

Enrollment Projections
Prepared for
Hanover Public Schools

February 2002

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Enrollment Projections: Hanover Public Schools

1. Background

This study was requested in order to help the Town of Hanover assess its public schools needs for the coming years. The Town of Hanover includes three public schools and a public middle and high school as well as a number of private schools, in town and in the wider area. The public schools may need renovation, physical changes or consideration of a new facility.

In order to understand what are the present and future needs, school enrollment projections are necessary. It is hoped that this report will serve as a useful tool in planning for the Town's educational needs.

Many variables are considered in projecting future enrollment: Some of them are total population in town, how many children will be born, how many children already live in Hanover and how many will move in over the next ten years. Although as a whole the U.S. population is "aging"; i.e. there are fewer school-aged children per adult, each particular place can have its own population profile. A town that has attractive housing, transportation and school options may attract more families with school-aged children. This seems to be the case in Hanover.

In general, population projections are more accurate when the sampling size is larger. Thus the overall projections for total enrollment will be more accurate than for individual grades. Birth rates have been averaged, so any particular grade size may be different than what is projected here. Prediction of future school population is not, and cannot be an exact science. Therefore, although specific numbers are given, actual enrollment levels may of course vary.

In the course of preparing this material, historic school enrollment data was obtained from the Hanover Public Schools Superintendent's office. Information regarding housing and economic development was researched with the help of the Hanover Town Planning & Building departments. The Town Clerk provided yearly town population census information. Existing publications were reviewed. Demographic data and statistics were obtained from the US Census, Massachusetts state community development data and the Massachusetts Institute for Social and Economic Research (MISER).

2. Summary of Findings & General Trends:

According to the 2000 US Census, there are 13,164 residents in Hanover. This is a relatively large increase of 10.5% over the population in 1990. The Town of Hanover does their own population census, which showed both a higher population and a higher growth rate than the US census. According to Town data, the population of Hanover grew by 12.7% over the last decade. In comparison, the entire state of Massachusetts grew by only 5.53% over the last decade.

This shows that there has been strong, steady growth in the town, despite a very small decrease in population in the past year. This growth is reflected in a slow but steady and even growth in school population over the last ten years. Class size, in all the elementary grades, grows from year to year. More children attend kindergarten than are born in Hanover five years previously. That means that there is a net migration of families into Hanover.

Will this growth continue? Comparison of the 1990 and 2000 US Census shows that the number of school aged children grew much more than other population groups. That means today there is a higher percentage and a higher number of school-aged children in Hanover than ten years ago. These children will cycle through the school system over the next ten years. Comparison of state, county and town populations in the 2000 US Census shows that there is a higher percentage of children in Hanover than in the state or county.

Building activity, as evidenced by building permits, is steady. There are a number of development projects presently being reviewed by the planning department, so it seems that building activity will continue. Real estate sales, residential and other, have been steadily rising, both in volume and in median sales price.

Private school enrollment of Hanover students seems to be stable; while rising slightly within the past five years, it has held steady at about 10% of all students from Hanover.

All of these factors seem to point to continued student population growth in Hanover, over the next ten years. The only mitigating factor is the general aging of the US population: As the “baby boomers” age, smaller numbers of people have school-aged children. But this seems to be offset by the net in-migration into Hanover. People with school aged children are moving in to the town, as evidenced by growth in both the absolute number and the percentage of school-aged children in Hanover.

Will growth rates rise? The number of births is a highly variable factor, but in the past two years, births were down significantly from what was perhaps a momentary peak in 1999. Building permit activity and real estate sales and volume point to a fairly steady and stable rate of growth. The Town Planning Department does not see any unusually large number or size of subdivision applications on the horizon. General economic outlooks do not forecast a rise in growth. Since one or more of these factors would likely be a sign of accelerated growth, it seems reasonable to assume that while growth may continue at its present pace, **there are few indicators that would point to a *higher rate of growth than presently existing.***

Lani Ravin ~~del~~ Hanover Public Schools ~~del~~ February 2002

3. Comparison to Previous Studies

This projection is compared to past projections that were done in the past for the Town of Hanover. These past projections focused on different issues and naturally did not have access to the most recent data. The following works were examined and compared to the present school enrollment projection:

- ?? Population Study, Town of Hanover 1970 – 2020; Planning Board, 1993
- ?? Hanover Public Schools Enrollment Projection, 2007-8 Philippe Plageman, 1997
- ?? NESDEC 10-Year Student Projection Figures NESCEC, 10/17/01

The population study done in 1993 is not specific to school-aged population. It does not break out age groups in more detail than four-year groupings. It does not address the question how many children will attend Hanover public schools (as opposed to private schools, for example). It also presents a population projection for 2020 without any prior years. It is difficult, therefore, to compare results. In general, the approximate number of school-aged children projected in 2020 is similar to the number of students projected in this (Ravin, 2002) study to attend Hanover Public Schools in 2011.

