town). The Future Land Use Plan proposes creating a highway business district along Main Street in the area between Mason Road and Hall Road. The lots are generally larger here than in the densely-settled eastern section and municipal sewer and water already cover most of this area. The highway business district would be bounded on the west by an existing industrial district and on the east by one of the newly created village mixed use districts.

Industrial Development: The current zoning scheme has resulted in a situation where a great deal of industrially-zoned land has been developed residentially. In addition, there are industrial districts where most of the land has been permanently protected and can't be built on, and there are a few industrial districts where no industrial development has taken place whatsoever. Another problem with the current zoning scheme is that it makes no differentiation between heavy and light industry.

The Future Land Use Plan proposes rezoning to residential those industrial areas that have lost their industrial development potential (either due to residential development or land protection efforts). For the industrial districts that have seen no industrial development and do not have access to municipal sewer/water, the Plan proposes to rezone these areas residentially as well. The Plan also proposes deleting residential uses from the industrial district's list of permitted uses. This will prevent the further loss of industrial land to residential development. Further, the Plan proposes that the zoning scheme be amended to differentiate between light industry and heavy industry. Lastly, the Plan proposes enlarging those industrial zoning districts that still have additional development potential.

The nuts and bolts of putting the Future Land Use Plan in place will entail changes to the Town's zoning scheme (Zoning By-Law) and land development regulations (Subdivision Regulations). Towards that end, the following regulatory changes are proposed:

DRAFT FUTURE LAND USE PLAN

New Light Industry District (LI)

Current Standards of IND-43 District	Current Standards of IND-130 District	Suggested Standards of new LI District:
Min. lot size: 1 acres	Min. lot size: 3 acres	Min. lot size: 2 acres
Frontage: 200 feet	Frontage: 200 feet	Frontage: 200 feet
Front setback: 45 feet	Front setback: 45 feet	Front setback: 50 feet
Rear setback: 40 feet	Rear setback: 40 feet	Rear setback: 30 feet
Side setback: 25 feet	Side setback: 25 feet	Side setback: 30 feet

With the above setbacks in mind, you could have a maximum building footprint of 49,784 square feet. This would be below 65% maximum lot coverage limitation that is currently in your by-law

for your industrial districts; therefore, there is no need to delete the maximum lot coverage provision for the new Light Industry district.

Suggested Special Provisions:

- Lots with frontage on the French or Quinebaug Rivers shall reserve a 30-foot wide easement along the riverbank for public access to the river. There shall be no equipment, supplies or structures (permanent or temporary) placed within the easement.
- All parking shall be located outside of the road right-of-way.
- Industrial uses that abut a residential zoning district or residentially used parcel shall provide a buffer or screen along the entirety of its shared boundary with the residential zoning district or residentially-used parcel. Buffers shall be at least six feet in height and may consist of fencing or appropriate plantings or landscaping. Buffers can be placed within the Light/Heavy Industry District's required side and rear setbacks.

New Definition for Inclusion in Zoning By-Law:

- Light Industry: Fabrication, processing or assembly employing only electric, gas or other substantially noiseless and inoffensive motor power, utilizing hand labor or quiet machinery and processes, and free of neighborhood disturbing agents such as: odors, gas, noise, fumes, smoke, cinders, flashing or excessively bright lights, refuse matter, electromagnetic radiation, heat or vibration. The definitions for Hazardous Wastes or Hazardous Materials found in Mass. General Laws, Chapter 21C, shall apply in all cases.

Possible List of Permitted Uses: (**please note:** if the use is currently allowed in your industrial districts, then the use will have "existing" next to it. If the use is a newly proposed use, then the use will have "new" next to it.)

Bio-technology facilities, laboratories and parks (new)

Medical research facilities, laboratories and parks (new)

Fiber-optics facilities (new)

Professional/business office parks (existing)

Light manufacturing operations (existing)

Motor vehicle rental, sales and service (existing)

Bulk storage (existing)

Commercial radio & television studio and transmission (existing)

Warehousing (existing)

Contractors yard (existing)

Laundry or dry cleaning store (existing)

Airplane or heliport field (existing)
 Wholesale service with storage (new)
 Packaging and assembly operations (new)
 Printing and publishing operations (new)
 Bakeries (new)
 Bottling plants (new)

The residential and agricultural uses currently allowed in your industrial districts would not be allowed in the new Light Industrial district. The commercial uses currently allowed in your industrial districts would be allowed.

New Heavy Industry District (HI)

<u>Current Standards of IND-43 District</u>	<u>Current Standards of IND-130 District</u>	<u>Suggested Standards of new HI District:</u>
Min. lot size: 1 acres	Min. lot size: 3 acres	Min. lot size: 3 acres
Frontage: 200 feet	Frontage: 200 feet	Frontage: 200 feet
Front setback: 45 feet	Front setback: 45 feet	Front setback: 45 feet
Rear setback: 40 feet	Rear setback: 40 feet	Rear setback: 40 feet
Side setback: 25 feet	Side setback: 25 feet	Side setback: 20 feet

Suggested Special Provisions:

- All parking shall be located outside of the road right-of-way.

Possible List of Permitted Uses:

Transportation terminals (existing)
 Bulk storage (existing)
 Warehousing (existing)
 Contractors yard (existing)
 Laundry or dry cleaning plant (existing)
 Factories (new)
 Auto salvage yards (new)

Chemical plants (new)

Machine shops (new)

Sand and gravel excavation operations (new)

The residential and agricultural uses currently allowed in your industrial districts would not be allowed in the new Heavy Industrial district. The commercial uses currently allowed in your industrial districts would be allowed.

Village Mixed Use District (VMU)

Current Standards

Suggested Standards

of BUS-15 District

of new VMU District:

Min. lot size: 15,000 sq. ft.

Min. lot size: 15,000 sq. ft.*

Frontage: 200 feet

Frontage: 150 feet

Front setback: 35 feet

Front setback: 30 feet

Rear setback: 35 feet

Rear setback: 20 feet

Side setback: 15 feet

Side setback: 15 feet

* Those lots within the VMU districts that do not have access to municipal sewer shall be at least 30,000 sq. ft. minimum lot size.

Suggested Special Provisions:

- All parking shall be located outside of the road right-of-way.
- Do away with the current 30% maximum lot coverage requirement. This restriction allows the landowner to use only 4,500 sq. ft. of a 15,000 sq. ft. lot for building *and* parking. This is too restrictive.
- Limit the amount of commercial floor space to 5,000 sq. ft., whether single or two-story.
- Limit the amount of parking spaces to 20.

Possible List of Permitted Uses:

Business or professional offices (existing)

Banks and financial offices (existing)

Sit-down restaurants with no drive-thru service (modification of an existing permitted use)

Retail sales and services (existing)

Laundry or dry cleaning store (existing)

Single and two-family homes (existing)

The agricultural uses currently allowed in your BUS-15 district would still be allowed in the new VMU district, while three out of the four industrial uses currently permitted in your BUS-15 district would not be allowed in the new VMU district: light manufacturing, contractors yard, and radio/television studio and transmission.

New Highway Commercial District (HC)

Current Standards of <u>BUS-15 District</u>	Suggested Standards of <u>new HC District</u> :
Min. lot size: 15,000 sq. ft.	Min. lot size: 15,000 sq. ft.
Frontage: 200 feet	Frontage: 200 feet
Front setback: 35 feet	Front setback: 30 feet
Rear setback: 35 feet	Rear setback: 20 feet
Side setback: 15 feet	Side setback: 15 feet

Suggested Special Provisions:

- All parking shall be located outside of the road right-of-way.
- Do away with the current 30% maximum lot coverage requirement.

Possible List of Permitted Uses:

Restaurants: sit-down and drive-thru (modification of an existing permitted use)

Shopping centers (although currently allowed, the Zoning By-Law should explicitly list shopping centers as a permitted use).

All of the permitted uses currently allowed by right in the BUS-15 District, included the agricultural, residential and industrial uses.

Residential Zoning Changes

R-10 Districts: Leave the R-10 District as it is. This district is fully covered by either municipal sewer and/or water. The district is almost fully built-out as it is. This is your most densely-developed portion of Dudley and should remain as such.

R-15 and R-25 Districts: The proposed Future Land Use Map shows that several areas of the existing R-15 and R-25 districts will be upzoned to R-30 (30,000 sq. ft. minimum lot size requirement) and R-43 (one acre minimum lot size requirement). The current dimensional standards of the R-25 district will apply to the new R-30 district (with the exception of lot size, of course). The current dimensional requirements of the R-43 district will not change.

R-43 Districts: The proposed Future Land Use Map shows that the majority of north and west

Dudley will be upzoned to Res-87 (two-acre zoning). The setback standards of the R-43 district will apply here, with the exception of the frontage requirement, which will increase to 200-feet.

Rezoning - Property Owner Implications: Increasing the minimum required lot size for any of the residential zoning districts will render some of the existing lots non-conforming. In addition, existing lots in the current R-15 District would have non-conforming setbacks if the setback requirements of the current R-25 District are applied in the new R-30 District.

What will this mean to Dudley property owners?

Property Owners Who Own Just One Lot: These lots are considered "grandfathered" or protected from changes in a district's dimensional requirements if:

- The lot is at least 5,000 sq. ft. in size and has at least 50 feet of frontage;
- The lot is located in an area zoned for single or two-family homes;
- The lot conformed to the existing zoning when legally created; and
- The lot is in separate ownership prior to the town meeting vote, which made the lot non-conforming.

If you have a lot (vacant or with a house) in a residential district that gets re-zoned to a non-residential district, you are considered "grandfathered" or protected from changes in a district's dimensional requirements.

Property Owners With Three or Less Adjoining Lots Held in Common Ownership: Any change in a district's dimensional provisions shall not apply to lots held in common ownership for a period of five years from the date of the change (town meeting approval date), provided that:

- The lots are at least 7,500 sq. ft. in size and have at least 75 feet of frontage; and
- The lots conformed to the existing zoning when legally created.

Thus, if you own two or three adjoining lots, these lots would be merged into a conforming lot five years after the date of the zoning change approval (town meeting date).

Property Owners With Four or More Adjoining Lots Held in Common Ownership: Only three of the lots held in common ownership would receive protection for a period of five years from the date of the change (town meeting approval date), provided that:

- The lots are at least 7,500 sq. ft. in size and have at least 75 feet of frontage; and
- The lots conformed to the existing zoning when legally created.

Thus, if you own four or more adjoining lots, you would receive a five-year period of protection from a zoning change for three of my lots, but your fourth lot would be considered a non-conforming lot unless it is combined with the third lot. If you have a fourth and a fifth lot, these two lots would be merged after the zoning change to create a conforming or a close-to-conforming lot (as close as possible).

Subdivision Plans before the Planning Board: All changes to a local zoning by-law are approved as articles at a town meeting. Any preliminary subdivision plan submitted to the Planning Board *before* the town meeting shall be governed by the zoning standards in place at the time when the plan was submitted to the Planning Board, and this protection from the zoning change under consideration shall last for a period of eight (8) years from the time that the Planning Board endorses the definitive plan.

Other Land Use Recommendations

1. The Town should rename West Main Street to simply "Main Street". This is a simple change, yet it will help Dudley create its own unique identity separate from Webster. The question often asked about West Main Street is "West of what?" West Main Street functions as Dudley's only Main Street and its road name should reflect this. Responsible Municipal Entity: the Dudley Board of Selectmen acting under their capacity as Higher Commissioners.

2. The Zoning By-Law should be amended to give the Planning Board more power to review how a site gets developed. Essentially, the Planning Board needs to institute a "site plan review" process. A site plan review process could not be used to deny a use permitted by right; however, it can be used to regulate how a site gets developed. Issues typically addressed during the site plan review process include: drainage, landscaping, lighting, dumpster location, parking area design and location, access/egress, and screening and fencing. In order to review for such items, the By-Laws site plan review provision would need to include specific standards. It is not wise to give the Planning Board wide discretion as to what constitutes appropriate site development; rather, clear site development standards need to be in place so that both the Planning Board and the developer know what is expected.

In terms of applicability, it is suggested that any site plan review process adopted by Dudley be applied to multi-family residential developments and those commercial/industrial developments proposing more than 5,000 sq. ft. of floor space and more than 20 parking spaces. The practical implication of this would be that new commercial uses within the proposed Village Mixed Use District would be exempt from site plan review, yet new commercial uses within the Highway Business District would need site plan review if they exceed the above thresholds. Any site plan review provision would need to address the following items:

- Intent of the provisions;
- Applicability;
- Site plan submission standards (what you need for mapped information);
 - Procedures for submitting and reviewing the plan, holding hearings, and rendering decisions;
- Site development standards;
- A waiver provision; and
- A time limit for developing the site, after which site plan approval will lapse.

3. The Town should establish a Technical Review Community (TRC) to review large-scale development plans. This was mentioned in the Housing chapter (Recommendation #4) within the context of reviewing large-scale residential developments, yet having a TRC in place would also facilitate the municipal review of large-scale commercial/industrial development proposals (i.e., those development proposals that require site plan review). A TRC would be composed of representatives from various municipal departments (water, sewer, health, highways, conservation, planning, building, fire and police), and would only meet as needed. Having the TRC review large-scale development plans would ensure that such plans are reviewed in a coordinated fashion and that all municipal concerns are addressed comprehensively. A coordinated TRC review process would also benefit the potential business/industry trying to establish themselves in Dudley. The Town's concerns would be presented to the developer all at once, instead of the time consuming department-by-department review that currently takes place in an uncoordinated fashion.

Responsible Municipal Entity: If site plan review provisions are added to the Zoning By-Law, then the Planning Board would be the most appropriate entity to coordinate the TRC process. Without site plan review provisions on the books, it would be the Building Inspector who would be the most appropriate entity to coordinate the TRC process. Since large-scale development proposals are currently not reviewed by the Planning Board (unless they are subdivisions), it is the Building Inspector who reviews such plans when the developer comes in for a building permit. The Board of Selectmen would have to instruct the departments under their jurisdiction to participate in the TRC process; and likewise, the Water Commission, Sewer Commission, and Board of Health.

4. The Town should review its cluster housing by-law to determine why it has never been used, and should take steps to identify and correct any problems with the by-law. Responsible Municipal Entity: the Planning Board.

5. The Town should have a mechanism in place that allows for the municipal review of major residential development proposals, that is, multiple lots (five or more) being created along the frontage of an existing Town road. Currently, such development proposals receive no municipal review as they are created under the Approval Not Required (ANR) process. Major residential development proposals could be captured under the applicability section of the site plan review process, or as a provision with the Town's Subdivision Regulations. Having a major residential development review provision within Dudley's regulatory framework would allow for the municipal review of such site planning issues such as the cumulative impacts of the proposed development in regards to drainage, stormwater management, erosion control, environmental impact and neighborhood impact. Responsible Municipal Entity: the Planning Board.

6. The Town should investigate its options for allowing backland development. As more and more road frontage is developed, a substantial amount of inaccessible backland is created. The intensity of this problem will increase as the Town continues to grow. The Planning Board may want to consider adding a flag lot provision to the Zoning By-Law. Issues to consider when creating a backland development provision include:

- Shall such lots be created by right or by Special Permit;
- Having a reduced frontage requirement in exchange for shared (common) driveways;
- Larger lot sizes with interior dimensional standards in order to prevent odd lot configurations; and
- Limiting the number of flag lots that created under a single development proposal or in close proximity to each other.

Responsible Municipal Entity: the Planning Board; however, if backland development is to be allowed by Special Permit, then the Zoning Board of Appeals would need to set the standards for such development.

7. The Town should adopt a telecommunications by-law so that it can regulate the placement of cell towers. Currently, Dudley does not have a cell tower by-law on the books. Since the enactment of the federal Telecommunications Act in 1996, many Massachusetts communities have enacted zoning by-laws to regulate the placement, construction and modification of personal wireless service facilities (cell towers). Such regulation by local governments is specifically authorized under the Act, provided that the resulting regulations do not unreasonably discriminate among providers and do not prohibit or have the effect of prohibiting the provision of personal wireless services. Any telecommunications by-law considered by Dudley should be sure to address the following items:

- What zoning districts to allow the placement of cell towers and how (i.e., as a use by right or by Special Permit);
- Establishment of a minimum fall zone (to prevent the structure from falling onto nearby structures and roadways);
- Fencing requirements;
- Landscaping requirements; and
- Bonding requirements (to provide for the facility's removal upon obsolescence).

Please be aware that telecommunication providers that have their development proposals denied at the local level can appeal to the Massachusetts Department of Telecommunications & Energy and make their case for overriding the local decision and the local telecommunications by-law as it applies to their proposal. Responsible Municipal Entity: the Planning Board.

8. The Town should investigate its options for allowing very small-scale commercial uses in its residential districts by Special Permit. Special Permit criteria would need to be developed that addressed the following issues at a minimum:

- Parking;
- Signage;
- Outside appearance;

- Hours of operation; and
- Trash disposal.

Responsible Municipal Entity: the Planning Board in consultation with the Zoning Board of Appeals.

