



2017-18 Enrollment Projections



TO: Dr. Cathy MacLeod, Superintendent of Schools, Hopkinton, MA
FROM: Donald G. Kennedy, Ed.D., Demographic Specialist
DATE: November 7, 2017
RE: Revised Enrollment Projections

We are pleased to send you the enclosed documents displaying the past, present and projected enrollments for the Hopkinton School District. We have used the figures given to us by the District and we assume that the method of collecting the enrollment data has been consistent from year to year. Included on the final three pages are school-by-school projections.

The primary factor driving the intensity of Hopkinton's growth is the number of new families with children of school age who are moving into Hopkinton in recent years - insuring that continued enrollment increases can be foreseen. NESDEC's enrollment projection totals from fall of 2016 data came within 31 students of the actual Grade K-12 enrollment total for fall, 2016 (3,429 projected v. 3,460 actual). In Grades K-5, 1,500 pupils were projected v. 1,501 enrolled. In Grades 6-8, 800 students were forecast v. 806 enrolled; and at the high school, 1,129 pupils were forecast v. 1,153 actual.

The two factors now at work which will have the greatest effect upon future enrollments are: a. a steady, though slightly smaller, number of births to Hopkinton residents and, b. a buildup to new in-migration - which had slowed, due to the 2008 Recession. The students currently in Grades 2-10 were born during a period when Hopkinton was averaging 165 births per year. More recently (and expected over the next 6-7 years) are 118-132 births annually... averaging about 37 births fewer per year. Hard-hit Connecticut experienced an 8.6% decline in births from 2007 to 2009 (in part caused by the economic Recession), the largest decline among the six New England states - followed by an 8.1% decline in Rhode Island births, the two states with the highest rates of unemployment in the New England region - **Massachusetts births declined by only -3.9%** over these three years. Economists are forecasting a slow-yet-steady recovery from the current rates of unemployment which, in turn, may lead to additional in-migration and births. The unemployment rate as of September, 2017 in CT was 4.6%; RI 4.2%; US non-farm unemployment 4.2%; **MA 3.9%**; New England

average 3.9%; ME 3.7%; VT 2.9%; and NH 2.7% - other nearby states: NY 4.9%; PA 4.8%; and NJ 4.7%. The rate of unemployment influences the likelihood of improving real estate sales, residential construction and thus affects the number of new families moving into the community – the US unemployment rate was above 10% during the Great Recession of 2008.

The ever-changing relationship between Hopkinton births and Kindergarten enrollments is displayed on the B-K graph. Hopkinton, over the past seven years, has registered about 149 Kindergarteners for every 100 births (five years previous), a relationship which has been increasing. This fall there were 160 Kindergarteners for every 100 births as opposed to only 104 Kindergarteners for every 100 births in 2011-12. NESDEC's Kindergarten projections for 2017-18 anticipated 226 children v. 203 enrolled. At present, Hopkinton has a birth-to-Kindergarten ratio in the top 10% of New England school districts. Next year's Grade 1 is expected to be about 12% larger than the previous year's Kindergarten class.

“Hidden Trends” within the district: Like many nearby communities, Hopkinton continues to experience fluctuations in enrollment and in/out-migration in Grades 1-8. There are additional trends and counter-trends to consider. More so than other grade levels, **Grades 1-8 in most districts tend to be quite stable in their numbers.** Grades 9-12 are excluded from the calculation as there tends to be additional fluctuation for reasons (especially Career and Technical High Schools) having little to do with students moving in/out of the community. Regarding the Grade 1-8 stability, if last year the Grade 1-7 total was 1,800 children, then (if no one moved in or out) this fall's Grades 2-8 again would equal about 1,800 – the same cohort of children. Because Grades 1-8 tend to be the most stable in total K-12 enrollment, these Grades 1-8 are excellent places to discover “hidden trends” that otherwise might go unnoticed and provide a useful yardstick by which to measure a district's tendency toward in-/out-migration. **In the case of Hopkinton, we know that the school district is currently experiencing “net in-migration” of families with school age children. For example, the 1,799 children in Grades 1-7 in 2015-16 increased by 58 children to 1,857 students in Grades 2-8 in 2016-17, and the 1,772 children in Grades 1-7 in 2017-18 increased by 76 children to 1,848 students in Grades 2-8 in 2017-18. This net increase has averaged about +54 students per year over the last five years (with increases in five-out-of-five school years).** The presence of a mixed in-migration trend is evidence of the complexity of enrollments in these unsettled economic times. Analysis of these hidden trends provides an additional benchmark by which to assess enrollment trends.