This is not surprising, since population projections done at the time proved to be low, in retrospect. It may be that the strong in-migration of families with school aged children was not foreseen exactly as it has developed.

The 1997 Plageman projection for 2007 also has a slightly different focus, as it provides a projection for one year only. The study has a wider view, and gives a *range* for class size. It does not seem to take into account specific class size variations that already exist. The ranges given are wide enough so that the present study's projections mostly fall within these ranges, albeit at the higher end.

The NESDEC projection is the most similar, in scope and timing, to this study. Two items are different:

- ?? The NESDEC study did not have access to the actual number of children born in Hanover over the last two years. This number was actually smaller than projected.
- ?? The NESDEC study did not project for grades of children not yet born. That is, the farthest projection for kindergarten was 2006, which would include children already born in 2001 (although, as noted above, the exact number was not known at the time of the study). Therefore, while grade size for the older grades is given through 2011, kindergarten through grade 5 is not. Therefore total school (K-12) enrollment is not projected through 2011.

The present 2002 study does project how many children will be born in Hanover over the next five years, so a full school enrollment projection is provided for the next ten years. The two enrollment projections are not very different for the first few years. The

projections begin to diverge when this study takes into account the lower births of the last two years. When other grades are examined separately, this projection is slightly lower.

It seems that similar assumptions for future growth have been made by both studies, although the NESDEC study seems to take into account a slightly higher rate of growth than what has historically existed within the last ten years.

The NESDEC projection is not complete for the years 2007 – 2011 therefore no overall comparison is possible for these later years. It should be noted, however, that the accuracy of any school enrollment projection is less when it is more than five years into the future, since the children who will attend kindergarten have not yet been born.

4: Public School Enrollment Projections:

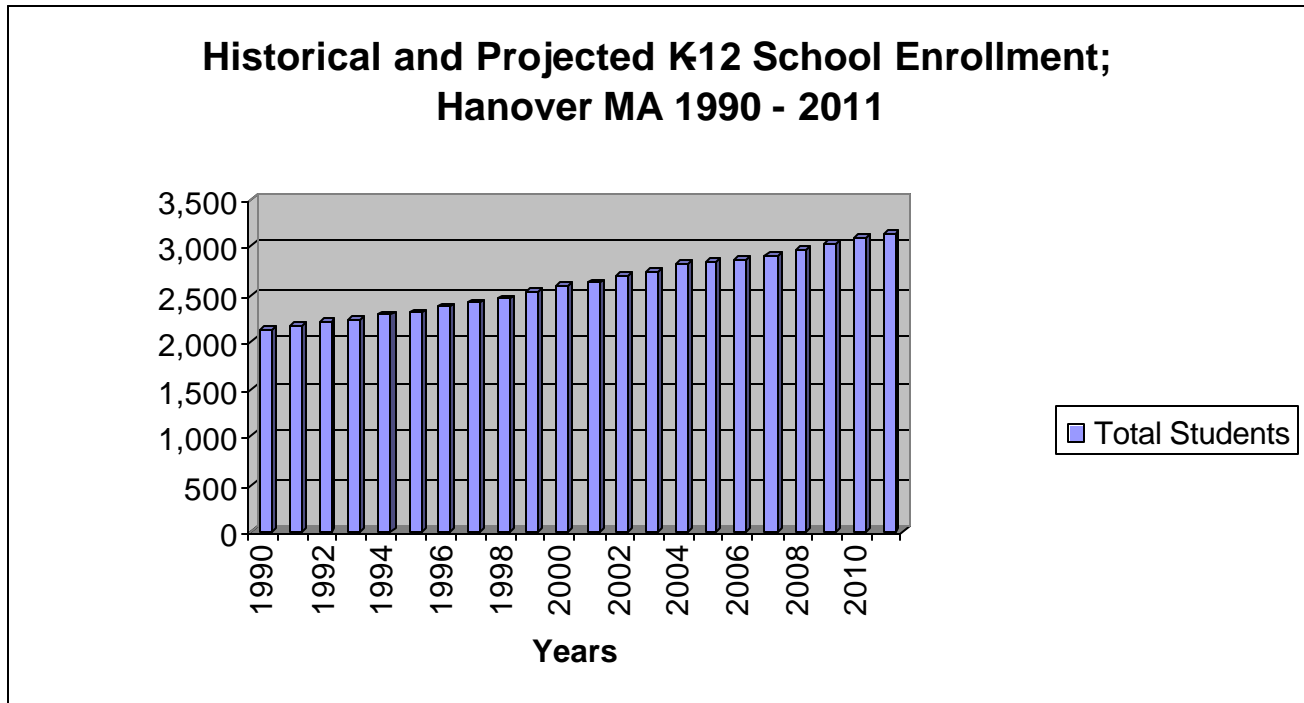
Table 4.1: Public School Enrollment Projection for Hanover Public Schools