Appendix A

Inventory of Town-Owned Properties

(To be used in conjunction with the Town-Owned Properties and Facilities Map)

Map ID #	Municipal Use	Use Status	Tax Map #	Lot Number	Area (Sq. Ft.)	Area (Acres)
1	Marsh Cemetery	Active	2	28	11,683	0.3
2	Conservation Land	Active	9	13-1	781,742	17.9
3	Conservation Commission	Active	10	49	243,972	5.6
4	Conservation Commission	Active	10	51	243,189	5.6
5	Town Government	Vacant	11	91	2,490,249	57.2
6	Conservation Commission	Active	10	5	172,560	4.0
7	Waldron Cemetery	Active	9	81-1	33,904	0.8
8	Calvary Cemetery	Active	16	64 & 6	799,972	18.4
9	Intermediate School	Active	251	4-1	831,295	19.1
10	Corbin Cemetery	Active	19	4	329,986	7.6
11	Dam for Sawmill Power	Active	201	18 & 1	78,508	1.8
12	Dudley Charlton Regional High	Active	20	4	3,868,456	88.8
13	Old School Site	Vacant	211	24	47,974	1.1
14	Albee/Durfee Cemetery	Active	18	8-1	14,410	0.3
15	Sayles Cemetery	Active	17		13,393	0.3
16	Town Government	Vacant	211	24	26,915	0.6
17	Village Cemetery	Active	19	102	59,399	1.4
18	Conservation (Dam)	Active	213	8	35,687	0.8
19	Old Water Tank Site	Vacant	19	46	32,241	0.7
20	Library	Active	213	1	8,554	0.2
21	Memorial Square Monument	Active	213	14	138	0.003
22	Mason School Site	Active	251	4	1,291,259	29.6
23	Abandoned Town Garage	Vacant	213	41	35,974	0.8
24	Underground Water Tank	Vacant	254	12	38,941	0.9
25	School	Active	213, 264	47, 49	254,475	5.8
26	Pump Station	Active	24	15	1,843	0.04
27	Town Government	Active	264	36 & 37	141,700	3.3
28	Pump Station	Active	24	14	6,485	0.15
29	Unknown	Vacant	264	5	3,617	0.08
30	Water/Sewer Department	Active	264	52	277,286	6.4
31	Pump Station	Active	263	59	167,157	3.8
32	Joshua Place	Active	252	157-3	419,899	9.6
33	Sewerage Treatment	Active	263	64	134,911	3.1
34	Transfer Station	Active	25	8	458,558	10.5
35	Railroad	Vacant	24	9 & 40	356,150	8.2
36	Water Department	Active	263	66-1	148,104	3.4
37	Group Home	Active	263	66-2	45,782	1.1
38	Dog Pound	Active	25	11	165,411	3.8
39	Conservation Commission	Active	30	17-1	687,584	15.8

Map ID #	Municipal Use	Use Status	Tax Map #	Lot Number	Area (Sq. Ft.)	Area (Acres)
40	Conservation Commission	Active	30	13	466,897	10.7
41	Old Landfill	Vacant	25	10 & 12	634,387	14.6
42	Conservation Commission	Active	25	15	627,396	14.4
43	Conservation Commission	Active	30	15	267,174	6.1
44	Town Well	Active	31	71	192,628	4.4
45	Conservation Commission	Active	30	107	335,761	7.7
46	Conservation Commission	Active	30	95	906,002	20.8
47	Perryville Cemetery	Active	31	3 & 5	81,971	1.9
48	Conservation Commission	Active	30	105	707,713	16.2
49	Soccer Field	Active	282	17	59,016	1.35

NATURAL FEATURES

Topography and Slopes: Dudley's topography is primarily comprised of small hills (drumlins), gently sloping fields and meadows, and low level valley areas. Steep slopes and drastic changes in terrain are not common features. The Town's topography ranges from a low of roughly 350 feet above sea level in the valley area directly abutting the Quinebaug River, to almost 840 feet above sea level near King Road in northwest Dudley.

Watersheds: Dudley encompasses roughly 14,004 acres, and the land is pretty evenly split between two regional drainage basins (watersheds): the French River basin and the Quinebaug River basin. Roughly 6,687 acres (48% of the town) fall within the French River Watershed, and roughly 7,317 acres (52% of the town) fall within the Quinebaug River Watershed.

The French River Basin ranges from Leicester, Massachusetts in the north and extends south to Killingly, Connecticut. The Massachusetts portion of the French River Watershed constitutes roughly 60,595 acres and is shared by the towns of Dudley, Webster, Oxford, Charlton, Spencer and Leicester (the headwaters community). The Quinebaug River Basin ranges from Warren, Massachusetts in the north and extends south all the way to Preston, Connecticut. The Massachusetts portion of the Quinebaug River Watershed constitutes roughly 98,454 acres and is shared by the towns of Dudley, Southbridge, Charlton, Sturbridge, Holland Brimfield, Wales, Brookfield and Warren (the headwaters community). See the Watersheds and Surface Water Resources Map for a graphic depiction of Dudley's location within these two regional watersheds.

In 1999, the University of Massachusetts-Amherst prepared the draft French-Quinebaug Watershed Plan for the Massachusetts Department of Environmental Protection's French-Quinebaug Watershed Basin Team. This document provided an analysis of the drainage patterns found in the two watersheds. Dudley's portion of the Quinebaug River Watershed has what is known as a "parallel" drainage pattern, that is, elongated landforms (including glacial drumlins) that constrict and direct the drainage pattern. The French River Watershed has what is known as a "dendritic" drainage pattern, that is, uniformly resistant crystalline rocks with a gentle regional slope.

Dudley's drainage pattern can be further broken down into five sub-watersheds (shown on the Watersheds and Surface Water Resources Map). Selected details for Dudley's five drainage basins are presented below.

Quinebaug Sub-Watershed

Regional watershed location: Quinebaug

Size in acres: 4,685

Acres of wetlands: 207

Waterbodies: Sylvestri Pond and Blood Pond.

Watercourses: Quinebaug River and several small streams.

Drainage pattern in Dudley: water from the northern section of this sub-watershed drains in a southerly direction until it reaches the river; water from the southwestern corner drains in a northeasterly direction until it reaches the river.

Tufts Brook Sub-Watershed

Regional watershed location: Quinebaug

Size in acres: 2,632

Acres of wetlands: 89

Waterbodies: Wielock Pond and Conant Pond.

Watercourses: Tufts Brook and several small streams.

Drainage pattern in Dudley: The headwaters of the Tufts Brook begins in north Dudley near Dresser Hill and flows in a southerly direction until its confluence with the Quinebaug River in Thompson, Connecticut.

Gore Pond Sub-Watershed

Regional watershed location: French

Size in acres: 688

Acres of wetlands: 37

Waterbodies: Gore/Baker Pond and Shepherd Pond.

Watercourses: several small streams.

Drainage pattern in Dudley: water drains east into Gore Pond and then flows in a northerly direction until it empties into the South Charlton Reservoir.

Merino Pond Sub-Watershed

Regional watershed location: French

Size in acres: 3,698

Acres of wetlands: 112

Waterbodies: Merino Pond, Hayden Pond, Pierpoint Pond, Wallis Pond, Lerner/Sawmill Pond, Peter/Parker Pond, Mosquito/Tobins Pond, Easterbrook Pond, New Pond, and Low Pond.

Watercourses: several small streams.

Drainage pattern in Dudley: water drains east and west into the ponds and then flows in a southerly direction into Merino Pond. From here, water drains in a south-easterly direction into the French River. The only exception is Pierpoint Pond which has a dike at its southern-most end

that causes its water to flow in a northerly direction into Charlton.

French River Sub-Watershed

Regional watershed location: French

Size in acres: 2,301

Acres of wetlands: 64

Waterbodies: Packard Pond and Perry Pond.

Watercourses: French River, Potash Brook and several small streams.

Drainage pattern in Dudley: This sub-watershed encompasses Dudley's entire frontage on the French River. Surface water drains in a southeasterly manner into the River.

Rivers and Streams: There are two major rivers and two significant streams in Dudley. The French River forms the Town's eastern-most boundary line, with Webster's downtown located right across the river. The Quinebaug River cuts diagonally across Dudley's southwest corner. The Tufts Brook begins in the middle of Town and flows in a southerly direction until its confluence with the Quinebaug in Thompson, Connecticut. Potash brook begins near Shepherd Hill Regional High School and flows in a southeasterly direction until its confluence with the French River, not far from the railroad bridge.

The table below presents selected data for Dudley's significant rivers and streams. The presented data includes: the name of the watercourse; its length in Dudley; its sub-watershed location; whether the watercourse is free-flowing or dammed; and the level of shoreline development activity. The issue of water quality will be discussed as a separate item.

Table NF-1

Significant Watercourses in Dudley

<u>Name</u>	<u>Sub-Watershed Location</u>	<u>Length in Miles</u>	<u>Free-Flowing or Dammed</u>	<u>Shoreline Development Activity</u>
Quinebaug River	Quinebaug	3 miles	one dam (near W. Dudley Rd.)	light
French River	French	3.75 miles	two dams (one near Cemetery Rd.) (one north of Stevens Mill)	moderate from Intermediate School through

				Chaseville area; light elsewhere
Tufts Brook	Tufts	2.8 miles	free-flowing	light
Potash Brook	French	2.5 miles	free-flowing	moderate to heavy near the Merino Village area

Source: USGS topographic maps and dam data provided by the DEM Division of Dam Safety.

Generally speaking, the river profiles of the French and Quinebaug are such that Dudley's portion of these rivers have lower energy systems than the river segments with higher elevations in the north (1999 DEP draft Watershed Plan). The Quinebaug River drops from an elevation of 600 feet at the Westville Dam down to 400 feet at Cady Brook confluence in Southbridge. This drop in elevation takes place within a length of three miles. The steeper the drop, the more energy is created by the river. Once in Dudley, the Quinebaug River slows down considerably, with its elevation dropping by less than 100 feet over a length of eight miles until its confluence with the French River in West Thompson, Connecticut. The French River shows a similar profile. From the River's headwaters, there is a 400 feet drop in elevation over a 12-mile span. From Clara Barton Pond in Oxford, the River's elevation drops by 150 feet over a 20-mile span until the its confluence with the Quinebaug River.

Waterbodies: There are 14 waterbodies in Dudley having at least ten acres in size. There are also numerous smaller ponds scattered throughout Town. Most of Dudley's major ponds fall within the Merino Pond Sub-watershed. The table on the next page presents selected data for Dudley's significant waterbodies. The presented data includes: waterbody name; sub-watershed location; whether the pond is free-flowing or dammed; and the level of shoreline development activity. The issue of water quality will be discussed as a separate item.

Table NF-2
Significant Waterbodies in Dudley

<u>Name</u>	<u>Sub- Watershed</u>	<u>Size in Acres</u>	<u>Free-Flowing or Dammed</u>	<u>Shoreline Development Activity</u>
Gore/Baker Pond	Gore	169 (94 in Dudley) (74 in Charlton)	one dam	light
Pierpoint Pond	Merino	90 (82 Dudley) (5 Charlton)	one dike	moderate- to-light

Shepherd Pond	Gore 18	one dam	light
Hayden Pond	Merino 41	free-flowing	moderate
New Pond	Merino 30	one dam	light
Wallis Pond	Merino 23	one dam	minimal
Larner/ Sawmill Pond	Merino 25	one dam	light
Peter/Parker Pond	Merino 44	one dam	light
Merino Pond	Merino 72	two dams	heavy
Blood Pond	Quinebaug 21 (6 in Dudley) (15 in Charlton)	free-flowing	none
Sylvestri Pond	Quinebaug 18	one dam	minimal
Mosquito/ Tobins Pond	Merino 9	free-flowing	minimal
Easterbrook Pond	Merino 5	free-flowing	minimal
Wielock Pond	Tufts 5	one dam	minimal
Packard Pond	French 6	free-flowing	light
Conant Pond	Tufts 1	free-flowing	minimal
Perry Pond	French 8 (3 in Dudley) (5 Thompson)	one dam	none

Source: Massachusetts Department of Environmental Protection (DEP) and dam data provided by the DEM Division of Dam Safety.

There are also two unnamed man-made ponds in the French River sub-watershed. Both are roughly ten acres in size and are located west of New Boston Road. Another unnamed pond can be found in the French River sub-watershed just west of Sunnyside Road. All told, Dudley's waterbodies and small ponds comprise roughly 600 acres, or 4.3% of the Town's total land area.

It should be noted that the two Merino Pond dams currently have a "high hazard" designation from the DEM Dam Safety Division. Such dams present a high risk of damage to downstream

properties in the event of a breach or overtopping of the dam. DEM offers grant money to municipalities for dam repair, and Dudley received funding in 1998 to make repairs to the Merino Pond dams and the New Pond dam.

A number of Dudley's ponds are very shallow. The average depth of Dudley's ponds rarely exceeds ten feet; thus, the sections subject to deposition (e.g. where streams enter) usually support vigorous weed growth due to the combined effects of high nutrient levels and sunlight penetration.

According to the document, An Inventory of the Ponds, Lakes, and Reservoirs of Massachusetts, prepared by the University of Massachusetts Water Resources Research Center in 1972, Hayden Pond is the deepest pond in Dudley with a maximum depth of 33 feet. Merino Pond had a maximum depth of 20 feet, and Pierpoint Pond had a maximum depth of 14 feet. This document identified that the vast majority of Dudley's ponds were undergoing eutrophication, the process whereby ponds age. Problems associated with eutrophication include elevated levels of phosphorus and nutrients which lead to an increase in biological activity (excessive plant growth), which in turn depletes the pond's oxygen supply. Ponds with depleted oxygen supplies have trouble supporting aquatic life.

Water Quality: It is well known that both the Quinebaug and French rivers were the source of power for the textile mills that flourished in the later part of the 19th century and the early part of the 20th. In fact, there are still active mills located along the French (the Stevens Linen Mill as a local example). The rivers were also major transportation corridors for shipping goods, materials and finished products. The industrial use of these rivers has resulted in serious water quality problems that will take a long time to rectify. A 1940 report prepared by the State Department of Public Health noted that the Quinebaug River was "often discolored with industrial wastes (7,752,000 gallons per day)" and made reference to the "markedly reddish color of the river below Southbridge", which was attributed to the "rouge" used as an abrasive in grinding lenses. A 1974 report by the Massachusetts Water Resource Commission (MWRC) noted a milky white color below the West Dudley Paper Company site and prolific algae blooms further down the river. The 1974 study noted that the French River in the Dudley/Webster area had the "general appearance...of pea soup, although the color may vary from blue to green to rouge."

Industrial discharges created sludge and sedimentation, particularly in the ponds and impoundments behind dams. Nutrient and coliform levels were out of sight. The 1974 report noted that the impoundment behind the Perryville dam (no longer active) was known to have a "sludge deposit [that] had accumulated on the bottom, pieces of which occasionally came loose and floated to the top" and "coliform bacteria counts skyrocketed up to the million level count." Most of the mills along the French and Quinebaug have shut down and the ones that remain follow strict NPDES (National Pollution Discharge Elimination System) permit requirements.

Municipal wastewater treatment plants have also been a substantial source of pollution for the rivers. A 1990 report by the MWRC identified the Oxford-Rochdale treatment plant along the French and the Southbridge treatment plant along the Quinebaug as significant contributors of high nutrients and organic loads. The area's treatment plants have all received significant upgrades during the 1980's, with the Webster/Dudley plant receiving an upgrade in 1988. These upgrades have resulted in a substantial reduction of pollutants in the rivers. According to the 1999 draft Watershed Plan, the major problem associated with today's treatment plants is high

phosphorus loading. The 1990 MWRC report noted that the Southbridge treatment plant alone contributes 88% of the Quinebaug's phosphorus loading and 71% of its ammonia-nitrate loading.

The municipal treatment plants and the industries discharging into the rivers are known as "point" pollution sources, that is, a pollution source that can be traced back to a single location. The past few decades have seen a marked reduction in the amount of pollutants entering the rivers from point pollution sources. Although the water quality of these rivers has improved dramatically, much remains to be done. Today, the primary pollution problems for the French and Quinebaug rivers are what's known as "non-point" pollution sources, that is, pollution sources that are diffuse in nature and discharge pollutants over a broad area. Typical non-point pollution sources include: stormwater runoff, manure leachate, septic systems, pesticides, road salt, erosion, etc. It is these non-point pollution sources that the watershed communities will need to address in order to further improve the water quality of the French and Quinebaug rivers.

The Department Environmental Protection Agency (DEP) designates six classes of water quality, based largely on the standards of the Federal Clean Water Act. In Massachusetts, Class A refers to those surface water resources that are used as water supply sources. Class B waters are considered safe for fishing, swimming and boating. The remaining four water quality categories cover those surface water resources with lesser water quality. The majority of the surface water resources in the French and Quinebaug Watersheds meet the Class B water quality standards. There are, however, several ponds and river segments that do not meet the Class B standards.

Under the regulations of the Federal Clean Water Act, states are required to file a report every two years that identifies those surface waters that are not expected to meet the Act's surface water quality standards (Class A, Class B, etc.). This report, known as the Massachusetts Section 303(d) Lists of Waters, was last prepared in 1999 and includes an assessment of water quality data collected in 1998. The table below lists those surface waters in Dudley that, according to the 1998 303(d) report, *do not* meet the water quality standards of the Federal Clean Water Act.

Table NF-3

Surface Water Resources with Water Quality Problems

<u>Surface Water Resource</u>	<u>Sub-Watershed</u>	<u>Pollutants/Stressors</u>
Sylvestri Pond	Quinebaug	noxious aquatic plants
Wielock Pond	Tufts	turbidity
Quinebaug River	Quinebaug	nutrients & pathogens
(from Southbridge treatment plant to W. Dudley)		
Easterbrook Pond	Merino	noxious aquatic plants
Gore/Baker Pond	Gore	noxious aquatic plants/turbidity
New Pond	Merino	noxious aquatic plants
Packard Pond	French	noxious aquatic plants

Peter/Parker Pond	Merino	nutrients, low dissolved oxygen, & organic enrichment
Pierpoint Pond	Merino	noxious aquatic plants
<u>Surface Water Resource</u>	<u>Sub-Watershed</u>	<u>Pollutants/Stressors</u>
Shepherd Pond	Gore	noxious aquatic plants
Wallis Pond	Merino	noxious aquatic plants
Larner/Sawmill Pond	Merino	noxious aquatic plants
Mosquito/Tobins Pond	Merino	noxious aquatic plants
French River (from North Dam to Dudley/Webster treatment plant)	French	habitat alterations & pathogens
French River (from Dudley/Webster treatment plant to Connecticut border)	French	nutrients, pathogens, odor & color, taste, organic enrichment, low dissolved oxygen, & turbidity

The previous table clearly indicates that Dudley's ponds are having a serious problem with noxious aquatic plants. This is typical for waterbodies in the process of eutrophication. Since none of these ponds (with the exception of Merino) have public boating access, it is unlikely that the plants are of the invasive species variety. Rather, their presence and expansion within Dudley's ponds is partly due to the shallow nature of the ponds, which has exacerbated the process of eutrophication. The sun is a factor for aquatic plant growth, and shallow ponds are very susceptible to the effects of sunlight. The proliferation of aquatic plants is also partly due to local non-point pollution sources such as stormwater runoff and road salt applications, which can increase the conductivity within small ponds.