Over the next three years of these projections, K-5 enrollments are forecast to **increase** by +26 children; Grades 6-8 to **increase** by +50 pupils and the high school level to **increase** by +15 students (all within the next three years – as classes move up the grades. After that point these projections show an **increase** in enrollment in Grades K-5 of +36 students, combined with an **increase** of +58 students at Grades 6-8; and an **increase** of +27 students in Grades 9-12 – as classes age their way through the grades. That said, it is possible that real estate turnover will have increased further, bringing in additional new families - see the “Projections” page. **Although the Year #1-3 forecast likely will occur, the longer-term future is better viewed as a possible**

direction which may be affected by consistently improving real estate conditions. That longer-term future also will be affected by the real estate market and the number of babies-yet-to-be-born...it is quite likely that the birth numbers will increase as the new families move in.

Will these patterns of increasing enrollments really last for as long as ten years? That is difficult to answer. All projections are more reliable for Years #1-5 in the future; and less reliable in Years #6-10 – as some many factors can change. As soon as the economy and real estate situation becomes more stable in the region, additional in-migration may occur in Hopkinton. Many communities in the region sold during 2008-2014 only about 60-80% as many homes as in 2003-2007. Building permits also had slowed as well; see the “Additional Data” table below. As additional families move in, forecasted declines may moderate. See the description on Page 4 below regarding “reliability of projections”. The birth numbers used in the projections, through 2015, are from the MA Department of Public Health. The “estimated” years, beginning with 2016 are a rolling five-year average, which NESDEC has found to be the most accurate method of estimation. Local City/Town Clerks have up-to-date information on local births however do not have access to the number of Hopkinton residents born out-of-state (information which will eventually become known to the MA DPH).

The two most difficult grades to forecast in all districts are Kindergarten and Grade 9. The latter is difficult to anticipate, as there are so many options for Grade 9 (in vocational or agricultural schools, private or parochial non-public schools, etc.). Kindergarten can be difficult to project based upon births alone, as many districts have large numbers of “net move-ins/move-outs” who are ages 1-4. **Some districts take extra steps to track 3 and 4-year olds with a local census, or report to NESDEC the known number of 4-year olds in local preschools/nursery schools which typically enroll Kindergarteners in the district. Knowing this information helps NESDEC to project Kindergarteners more reliably...as does data from the Kindergarten Screening in districts which also track 3 and 4-year old siblings (or neighbors) at that time. The more data, in addition to births, which is sent to NESDEC regarding the incoming Kindergarten class, the greater is the chance that “enrollment surprises” will be minimized.**

Will many new families be moving into our school district? Everyday across America, 10,000 “Baby Boomers” celebrate their 65th birthday - a phenomenon which will continue for a decade. New England has a disproportionately large share of these senior citizens, many of whom had planned to “downsize” their living arrangements, yet postponed putting homes on the market due to the Great Recession. School enrollments are influenced strongly by the number of real estate sales, as these contribute new families moving into many districts. In over 80% of districts, the number of real estate sales is 4-5 times larger than the number of building permits for new residential construction – **thus the number of real estate sales often is a more important factor than building permits.**

In New England, how rapidly will additional homes be placed on the market? A mid-2014 study using data from the Federal Housing Finance Agency, Bureau of Economic Analysis and the U.S. Census Bureau directly links home prices to the “real Gross Domestic Product” (GDP) in each of the nine regions in the country. However New England ranks only 7th among the 9 regions in the recovery of its regional economy (as measured in “the bubble” prior to the Recession, in “real GDP”). Comparing the regional economies from 2 Quarter of 2007 to 4 Quarter 2013: W. South Central = +18.6% (that is, many jobs are available); W. North Central +11.8%; Pacific +7.4%; E. South Central + 5.6%; Middle Atlantic + 5.1%; Mountain + 4.1%; **New England +3.4%**; South Atlantic + 2.1%; and E. North Central + 2.0%. Home sales prices are +14.6% in the W. South Central region (including Texas, Arkansas, Louisiana, and Oklahoma) with the strongest “real G.D.P.” v. -4.4% in New England. Thus, although real estate sales and rentals are very strong in some New England towns and cities, there are many senior citizens still refraining from placing their homes on the market – as house prices still may be rising. New England births, however, are likely to remain at low levels, due to the advanced age of the New England population.

Continuing Declines Expected in New England’s PK-12 Enrollments

The US Department of Education, from 2013 to 2025, anticipates changes in PK-12 enrollment of +7.8% in the South; +4.47% in the West, -2.7% in the Midwest; and -4.8% in the Northeast.