	KG	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	TOTAL
1990	185	189	216	167	161	174	176	144	161	117	128	134	163	2,115
1991	190	203	186	218	178	168	180	176	143	136	125	130	131	2,164
1992	194	198	200	188	214	175	171	179	169	122	137	120	133	2,200
1993	204	194	205	195	188	218	178	172	168	127	119	133	121	2,222
1994	203	213	202	202	193	191	222	179	168	142	129	119	131	2,294
1995	163	220	219	197	210	195	185	220	173	137	149	131	117	2,316
1996	188	180	228	224	201	220	184	191	211	136	138	148	127	2,376
1997	190	201	189	223	219	203	209	202	188	176	136	141	144	2,421
1998	207	202	204	194	225	223	197	205	204	144	176	135	144	2,460
1999	197	218	202	206	191	228	223	195	210	168	160	195	138	2,531
2000	209	202	223	203	212	191	228	221	198	182	167	168	194	2,598
2001	219	225	211	228	201	218	196	229	221	171	183	168	159	2,629
2002	234	232	231	213	228	204	216	199	225	182	175	188	167	2,698
2003	214	248	238	233	212	231	202	218	195	185	186	180	187	2,741
2004	262	226	254	240	232	215	228	204	213	161	189	191	178	2,817
2005	205	277	232	256	239	236	213	231	201	176	164	194	189	2,844
2006	212	217	284	234	256	243	233	216	228	165	179	169	193	2,865
2007	231	224	223	286	233	259	240	236	213	188	169	185	168	2,902
2008	234	245	230	225	286	237	257	243	234	176	192	173	183	2,970
2009	237	247	251	232	224	290	234	260	242	192	179	197	172	3,025
2010	240	250	254	253	232	228	287	237	263	200	197	184	195	3,090
2011	242	253	257	256	253	235	225	290	240	217	204	202	183	3,135

Source for historical school enrollment data: Hanover School Dept.

Note: Preschool and special education students are not included in this enrollment projection.

Chart 4.1:



4.2: Assumptions:

- ?? Current trends in population growth, birth rate and public/private school enrollment ratios continue similar to the last 6 – 11 years average.
- ?? Although within the state and in the US as a whole, the population is aging, here in Hanover it is assumed that the birthrate will remain steady for the next five years, because of in-migration of families with school-aged children.
- ?? Net positive migration from grade to grade over the past 6 - 11 years is assumed to continue throughout the next decade.
- ?? Fluctuations in the economy were NOT factored into this projection.

Table 4.2: Projected Enrollments in Various Grade Combinations

Year	K-2	K-4	5 - 8	9 - 12
2002	702	1,144	843	711
2003	710	1,157	847	737
2004	757	1,234	864	719
2005	729	1,235	886	724
2006	728	1,232	927	706
2007	696	1,230	963	708
2008	731	1,256	990	724
2009	763	1,232	1,051	741
2010	773	1,276	1,038	776
2011	783	1,315	1,014	805