A future water quality concern for the Quinebaug River will be the construction of the Millenium Power Plant in Charlton, currently in progress. Once on-line, this natural gas power plant will employ a cooling system that will use two million gallons per day. The majority of the water used for this process will come from the Southbridge wastewater treatment plant. The power plant will use wastewater from Southbridge for its cooling system and then return the water to the Southbridge treatment plant for additional treatment. However, the power plant does have a permit from the State to withdraw water from the Quinebaug River for its cooling system.

Although it is unlikely that the plant will use river water on a regular basis, the river's existing low flow problems may be exacerbated on those occasions when river water is used. Low flow rates in a river can exaggerate existing water quality problems by increasing the concentration of pollutants. Conversely, the more water in the river, the more pollutants are dissolved. In an effort to gauge the true impact of the Millenium Power Plant, the Massachusetts Departments of Environmental Protection and Environmental Management, along with Professor Mauri Pelto of Nichols College, have begun flow studies for the river.

Wetlands: Dudley has a total of 509 wetland acres. This represents roughly 3.6% of the Town's total land area. Over 200 acres of wetlands fall within the Quinebaug Sub-Watershed and these wet areas are primarily associated with the perennial streams that flow into the Quinebaug River. There is a significant concentration of wetlands east of Tracy Road extending all the way over to Corbin Road. A graphic depiction of Dudley's wetlands can be seen on the Watersheds and Surface Water Resources Map. The amount of Dudley's wetlands has been calculated by several governmental/educational entities over the years. However, by all accounts, the amount of Dudley's wetlands has actually *increased* over the years due to increased dam activity. Wetlands provide a number of benefits including: flood water storage, wildlife habitat (including vernal pools), pollution filtration, water purification, and groundwater recharge.

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Floodplains: A set of Flood Insurance Rate Maps (FIRM) was prepared for Dudley by the Federal Insurance Administration in June of 1982. The preparation of these maps, along with the adoption of a special ordinance dealing with floodplain development, enables Dudley to participate in the National Flood Insurance Program (NFIP). The NFIP allows residents living in flood hazard areas to purchase flood insurance at a low cost. The FIRMs identify 100-year floodplains, that is, those areas that are likely to flood once within a 100-year period. The extent of Dudley's 100-year floodplains, as identified by the FIRMs, can be found on the Floodplains and Habitats Map on the following page. The majority of Dudley's 100-year floodplains are associated with the French and Quinebaug rivers. In fact, the entire length of these rivers in Dudley have floodplains adjacent to them. A number of ponds in Dudley also have 100-year floodplains associated with them. Flooding has not been a major problem for the French River since the construction of the Hodges Village Flood Control Dam in Oxford. All told, there are 939 acres of 100-year floodplains in Dudley, or roughly 6.7% of the Town's total land area.

Aquifers: Aquifers are subsurface concentrations of groundwater. Essentially, aquifers are underground sinks where water is stored. Aquifers are found where land surfaces are permeable and the storage and transmission of water can take place. Aquifers having medium-to-high potential to yield groundwater occur in Massachusetts as alluvial deposits of sand and gravel.

Dudley's aquifers were mapped by the US Geological Survey (USGS) back in the early 1980's. The USGS characterizes aquifers by the amount of water they can yield per minute and by their transmissivity. The term "transmissivity" refers to the rate at which water is transmitted through a unit width of aquifer under a unit hydraulic gradient, and is expressed in units of feet squared per day. The transmissivity (T) of an aquifer is equal to the horizontal hydraulic conductivity (K) of the aquifer multiplied by its saturated thickness (b); thus, $T=Kb$. The USGS defines "high yield" aquifers as those aquifers that can yield over 300 gallons per minute and have transmissivities of over 4,000 square feet per day. "Medium yield" aquifers can yield 100-300 gallons per minute and have transmissivities of 1,400-4,000 square feet per day. According to the USGS, there are five medium-to-high yield aquifers in Dudley.

Dudley's largest aquifer is the Schofield Avenue aquifer at 110 acres (62.2 acres of medium yield and 47.8 acres of high yield). There are two wells operated by the Dudley Water Department located in the high yield portion of this aquifer (Stations #3 and #6). This aquifer is

in close proximity to the French River, however, the full extent of the hydrologic connection has not been determined as of this date.

There is an aquifer at the southern base of Merino Pond. This aquifer has 28 medium yield acres and 7.5 high yield acres, for a total size of 35.5 acres. The Merino Pond wellfield operated by the Dudley Water Department (Station #1) is located in the high yield portion of this aquifer. There is a hydrologic connection between this aquifer and Merino Pond, however, again the full extent of this connection has not yet been determined.

There is an 8.4 acre high yielding aquifer located at the southern base of New Pond. The full extent of the aquifer's hydrologic connection to the Pond has not yet been determined. The aquifer's small size may preclude its use as a future water supply source for the Dudley Water Department. The same can be said for the two small high yielding aquifers (2.4 acres and 4.4 acres respectively) located in close proximity to the Quinebaug River.

There are two significant aquifers located outside of Dudley, but in close proximity. There is a 251 acre medium-to-high yield aquifer in Webster located adjacent to the French River. Webster's municipal water system has a well located in the high yield portion of this aquifer. Additionally, there is a large (941 acres) medium-to-high yield aquifer located in the southern corner of Oxford, adjacent to the French River. Oxford's municipal water system has a well located in the high yield portion of this aquifer. The locations of Dudley's aquifers, and those of its adjacent neighbors, can be seen on the Groundwater Resources Map found on the next page.

Soils: The Natural Resources Conservation Service (NRCS) of the US Department of Agriculture published the Soil Survey of Worcester County, Massachusetts, Southern Part, in 1998. The Town of Dudley was included in this effort. Generally speaking, there are four major types of soils in Dudley. These soil types, and their locations in Town, are described below:

Paxton-Woodbridge-Ridgebury soil type: nearly level to steep, very deep, well drained to poorly drained soils on glaciated uplands. This soil type consists of soils on upland hills and ridges dissected by many small drainage ways. In Dudley, this soil type covers the land between the Quinebaug River and Route 31. It can also be found as a small strip around Gore Pond, extending to the western shore of Pierpoint Pond. This soil type also covers the northeastern corner of Town.

Canton-Montauk-Scituate soil type: Nearly level to steep, very deep, well drained soils on glaciated uplands. This soil type consists of soils on upland hills and rolling glacial till flats. It is dissected by broad drainageways that flatten out on the lower slopes. This soil type covers the southwestern corner of Town, south of Route 131 and the Quinebaug River. There is also a large swath of this soil type beginning at the Connecticut border and extending north to the Corbin Road area. It is bound to the west by Dudley-Southbridge Road and bound to the east by Mason Road.

Merrimac-Hinckley-Windsor soil type: Nearly level to steep, very deep, excessively drained and somewhat excessively drained soils on outwash plains. This soil type consists of soils on broad,

flat plains and in rolling to steep areas, and was formed by water-sorted deposits of glacial outwash. This soil type appears in Dudley at two locations. The first concentration is a long swath along Dudley's length of the French River, jutting into the Town at two points: near the Indian Road area in southern Dudley, and a long patch covering the land alongside Dudley's interconnected ponds (Merino Pond, Lerner Pond, Wallis Pond, New Pond, Hayden Pond and Pierpoint Meadow Pond). The second concentration of this soil type covers a small strip located along both sides of the Tufts Brook.

Freetown-Swansea-Saco soil type: Nearly level, very deep, very poorly drained soils on uplands, outwash plains and floodplains. This soil type consists of soils on broad flats that have small depressions. These soils are in old glacial lakes or small ponds adjacent to streams. The soil formed in organic deposits and alluvium. This soil type appears in Dudley as a long strip along both sides of the Quinebaug River, extending over to the Wielock Pond area.

With the exception of the last soil type, all of Dudley's soils are suitable for crop cultivation, hay fields and pasture lands. In fact, the first three soil categories have qualities that fall under the USDA's "Prime Farmland" designation. Deep, well-drained soils are quite beneficial for growing crops.

Surficial and Bedrock Geology: Dudley's current surficial geology was formed by glaciation several thousands of years ago. This glaciation rounded and smoothed the mountains within the French and Quinebaug drainage basins, and smaller hills were buried in till consisting of silt, fine sands, cobbles and boulders (1999 Draft Watershed Plan). Glacial drumlins abound in Dudley's portion of the Quinebaug Watershed, while sand and gravel deposits are found along the French River valley.

The USGS mapped the structural and bedrock geology of the central Massachusetts region in 1983. Structurally, Dudley's bedrock geology is part of the central upland of Massachusetts known as the Worcester County Plateau. Dudley's structural and bedrock geology do not have much impact on land use, as much of the bedrock is covered by glacial deposits and deep soils. Faults in the bedrock are inactive and pose no threat to development (1999 Draft Watershed Plan). The only problems posed by the Town's bedrock geology are those few locations where bedrock outcroppings are found and ledge is close to the surface.

Flora and Fauna: Dudley's forest covered hills, open fields and cropland, pastures, riverbanks, forested wetlands and marshes provide a diversity of habitats for wildlife. Fish can be found in both the French and Quinebaug rivers. A number of Dudley's ponds contain warm water and produce excellent pan fish populations. Hayden Pond has sufficient cold water to allow the Division of Fisheries and Game to stock trout annually. The French River and Tufts Brook are also stocked with trout as well. Tobin/Mosquito Pond is an important habitat for waterfowl and muskrats (Dudley Open Space and Recreation Plan, 1988-1992).

A comprehensive list of wildlife living in the French/Quinebaug watersheds was compiled for the French River Greenway Plan in 1990. This list was further supplemented by the Audubon Society and a local environmental consultant for the draft French-Quinebaug Watershed Plan in early 1999. Listed below are the various forms of wildlife found in the two major watersheds that cover the Town of Dudley.

<u>Fish</u>	<u>Birds</u>	<u>Reptiles and Amphibians</u>
Northern Blacknose Dace	Blue-Winged Teal	Marbled Salamander
Native Brown Trout	Wood Duck	Jefferson Salamander
Bluegill	Black Duck	Blue-Spotted Salamander
American Eel	Mallard Duck	Spotted Salamander
River Dace	Osprey	Northern Dusky Salamander
<u>Fish</u>	<u>Birds</u>	<u>Reptiles and Amphibians</u>
Black Crappie	Northern Harrier	Northern Two-Lined Salamander
Chain Pickerel	Wild Turkey	Red-Spotted Newt
Yellow Bullhead	Ruffed Grouse	Eastern American Toad
Brown Bullhead	Woodcock	Fowler's Toad
Large Mouth Bass	Great Horned Owl	Spring Peeper
Small Mouth Bass	Barred Owl	Gray Tree Frog
Yellow Perch	Red-Headed Woodpecker	Bull Frog
White Perch	Black-Backed Woodpecker	Green Frog
Yellow Horned Pout	Pileated Woodpecker	Leopard Frog
White-Bellied Horned Pout	Yellow-Bellied Woodpecker	Snapping Turtle
Redfin Shinner	Kingfisher	Box Turtle
Pumpkin Seed	Phoebe	Painted Turtle
White Sucker	Warblers	Northern Water Snake
Carp	Flycatcher	Northern Brown Snake
Northern Pike		Northern Redbelly Snake

Eastern Garter Snake

Mammals

Red Fox, Star-Nosed Vole, Red-Backed Vole, Meadow Vole, and Eastern Cottontail Rabbit

In addition to the common wildlife found in the watersheds, the Massachusetts Division of Fisheries, Wildlife and Law Enforcement (DFWLE) have identified rare animal *and* plant

species for the towns in the watersheds as authorized by the Massachusetts Rare and Endangered Species Act of 1990. Through their Natural Heritage and Endangered Species Program, the DFWLE has identified 35 rare vertebrate, invertebrate, and plant species in the two watersheds. The DFWLE designates the status of the species by using three categories: endangered, threatened or special concern. In Dudley's case, there is only one species listing and that is for the Marbled Salamander which is listed as "threatened".

The Natural Heritage Program maps two types of habitats: "priority habitats" and "estimated habitats for rare wildlife". The Program defines "priority habitats" as the approximate location of the most important sites for rare species (flora and fauna) in Massachusetts. The Program defines "estimated habitats for rare wildlife" as those habitat areas where rare wildlife have been observed over a 25-year period.

In Dudley's case, there are four "priority habitat" areas. The first area begins in Southbridge and extends into Dudley just above the Quinebaug River; the second area is a narrow strip along the shoreline of the French River; the third is an area located between Sylvestri Pond and King Road; while the fourth is an area between Baker Pond Road and Ramshorn Road. All of these "priority habitat" areas are also considered to be "estimated habitats for rare wildlife", with the exception of the Baker Pond Road/Ramshorn Road site.

The Heritage Program knows what types of rare/endangered plant and animal species are found in the above locations, however, under the law this information cannot be made available to the public. The reason is that the Rare and Endangered Species Act does not want to promote the taking of these resources, and identifying the particular species found in a certain habitat area may encourage their taking. The general location of Dudley's habitat areas are depicted on the Floodplains and Habitats Map.

Environmental Protection Efforts: Presented below are a partial listing of the environmental protection efforts, both regulatory and non-regulatory, of the various levels of government (federal, state, regional, local) with relevance and jurisdiction in Dudley.

Federal Environmental Protection Initiatives

- *Federal Clean Water Act*: The Act sponsors numerous programs designed to improve our nation's drinking water quality. Programs under the Act include assessment (Section 303[d]), planning (Section 604[b]), and implementation (Section 319). Wetland alteration activities are regulated by Section 404 of the Act, with the Army Corps of Engineers being the permitting authority. Drinking water quality standards and testing standards are also outlined in the Act.
- *National Flood Insurance Program*: as stated previously, this program maps a community's 100-year flood hazard areas and allows residents living in these areas to purchase flood insurance at a low cost.
- *US Rivers and Harbors Act*: Section 10 of the Act requires a permit to be issued from the Army Corps of Engineers before any alteration of navigable waters in the U.S. can occur. Both the French and the Quinebaug rivers are considered to be "navigable waters" under the Act.

- *Land and Water Conservation Fund*: Administered jointly by the National Parks Service and the Massachusetts Division of Conservation Services, this program offers communities money for land acquisition and planning/building outdoor recreation facilities. Funds from this program can be used to purchase environmentally sensitive lands.
- *Community Septic Management Program*: as mentioned in the housing chapter, this program was developed by the US Environmental Protection Agency and is administered at the State level by the Department of Environmental Protection. The program makes loans available to home owners for septic system repairs. Dudley has been involved in this program since 1997.
- *USDA Natural Resources and Conservation Service (NRCS)*: Operating within the US Department of Agriculture, the NRCS offers two environmental protection programs. First, the Resource Conservation and Development program offers funds to municipalities for the planning and development of water-related recreation facilities, fish and wildlife resource development, and water quantity and quality management. Funds can be used for land acquisition and facilities development. Secondly, the Watershed Protection and Flood Protection program provides funding for projects that protect watershed resources such as flood protection, and wildlife management.
- *National Pollution Discharge Elimination System (NPDES) Permits*: Under the authority of the US Environmental Protection Agency, these permits are necessary before any discharge of treated wastewater into a surface water resource. All of the municipal sewage plants that discharge into the French and Quinebaug rivers have such a permit in place, as do the remaining industries that discharge to these rivers. The permits set forth site-specific water quality standards and discharge limitations.

State Environmental Protection Initiatives

- *Rivers Protection Act*: This act is an amendment to the earlier Wetlands Protection Act. The new act regulates development along rivers, streams, lakes, ponds as well as wetlands. While the use of land in these areas is restricted, development is not prohibited.
- *Title V Septic Regulations*: These are the regulations that cover the siting and construction of on-site septic systems. They are of particular importance for land abutting the ponds and the more rural areas of Dudley where municipal sewer is unavailable.
- *Zone II Wellhead Protection Regulations*: Administered by the Massachusetts

Department of Environmental Protection (DEP), this program identifies the area of an aquifer that contributes water to a public water well under the most severe pumping and recharge conditions that can realistically be anticipated. Land uses within the identified contribution areas are regulated so as to protect the land area where water is drawn from once a well is in the process of pumping. Zone II contribution areas have been delineated for the two Schofield Avenue wells operated by the Dudley Water Department. The Zone II contribution areas for Dudley are depicted on the Water System Service Area Map found within the Town Government: Facilities and Services chapter.

- *Massachusetts Endangered Species Act*: The Act is administered by the Natural Heritage & Endangered Species Program within the Massachusetts Department of Fisheries, Wildlife and Environmental Law Enforcement. The Heritage Program identifies rare and endangered plant and wildlife species in Massachusetts, delineates their habitat areas, and provides for their protection.
- *Massachusetts Wetland Protection Act*: Administered by the DEP, the Act regulates activity in and around wetlands. The Act is administered at the local level by a municipality's conservation commission.
- *Water Management Act*: The Act regulates ground and surface water withdrawals of over 100,000 gallons per day. There are detailed environmental performance standards that an applicant has to meet in order to be approved for such large water withdrawals.
- *Areas of Critical Environmental Concern Program*: Administered by the Massachusetts Department of Environmental Management (DEM), this program allows for the identification and protection of critical environmental resource areas. This is a grass-roots type of program in that local entities are responsible for proposing an area for inclusion in the program. There are guidelines as to what types of areas can be nominated for inclusion, and nominations can be submitted by a local municipal entity, a state legislator, a state or regional agency, or simply a group of ten citizens who are willing to prepare the application and conduct the necessary research. There have been no Areas of Critical Environmental Concern identified for Dudley as yet.
- *Riverways Programs*: The Massachusetts Division of Fish, Wildlife and Law Enforcement offer a variety of non-regulatory programs under the umbrella of the Riverways Programs. The Riverways programs offer technical assistance and grant money for a variety of environmental projects such as: citizens water quality monitoring efforts, environmental education, riparian land protection, fish habitat enhancement and recreation.
- *State Grant Opportunities for Environmental Projects*: Massachusetts State agencies offer numerous grant opportunities for environmental projects. Eligible projects range from assessment, planning, implementation, acquisition, construction and maintenance. The grant opportunities are far too numerous to list here, so they are presented as an appendix to this document (see Appendix B). This list is constantly changing and is not considered to be a comprehensive compilation of State-sponsored grant opportunities.