State	Fall 2013	Fall 2025 Projected	PK-12 Decline	% Change, 2013-2025
CT	546,200	468,600	-77,600	-14.2%
ME	183,995	161,900	-22,095	-12.0%
MA	955,739	910,700	-45,039	-4.7%
NH	186,310	159,100	-52,410	-14.6%
RI	142,008	133,900	-8,108	-5.7%
VT	88,690	79,600	-9,090	-10.3%

Source: USDE, National Center for Education Statistics, *Projections of Education Statistics to 2025*, Table 3, pages 40-41.

Despite overall declines regionwide, NESDEC has found in over 300 sets of enrollment projections during 2016-17 that about 29% of the districts are expected to increase their enrollment by some amount over the next decade – with 71% of the districts forecast to decline below their 2016-17 PK-12 total enrollments.



Analyzing Your Enrollment

Historical Public Enrollments

1. After the "YEAR" column can be found the "BIRTHS" column. The number of births to residents for each of eleven years is displayed. Note any trends, e.g., have births been decreasing? increasing? leveling off? Kindergarten and Grade 1 enrollments normally are quite responsive to these fluctuations.
2. Look **down** the K and 1 columns, noting the direction of the trend. This affords a comparison of these classes over a ten-year period. Add the K and Grade 1 enrollments of the first school year recorded, and compare them with the sum of the current K and Grade 1 enrollments.
3. Take the first K class and follow it diagonally to trace its movement to Grade 1, 2, etc. up to its current 10th grade status. This comparison (which can be accomplished for other classes also) gives some measure of the effects of migration in your school district. If a sixth grade class today is larger than it was as a K class six years ago, then net in-migration probably has occurred; if it is smaller, then net out-migration probably has occurred.
4. Compare each K class with the previous year's graduating class. Note which is larger and by what amount one surpasses the other. Larger graduating classes generally reflect declining enrollments; larger K classes generally indicate increasing enrollments.
5. In the "Grade Combinations" section, note the trends of elementary, middle school and high school enrollments. A significant and consistent trend in these summaries usually results in the corresponding trend for projected enrollments. If enrollments are leveling off in the elementary grades after a period of decline, then the secondary enrollments might be expected to continue to decline for several years until the leveling off experience has had time to take hold at the secondary grades.

Enrollment Projections

1. Note the trends exhibited in the total K-12 (or 1-12) projection for the next five years as well as the projections for various grade

combinations. The trends on this page should generally exhibit a continuation of the trends mentioned above for historical enrollments, although the **rate** of change may be quite different.

2. Look at the births in the most recent years and note whether the trend is up, down, or level.
3. Make similar comparisons as appropriate on this page as were suggested for the "Historical Public Enrollments" page.

PROJECTION METHODOLOGY

Cohort component (survival) technique is a frequently used method of preparing enrollment forecasts. NESDEC uses this method, but modifies it in order to move away from forecasts which are wholly computer or formula driven. Such modification permits the incorporation of important, current town-specific information into the generation of the enrollment forecasts (such as the volume of real estate sales, building permits, in/out-migration, etc.). Basically, percentages are calculated from the historical enrollment data to determine a reliable percentage of increase or decrease in enrollment between any two grades. For example, if 100 students enrolled in Grade 1 in 2014-15, increased to 104 students in Grade 2 in 2015-16, the percentage of survival would have been 104% or a ratio of 1.04. Such ratios are calculated between each pair of grades or years in school over several recent years.

After study and analysis of the historical ratios, and based upon a reasonable set of assumptions regarding births, migration rates, retention rates, etc., ratios most indicative of future growth patterns are determined for each pair of grades. The ratios thus selected are applied to the present enrollment statistics for a pre-determined number of years. The ratios used are the key factors in the reliability of the projections, given the validity of the data at the starting point. The strength of the ratios lies in the fact that each ratio encompasses **collectively** the variables that account for increases or decreases in the size of a grade enrollment as it moves on to the next grade. Each ratio represents the cumulative effect of the following factors:

1. Real estate turnover and new residential construction;
2. Migration, in or out, of the schools;
3. Drop-outs, transfers, etc.;
4. Births to residents;
5. Retention in the same grade.

RELIABILITY OF ENROLLMENT PROJECTIONS

Projections can serve as useful guides to school administrators for educational planning. In this regard, the projections are generally most reliable when they are closest in time to the current year. Projections six to ten years out may serve as a guide to future enrollments, and are useful for facility planning purposes. However, they should be viewed as subject to change given the likelihood of changes in the underlying assumptions/trends.

Projections that are based upon **the children who already are in the district** (the current K-12 population only) will be the most reliable; the second level of reliability will be for those children already **born into the community but not yet old enough to be in school**. A less reliable category is the group for which an estimate must be made **to predict the number of births**, thereby adding an additional variable. See these three multi-colored groupings on the “Projected Enrollment” slide/page.