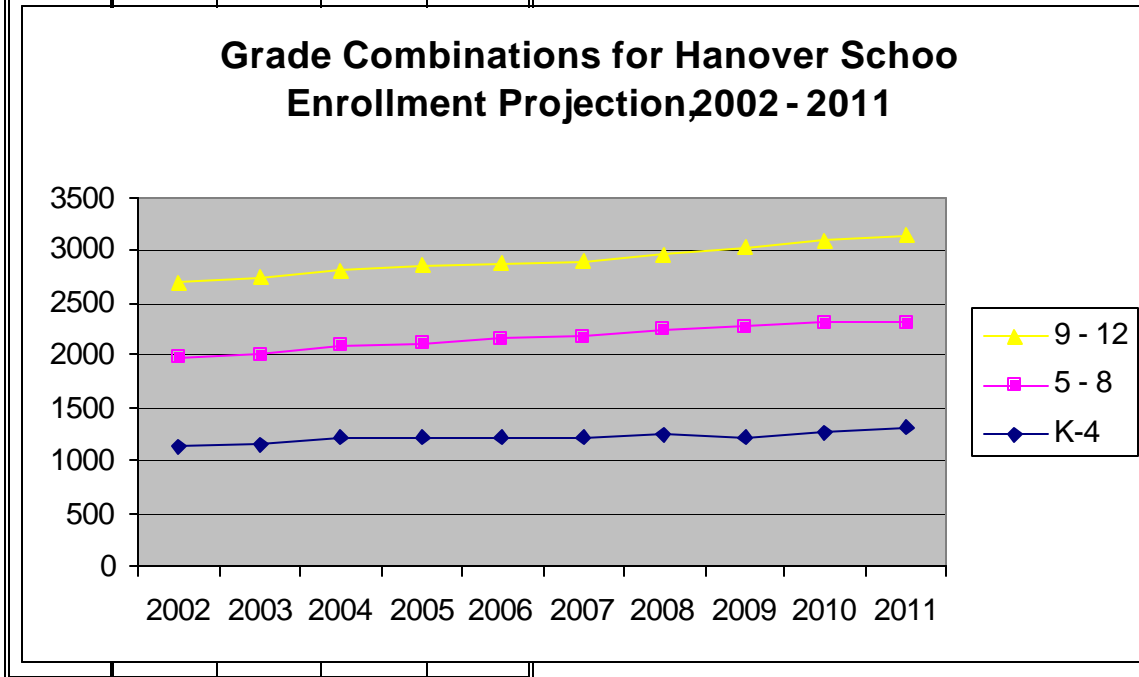


Chart 4.2

5. Background Data

5.1: Birth and Total Population: Past and Projections

In order to calculate kindergarten classes for 2006 - 2011, historic population levels, births and birth rates were examined. Existing trends are assumed to continue for the next five years. Birth rates are extremely variable but for the purposes of this study an average was assumed.

The projections of births and total population below are for purposes of estimating new kindergarten classes only.

Table 5.1

Year	Total Pop.	Births
1990	12,220	126
1991	12,356	126
1992	12,370	156
1993	12,385	141
1994	12,400	139
1995	12,588	145
1996	12,862	168
1997	13,097	171
1998	13,245	156
1999	13,407	191
2000	13,776	150
2001	13,636	155
2002	13,820	171
2003	14,006	174
2004	14,195	176
2005	14,387	178
2006	14,581	181

?? Total population for 1992 and 1993 is an estimate only; exact data is not available .

?? Source for historical total population data is the Town of Hanover.

?? Births in 2001 are documented only until mid December, 2001.

?? Source for historical birth data: MISER.

?? **Boldfaced: Estimate or Projection.**

5.2 Private School Attendance Trends

Table 5.2: Private School Attendance of Hanover Residents, 1990 - 2001

Year	K	1	2	3	4	5	6	7	8	9	10	11	12	Total
1990														
1991														
1992	9	13	6	12	12	24	17	14	12	25	24	36	32	236
1993	12	9	13	7	16	11	7	19	12	51	25	25	33	240
1994	5	11	7	7	7	9	7	6	14	21	25	11	11	141
1995														
1996	10	11	12	12	13	12	15	19	11	24	17	24	15	195
1997	2	14	6	13	11	11	13	12	19	19	31	30	22	203
1998	8	10	19	5	13	14	20	22	15	43	45	32	34	280
1999	7	8	10	8	12	16	14	25	23	34	37	26	22	242
2000	7	8	9	13	9	13	18	16	21	37	29	32	33	245
2001														

Source: Hanover School Dept.

Note: 1. Data not available for all years.