Regional Environmental Protection Initiatives

- *Watershed Management Program*: Administered by the Massachusetts Executive Office of Environmental Affairs, this program has set up a five-year watershed planning and management effort for all of the State's major watersheds. The French River Watershed and the Quinebaug River Watershed have been grouped together for this effort. The draft French-Quinebaug Watershed Plan prepared in 1999 is a direct result of the State's watershed planning and management approach.
- *French River Advisory Committee*: This now dormant committee was responsible for the preparation of the French River Greenway Plan in 1990. The plan sets forth a number of recommendations designed to improve the river's water quality and promote an environmentally sound stewardship of the river. The Committee was comprised of citizens from the Towns of Oxford, Webster and Dudley. The Committee disbanded shortly after the publication of the Greenway Plan in 1990.
- *Quinebaug-Shetucket Rivers Valley National Heritage Corridor*: This area was designated as a National Heritage Corridor by an act of Congress in 1994. The National Heritage Corridor Program is managed at the federal level by the National Parks Service. The designated area covers roughly 1,000 square miles in Massachusetts and Connecticut. The Massachusetts portion of the Corridor was not initially included in the designation, however, the State's congressional delegation successfully lobbied to include the Massachusetts portion in the National Heritage Corridor Program. President Clinton approved expanding the Corridor into Massachusetts in early 2000. The Program's purpose is to encourage grassroots efforts for the preservation and restoration of significant historic and natural assets within the Corridor; foster compatible economic development (including tourism); and enhance recreational opportunities. The Program is administered on the regional level by the Quinebaug-Shetucket Rivers Valley Advisory Council which includes local officials and residents, regional planning agencies and councils of governments, tourism districts and several state agencies. The operating body for the Council is Quinebaug-Shetucket Heritage Corridor, Inc., located in Putnam, Connecticut. The Council has prepared a Management Plan to guide their efforts.

Local Environmental Protection Initiatives

The Dudley Conservation Commission is the local entity charged with administering and interpreting the State's various wetland protection laws and regulations. The Commission's main task is to ensure the integrity of wetland areas in Dudley. The Commission's duties are described below, along with their list of current and on-going projects.

Conservation Commission Duties

WETLANDS: The Wetland Protection Act (1872) is administered by the DEP in conjunction with conservation commissions. In Dudley, the commission regulates wetlands and a 100' buffer zone around them. Wetlands vary from ponds and bogs to less obvious vegetated marshlands. Any development planned for the buffer zone requires Conservation Commission approval, which if given, calls for a permit and specified work conditions such as erosion control measures.

RIVERFRONTS: Under the new Rivers Protection Act (1996) the commission regulates a 200'

'riparian resource area' bordering all permanent streams. Strict best management practices (BMP's) are required for development in these zones.

STORMWATER: In issuing permits for development within protected zones, the Conservation Commission is required to implement the Storm water Management Standards issued by the DEP in 1996. The commission may also call for remedial action for existing discharges under the state's Clean Waters Act.

DAMS: Pond water levels are under the jurisdiction of the Conservation Commission so conservation permits are issued for dam operation. The Commission directly manages the operation of Baker Pond Dam and shares responsibility for dams in the Merino Pond system with the Dudley Water Department, due to the necessity of maintaining the town well aquifer at an optimum level.

VERNAL POOLS: These are temporary ponds important for retarding surface runoff and usually home to rare species of wildlife. The Commission is responsible for certifying such pools and ensuring BMP's in developments in their vicinity.

AGRICULTURAL PRESERVATION (APR): The Commission administers the Agricultural Preservation Restriction Act, which enables farmers to 'sell' their development rights to the state, thereby preventing activities that will negatively impact the future agricultural viability of the land. There are 13 areas of APR land in Dudley, amounting to about 1200 acres, much of it along Route 31.

FOREST CUTTING: The Commission administers DEP regulations for forestry cutting and logging activities in and around wetlands. All forestry operations have to be in compliance with the Forest Cutting Practices Act, administered by the DEM's Bureau of Forestry. Dudley is in the Bureau's District 11 (covering the Quinebaug, French and Blackstone River basins).

WILDLIFE HABITAT : Conserving wildlife habitats was added to the Wetlands Protection Act as a special value in 1986. The Fisheries and Wildlife's Natural Heritage and Endangered Species Program (NHESP) has produced maps of rare species used by the Commission in the permitting process.

Conservation Commission Projects in Progress/Planned

VERNAL POOL CERTIFICATION: The Commission is working with Margaret Washburn (volunteer consultant) to certify about 6 vernal pools in Dudley. Pools certified by the NHESP receive protection under the Wetlands Protection Act, the Clean Water Act, and the Forest Cutting Practices Act. These regulations help eliminate direct impacts to vernal pools and minimize direct impacts.

ARDLOCK ACRES RECREATION PROJECT: The Commission has sought money to post and clean up this area (which includes two sizable ponds), to develop trails and provide a parking area, but no funds have been obtained as yet. The area adjoins the old landfill and has its own share of dumped trash and needs some serious cleaning up. It is a good potential project for agencies such as the court's community service project or the Eagle Scouts. Younger scouts have worked there but the scope of the work proved too heavy. Proximity to the abandoned section of Perryville Road means an exceptionally good bicycle trail could run through here.

WILDLIFE CORRIDORS: The Commission is interested in linking together areas of undeveloped land as wildlife so that animals (such as otters, beavers, fox, etc. can range freely and safely. Such areas would also provide good low-impact recreational land (hiking, mountain biking). The Commission believes such projects would not preclude limited development e.g. homes with large unfenced yards. The Commission is currently looking at two areas:

Northeast Dudley: This is an area to the east of Pierpont Pond comprising land that is Conservation, Audubon, agricultural and private. It extends from Conservation Commission land on Hayden Pond Road, through the Audubon sanctuary and adjoining farmland, north and east to wetlands near Piasta Road. Although this area is privately owned it is too wet for development and some 30 acres have already been offered to the Conservation Commission for purchase. The wetlands reach north into Charlton, providing an extensive natural refuge. Adjoining these areas to the east is another parcel of Audubon land and more Conservation land around Mosquito and New Ponds. These areas, if successfully linked together, would form a natural 'loop' for wildlife and low impact recreation.

South Dudley: This includes Ardlock Acres (conservation land) on the Old Boston Road, the old landfill land and the area of undeveloped land to the north and west - all traversed by the abandoned "Grand Trunk" route which runs across to the Lyons Road area. Funds to post this area are being sought as well as to provide parking for recreation use.

There are several other local municipal entities charged with environmental management responsibilities:

- The Dudley Water Department is responsible for safeguarding the municipal water supply sources.
- The Dudley Sewer Department is responsible for managing the municipal sewer system and evaluating the treatment plant's impact on the French River.
- The Dudley Board of Health is responsible for administering the State's Title V septic system regulations.
- The Dudley Parks and Recreation Department are responsible for maintaining the Town Beach at Merino Pond. The Department takes periodic water and sand samples at the Beach in accordance with the State regulations governing public beaches.
- The Dudley Highway Department is responsible for maintaining the drainage along the Towns public roads.
- The Dudley Land Trust Inc. is a non-profit organization devoted to preserving the rural character of Dudley. Founded in 1991, the Trust does not seek to own land itself, but provides advice and technical assistance to landowners regarding land conservation methods. Over the years, the Land Trust has worked with a number of local farmers to get their lands in the State Agricultural Preservation Restrictions (APR) Program, which enables the landowner to sell the land's development rights to the State.

Natural Feature Issues in Dudley

1. Non-Native Aquatic Weeds in Ponds: The evidence is clear that many of Dudley's ponds have a serious problem with the rapid growth of aquatic weeds that are not native to the area. The proliferation of these weeds has serious implications for the ponds' water quality and their ability to provide habitat for various fish species. Increased biological activity within the affected ponds can reduce the amount of dissolved oxygen, thus endangering fish populations. The Town should investigate its options, both preventative and curative, for dealing with the non-native aquatic weed problem.

One source the Town should review for aquatic weed control options is the document, Eutrophication and Aquatic Plant Management in Massachusetts - Environmental Impact Report, prepared in 1998 by the Water Resources Research Center at the Amherst campus of the University of Massachusetts. The document was prepared at the request of the Massachusetts Departments of Environmental Protection and Environmental Management. Aquatic plant management options described in this document include: chemical treatments, mechanical harvesting, wetland-based treatments, nutrient control strategies, point and non-point pollution source controls, hydraulic controls, dredging and a variety of other weed removal strategies.

2. Stormwater Management and Erosion Control: Dudley's Subdivision Regulations have minimal standards for stormwater management and no erosion control standards whatsoever. When a site is developed, care must be taken to create drainage structures that can accommodate the expected levels of stormwater runoff. Also, down-slope drainage facilities must be evaluated to ensure they can handle the additional stormwater generated by a newly developed site. Failure to adequately plan for a site's drainage and stormwater management needs can result in flooding of the property and adjacent properties, overloading down-slope drainage facilities, soil erosion, and eventually the siltation and sedimentation of nearby surface water resources.

3. Non-Point Pollution Sources: The water quality of the French and Quinebaug rivers has improved dramatically over the past fifteen years as the municipal wastewater treatment plants along their shores have been upgraded, and as industrial discharges have been curtailed. Today, the primary pollution problems for the French and Quinebaug rivers are what's known as "non-point" pollution sources, that is, pollution sources that are diffuse in nature and discharge pollutants over a broad area. Typical non-point pollution sources include: stormwater runoff, manure leachate, septic system leachate, pesticide applications, road salt, erosion, etc. The Town should investigate its options, both regulatory and non-regulatory, for addressing non-point pollution sources.

4. Lack of Detailed Water Quality Data: The State does not conduct detailed water quality testing of Dudley's ponds on a regular basis. The water quality assessments of Dudley's ponds found in the biannual Massachusetts Section 303(d) Lists of Waters reports are cursory at best. A detailed water quality sampling effort would include such factors as dissolved oxygen measurements, pH sampling, fecal coliform bacteria sampling, water temperatures, turbidity assessments, and in some cases an assessment of heavy metals. Most of Dudley's ponds were not assessed for these factors in the document, An Inventory of the Ponds, Lakes, and Reservoirs of Massachusetts, prepared by the University of Massachusetts Water Resources Research Center in 1972.

Detailed water quality sampling should be conducted for all of Dudley's major ponds in order to provide a baseline of water quality data that can be compared against future sampling efforts.

This will allow the Town to track the changes in water quality for Dudley's ponds. Citizens can be trained in water quality sampling techniques very easily and there are four entities that can assist the Town in setting up a citizen's water quality monitoring program:

- the Massachusetts Division of Fish, Wildlife and Law Enforcement (DFWLE) can train citizens under its Riverways Program;
- the Massachusetts Waterwatch Partnership, operating out of UMass Amherst, is available to train citizens, oversee quality control and provide technical assistance;
- the Massachusetts Coalition of Lakes and Ponds is a non-profit organization whose members have experience in designing volunteer-based water quality sampling programs;
- and the Audubon Society has also worked with citizens to set up local water quality monitoring efforts.

5. Preservation of Prime Farmland Soils: It is evident from the results of the citizen survey that Dudley citizens are concerned about maintaining the community's rural character. The numerous open fields and active farms are a big part of this character. As mentioned in the soils section, a majority of Dudley's land contains soils considered to be "Prime Farmland" as designated by the USDA's Natural Resources Conservation Service. Although most of north and west Dudley currently consists of "Prime Farmland" soils, and moreover, active farms, development pressure does have the potential to alter the landscape in less than desirable ways. There are a variety of ways to protect land from development, and these methods will be discussed in the Open Space and Recreation chapter.

Natural Features - Goals

1. Preserve, enhance, and publicize the Town's natural resources, agricultural resources, historic buildings and sites, unique cultural resources and significant views.
2. Maintain and enhance a high quality environment, which can accommodate an attractively built community with minimal impact on air and water quality, and the Town's natural habitats.

Natural Features - Recommendations

1. The Town should investigate its options for dealing with the noxious aquatic weeds that have proliferated in a number of Dudley's ponds. The Town should develop a prioritized list of ponds for remediation, as it will not be financially feasible to address all the ponds at once. The Town should consult with the Massachusetts Departments of Environmental Protection and Environmental Management to review its options for managing/ removing/controlling the growth of noxious aquatic weeds, as well as funding sources and grant opportunities for implementing the Town's preferred option. Responsible Municipal Entity: This should be a joint effort between the Board of Selectmen and the Conservation Commission. If there is an active lake/pond association in place for an affected waterbody, then these people should be involved in the

process.

2. The Town's Subdivision Regulations should update its stormwater management and erosion control provisions. Items to address during the update process should include: the ability of new drainage structures to accommodate the expected levels of stormwater runoff generated by the subdivision; the ability of down-slope drainage facilities to accommodate the expected levels stormwater generated by the new subdivision; and soil erosion control measures for both during and after the construction phase. Addressing the above items will require the adoption of specific stormwater management/erosion control standards within the Subdivision Regulations. Such standards should be developed with the help of a certified, licensed civil engineer with experience in such matters. Responsible Municipal Entity: the Planning Board.

3. The Town should investigate its options, both regulatory and non-regulatory, for addressing non-point pollution sources. Updating the stormwater management/erosion control provisions in the Subdivision Regulations, as suggested above, would be a regulatory attempt to address non-point pollution. Non-regulatory options for addressing non-point pollution could include the following:

- Reducing the amount of road salt used by the Highway Department within the groundwater contribution areas of Dudley's three municipal well fields (Responsible Municipal Entity: Highway Department);
- Having Dudley participate in any regional or inter-community household hazardous waste collection day, or sponsoring such a day on its own (Responsible Municipal Entity: Board of Selectmen and Transfer Station personnel);
- Having household hazardous waste education pamphlets available at the Town Hall. Such pamphlets have already been prepared by the Massachusetts Departments of Environmental Protection and Environmental Management (Responsible Municipal Entity: Conservation Commission or Board of Health);
- Having pamphlets on the proper maintenance of septic systems/leachfields available at the Town Hall. Such pamphlets have already been prepared by the Massachusetts Departments of Environmental Protection and Environmental Management (Responsible Municipal Entity: Board of Health);
- Working with owners of environmentally sensitive properties to protect these resources through the various land protection programs offered by the State (Responsible Municipal Entity: Conservation Commission and/or Dudley Land Trust); and
- Having the regional USDA office work with Dudley's active farmers on smart farming practices, such as: enclosed manure storage facilities and low impact fertilization techniques.

4. In an effort to create a baseline of water quality data for Dudley's ponds/rivers/streams, the Town should consider supporting an organization of interested citizens (or school groups) willing to participate in an annual water quality monitoring program. Currently, there are no citizen groups collecting water quality data on Dudley's behalf. The Town could support such a group by paying for sampling equipment and training. Citizens can be trained in water quality

sampling techniques very easily and there are two entities that can assist the Town in setting up a citizen's water quality monitoring program: the Massachusetts Division of Fish, Wildlife and Law Enforcement (DFWLE) can train citizens under its Riverways Program; and the Massachusetts Audubon Society has also worked with citizens to set up local water quality monitoring efforts. Responsible Municipal Entity: Conservation Commission.

5. In an effort to protect the environment *and* preserve Dudley's agricultural heritage, the Town should investigate its options for protecting its "Prime Farmlands" as designated by the USDA's Natural Resources Conservation Service. There are a variety of ways to protect land from development, and these methods will be discussed in detail in the Open Space and Recreation chapter. Responsible Municipal Entity: Conservation Commission and/or Dudley Land Trust.

6. The Town should continue its membership in the Worcester Regional Transit Authority (WRTA) and support its efforts to provide public transportation alternatives on a regional scale. A viable para-transit system keeps cars off the roads, which in turn helps improve air quality and water quality. Responsible Municipal Entity: The Board of Selectmen and Dudley's representatives to the WRTA.

7. The Conservation Commission should stringently enforce the provisions of the State's River Protection Act, particularly along the undisturbed portions of the Quinebaug River. Responsible Municipal Entity: Conservation Commission.

OPEN SPACE AND RECREATION

Introduction: The term "open space" usually refers to those undeveloped natural lands that have been permanently protected for the public's enjoyment. Protected farmlands offer panoramic views of Dudley's rural character while reminding people of the Town's agricultural heritage. Protected wetlands and habitat areas help to maintain the Town's diversity of wildlife while giving people a chance to view nature in action.

For planning purposes, the term "recreation" is usually broken down into two categories: active and passive. Active recreation refers to athletic fields, swimming areas and playgrounds; while passive recreation refers to areas for walking and hiking. Protected open spaces can be used for passive recreation, while active recreation needs a designated area and a much higher degree of management and maintenance. This chapter of the Dudley Master Plan will inventory and analyze all of Dudley's protected open spaces, as well as the Town's active recreation areas.

Economic Benefits of Open Space: On the macro-development level, the current trend is the rapid expansion of low density development along the metropolitan fringe (i.e. "sprawl" development). Although planners are making a concerted effort to revitalize our nation's compact metropolitan areas, more houses continue to be built along rural roads and more retail development is taking place outside of urban centers along community gateway roads. This development trend has a negative impact on a community's fiscal health as municipal services are expanded and radiate further and further away from the urban core, and the urban core itself loses businesses and population; setting the stage for urban blight, poverty, crime and despair. Of course, this is more of a problem for cities than a small town like Dudley, yet the potential for residential and highway commercial sprawl does exist.

In an effort to champion the cause of open space protection, planners have begun to assess the economic benefits of protecting open space. In recent years fiscal impact analysis has been applied to open space preservation, comparing the net effects on municipal budgets of open space to other forms of land use. The general conclusions of the studies conducted to date are as follows:

- Residential development typically incurs a net fiscal deficit (unless they are time-shares or second homes);
- Nonresidential development (business and industry) generates a fiscal surplus, but attracts residential development; and
- Open space is fiscally better than residential development and equal to or better than nonresidential development.