How often do the actual enrollments closely match the NESDEC projections? The research literature reports the closest that enrollment forecasters are likely to come to actual enrollments is about 1% variance per year-from-the-known-data. That is, a 1% variance from projection-to-actual “one-year-out” into the future (2% variance “two-years-out” ... 10% variance “ten-years-out”). NESDEC reaches this “highest possible” standard in about 90% of cases. When our NESDEC variance is greater, the reasons often are one of the following: a. imbedded/intervening “hidden” variables (examples: a parochial school closed or other students returned from non-public schools, a charter school opened, the Kindergarten program changed entrance age or to extended/full-day, the high school toughened its course credit/graduation requirements, the District set new attendance boundaries for elementary schools, or the District had well-publicized budget/referendum academic accreditation difficulties); b. the District size was below 500 students, thus subject to fluctuations in total numbers; or c. the District has not done enrollment projections on an annual basis.

Annual updates allow for early identification of recent changes in historical trends. When the actual enrollment in a grade is significantly different (high or low) from the projected number, it is important (yet difficult) to determine whether this is a one-year aberration or whether a new trend may have begun. **In light of this possibility, NESDEC urges all school districts to have updated enrollment forecasts developed by NESDEC each October.** This service is available at no cost to affiliated school districts.



If you would like to extract the information contained in this report for your own documents or presentations, you can use Adobe Acrobat reader to convert the desired information to a “snapshot,” which can be inserted into PowerPoint slides, Word documents, etc. Because the snapshot tool creates a graphic, the image is not editable.

Steps for Using The Snapshot Tool in Adobe Acrobat Reader:

1. Click on Edit Menu (earlier versions of Adobe Reader might require you to click on the Tools menu and then choose “Select and Zoom;”);
2. Choose “Take a Snapshot” (or “Snapshot Tool” in earlier versions);
3. Click and drag around the text, chart, and/or graphics that you would like to capture: your selection will be copied to the clipboard automatically;
4. Click in the document where you would like the information to appear;*
5. Give Paste command.

If you have an earlier version of Adobe Acrobat and these instructions don’t work for you, contact your tech support person, or NESDEC and we will try to assist you. Telephone (508)481-9444 or ep@nesdec.org. Ask for Carol or Christina.

*You may paste your snapshot onto a PowerPoint slide, onto an Excel sheet, or even into a graphics program to save as a separate graphic file (in .jpg or other format), so that it is available for inserting into future documents.

Hopkinton, MA Historical Enrollment

School District: Hopkinton, MA

11/7/2017

Historical Enrollment By Grade																			
Birth Year	Births	School Year	PK	K	1	2	3	4	5	6	7	8	9	10	11	12	UNGR	K-12	PK-12
2002	222	2007-08	52	233	245	258	242	297	291	293	262	275	251	260	226	240	0	3373	3425
2003	215	2008-09	61	231	250	249	269	252	297	283	295	263	256	258	262	226	0	3391	3452
2004	180	2009-10	64	199	274	253	255	273	254	287	282	293	249	264	254	261	0	3398	3462
2005	182	2010-11	51	231	228	284	254	261	276	250	290	282	288	244	257	258	0	3403	3454
2006	172	2011-12	48	179	248	234	298	257	266	268	252	295	270	290	237	272	0	3366	3414
2007	166	2012-13	46	200	200	259	245	305	260	261	264	258	294	286	289	244	0	3365	3411
2008	138	2013-14	54	192	225	214	266	255	305	265	261	274	268	294	286	300	0	3405	3459
2009	133	2014-15	48	216	227	241	224	274	266	307	271	267	266	268	293	294	0	3414	3462
2010	119	2015-16	64	207	239	230	258	221	282	262	307	279	260	269	274	307	0	3395	3459
2011	124	2016-17	65	224	226	250	239	270	226	286	275	311	274	265	271	281	2	3400	3465
2012	127	2017-18	59	203	256	239	263	262	278	234	294	278	312	286	265	290	2	3462	3521