2. Does not include North River Collaborative

Table 5.3: Regional Vocational/Technical/Agricultural School Enrollments for Hanover Residents (North River Collaborative)

Year	9	10	11	12	Total
1990					
1991					
1992	4	2	7	6	19
1993	13	8	1	7	29
1994	12	13	8	1	34
1995	13	11	12	6	42
1996	14	13	10	9	46
1997	13	14	9	9	45
1998	11	13	13	8	45
1999	11	13	13	8	45
2000	6	18	6	8	38
2001	6	9	17	6	38

Source: Hanover School Dept.

Note: Data not available for all years.

Table 5.4 Total Historic Non-Public/Public School Enrollment Comparison

	Private Schools	NRC	Total non-public	Total Public	% non-public/ Total
1992	236	19	255	2,200	10.39%
1993	240	29	269	2,222	10.80%
1994	141	34	175	2,294	7.09%
1995		42		2,316	
1996	195	46	241	2,396	9.14%
1997	203	45	248	2,438	9.23%
1998	280	45	325	2,460	11.67%
1999	242	45	287	2,548	10.12%
2000	245	38	283	2,634	9.70%
2001		38			

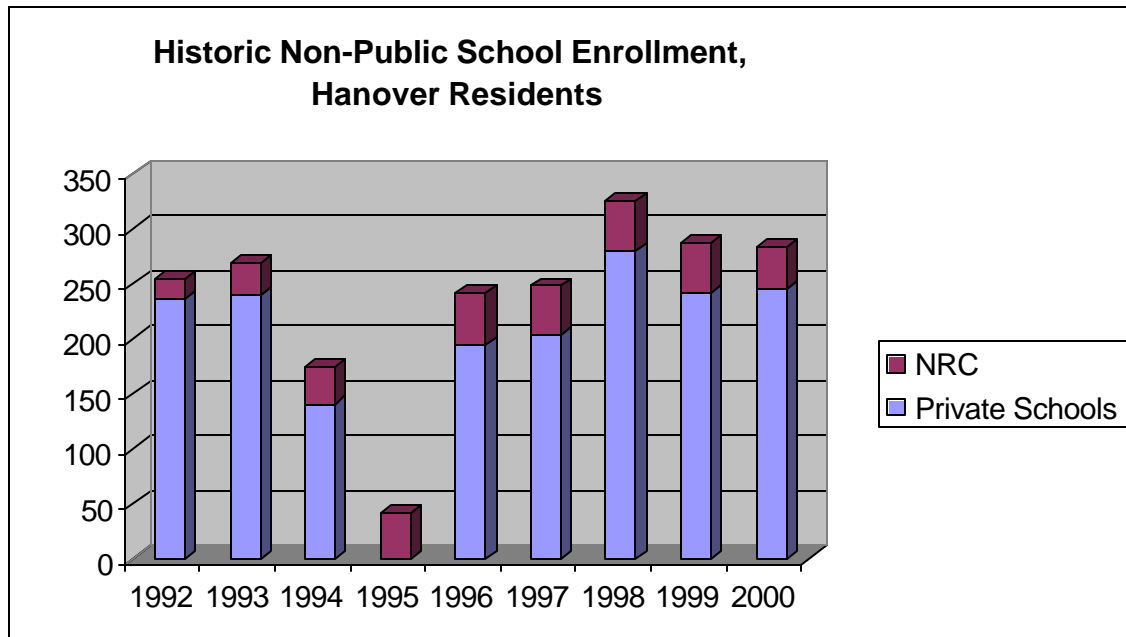


Chart 5.1

Note: Complete data not available for 1995 and 2001.