There are two studies in particular that have relevance for Dudley:

- The Northeastern Office of the American Farmland Trust studied six rural towns in

Connecticut, Massachusetts and New York and found that, on average, residential development required \$1.13 in municipal services for every \$1.00 of tax revenue generated. Farm, forest and open space land required only \$0.29 in services per dollar of tax revenue (Freegood and Wagner 1992).

- The Commonwealth Research Group (1995) studied eleven southern New England towns and found that, on average, towns spent \$1.14 in services for every dollar raised from residential development; \$0.43 in services for every dollar raised from commercial/industrial development; and \$0.42 in services for every dollar raised from forest, farmland and open space.

In terms of a hierarchy of land uses based on the cost of services/tax dollars generated ratio, research office parks are the highest (net fiscal surplus), while mobile homes are the lowest (net fiscal deficit). In this hierarchy, open space lands fall somewhere in the middle, above the break-even line for municipal budgets.

Active Recreation Facilities:

1. *Shepherd Hill Regional High School:* there are a number of active recreation facilities associated with the High School including: basketball courts; fields for baseball, softball, soccer and football; a track; and tennis courts.
2. *Nichols College:* football field; baseball fields; track; tennis courts; and swimming pool. Nichols does allow the Town's organized sports groups to use their fields on occasion.
3. *Crawford Memorial Field:* baseball and softball fields (four in total), and swing sets. Although technically under the jurisdiction of the Dudley Recreation Commission, the fields are managed by Dudley Little League.
4. *Eben Stevens Park:* soccer field. Although technically under the jurisdiction of the Dudley Recreation Commission, the field is managed by the Dudley youth soccer organization.
5. *Pine Street Field:* this is an undeveloped piece of land near Pine Street. Although the property is under the jurisdiction of the Dudley Recreation Commission, there are no facilities at this site and the fields are not maintained.
6. *Merino Pond Recreation Area:* town beach with lifeguard during the summer; bathroom facilities; small playground and picnic tables. None of the facilities at this site are handicap accessible, i.e., ADA compliant. This site is managed by the Dudley Recreation Commission. The Webster-Dudley Rotary Club will be erecting a gazebo at this site in the near future.
7. *Mellea's Winery Soccer Field:* This is a private piece of property associated with the Winery located in West Dudley. The Winery allows Dudley's youth soccer organization to use the field.
8. *Webster-Dudley Golf Course:* This private golf course, located off of Dudley Center Road, belong to Nichols College until recently. The golf course is now owned and operated by Webster-Dudley Golf Course Inc.

The recreation facilities under municipal management are shown on the Town-Owned Properties and Facilities Map found in the Community Facilities and Services chapter, and a numerical index of all Town-owned properties can be found in A.

Permanently Protected Open Space: All told, Dudley has 1,777 acres of permanently protected open space. The majority of these lands are active farms; however, the Dudley Conservation Commission and the Dudley Cemetery Commission also manage several permanently protected properties. In addition, the Massachusetts Audubon Society manages several permanently protected properties. All of Dudley's permanently protected properties can be seen on the Permanently Protected Lands Map on the following page.

Conservation Commission Properties: The Commission has management jurisdiction over several properties at five distinct locations within Dudley. The Commission's largest land holding is the Ardlock Acres conservation area (94 acres) located northwest of New Boston Road. The Commission also manages land along the shorelines of Gore Pond and Pierpoint Pond; as well as a small property at the corner of Pierpoint Road and Shine Avenue, and a bit of land abutting Low Pond. All told, the Commission manages roughly 200 acres of land.

Cemeteries: Dudley's Cemetery Commissioners have jurisdiction over seven cemeteries: Albee/Durfee Cemetery on Durfee Road; Corbin Cemetery on Corbin Road; Marsh Cemetery on Henry Marsh Road; Perryville Cemetery on Carpenter Road; Waldron Cemetery on Ramshorn Road; Village Cemetery on Dudley-Oxford Road; and Calvary Cemetery on Cemetery Road (currently maintained by the Diocese of Worcester). There are two other cemeteries in Dudley that are privately maintained: Sayles Cemetery off of Intervale Road, and the Holy Trinity Cemetery off of New Boston Road. Dudley's cemeteries are depicted on the Town-Owned Properties Map and the Permanently Protected Lands Map.

Agricultural Preservation Restriction (APR) Properties: This State program is administered by the Massachusetts Department of Food and Agriculture (DFA). The program insures that active farms stay in agricultural production. The State purchases a farmer's development rights. The price paid is the difference between the full market value of the property and its appraised agricultural value. A permanent restriction is then put in place prohibiting all non-agricultural uses on the parcel. The farmer is taxed at the agricultural value rather than the highest use value. According to the State, there are 27 (some under common ownership) Dudley properties in the APR Program, comprising 1,472 acres. This represents the second largest amount of APR land for all of the communities in Massachusetts; only Amherst has more APR land.

Massachusetts Audubon Society: The Society owns and manages three properties in the vicinity of Marsh Road and Dudley-Oxford Road. The properties encompass roughly 105 acres and are considered to be permanently protected.

Town-Designated Conservation Districts: In 1969, the Town created four conservation districts. The location of these districts can be seen on the Zoning Map found in the Land Use chapter. A brief description of each conservation district is provided below:

1. *Pierpoint Pond/Marsh Road Conservation District* - This district consists of 34 acres and is located on the eastern side of Pierpoint Pond, extending east to Marsh Road and Dudley-Oxford Road. The district's northern end covers a large piece of protected land owned by the

Massachusetts Audubon Society. The Dudley Conservation Commission manages two properties (totaling seven acres) along Hayden Pond Road. Both of these properties fall within the district. The potential exists to permanently protect more land within this district.

2. *Town Beach Conservation District* - This district consists of roughly 14 acres and is located along the southwest shoreline of Merino Pond, just off of West Main Street and behind the Mason Road School. The Town Beach within this district consists of a third of an acre and is actively managed by the Dudley Recreation Commission.

3. *French River Conservation District* - This district consists of 4.3 acres located between the River to the east and the following roads to the west: Oxford Avenue, Cemetery Road and Old Oxford Road. The district consists entirely of privately owned land.

4. *Mosquito Pond Conservation District* - This district consists of 12.6 acres and is located just north of the intersection of Charlton Road and Dudley-Oxford Road. The district covers almost all of Mosquito Pond. Again, this district consists entirely of privately owned land.

Unprotected Open Space: Parcels taxed under Chapter 61 (Forestry), Chapter 61A (Agriculture) and Chapter 61B (Recreation) are in private ownership and *are not* permanently protected open space areas. This tax classification enables the lands to be taxed at their use value rather than their full fair market value. The Town has the right of first refusal if the parcels are sold prior to the expiration of their tax abated status. This allows the Town to protect individual open space parcels as they enter the market or become threatened by development. According to the records of the Town Assessor, here is the breakdown of Dudley properties enrolled in the above tax programs:

Chapter 61 (Forestry) properties: one property.

Chapter 61A (Agriculture) properties: 69 properties.

Chapter 61B (Recreation) properties: none.

Unique Scenic Areas (Scenic Roads and Landscapes): Dudley has given the "Scenic Road" designation to only one of its local roads thus far. At the 1999 November Town Meeting, voters approved this designation for a section of Baker Pond Road, beginning at its intersection with Dresser Hill Road and ending at its intersection with Ramshorn Road. This is indeed a scenic road as there are open fields on either side and a great view of Gore Pond along its northern section. The scenic road designation means that any maintenance (tree cutting, brush clearing, moving stonewalls, etc.) along this road will be carefully reviewed by the Town's Highway Commissioners before the work begins.

The Massachusetts Department of Environmental Management (DEM) prepared an inventory of the State's most scenic landscapes in 1982. Entitled, Massachusetts Landscape Inventory: A Survey of the Commonwealth's Scenic Areas, this document identified a large portion of western Dudley as a scenic landscape. The identified area begins in Charlton and extends through the length of Dudley in a north-to-south direction. The area encompasses Gore Pond and either side of the entire length of Route 31 (Dresser Hill Road). According to the 1982 Inventory, "This unit contains some of the finest pastoral scenery east of the Connecticut Valley."

Open Space and Recreation - Needs Assessment: While Dudley has an abundance of protected open space, the Town does not have much in the way of active recreation facilities. According to the standards developed by the National Recreation and Park Association, a Town with Dudley's population should have roughly 90 acres of active recreation areas (or nine acres per 1,000 people). Dudley's active recreation areas (Nichols College included) constitute roughly 15-20 acres.

The 1999 Master Plan citizen survey clearly identified that Dudley residents desire more active recreation areas/facilities. According to the survey respondents, here are the top five types of recreation facilities that they would like to see more of in Dudley:

1. Hiking trails
2. Biking trails
3. Swimming areas
4. Playgrounds
5. Ice skating rinks

In terms of the preferred method of paying for new recreation facilities, the institution of users fees received the highest number of votes and general tax revenues received the second highest. In the comments section of the survey, many residents indicated that they did not know where the active recreation facilities were in Dudley. Recreation as a municipal service received the second lowest rating of all the municipal services (only road maintenance was rated lower).

Open Space and Recreation - Goal

To promote Dudley's rural character by retaining its open space lands and expanding the Town's passive and active recreation facilities for the enjoyment of the community.

Open Space and Recreation - Recommendations

1. In terms of creating more public open space for hiking/biking trails, the Town should focus on two areas: western Dudley, and along the banks of its two major rivers. If one looks close enough, remnants of historic trails and rail lines can still be detected in western Dudley, particularly in the area south of Dudley-Southbridge Road. The Old Stage Coach trail cuts through this area in a west-to-east direction, and portions of the former Grand Trunk rail line can be found here as well. The former Grand Trunk rail line runs parallel to the abandoned P&W Southbridge railbed and then cuts through the south of Dudley in an easterly direction.

Regarding Dudley's two major rivers (the French and the Quinebaug), these resources are all but inaccessible to Dudley residents. With roughly seven miles of river frontage (French and Quinebaug combined), the Town only owns one piece of riverfront property (see the Town-Own Property Map for its location). Less than 10,000 square feet, this property has roughly 200 feet of frontage on the French River and there are no signs indicating that this is public property. The water quality of the French and Quinebaug Rivers has been steadily improving over the last thirty years, and there is no reason why Dudley residents should not be able to enjoy the natural beauty of these resources. The Town should endeavor to open up these areas for public

enjoyment through land acquisition and easements. Signage on Town-owned properties along the rivers would inform the public that these areas are here for their enjoyment. The provision of park benches would make these areas all the more inviting. Responsible Municipal Entity: the Dudley Conservation Commission.

A list of open space preservation techniques and grant opportunities can be found in Appendix C.

2. The Town should acquire land for, and develop additional active recreation facilities including, but not limited to: new ballfields, playgrounds, parks, boat ramps and associated parking facilities. Clearly, Dudley is lacking in active recreation facilities and there is citizen support for additional facilities. Land acquisition and facility construction are expensive propositions; therefore, the Town should consider what it can accomplish with its own resources first. The Town-Owned Properties Map shows that the Town owns several vacant pieces of property scattered throughout Town, and perhaps some of these properties have the potential to be developed recreationally. Civic groups and other sources of volunteer labor could assist with facility construction. Please review Appendix C for a list of recreation-related grant opportunities. Responsible Municipal Entity: the Dudley Recreation Commission.

3. The Dudley Conservation Commission should update its Open Space and Recreation Plan of March 1988. Several of the recreation-related grant opportunities outlined in Appendix C require that the Town have an up-to-date Open Space and Recreation Plan in place. Such plans are reviewed and approved by the Massachusetts Executive Office of Environmental Affairs (EOEA) Division of Conservation Services. Towns that do not have an up-to-date Plan are not eligible for most State recreation-related grants. As not much has changed since the 1988 Plan, preparing an update should not be too difficult. The EOEA has prepared two documents to help towns prepare an Open Space and Recreation Plan: 1990 Open Space and Recreation Plan Requirements (a full description of the State's requirements), and The Open Space Planner's Workbook (a step-by-step guidance document for preparing a plan).

The Conservation Commission could update the 1988 Plan on its own (quite cost effective); however, it may be a bit much for a volunteer board with a minimal budget. The Commission may want to ask for funds to update the 1988 Plan at a Town Meeting. There are a number of planning consultants in the area who do this type of work. A full-blown update of an Open Space and Recreation Plan could cost between \$5,000 and \$10,000, depending on the scope of the work and the chosen consultant.

Please be advised that any update of the 1988 Plan will need to include a "Section 504 Self Evaluation" for all properties under the jurisdiction of the Conservation Commission and Recreation Commission. The Section 504 Self-Evaluation is simply a detailed checklist that is used to determine the level of handicapped accessibility for each recreation facility/property. The Town's Open Space and Recreation Plan would need to identify how the Town plans to correct any deficiencies identified as Part of the Section 504 Self-Evaluation. This will be a considerable effort as most of the Town's recreation facilities are *not* handicapped accessible. This does not mean that the facilities have to be brought up to code immediately, or that funding has to be in place for the identified improvements, just that the Town understands what needs to be done and has an idea as to how to go about it. Once the Town's Plan is approved by the EOEA, the Town

can pursue a variety of grant opportunities to address the deficiencies identified in the Section 504 Self-Evaluation. Responsible Municipal Entity: the Dudley Conservation Commission in conjunction with the Dudley Recreation Commission.

4. Dudley should take advantage of the recreation funding opportunities offered by the Quinebaug-Shetucket Rivers Valley National Heritage Corridor, which was recently expanded to cover Dudley and seven other Massachusetts communities. The Corridor program has already developed several successful recreation projects in Connecticut, most notably the extensive riverwalk located in downtown Putnam, Connecticut. Perhaps the Corridor program could be used to open up public access to the French and Quinebaug Rivers. Responsible Municipal Entity: the Dudley Conservation Commission in conjunction with the Dudley Recreation Commission

5. The Town should put together a brochure that outlines what is has for recreation programs/facilities and have them available at the Town Hall. A comment heard over and over in the 1999 Master Plan citizen survey was that people where not sure where the Town's recreation facilities were and did not know what the Town had to offer. A brochure could include a small map of the Town's recreation facilities and conservation lands, as well as a list of contacts for Dudley's recreation programs. Responsible Municipal Entity: the Dudley Conservation Commission in conjunction with the Dudley Recreation Commission.

6. The Town's Zoning By-Law should be amended to give the Planning Board the power to require conservation easements for large-scale residential and industrial development which have frontage on the French and Quinebaug Rivers. The Town needs to start protecting public access to these resources while it still has the chance to do so. It is suggested that new large-scale developments that front on the rivers be required to provide a 30-foot easement along the rivers edge. The land would still be owned by the property owner, but the public would have the right to walk/hike through the easement. For all large-scale development proposals, the Planning Board should encourage the creation of easements or land donations for public open space. Responsible Municipal Entity: the Planning Board.

7. The Town should lobby its representatives to the State Legislature in support of purchasing the abandoned Southbridge Branch rail line, owned by the P&W Railroad, for use as a recreational trail. This is the abandoned rail line that parallels the Quinebaug River, curves through Thompson, and concludes in downtown Webster. All told, the abandoned Southbridge Branch is roughly eleven miles in length. The Massachusetts Department of Environmental Management (DEM) has surveyed the condition of the railbed and has been negotiating a sale price with P&W intermittently over the last decade. The P&W is currently asking \$1.4 million for the railbed, while DEM is currently offering \$910,000. Perhaps the Quinebaug-Shetucket Rivers Valley National Corridor could provide a portion of the necessary funding for this effort. Responsible Municipal Entity: the Dudley Board of Selectmen in consultation with the Conservation Commission.

8. The Town should encourage its active farmers to protect their land under the State's Agricultural Preservation Restriction (APR) Program, administered by the Massachusetts Department of Food and Agriculture (DFA). The program insures that active farms stay in agricultural production. The State purchases a farmer's development rights. The price paid is the difference between the full market value of the property and its appraised agricultural value. A

permanent restriction is then put in place prohibiting all non-agricultural uses on the parcel. The farmer is taxed at the agricultural value rather than the highest use value. As Dudley's rural character is highly dependant on farms staying as farms (as opposed to being developed residentially), the APR Program is an excellent method of ensuring farmland preservation. Responsible Municipal Entity: any of Dudley's land use boards including the Planning Board, Zoning Board of Appeals, and the Conservation Commission.

9. The Town should encourage its active farmers to participate in the Farm Viability Enhancement Program offered by the Massachusetts Department of Food and Agriculture (DFA). The program is designed to improve the economic bottom line and environmental integrity of farms through the development and implementation of farm viability plans developed by teams of agricultural, economic and environmental consultants. The team will assess the current farm operation and suggest ways to increase farm income through such methods as improved management practices, diversification, direct marketing, value-added initiatives and agri-tourism. Funding for implementation is available in exchange for an agricultural use covenant on the property. Responsible Municipal Entity: any of Dudley's land use boards including the Planning Board, Zoning Board of Appeals, and the Conservation Commission.

10. The Dudley Historical Commission should complete its update of the Town's Historical Survey and then work with the Planning Board to pursue historic district designation for some of Dudley's more historic areas, such as Dudley Center and some of the Town's older cemeteries. Responsible Municipal Entity: the Historical Commission in conjunction with the Planning Board.

11. The Town should prevent all further development of the woodland it owns within the Town Beach Conservation District. Responsible Municipal Entity: Although this property is under the jurisdiction of the Water Department, it will take the full cooperation of the Department, Board of Selectmen, Recreation Commission and Conservation Commission to protect this area.

12. As it is highly unlikely that MassHighways will replace the bridge over the canal along Perryville Road (estimated repair cost: \$460,000), the Town should designate this road and its bridge as a trail for walking and biking. Responsible Municipal Entity: the Recreation Commission in consultation with the Board of Selectmen.

13. The Town should pursue the "scenic road" designation for some of its more rural roads in the north and west sections of Dudley. Responsible Municipal Entity: the Board of Selectmen.

DUDLEY MASTER PLAN 2000:
A SUMMARY OF MAJOR FINDINGS

As with every entity, from the largest governmental and private organizations, to the individual family unit, the need to plan for the effective use of available resources is paramount. Without planning and structure, the chances of optimizing the best and highest value of human, natural and capital resources is diminished.