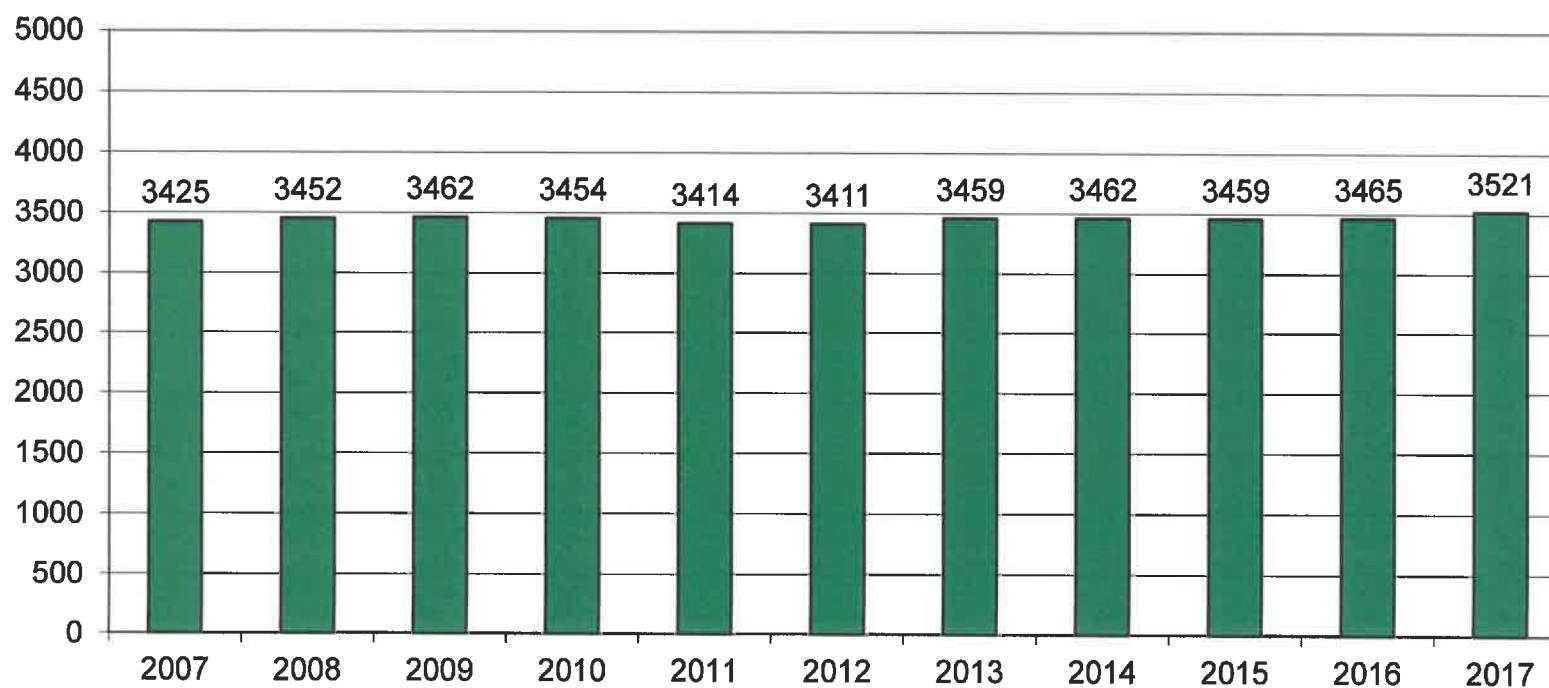
Historical Enrollment in Grade Combinations									
Year	K-1	K-5	2-3	K-8	4-5	6-8	7-8	7-12	9-12
2007-08	478	1566	500	2396	588	830	537	1514	977
2008-09	481	1548	518	2389	549	841	558	1560	1002
2009-10	473	1508	508	2370	527	862	575	1603	1028
2010-11	459	1534	538	2356	537	822	572	1619	1047
2011-12	427	1482	532	2297	523	815	547	1616	1069
2012-13	400	1469	504	2252	565	783	522	1635	1113
2013-14	417	1457	480	2257	560	800	535	1683	1148
2014-15	443	1448	465	2293	540	845	538	1659	1121
2015-16	446	1437	488	2285	503	848	586	1696	1110
2016-17	450	1435	489	2307	496	872	586	1677	1091
2017-18	459	1501	502	2307	540	806	572	1725	1153

Historical Percentage Changes			
Year	K-12	Diff.	%
2007-08	3373	0	0.0%
2008-09	3391	18	0.5%
2009-10	3398	7	0.2%
2010-11	3403	5	0.1%
2011-12	3366	-37	-1.1%
2012-13	3365	-1	0.0%
2013-14	3405	40	1.2%
2014-15	3414	9	0.3%
2015-16	3395	-19	-0.6%
2016-17	3400	5	0.1%
2017-18	3462	62	1.8%
Change		89	2.6%



Hopkinton, MA Historical Enrollment

PK-12, 2007-2017



Hopkinton, MA Projected Enrollment

School District: Hopkinton, MA

11/7/2017

Note: Due to robust real estate sales, enrollments continue to increase at a steady pace.