5.3 Total Population Trends: Hanover MA: 1990 & 2000

Table 5.5 Percentage Growth of Different Age Groups: Hanover MA: 1990 - 2000

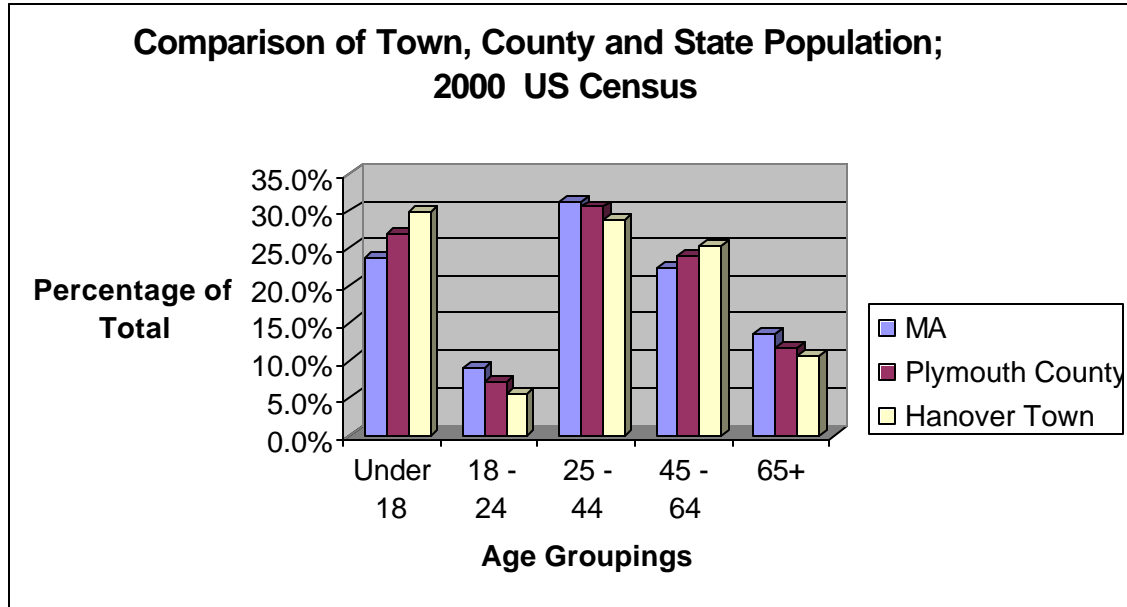
	1990	2000	1990	2000	% Growth
Under 5	856	1,013	7.19%	7.70%	18.34%
5 - 9	909	1,095	7.63%	8.32%	20.46%
10 - 14	899	1,174	7.55%	8.92%	30.59%
15 - 19	1,007	894	8.45%	6.79%	-11.22%
20 - 24	854	481	7.17%	3.65%	-43.68%
25 - 34	1,598	1,337	13.42%	10.16%	-16.33%
35 - 44	2,163	2,457	18.16%	18.66%	13.59%
45 - 54	1,572	2,067	13.20%	15.70%	31.49%
55 - 59	530	792	4.45%	6.02%	49.43%
60 - 64	425	475	3.57%	3.61%	11.76%
65 - 74	691	752	5.80%	5.71%	8.83%
75 - 84	319	484	2.68%	3.68%	51.72%
85 & over	89	143	0.75%	1.09%	60.67%
Total:	11,912	13,164	100.00%	100.00%	10.51%

Source: US Census

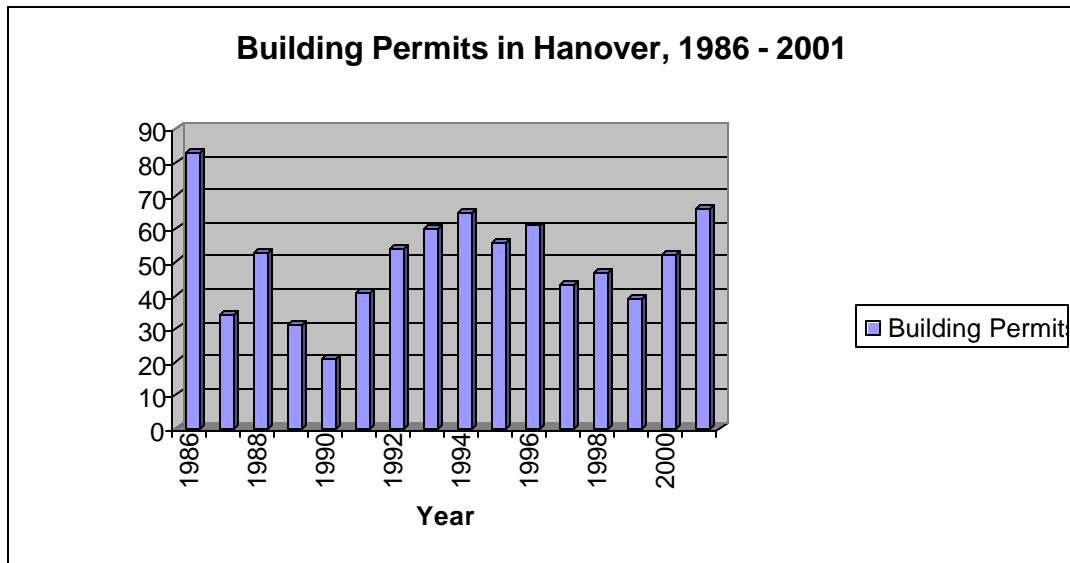
Note: For school enrollment calculations, town data regarding total population was used.