The Master Plan for the Town of Dudley is intended primarily to provide direction on land use planning decisions, that is, the Master Plan gives citizens and town officials a blueprint from which to make decisions regarding how land should be used within Dudley. As such, the Plan will serve as the foundation of the Town's zoning scheme. The recommendations contained in the Plan are based on the assessment of existing resources and problems, and projections of future conditions and needs. In other words, this Plan describes where Dudley is today and where it wants to be in the future. This Plan defines the desired land use pattern for Dudley and lays out a series of recommendations designed to bring the Town closer to where it wants to be.

In an effort to develop a singular vision to guide the master planning process, the Dudley Master Plan Committee prepared the following Vision Statement:

"In the Year 2010, we want Dudley to be a cohesive community that provides quality education and municipal services, with a stable rural character and unique identity, where people can feel comfortable living and working."

All of the Plan's recommendations were reviewed for conformance to the above Vision Statement. The question asked of every recommendation was "Does this take us closer to where we want to be?" If a recommendation did not conform to the Vision Statement, it was either deleted or revised for conformance.

Although the Master Plan contains a number of good government recommendations, it is important to remember that the Plan deals primarily with land use issues. The Plan *does not* lay out a strategy for municipal staffing or operations, school programming or curricula, roadway engineering specifics, or detailed water/sewer system improvements. While these issues are touched upon in the Plan, they are only discussed in relation to land use and the Town's decision making process in regard to land use issues.

The single most important recommendation of the Master Plan is the Future Land Use Plan contained in the Existing and Future Land Use chapter. The intent of Dudley's Future Land Use Plan is to strengthen the existing land use pattern while limiting opportunities for sprawling residential development. Dudley's land use pattern has remained fairly consistent during the past century: densely developed (houses, businesses & industries) in the east, and rural (farms) in the north and west. The Plan strives to strike a balance between the two stated goals of maintaining the rural character of the north and west while increasing the Town's non-residential tax base. The Master Plan Committee developed the following goal for the Future Land Use Plan:

"Promote the most efficient use of Dudley's land resources. This includes the most effective placement of commercial/industrial ventures while complimenting the established pattern of residential development and Dudley's agricultural heritage."

The major land use-related findings of the Master Plan process include the following:

- The Town needs to stop the current trend of having its industrially-zoned land developed residentially. Residential development should not be allowed within the Town's industrial zoning districts.
- There are several industrial districts that have lost their potential to be developed industrially. These areas should be rezoned residentially.
- Those industrial districts with further development potential and available vacant land adjacent to them should be expanded in size and serviced by municipal water and sewer when feasible.
- The Town's zoning scheme needs to differentiate between light industry and heavy industry.
- The Town's zoning scheme needs to differentiate between large-scale, high-intensity commercial uses and small-scale, neighborhood commercial uses.
- The Town should create a zoning district for high-intensity, large-scale commercial ventures.
- The Town's zoning scheme should endeavor to re-establish the old Quinebaug Village along the Connecticut border by allowing a mixture of commercial and residential uses.
- The Town should ensure that every newly-created lot is a buildable lot.
- The Town should increase the minimum lot size for those residential zoning districts that have significant development potential. This will decrease the density of population in these areas while enabling the Town to better plan for providing services to these areas.
- The Town needs to increase the capacity of its water system in order to accommodate new economic development.
- The Town needs to streamline its procedures for making land use decisions and issuing building-related permits.
- The Town needs to institute site plan review (including technical review) for large-scale development projects so that it gains more control over how individual pieces of property get developed. A thorough and coordinated review of large-scale development plans will ensure that the Town's interests are protected while providing the developer with a one-stop review of the proposed project.

Other significant findings of the Master Plan process include:

- The Town needs to develop a prioritized town-wide roadway improvement program.
- The Town needs to create for opportunities for active recreation, both in terms of facilities and programs.
- The Town needs to develop a Capital Improvement Program in order to plan and prioritize its spending on large-scale capital items over the long-term.
- The Town should establish an entity whose sole purpose will be to develop and implement an economic development strategy for the Town.

The Master Plan you are about to read consists of seven subject chapters, each addressing a particular aspect of the Town's situation. After an introduction, a brief history of Dudley and a modern-day demographic profile, the following chapters are presented:

- Transportation;
- Community Facilities and Services;
- Natural Features;
- Open Space and Recreation;
- Housing;
- Economic Development; and
- Existing and Future Land Use

The seven chapters contain inventory data, analysis and recommendations designed to help town planners make informed decisions regarding the future development of Dudley. The final chapter of the Master Plan is the Implementation Plan, which outlines all of the Plan's recommendations and the municipal entity responsible for implementation.

The Master Plan Committee would like to take this opportunity to thank all of the municipal departments, committees, boards and commissions within Dudley's town government for all of their help in preparing this plan. This project would never have been completed without their help. Dudley's Town government relies heavily on volunteers who give their time in the spirit of community service.

The Committee would also like to thank all of the citizens who participated in the Master Plan process; whether it was through last summer's citizen survey, participating in the two public forums, attending the twice-monthly Committee meetings, or calling and writing the Committee and its consultant with your input. This Plan is for you and your children and we hope that its implementation will result in..... "a cohesive community that provides quality education and municipal services, with a stable rural character and unique identity, where people can feel comfortable living and working."

CITIZEN SURVEY FOR DUDLEY'S COMMUNITY MASTER PLAN

Dear Dudley Resident:

The Town of Dudley is in the process of preparing a Community Master Plan. The Dudley Planning Board is leading this effort in conjunction with a Master Plan Committee composed of interested citizens. The Central Massachusetts Regional Planning Commission (CMRPC) will provide technical assistance. The Master Plan will contain an inventory and analysis of the Town's existing conditions and conclude by setting forth a blueprint for Town's future development.

The Master Plan Committee has prepared this survey in order to find out the community's opinions on critical issues facing the Town. This survey gives you an opportunity to express your views on the type of town that you would like to see Dudley become. This survey should only take about fifteen minutes of your time to complete. Your input to this project is valuable and essential. Town planners need to know your opinions in order to appropriately plan for Dudley's future.

For your convenience, you can drop off the survey at the Town Hall or Dudley Public Library (just look for the boxes located at the front of the building marked "Master Plan Surveys"). You may also mail the completed survey to the Central Massachusetts Regional Planning Commission in the self-addressed envelope provided. Please return the survey by the end of May so that we can begin to analyze the results and include your ideas in the Plan. The Plan should take about a year to complete, so check your local newspaper for news on the Plan's progress. Also, advanced notice of the Plan workshop dates will be posted at the Town Hall. Residents are invited to attend these workshops and participate.

This project is important to the Town's future and should be of great concern to you. Thank you for your assistance with this effort.

Dudley Planning Board

Martin Nieski, Chairman

Monica Elefterion

John Briare

Brian Germaine

Gerry Frank

Dudley Master Plan Committee

Joseph Holewa, Chairman

Monica Elefterion

John Briare

Mark Marzeotti

Paul Dona

Doug Freund

GENERAL

What is desirable about living and/or working in Dudley? What factors influenced your decision to move to Dudley and continue living here? (please rank your responses, i.e., put a 1 next to what you consider most desirable, a 2 next to your second choice, etc.) **Average of results**

<u>2.8</u>	rural nature housing	<u>5.0</u>	privacy	<u>4.8</u>	affordable
<u>3.0</u>	small town atmosphere	<u>3.8</u>	quality schools	<u>5.4</u>	open space
<u>5.4</u>	convenient location	<u>11.8</u>	retail services	<u>5.0</u>	low crime rate
<u>9.6</u>	municipal services	<u>7.1</u>	scenic views	<u>4.9</u>	low tax rate
<u>11.3</u>	recreation opportunities	<u>5.7</u>	lack of congestion		
<u>4.8</u>	family ties to town	<u>12.5</u>	business expansion potential		
<u>7.3</u>	quality of housing	<u>12.9</u>	employment opportunities		

other (please specify): _____

What do you find to be undesirable about living and/or working in Dudley? (please rank your responses, i.e., put a 1 next to what you consider least desirable, a 2 next to your second choice, etc.) **Average of results**

<u>3.0</u>	excessive development	<u>6.5</u>	lack of privacy
<u>4.4</u>	municipal services	<u>6.9</u>	lack of housing opportunities
<u>3.3</u>	lack of retail services	<u>6.8</u>	housing costs
<u>8.0</u>	amount of crime	<u>6.0</u>	poor condition of existing housing stock
<u>2.5</u>	condition of roads	<u>3.2</u>	lack of employment opportunities
<u>8.0</u>	school system	<u>4.6</u>	local tax demands
<u>3.4</u>	lack of passive recreation opportunities (hiking, cross-country skiing, etc.)	<u>3.3</u>	lack of active recreation opportunities (ballfields, swimming, etc.)

other (please specify): _____

OPEN SPACE AND RECREATION

1. Open fields for agriculture are a very prominent feature of Dudley's landscape. Is preserving these areas important to you? [89.3] Yes [3.5%] No [7.2] Not Sure

Do you have any additional comments on this matter?

2. Dudley has a significant amount of frontage on the French River and the Quinebaug River. There are also numerous small to mid-size ponds scattered throughout Town. What is your opinion on public access to these resources, their maintenance by the Town, and their availability for recreation opportunities?

Percentages

Access:

[49%] The current amount of public access to Dudley's water resources is sufficient.

[51%] Public access to Dudley's water resources needs to be expanded.

Feel free to specify where access needs to be expanded: _____

Town Maintenance:

[50.3%] The Town's current level of maintenance of Dudley's water resources is sufficient.

[49.7%] The Town's maintenance of Dudley's water resources needs to be improved.

Feel free to specify where maintenance needs to be improved: _____

Water-Based Recreation Opportunities:

[49.2%] The current amount of water-based recreation opportunities is sufficient.

[50.8%] Dudley needs more water-based recreation opportunities.

Feel free to specify where water-based recreation opportunities need to be expanded: _____

3. If you believe that open space protection, improved town maintenance and water resource access are needed, and keeping in mind that there is limited local and state funding available for these purposes, how do you feel the Town should finance such efforts? **Numerical counts**

[147] general tax revenues [54] bond issue [33] override Proposition 2 ½

[51] tax on all real estate transfers [54] not a priority [109] no opinion

[238] user fees [] other (please specify): _____

4. What types of recreation opportunities would you like to see more of in Town? **Numerical counts.**

[91] ballfields [287] hiking trails [205] playgrounds [93] tennis courts

[214] swimming [56] boating [80] basketball courts [90] soccer fields

[115] fishing [280] bike trails [164] ice skating rink

[] organized recreation programs (please specify): _____

5. Please list the recreation sites in Dudley that you think are in need of improvement: (feel free to list the specific improvements needed for each site.)

ECONOMIC DEVELOPMENT

6. In terms of Dudley's future, how would you like to see the following items change? **Percentages**

	Increase	Decrease	No Change
Number of retail stores:	[47.9%]	[2.9%]	[49.2%]
Retail items available: (groceries, hardware, etc.)	[43.9%]	[2.2%]	[53.9%]
Industrial development:	[38.8%]	[10.5%]	[50.7%]
Business development:	[56.9%]	[5.8%]	[37.3%]
Medical facilities:	[52.4%]	[2.0%]	[45.6%]
Residential development:	[23.3%]	[25.1%]	[51.6%]
Employment opportunities:	[61.3%]	[1.0%]	[37.8%]

Please add any comments you may have: _____

For questions 7 and 8, check as many responses as you believe apply.

7. What do you see as the major benefit(s) of encouraging business/industrial development in Dudley?

Numerical counts

- [364] More in-town jobs [358] More tax revenues to help ease residential tax burden
[168] More retail stores [254] More tax revenues to help maintain current municipal services
[200] More services [293] More tax revenues to help improve municipal services

[] Other (please specify): _____

8. What do you see as the major disadvantage(s) of encouraging economic development in Dudley?

Numerical counts

- [375] More auto traffic [372] More truck traffic [367] Changing the basic character of Dudley
[275] Environmental problems [] Other (please specify): _____

9. If the Town was to encourage the development of land currently zoned for business (retail, office, professional, and tourism), I would be: **Percentages**

[33.3%] Strongly in favor of this [12.3%] Somewhat opposed to this [30.1%] Somewhat in favor of this
 [10.8%] Strongly opposed to this [13.4%] Unsure [] Other (please specify): _____

10. If the Town were to encourage the development of land currently zoned for industrial (manufacturing and light industry), I would be: **Percentages**

[30.3%] Strongly in favor of this [16.0%] Somewhat opposed to this [24.8%] Somewhat in favor of this
 [16.8%] Strongly opposed to this [12.2%] Unsure [] Other (please specify): _____

11. Would you support the re-zoning of land currently zoned as residential for: **Percentages**

	Yes	No	Unsure
Manufacturing	[13.8%]	[73.3%]	[12.9%]
Light Industry	[25.0%]	[63.1%]	[12.0%]
Office and Professional	[47.2%]	[39.5%]	[13.4%]
Retail Use	[29.0%]	[54.4%]	[10.7%]
Tourism	[44.0%]	[36.6%]	[19.4%]
Conservation	[74.1%]	[13.8%]	[12.1%]

12. Would you approve the use of Town funds to upgrade our existing infrastructure (roads, sewer and water) to attract new business or industry if it meant increasing your local taxes? **Percentages**

[16.0%] Yes, but only up to a 5% increase [5.9%] Yes, but only up to a 10% increase
 [3.5%] Yes, but only up to a 15% increase [8.6%] Yes, if funded from current revenues
 [23.4%] Infrastructure improvements should be negotiated between the Town and the developer
 [24.9%] No, infrastructure improvements should be paid for solely by the developer
 [17.8%] No

13. In-home occupations are currently allowed as a permitted use throughout Dudley. Do you have any objections to how in-home businesses are regulated/enforced in Dudley? **Percentages**

[11.6%] Yes [57.6%] No [30.7%] Not Sure

If yes, please explain: _____

SERVICES AND FACILITIES

14. How do you rate the services provided by each town department? **Percentages**

	Excellent	Good	Fair	Poor
Fire	[59.3%]	[37.6%]	[2.6%]	[0.5%]
Police	[54.9%]	[38.0%]	[6.1%]	[1.1%]
Town Roads	[5.9%]	[31.6%]	[39.6%]	[22.9%]
Health	[13.4%]	[54.6%]	[25.7%]	[6.3%]

Schools	[49.6%]	[40.3%]	[8.7%]	[1.4%]
Recreation	[5.1%]	[37.0%]	[41.9%]	[16.0%]
Sewer	[9.4%]	[47.0%]	[30.2%]	[13.4%]
Water	[12.2%]	[43.5%]	[28.5%]	[15.8%]
Cemeteries	[7.6%]	[57.6%]	[26.2%]	[8.5%]
Inspection Services	[9.1%]	[53.4%]	[27.8%]	[9.7%]

Any additional comments regarding the quality of your town government and municipal services?

15. The percentages of the Town's budget devoted to various departments are shown in the pie chart on page 2. Do you think the percentage of the budget for each department should... **Percentages**

	Increase	Decrease	Stay the Same
Fire	[32.6%]	[5.3%]	[62.1%]
Police	[26.1%]	[11.3%]	[62.6%]
Highway	[42.1%]	[3.5%]	[54.4%]
Schools	[23.6%]	[12.9%]	[63.5%]
Sewer	[13.7%]	[19.1%]	[67.2%]
Water	[16.5%]	[13.7%]	[69.8%]
Insurance	[3.6%]	[12.6%]	[83.8%]
Retirement	[10.0%]	[9.7%]	[80.3%]
Debt	[5.4%]	[29.0%]	[65.6%]
(Misc.) Health	[18.1%]	[6.2%]	[75.6%]
(Misc.) Recreation	[38.5%]	[3.1%]	[58.4%]
(Misc.) Cemeteries	[16.8%]	[5.7%]	[77.4%]
(Misc.) Inspection Services	[9.6%]	[6.9%]	[83.5%]

16. Would you support an expanded recycling program (i.e., an expansion in the variety of items collected for recycling)? **Percentages** [64.1%] Yes [17.3%] No [18.6%] Unsure

17. On a scale from one to ten, how would you rate the school system's academic curriculum?

Poor	Average										Superior	Average
Elementary	[] 1	[] 2	[] 3	[] 4	[] 5	[] 6	[] 7	[] 8	[] 9	[] 10	7.6	
Intermediate	[] 1	[] 2	[] 3	[] 4	[] 5	[] 6	[] 7	[] 8	[] 9	[] 10	7.4	

18. The Town of Dudley will soon take possession of the elementary school on West Main Street.

What should the Town do with this property? **Percentages.**

15.2% use the building for a senior citizens center

10.2% use the building for a youth center

62.7% use the building for a combination senior center/youth center

9.1% tear the building down

use the building for another municipal purpose (please specify): (2.8%) _____

19. What buildings and/or sites in Dudley do you believe are worthy of historic preservation efforts (either through the Mass. Historical Commission or the National Register of Historic Places)?

List as many as you like: _____

LAND USE

20. Please rank the following land uses according to the priority you feel they should be assigned for future development/redevelopment and/or zoning. Start with 1 as your highest priority. **Average**

4.2 detached single family homes

7.1 manufacturing

7.8 attached housing units, i.e. condominiums

6.4 municipal services

4.2 active recreation (ballfields, playgrounds, etc.)

5.5 professional offices

3.9 passive recreation (hiking, cross-country ski, etc.)

5.8 retail and other services

6.1 light industry and warehousing

3.4 conservation/wildlife preserves

3.6 farming and agriculture

6.7 tourism

21. Dudley currently allows single and two-family homes in all of its zoning districts, including the Business and Industrial districts. What is your opinion of this situation? **Percentages**

[**66.8%**] The current zoning scheme is acceptable.

[**14.1%**] Residential uses should be taken out of the permitted uses within the Business and Industrial zones.

[**19.1%**] Residential uses should be taken out of the permitted uses within the Industrial districts, but should continue as a permitted use within the Business districts.