Enrollment Projections By Grade*																				
Birth Year	Births		School Year	PK	K	1	2	3	4	5	6	7	8	9	10	11	12	UNGR	K-12	PK-12
2012	127		2017-18	59	203	256	239	263	262	278	234	294	278	312	286	265	290	2	3462	3521
2013	118		2018-19	60	202	227	266	252	274	269	281	240	299	275	320	289	278	2	3474	3534
2014	133		2019-20	61	228	226	236	280	263	281	272	288	244	296	282	323	303	2	3524	3585
2015	132	0	2020-21	62	226	255	235	249	292	270	284	279	293	242	303	285	338	2	3553	3615
2016	127	(est.)	2021-22	63	217	253	265	248	260	300	273	291	284	290	248	306	299	2	3536	3599
2017	127	(est.)	2022-23	64	218	243	263	279	259	267	303	280	296	281	297	250	321	2	3559	3623
2018	127	(est.)	2023-24	65	219	244	253	277	291	266	270	311	285	293	288	300	262	2	3561	3626
2019	129	(est.)	2024-25	66	222	245	254	267	289	299	269	277	317	282	300	291	314	2	3628	3694
2020	129	(est.)	2025-26	67	220	249	255	268	279	297	302	276	282	314	289	303	305	2	3641	3708
2021	128	(est.)	2026-27	68	219	246	259	269	280	287	300	310	281	279	322	292	317	2	3663	3731
2022	128	(est.)	2027-28	69	220	245	256	273	281	288	290	308	316	278	286	325	306	2	3674	3743

*Projections should be updated annually to reflect changes in in/out-migration of families, real estate sales, residential construction, and births.

Based on an estimate of births

Based on children already born

Based on students already enrolled

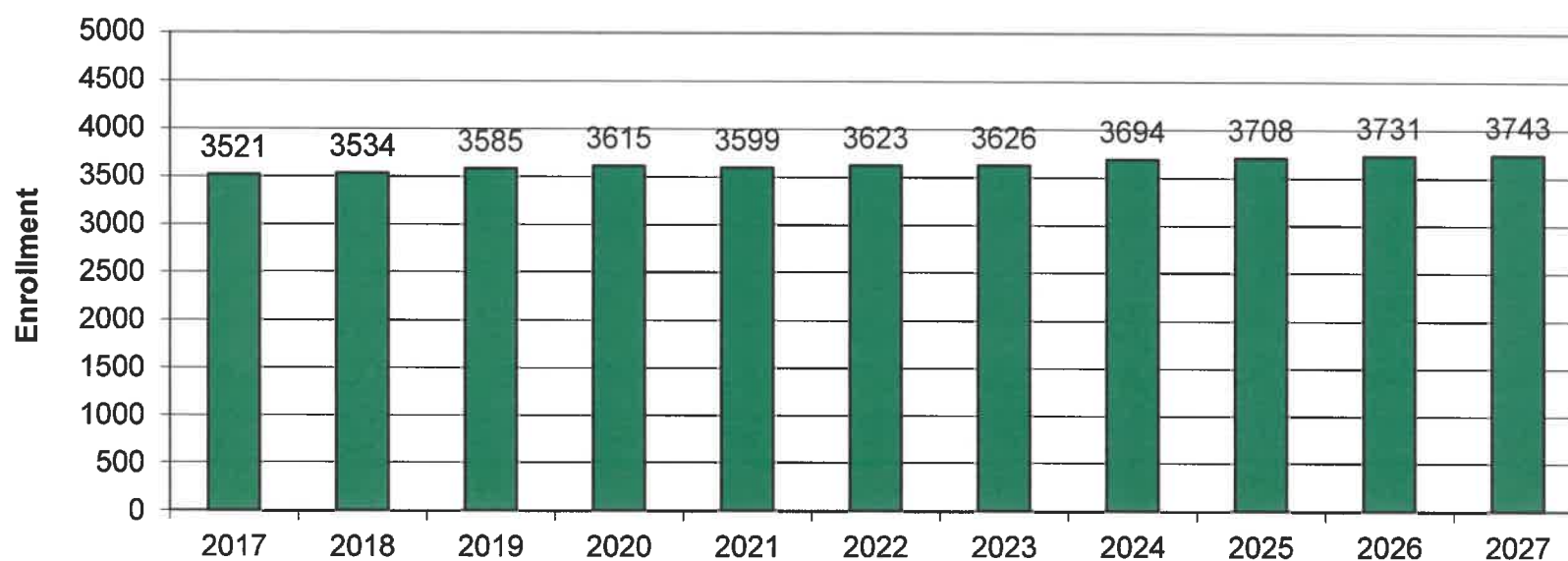
Projected Enrollment in Grade Combinations*									
Year	K-1	K-5	2-3	K-8	4-5	6-8	7-8	7-12	9-12
2017-18	459	1501	502	2307	540	806	572	1725	1153
2018-19	429	1490	518	2310	543	820	539	1701	1162
2019-20	454	1514	516	2318	544	804	532	1736	1204
2020-21	481	1527	484	2383	562	856	572	1740	1168
2021-22	470	1543	513	2391	560	848	575	1718	1143
2022-23	461	1529	542	2408	526	879	576	1725	1149
2023-24	463	1550	530	2416	557	866	596	1739	1143
2024-25	467	1576	521	2439	588	863	594	1781	1187
2025-26	469	1568	523	2428	576	860	558	1769	1211
2026-27	465	1560	528	2451	567	891	591	1801	1210
2027-28	465	1563	529	2477	569	914	624	1819	1195