Table 5.6 2000 US Census Comparison: State, County and Town

	MA	Plymouth County	Hanover Town
Under 18	23.6%	26.8%	29.8%
18 - 24	9.1%	7.2%	5.6%
25 - 44	31.3%	30.4%	28.8%
45 - 64	22.4%	23.9%	25.3%
65+	13.5%	11.8%	10.5%
Total Pop.	6,349,097	472,822	13,164

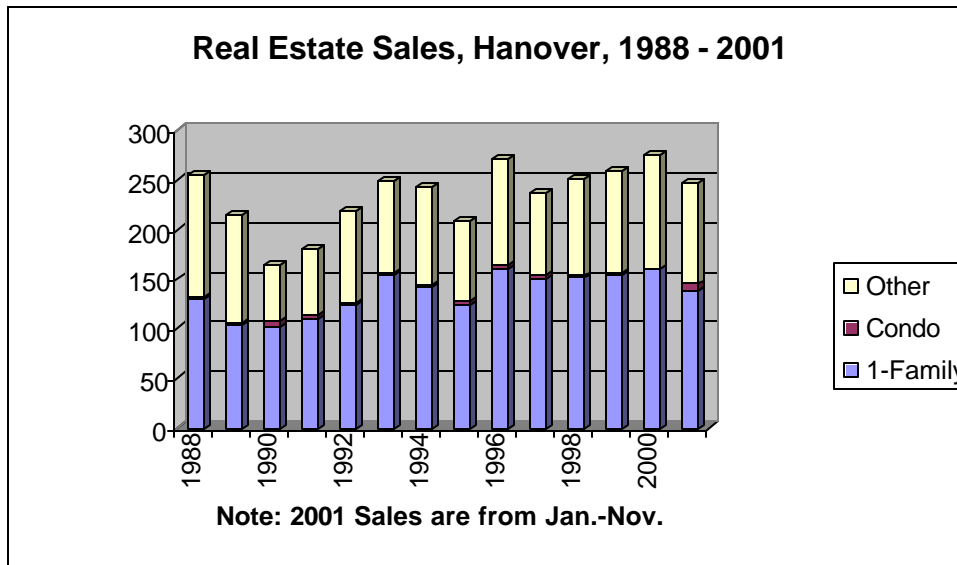


5.4 Building Permits in Hanover



Source: Town of Hanover

Chart 5.5: Real Estate Transactions in Hanover



Source: "Town Stats", by The Warren Group, 2002

6. Comparison with Other School Enrollment Projections

NESDEC, October, 2001

Year	Births	Kgtn	1	2	3	4	5	6	7	8	9	10	11	12	Total
2000	173														
2001	173														
2002		239	230	231	213	229	203	220	194	231	191	171	188	165	2,705
2003		218	251	236	233	214	231	205	218	196	200	191	176	184	2,753
2004		267	229	257	238	234	216	233	203	220	170	200	197	172	2,836
2005		242	280	235	260	239	236	218	231	205	190	170	206	193	2,905
2006		243	254	287	237	261	241	238	216	233	177	190	175	202	2,954
2007			255	260	290	238	264	243	236	218	202	177	196	172	
2008				261	263	291	240	267	241	238	189	202	182	192	
2009					264	264	294	242	264	243	206	189	208	178	
2010						265	267	297	240	267	210	206	195	204	
2011							268	270	294	242	231	210	212	191	

Plageman, 1997

Year	Births	Kgtn	1	2	3	4	5	6	7	8	9	10	11	12	Total
2007	161	212	227	227	227	227	226	226	226	226	179	171	171	171	2,716

Comparison between School Enrollment Projection Studies:

Year	2002 Ravin	2001 NESDEC	1997 Plageman
2002	2,698	2,705	
2003	2,741	2,753	
2004	2,817	2,836	
2005	2,844	2,905	
2006	2,865	2,954	
2007	2,902		2,716
2008	2,970		
2009	3,025		
2010	3,090		
2011	3,135		

Chart 6.1