22. Dudley is still very rural in the north and west with the minimum required lot size being one acre for this area. Should the minimum lot size be increased to two acres in the north and west? **Percentages**

[**18.0%**] Yes, the minimum lot size for the north & west should be increase to one and a half acres.

[**24.7%**] Yes, the minimum lot size for the north & west should be increase to two acres.

[**8.1%**] Yes, the minimum lot size for the north & west should be increase to more than two acres.

[49.1%] No, the minimum lot size for the north & west should not be increased.

23. There are several residential zoning districts in Dudley that allow minimum lot sizes to be as small as 10,000 square feet to 25,000 square feet, and many of the existing lots in these districts are not on municipal sewer. The Title V regulations require that septic systems be located at least 100 feet away from on-site water wells (to reduce the possibility of contamination). Considering the difficulty of placing a septic system and water well on such small lots, should lots located *outside* of the municipal sewer system be re-zoned to require larger lot sizes?

Percentages

[66.9%] Yes [13.5%] No [19.6%] Unsure

24. Should Dudley take measures to control future growth? **Percentages** Yes [76.2%] No [14.6%] Unsure [9.2%]

If yes, how should the Town control or regulate growth: **Numerical counts**

[189]	Restrict the number of new single family homes regulations	[184]	Adopt more restrictive zoning
[337]	Restrict the number of new multiple family homes	[61]	Limit water/sewer hookups
[193]	Restrict industrial/commercial development	[]	Other (please specify):

HOUSING

25. Do you think the Town should actively pursue ways to provide housing for: **Percentages**

	Yes	No	Unsure
Low and moderate income families?	[20.8%]	[64.7%]	[14.5%]
Elderly households?	[68.2%]	[20.3%]	[11.6%]
26. Do you favor zoning incentives (density bonuses, reduced setbacks, etc.) that would allow for new construction/conversion of existing buildings, in order to provide housing for low/moderate income households?	[21.3%]	[61.2%]	[17.4%]

27. Do you favor development of vacant Town property for:

	Yes	No	Unsure
Low and moderate income family housing	[21.6%]	[65.9%]	[12.5%]
Elderly housing	[73.0%]	[17.6%]	[9.4%]
Commercial development	[42.7%]	[45.1%]	[12.2%]
Industrial development	[31.0%]	[56.3%]	[12.8%]
Municipal purposes	[60.5%]	[24.6%]	[14.9%]
Parks and recreation	[89.0%]	[6.5%]	[4.5%]

28. Do you favor allowing in-law apartments [73.1%] [16.2%] [10.8%]
in single family residential districts?

DEMOGRAPHICS Numerical counts and percentages (%)

29. Are you responding as a resident or as a Dudley business? **648** resident **4** business **10** Both

30. How many people in your household and what are their ages? **Average household size of 2.93**

31. Sex of survey respondent: [294] Male [286] Female M&F [54] 32. Do you: [93%] Own [7%] Rent

33. What type of housing do you live in? [89.7%] single family home [3.6%] apartment
[5.2%] two/three family home [1.2%] condominium [0.3%] other

34. How long have you lived in Dudley?
[12.4%] less than five years [12.3%] 5 to 10 years [21.2%] 10 to 20 years [53.9%] over 20 years

35. Geographically speaking, where do you work?
[14.3%] in Dudley [10.4%] within 10 minutes of Dudley [10.1%] within 20 minutes of
Dudley
[25.8%] within 30 minutes of Dudley [13.1%] outside of the region [26.3%] retired

Feel free to tell us the name of the community you work in: _____

36. Please check the appropriate range of your yearly household income:
[8.3%] less than \$14,999 [4.7%] \$15,000 to \$19,999 [7.9%] \$20,000 to \$29,999
[10.6%] \$30,000 to \$39,999 [13.7%] \$40,000 to \$49,999 [31.5%] \$50,000 to \$74,999
[14.3%] \$75,000 to \$99,999 [8.9%] \$100,000 or higher

ADDITIONAL COMMENTS

Please provide any additional comments or concerns that you may have regarding the future development of Dudley.
If necessary, use another sheet of paper.

DUDLEY MASTER PLAN 2000

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Appendices

Appendix A: Inventory of Town-Owned Properties.

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TRANSPORTATION NETWORK

Transportation Network:

Dudley has a well-developed transportation network, although the current network bears little resemblance to the Town's historical transportation pattern when Dudley Hill was the center of Town. West Main Street (Route 197) now represents the Town's main thoroughfare. Dudley does not have direct access to any of the region's interstate highways. Dudley residents need to travel north to access the Massachusetts Turnpike (I-90); east through neighboring Webster to access I-395 (and eventually I-290 in Auburn); and west to reach I-84, the main thoroughfare to Hartford, Connecticut.

Roadways (maintenance responsibilities):

MassHighway, the State's transportation department, is responsible for maintaining the majority of Route 197, although the Town is responsible for its maintenance from the Webster town line to a point just beyond its intersection with Schofield Avenue (a length of approximately 1,500 feet). MassHighway maintains the entire length of Route 131 (Southbridge Road), as well as a portion of Route 12 (Schofield Avenue) from its intersection with Brandon Avenue all the way to the Connecticut border. Route 31 (Dresser Hill Road) is also considered a State-numbered route, however, the Town handles its day-to-day maintenance.

State Roads/Bridges (planning for improvements):

In many cases, transportation projects are planned for at the regional level. The Central Massachusetts Metropolitan Planning Organization (MPO) is the decision-making body responsible for planning and funding transportation projects in this region. The regional MPO is made up of representatives from four organizations: MassHighway; the Executive Office of Transportation Construction (EOTC); the Central Massachusetts Regional Planning Commission (CMRPC); and the Worcester Regional Transit Authority (WRTA). The CMRPC transportation staff does the planning for the MPO. The MPO prepares an annual Transportation Improvement Program (TIP) for the region. Each annual TIP lists projects six years into the future. The improvements included in the TIP are paid for through Federal-Aid funds provided to MassHighway by the Federal Highway Administration (FHA).

The most recent TIP (years 2000-2005) lists three projects for Dudley. One is for the resurfacing of Route 31 through Charlton and the length of Dudley (estimated cost of \$2.3 million). Another project will replace the bridge over the channel along Lower Perryville Road (\$350,000). The third TIP project for Dudley will replace the bridge over the canal along Perryville Road (\$460,000). MassHighway has begun the bridge design phase of the Lower Perryville Road channel project. The Perryville Road canal project may be scrapped altogether in favor of using this area for a pedestrian walkway.

According to MassHighway, there are 649 bridges in the Central Massachusetts Planning Region. All of the bridges have been evaluated for structural integrity according to standards set

forth by the American Association of State & Highway Transportation Officials (AASHTO). According to the AASHTO bridge evaluations, there are 58 bridges in the region that are structurally deficient. There are two such bridges in Dudley: the Oxford Avenue bridge crossing the French River (8th lowest rating in the region); and the previously described bridge along Lower Perryville Road that spans a small channel (16th lowest rating in the region). MassHighway has obligated the necessary Federal Aid to re-construct the Oxford Avenue bridge, although construction has yet to begin.

The AASHTO bridge evaluations also identify those bridges considered to be functionally obsolete, that is, those bridges in need of modernization. There are 174 such bridges have been identified in the region. There are five functionally obsolete bridges in Dudley:

- Peter Street Bridge crossing the French River;
- Tracy Court Road Bridge crossing the French River;
- West Dudley Road Bridge crossing the Quinebaug River;
- Perryville Road Bridge crossing a canal (TIP project - estimated repair cost: \$460,000); and
- Brandon Road Bridge crossing the French River.

If the Town of Dudley wants to pursue federal/state funding for repairing the bridges identified above, they should work through CMRPC and MassHighway to explore this possibility.

State Aid for Local Roads:

Every year, Mass Highways distributes roadway repair/maintenance money to Massachusetts municipalities through Chapter 90 of the Massachusetts General Laws. Since 1994, the State has distributed approximately \$150 million per year to cities and towns through Chapter 90. Dudley's Chapter 90 appropriation for the past five years has averaged approximately \$300,000 per year, with \$326,474 being disbursed for the 98/99 fiscal year. Although the State does have some guidelines as to how Chapter 90 funds are to be used, it is up to each individual city and town to decide how to spend its Chapter 90 allotment. In Dudley, it is the Highway Superintendent who decides how to spend the Town's Chapter 90 annual allotment. The activities of the Highway Department are overseen by the Dudley Board of Selectmen acting under their capacity as Highway Commissioners. It should be noted that the State Legislature has recently approved an across-the-board 44% cut in Chapter 90 funds. Thus, Dudley can expect a 44% cut in next year's Chapter 90 disbursement.

Road Classifications and Federal-Aid Eligibility:

MassHighway maintains an inventory of local roadways as reported by the municipalities. MassHighway also maintains an inventory of those State-maintained roads that are considered to be part of the Federal-Aid System. The Federal-Aid System has a three-tier functional classification system for roads:

- Arterial Roads: roads that serve through traffic. Arterial roads are the highways of the

Interstate Highway System, such as I-395, I-84, etc.

- Collector Roads: roads that link local roads to arterial roads. Collectors are heavily traveled local roads and those roads associated with the State highway network (Routes 12 & 197).
- Local Roads: roads primarily used to access the community's housing stock.

MassHighway classifies Dudley's roads in the following manner:

Rural Minor Arterial Roads: Route 131 (Southbridge Road) is the only such road in Dudley, and is eligible for Federal-Aid.

Rural Major Collector Roads: Route 31 (Dresser Hill Road); Route 12 (from Webster town line to the Route 197 intersection, as well as Schofield Avenue); Route 197 (West Main Street); Dudley Center Road; and Dudley-Oxford Road. These roads are eligible for Federal-Aid.

Rural Minor Collector Roads: Oxford Avenue; Mason Road; Dudley-Southbridge Road; Dudley Hill Road; Pierpoint Road; Village Street; Charlton Road; Brandon Road; Mill Street and Pine Street. These roads are eligible for Federal-Aid.

Local Roads: All other roads in Dudley. These roads are not eligible for Federal-Aid.

Dudley officials can compete for limited federal funding to repair their Federal-Aid eligible roads above roads through the annual TIP process. Roads classified as "Local" are maintained solely by the municipalities and are not eligible for Federal-Aid. Local roads are eligible for State Highway funds under Chapter 90 (previously described).

Current Condition of Local Roads:

CMRPC conducted a Local Pavement Management Study for Dudley in the summer of 1997, with a summary report issued to the Town in December of 1997. CMRPC worked with MassHighway and the Dudley Highway Superintendent to define the Town's road network for this project. CMRPC then drove along each segment of roadway in Dudley, collecting detailed pavement condition information using a specialized computer program. The CMRPC roadway analysis incorporated the severity and extent of the following types of pavement distress:

- potholes
- cracking (block, alligator, transverse and longitudinal cracking)
- rutting
- surface wear and raveling
- corrugations, shoving and slippage

The collected data allowed CMRPC to evaluate each roadway's pavement condition (segment-by-segment), and determine an estimated repair cost. A pavement condition index (PCI) was calculated for each roadway segment. The PCI rated each road on a scale from one (extreme

distress - substantial repair work needed) to 100 (no need of repair). Slightly more than half of Dudley's roads (41 road miles out of a total of 78 road miles) received PCIs of less than 70, and the average PCI for all of Dudley's roadway segments was 68. Listed below are the top ten roads with the worst pavement conditions in Dudley, according to the 1997 Pavement Management Study:

Table TR-1

Roads With the Worst Pavement Conditions in Dudley (Top 10)

<u>Rank</u>	<u>Road Name</u>	<u>Length</u>	<u>PCI Score</u>
1	Maynard Road	0.29 miles	12
2	Fish Road	0.35 miles	18
3	School Street	0.91 miles	25
4	Sylvester Road	0.44 miles	26
5	Mason Road	1.02 miles	27
	(from Putnam Road to Sunrise Shores)		
6	Dresser Hill Road	1.17 miles	27
	(from Dudley-Southbridge Road to Healy Road)		
7	Lyons Road	0.79 miles	28
8	Saw Mill Road	0.93 miles	29
9	Ramshorn Road	2.80 miles	29
10	Marsh Road	1.08 miles	29

Source: CMRPC Local Pavement Management Study for Dudley, Massachusetts, December 1997.

The 1997 Pavement Management Study also estimated the cost of repairing the identified roadway deficiencies. Listed below are the top ten most expensive roadway improvement projects as identified in the 1997 Study:

Table TR-2

Top Ten Most Expensive Roadway

Improvement Projects in Dudley

<u>Rank</u>	<u>Road Name</u>	<u>Length</u>	<u>Estimated Repair Cost</u>
-------------	------------------	---------------	------------------------------

1	Dresser Hill Road (five distinct segments)	4.11 miles	\$532,849
2	Ramshorn Road	2.80 miles	\$295,740
3	Hayden Pond Road	1.45 miles	\$170,133
4	Corbin Road (from telephone pole #9 to Ramshorn Road)	1.69 miles	\$158,631
5	Mason Road (eight distinct segments)	2.42 miles	\$155,775
6	West Dudley Road	1.15 miles	\$114,693
7	Saw Mill Road	0.93 miles	\$109,111
8	Marsh Road	1.08 miles	\$101,369
9	Flaxfield Road	0.65 miles	\$99,147
10	School Street	0.91 miles	\$96,100

Source: CMRPC Local Pavement Management Study for Dudley, Massachusetts, December 1997.

The 1997 Pavement Management Study identified a total of approximately one million dollars worth of improvements for all of Dudley's Federal-Aid eligible roadways, and a total of roughly \$2.9 million dollars worth of improvements for all of Dudley's local road network. Thus, a grand total of approximately **\$3.9 million dollars** of roadway improvements were identified for the Town's transportation network. The 1997 Pavement Management Study developed three future funding scenarios for the Town:

- Scenario A: If the current level of funds (both Chapter 90 funds and local funds - roughly \$320,000 per year) continues to be allocated for pavement repair and maintenance, Dudley's roadway network will likely deteriorate from an average PCI of 68 in 1997 to an average PCI of 57 in the year 2007.
- Scenario B: In order to maintain the condition of Town's roadway network at its current level of performance (average PCI = 68) through the year 2007, approximately \$525,000 in annual funds should be allocated for pavement repair and maintenance.
- Scenario C: If \$775,000 were spent annually on pavement repair and maintenance, the condition of Dudley's roadway network would likely improve to an average PCI of 92 by the year 2007.

It is clear from the 1997 Pavement Management Study that Dudley will need to increase its annual roadway maintenance/repair allocation just to maintain the current condition of its road network. Even more money will need to be allocated if the Town wishes to improve the network's current condition. It is also abundantly clear from the Master Plan citizen survey that

the citizens are unhappy with the current condition of Dudley's roadways. According to the survey, the condition of the roads was the number one reason people found undesirable about living in Dudley. Clearly, more needs to be done regarding the Town's maintenance and repair of its roadway network. The situation will be even more pronounced next year when Dudley's Chapter 90 allotment is reduced by 44%.

Roadway Volume/Capacity and Levels of Service:

CMRPC conducts traffic counts throughout the region on an ongoing basis. Traffic counting machines are placed along a roadway and they record the number of vehicles travelling in each direction over a 24-hour period. The Daily Traffic Volume Map on the following page shows the total number of vehicles (i.e., both directions) travelling on Dudley's roads during a 24-hour period. The volumes shown on the map are taken from a series of traffic counts conducted throughout the 1990's. Most of Dudley's local roads handle less than 1,000 cars a day. The more heavily traveled roads have the following ranges of daily traffic volume:

1,000 - 2,500 vehicles per day: Dudley Hill Road, a portion of Dudley-Oxford Road, and portions of Mill Street and Pine Street.

2,500 - 5,000 vehicles per day: Schofield Avenue (Route 12), Brandon Road, Airport Road, Charlton Road, a portion of Mill Street, and a portion of Dudley-Oxford Road.

5,000 - 10,000 vehicles per day: The entirety of Southbridge Road (Route 131) and West Main Street (Route 197) from Airport Road to the Connecticut state line.

10,000 - 15,000 vehicles per day: West Main Street from Mason Road to Airport Road.

Over 15,000 vehicles per day: Route 12 from the Webster town line to its intersection with West Main Street, and West Main Street from the Route 12 intersection to Mason Road.

The Daily Traffic Volume Map indicates that a substantial number of vehicles are using some of the roads in northeast Dudley to get in and out of town, particularly Charlton Road, Dudley-Oxford Road and Oxford Avenue. The heavy volumes of traffic along Village Street, Mill Street and Pine Street indicate that vehicles are using these roads as a shortcut to Webster locations in an effort to avoid the traffic delays of downtown Webster.

It should be noted that all of Dudley's roadways are projected to have moderate increases in their traffic volumes over the next twenty years. CMRPC has developed a Regional Traffic Simulation Model that projects travel demands through the year 2020. According to the model, Dudley's roadways will experience a volume increase between 10% to 20% (depending on the road) over the next twenty years.

As part of CMRPC's 1997 Regional Transportation Plan, numerous transportation corridors were evaluated for their Level-Of-Service (LOS), i.e., the existing volume (V) of vehicles using the road versus the road's theoretical capacity (C). If the volume (V) is the same or greater than the theoretical capacity (C), then the road's Level-Of-Service gets a failing grade. A road's Level-Of-Service is graded similar to a school report card: LOS "A" (low volumes and minimal congestion) through LOS "F" (high volumes and significant travel delays).

The 1997 Plan evaluated two roadways in Dudley: Route 12 from the Webster town line to its intersection with Route 197; and Route 197 to the Connecticut state line. In addition to calculation V/C ratios, CMRPC also looked at average observed travel time and average observed travel speeds along these two roadways.

As discussed previously, Route 12 and Route 197 are considered "collector" roads. The theoretical capacity for these two collector roads is 1,000 vehicles per hour (each lane of traffic). The true capacity of these roads, as well as the other collector roads in the region, has never been determined. Determining the true capacity of a collector road would involve such factors as the number of signalized intersections, the number of curb cuts (driveways) along the road, the curvature of the road, and the road's structural integrity. Determining the true capacity of a roadway is an expensive proposition and, as such, was above and beyond the scope of CMRPC's 1997 Plan. Theoretical capacity is sufficient for this level of analysis.