Projected Percentage Changes			
Year	K-12	Diff.	%
2017-18	3462	0	0.0%
2018-19	3474	12	0.3%
2019-20	3524	50	1.4%
2020-21	3553	29	0.8%
2021-22	3536	-17	-0.5%
2022-23	3559	23	0.7%
2023-24	3561	2	0.1%
2024-25	3628	67	1.9%
2025-26	3641	13	0.4%
2026-27	3663	22	0.6%
2027-28	3674	11	0.3%
Change	212		6.1%



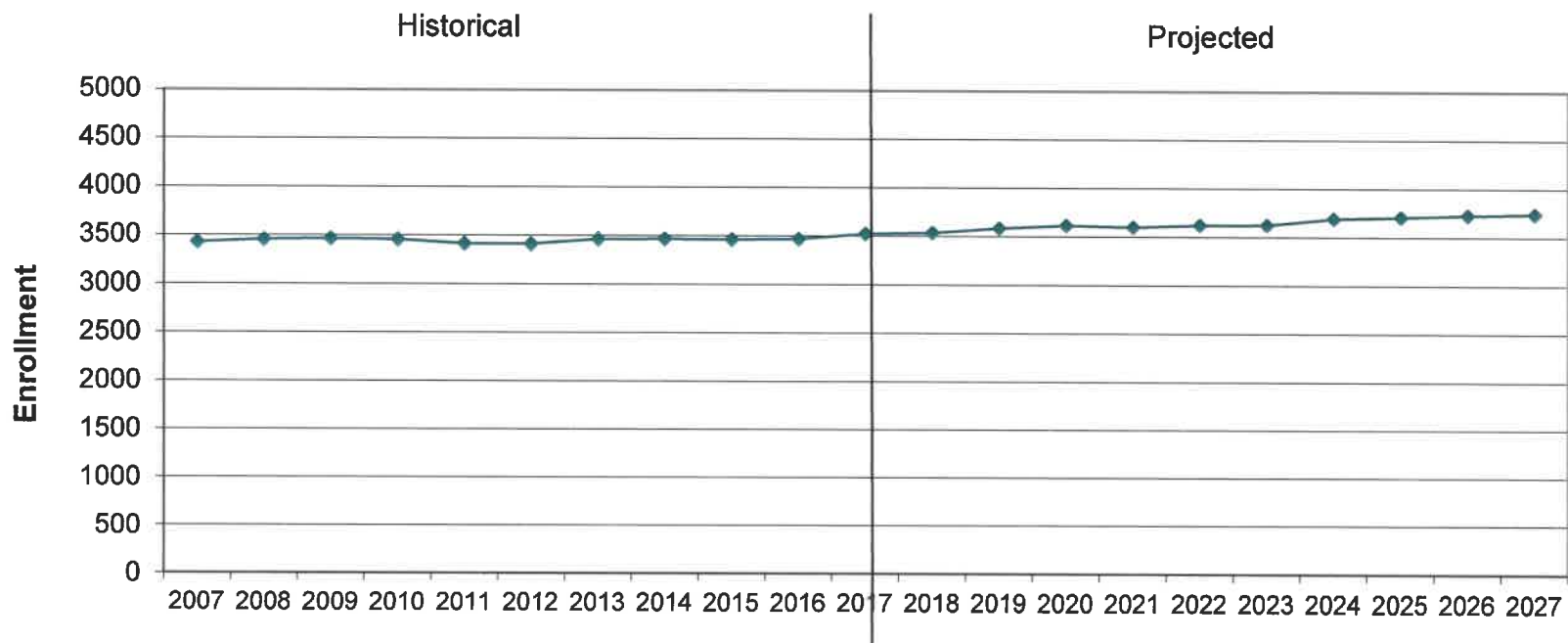
Hopkinton, MA Projected Enrollment

PK-12 TO 2027 Based On Data Through School Year 2017-18

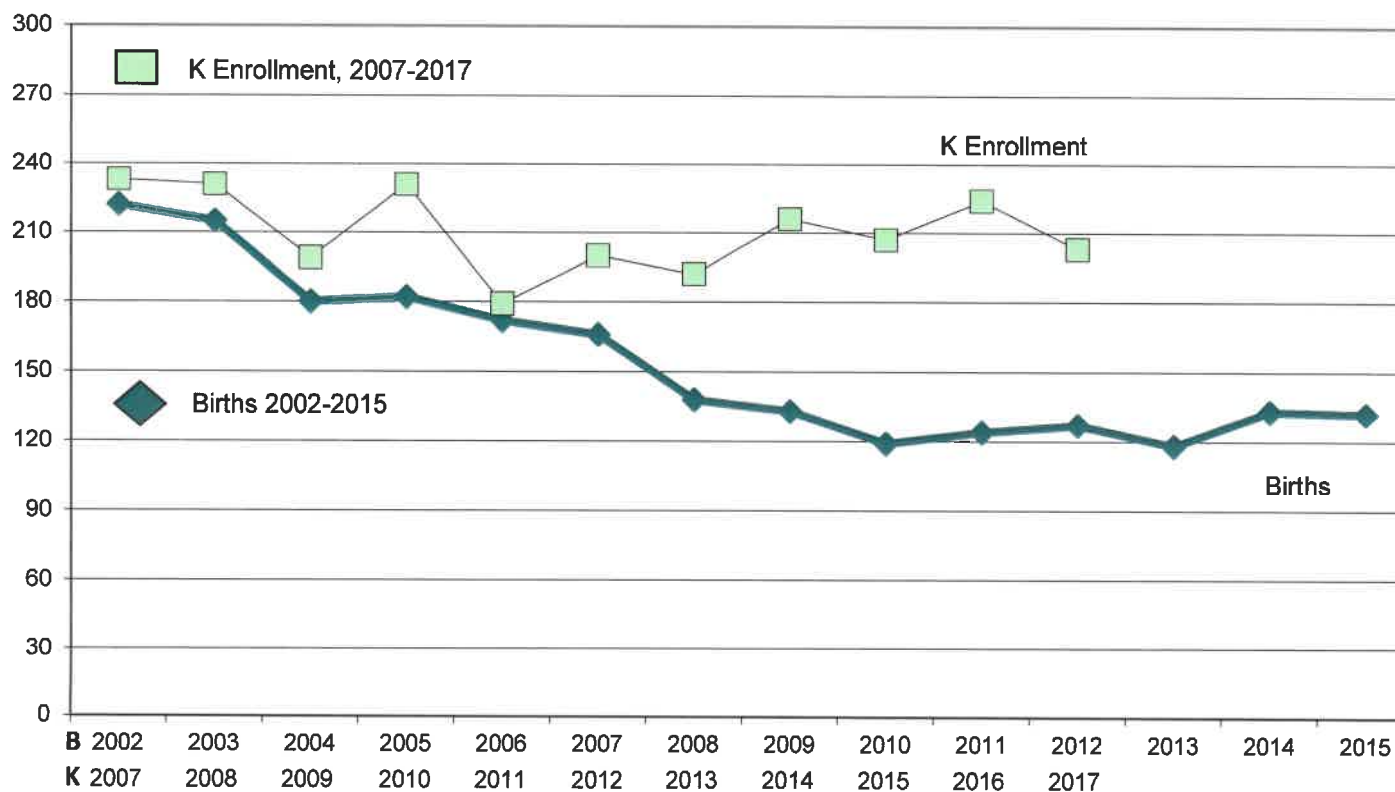


Hopkinton, MA Historical & Projected Enrollment

PK-12, 2007-2027



Hopkinton, MA Birth-to-Kindergarten Relationship



Hopkinton, MA Additional Data

Building Permits Issued		
Year	Single-Family	Multi-Units
2005	51	0
2013	59	54
2014	104	0
2015	128	0
2016	148	242
2017	83 to Sep 30	0

Source: HUD and Building Department

Enrollment History		
Year	Career-Tech 9-12 Total	Non-Public K-12 Total
2005-06	28	184
2013-14	27	176
2014-15	20	167
2015-16	21	n/a
2016-17	29	159
2017-18	28	140

Residents in Non-Public Independent and Parochial Schools (General Education)														
Enrollments as of Oct. 1	K	1	2	3	4	5	6	7	8	9	10	11	12	K-12 TOTAL
	6	6	7	9	8	6	10	11	14	19	14	15	15	140

K-12 Home-Schooled Students	
2017	16

K-12 Residents "Choiced-out" or in Charter or Magnet Schools	
2017	12

K-12 Special Education Outplaced Students	
2017	27

K-12 Choiced-In, Tuitioned-In, & Other Non-Residents	
2017	0

The above data were used to assist in the preparation of the enrollment projections. If additional demographic work is needed, please contact our office.