West Main Street (Route 197): Volume vs. Capacity:

For a meaningful analysis of a roadway's volume/capacity, the peak travel hours should be evaluated because that is when the highest percentage of traffic is using the road. The morning peak is from 7:00 AM to 9:00 AM, and the evening peak is from 4:00 PM to 6:00 PM. As the evening peak period traffic counts for Route 197 were slightly higher than the morning peak period traffic counts, the PM peak period counts will be analyzed here. During the PM peak period, West Main Street averaged 608 vehicles per hour in the westbound lane and 517 vehicles per hour in the eastbound lane. Both traffic counts are well below the road's theoretical carrying capacity of 1,000 vehicles per hour.

Using this basic analysis method, a roadway's Level of Service receives a "B" grade when it is at 60% of its carrying capacity (as is the case with West Main Street's westbound peak period volume). When a roadway is at less than 60% of its carrying capacity (as is the case with West Main Street's eastbound peak period volume), its Level Of Service receives an "A" grade. Thus, West Main Street's Level Of Service, all told, is around the A-to-B range. West Main Street is the only road in Dudley that is even close to reaching its capacity during peak hour periods.

Volume of Heavy Trucks on West Main Street:

CMRPC's traffic counts along West Main Street provide another interesting bit of information regarding the percentage of heavy trucks using the roadway during the AM and PM peak hour periods. During the morning peak period (7:00 AM to 9:00 AM), trucks make up roughly 4% of the total traffic along West Main Street; while during the evening peak period (4:00 PM to 6:00 PM), trucks make up less than 2% of West Main Street's total traffic.

West Main Street (Route 197): Average Travel Time/Speed:

In general, observed speeds along Route 197 can be considered acceptable and are consistent with the posted speed limits (20-40 mph). The lowest speeds (20-30 mph) were observed between Brandon Road and the Dudley/Webster town line. The lower observed speeds can be attributed to the geography of the road (a curving road going uphill/downhill) as well as the Route 12 signalized intersection. This signal caused stopped delays along this segment, the longest observed being 27 seconds. It appears that the low travel speeds may be related to the intersections east of this segment in Webster. The average travel speed increases to 35 mph and

greater from the Brandon Road intersection to the Connecticut state line. In an effort to address the slower traffic speed and associated delay from the Webster town line to the Brandon Road intersection, the CMRPC 1997 Regional Transportation Plan made two recommendations, neither of which have been implemented at this time:

1. Investigate the potential of signal coordination between the Route 12/197 intersection in Dudley and the Route 12/Lake Street intersection in Webster.
2. Conduct a Corridor Planning Study along this roadway in both Dudley and Webster.

Traffic Safety and High Accident Intersections :

In 1996, the Dudley Police Department instituted a computerized tracking system for response calls at the various roadway intersections in Town. This has allowed the Department to track the number of motor vehicle accidents occurring at each intersection in Dudley. Listed on the following page are the top five intersections for traffic accidents in Town:

1. Intersection of Route 12, West Main Street and Village Street: **30 accidents** since 1996.
2. Intersection of West Main Street and Brandon Road: **11 accidents** since 1996.
3. Intersection of Schofield Avenue and Brandon Road: **11 accidents** since 1996.
4. Intersection of Ramshorn Road and Dudley-Oxford Road: **8 accidents** since 1996.
5. Intersection of Pine Street and Oxford Avenue: **7 accidents** since 1996.

Although the majority of these accidents were minor fender-benders, there were a few serious accidents resulting in people being injured. Clearly, the Route 12/West Main Street intersection has the highest accident occurrence in Dudley. It is very difficult to turn left in any direction, and vehicles travelling east on West Main Street often have to utilize the adjacent parking lane in order not to hit traffic making a left turn.

Although the majority of Routes 12 and 197 (West Main Street) are State maintained, this particular intersection is maintained by the Town. In fact, the traffic light at this intersection was paid for and installed by the Town. Considering that the traffic volumes at this intersection are expected to increase over the next twenty years, it stands to reason that the number of accidents will increase here as well.

Since both Route 12 and West Main Street are eligible for Federal-Aid funds, the Town should work with MassHighway and CMRPC to get this intersection improvement project into the annual TIP. Coordinated signalization, as suggested in the CMRPC 1997 Regional Transportation Plan, should be considered as part of the intersection improvement project.

The Town may also want to monitor the Brandon Road/West Main Street intersection to see if it warrants a traffic light. Currently, there is only a stop sign at this location. Any signalization of this intersection should be coordinated with the Route 12/West Main Street traffic signal.

One of the most difficult intersections to navigate in Dudley is the Ramshorn Road/Dudley Center Road/Dudley Oxford Road intersection (#4 on the High Accident Location list). There are

actually two intersections at this location, one right after another. The sight distance is limited, and with two stop signs in close proximity, it can be hard to figure out who has the right of way. Local residents know this is a troublesome intersection and drive accordingly. However, non-residents often have a hard time navigating this intersection. Since Dudley Center Road and Dudley-Oxford Road are eligible for Federal-Aid funds, the Town may want to work with MassHighway and CMRPC to pursue an intersection improvement project at this intersection as well.

Pedestrian Safety and Sidewalks:

According to an interview with the Police Department, there are several roadways in Dudley where pedestrian safety could be improved through the installation of sidewalks:

- School Street leading to the Intermediate School. Children walking to school have to walk along a narrow road with no sidewalks.
- Charlton Road and Pine Street west of the School Street intersection. Once again, children walking to the Intermediate School have to walk along a heavily traveled road with no sidewalks.
- Oxford Avenue north of its intersection with Pine Street. The existing sidewalk at this location only continues up Oxford Avenue for a short distance.
- East side of Mill Street at the Stevens Mills Overpass: Currently, the sidewalk ends at the overpass and children have to walk in the street until reaching the other side of the overpass.
- West Main Street (Route 197) at two locations: There are no sidewalks on the south side of West Main Street from Williams Street to Brandon Road; and there are no sidewalks on the south side of West Main Street from Brandon Road to Prospect Street, even though this is a Business district and there are several active businesses along this side of the street. There *are* sidewalks on the northern side of West Main Street, however, residents from the Brandon Road neighborhood are unlikely to cross the street to use the sidewalk, and then cross the street again to get to the businesses on the south side of West Main Street.
- Mason Road north of Mason Road School. Currently, the only sidewalk leading to the School starts at West Main Street and stops before the school building. Students walking to the school from the north have no sidewalks whatsoever. This is also a factor for children walking to the High School from Mason Road.
- Dudley-Oxford Road north of its intersection with Mason Road. There are sidewalks along this road south of the Mason Road intersection, however, there are numerous residential streets that empty out onto the northern portion of Dudley-Oxford Road and students from this area should have a sidewalk from Wayne Avenue all the way down to the Mason Road intersection.

The Town should allocate a sum of money each year for new sidewalk construction. The Board of Selectmen, acting under their capacity as Highway Commissioners, should work with the

Police Department to develop a list of sidewalk construction priorities.

Another potentially hazardous pedestrian safety issue occurs when the Little League teams use the ballfields at the Intermediate School. Cars park along Pine Street and School Street, causing pedestrians to walk in the road to get to the ballfields. Dudley Little League officials should work with the Board of Selectmen (Highway Commissioners) and the Police Department to address this situation. Perhaps the old vacant school property could be used for new parking. A major limitation here is that disabled residents could not access the ballfields from this site. Perhaps handicapped parking could be provided at another nearby location that would provide easier disabled access to the ballfields.

Mass Transit Alternatives:

Mass transit can be loosely defined as a public transportation service designed to move groups of people from one place to another. Such services include: busses; trains; planes; and boats for some areas of our nation. Typically, mass transit serves persons who would find it difficult to make their trip by any other mode. Such persons include: the elderly, people with disabilities, young people, and people living on limited incomes. Mass transit opportunities are essentially non-existent in Dudley, however, such opportunities can be found at the regional level.

Bus Service: The regional bus service provided by the Worcester Regional Transit Authority (WRTA) continues to play a small but vital role in central Massachusetts. The WRTA currently has 32 bus routes, all of which radiate from downtown Worcester. Overall, the WRTA serves approximately 1% of all person travel trips in the region. The CMRPC estimates that on any given business day, there are 1,620,000 person travel trips in the region. A 1999 study conducted for the WRTA identified 16,000 riders per weekday, or roughly 1% of the region's total person travel trips.

The number of people served by the WRTA is expected to increase due to the region's non-attainment status with regard to federal air quality standards. An increase is also expected due to the fact that the WRTA system leads into downtown Worcester, which serves as the region's commerce center and is the site of several large-scale development projects. Although Dudley has been a member of the WRTA since 1982, there are no fixed bus routes that serve Dudley directly. However, the WRTA does have a fixed route (Bus Route #42) that extends into downtown Webster, whose terminus is in front of the Dunkin Donuts shop along Main Street (Route 12). Although Dudley does not have the population density to support fixed route bus service, Dudley elders and residents with disabilities do have access to weekday paratransit (van) service funded by the Worcester Regional Transit Authority and provided by S.C.M. Elderbus. Close to 5,000 trips are provided annually.

There are also two interstate bus services operating out of downtown Worcester: Peter Pan and Greyhound. These carriers provide transportation to Boston and various points out of state.

Train Service: Worcester's historic Union Station will soon serve as the region's primary rail passenger hub. The station currently provides inter-city train service through Amtrak, and

commuter service through the Massachusetts Bay Transportation Authority (MBTA). Amtrak is the region's sole railroad passenger service provider, and Worcester is the region's only stop along Amtrak's New York-to-Boston route.

There is an extensive freight rail network in central Massachusetts that is currently utilized by five freight rail providers. The Providence & Worcester Railroad Company (P&W) maintains an active rail line beginning in southeast Connecticut and terminating in downtown Worcester. This rail line enters Massachusetts in Webster and extends north directly parallel to the French River. This active rail line extends into east Dudley for about a half a mile, just east of Oxford Avenue.

P&W also owns an inactive rail line, known as the Southbridge Branch, that extends into Dudley at two points. Beginning with its intersection with the active rail line in downtown Webster, the Southbridge Branch extends into southeast Dudley for a little over a mile before entering Thompson, Connecticut. This rail line curves through Thompson and back into Dudley in a northwesterly direction, paralleling the Quinebaug River. This section of the inactive Southbridge Branch traverses slightly less than three miles through southwest Dudley. The rail line terminates in downtown Southbridge. All told, the abandoned Southbridge Branch is roughly eleven miles in length.

It should be noted that the State is interested in acquiring the inactive Southbridge Branch railbed for use as a recreation trail (hiking/biking). The Massachusetts Department of Environmental Management (DEM) has surveyed the condition of the railbed and has been negotiating a sale price with P&W intermittently over the last decade. Support for this effort has been documented in the 1988 Dudley Open Space and Recreation Plan, the 1997 Southbridge Open Space and Recreation Plan, and the 1999 French-Quinebaug Watershed Plan prepared by UMass Amherst on behalf of DEM. The P&R is currently asking \$1.4 million for the eleven-mile railbed, while DEM is currently offering \$910,000. Negotiations continue as this document was prepared.

It should also be noted that the railbed originally planned for the "Grand Trunk" railroad is located on the eastern side of the Quinebaug River, near the inactive Southbridge Branch rail line. The Grand Trunk railroad was originally envisioned as a rail line linking Providence, Rhode Island to Palmer, Massachusetts. Although a great deal of land was cleared for this project during the early 1900's, no tracks were ever laid for this line. The land for the Grand Trunk line has since reverted to the adjacent property owners.

Air Travel: Worcester Regional Airport represents the only inter-state air travel provider for central Massachusetts, however, there are five local airports that are designed to accommodate smaller, lighter, general aviation aircraft. These local airports include: the Oxford Airport (located in east Oxford near the Millbury town line); the Southbridge Municipal Airport (located in the northwest corner of town); the Spencer Airport (simply a gravel runway for small planes); the Hopedale Industrial Park Airport; and the Tanner-Hiller Airport in New Braintree. The Southbridge Municipal Airport was substantially upgraded in 1996.

Transportation - Goal

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

Transportation and Pedestrian Safety - Recommendations

1. The Town should develop a town-wide roadway improvement program. There are numerous roads in Dudley in need of repair, and neither the Highway Superintendent, nor the Board of Selectmen (Highway Commissioners) have a prioritized plan for addressing the needed improvements. Currently, roadway improvements are made on an as-needed basis, and are often not coordinated with other municipal departments (particularly sewer and water). This has led to a band-aide approach to roadway repair and an inefficient use of what little money is appropriated for this purpose. Clearly, this approach has not been successful as the Master Plan survey respondents gave the Highway Department the lowest rating of all of the Town's municipal services.

A coordinated and comprehensive approach to roadway repair is needed, and the Board of Selectmen need to involve the water and sewer departments in this planning process. The CMRPC 1997 Local Pavement Management Study would be a good starting point for preparing a town-wide roadway improvement program. Any highway improvement program needs to address how to pay for identified roadway improvements. The Town should work with MassHighway and CMRPC to include eligible Dudley roads in the region's annual Transportation Improvement Project (TIP). Many of Dudley's worst roads would be eligible for Federal-Aid. In addition, the Town may need to increase the amount of local tax revenues used for highway maintenance. Substantial roadway improvement projects should be designed and construction overseen by a licensed civil engineer. This would require some outside help as such expertise does not currently exist within the Highway Department. Responsible Municipal Entity: the Board of Selectmen, acting under their capacity as Highway Commissioners, and the Highway Department. Once a roadway improvement program has been developed, the Town's Board of Selectmen need to request that eligible Dudley projects get included the annual TIP.

2. The Town should address its problem intersections. The first priority here is obviously the Route 12/197 intersection. As stated previously, this is Dudley's highest accident intersection with 30 accidents occurring here since 1996. Since both Routes 12 and 197 are eligible for Federal-Aid funds, the Town should work with MassHighway and CMRPC to get an intersection improvement project into the annual TIP. Coordinated signalization, as suggested in the CMRPC 1997 Regional Transportation Plan, should be considered as part of the intersection improvement project. Once an improvement plan has been finalized, Dudley should work with the MPO to obtain construction funding through the annual TIP process. Responsible Municipal Entity: the Board of Selectmen, acting under their capacity as Highway Commissioners, and the Highway Department. The Police Department should periodically share their intersection accident report data with the Selectmen.

3. The Town should address its structurally deficient and functionally obsolete bridges. As mentioned previously, Dudley has two structurally deficient bridges and five functionally obsolete bridges. The Town should work with MassHighway and CMRPC to obtain Federal-Aid bridge repair funds through the TIP process for those eligible bridges, and State highway aid for those bridges that are not eligible for Federal-Aid. Responsible Municipal Entity: the Board of Selectmen, acting under their capacity as Highway Commissioners, and the Highway Department.

4. The Town should prepare a sidewalk improvement plan. As mentioned previously, there

are several roadways in Dudley where the lack of sidewalks have the potential to imperil pedestrian safety. The Town should allocate funding every year for new sidewalk construction. Responsible Municipal Entity: The Board of Selectmen (Highway Commissioners) should work with the Police Department to develop a list of sidewalk construction priorities. Funding these efforts should be supported by the Board of Selectmen.

5. The Town should address the pedestrian safety issues at Intermediate School Site. As mentioned previously, pedestrian safety issues have been identified at this site when the Little League uses the ballfields at the Intermediate School at the end of School Street. Cars park along Pine Street and School Street, causing pedestrians to walk in the road to get to the ballfields. This situation becomes even more dangerous during night games because of the darkness. Responsible Municipal Entity: Dudley Little League officials should work with the Board of Selectmen (Highway Commissioners) and the Police Department to address this situation. Perhaps the old vacant school property could be used for new parking. A major limitation here is that disabled residents could not access the ballfields from this site. Perhaps handicapped parking could be provided at another nearby location that would provide easier disabled access to the ballfields.

6. The Town should continue its membership in the Worcester Regional Transit Authority (WRTA) and support its efforts to provide public transportation alternatives on a regional scale. A viable para-transit system keeps cars off the roads, which in turn helps to reduce congestion and facilitate circulation. Responsible Municipal Entity: The Board of Selectmen and Dudley's representatives to the WRTA.

7. The Town's representatives to the WRTA and the CMRPC should continue to brief the Board of Selectmen on regional transportation projects and issues that may have relevance to Dudley.

8. The Town should ensure that utility companies who dig up town-maintained roads for the placement of their utility lines incur the full cost of repairing the roadway to its previous condition. Responsible Municipal Entity: the Board of Selectmen, acting under their capacity as Highway Commissioners, and the Highway Department.

DUDLEY MASTER PLAN 2000

Vision Statement

"In the Year 2010, we want Dudley to be a cohesive community that provides quality education and municipal services, with a stable rural character and unique identity, where people can feel comfortable living and working."

Transportation - Goal:

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

Town Government - Goal:

Provide high quality municipal and educational services, facilities and infrastructure that are consistent with the fiscal health and environmental quality of the Town and that meet the current and future needs of Dudley's residents, businesses, industries and institutions.

Open Space and Recreation - Goal:

To promote Dudley's rural character by retaining its open space lands and expanding the Town's passive and active recreation facilities for the enjoyment of the community.

Natural Features - Goals:

1. Preserve, enhance, and publicize the Town's natural resources, agricultural resources, historic buildings and sites, unique cultural resources and significant views.
2. Maintain and enhance a high quality environment, which can accommodate an attractively built community with minimal impact on air and water quality, and the Town's natural habitats.

Housing - Goals:

1. Maintain the Town's 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 Town government's ability to provide public facilities and services, protect the environment, and preserve and

enhance community character.

Economic Development - Goals:

1. Promote economic development that is in keeping with the Town's character and natural environment, and that results in long-term tax revenue and good paying local jobs.
2. Promote a business friendly environment where new businesses can find a streamlined regulatory process, modern high-speed communication availability, a qualified workforce, and a competitive tax rate.

Land Use - Goal:

Promote the most efficient use of Dudley's land resources. This includes the most effective placement of commercial/industrial ventures while complimenting the established pattern of residential development and Dudley's agricultural heritage.