2012-13 Enrollment Projections

TO: Dr. Robert G. Hasson, Jr., Superintendent of Schools, Cumberland, ME MSAD#51
FROM: Donald G. Kennedy, Ed.D., Demographic Specialist
DATE: November 15, 2012
RE: Enrollment Projections

We are pleased to send you the enclosed documents displaying the past, present, and projected enrollments for the Cumberland-North Yarmouth School District MSAD#51. 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.

NESDEC's enrollment projection totals from fall of 2011 data came within 24 students of the actual Grade K-12 enrollment total for fall, 2012 (2,071 projected v. 2,095 actual). In Grades K-3, 560 pupils were projected v. 576 enrolled; in Grades 4-5, 309 students were projected and 302 were registered as of October 1. In Grades 6-8, 488 pupils were forecast v. 511 actual; and at the high school level, 714 pupils were projected, and 706 enrolled. **Thus, at every level of the school district a reasonably accurate number of students was anticipated by NESDEC …based upon MSAD#51's recent history.**

The two factors at work which will have the greatest effect upon future enrollments are: a continuing decrease in the number of births to Cumberland-North Yarmouth residents and, to a lesser degree, b. the possibility of a resumption of in-migration (which had slowed or disappeared due to the real estate slowdown). In the decade from 1997-2006, Cumberland-North Yarmouth averaged 115 births per year; more recently (and expected over the next 6-7 years) are about 73-96 births annually…about 32 fewer than previously. Incidentally, Maine experienced a 4.7% decline in births from 2007 to 2009 (in large part caused by the economic Recession), the third-smallest decline among the six New England states. Maine's 7.6% rate of unemployment is the third highest among the six New England states, suggesting that real estate sales may begin to bounce back at about the same

time as the other New England states (Rhode Island's unemployment rate continues at 10.5%; Vermont was the lowest in New England with an unemployment rate of 5.4%).

The ever-changing relationship between Cumberland-North Yarmouth births and Kindergarten enrollments is displayed on the B-K graph. Cumberland-North Yarmouth, over the past seven years, has registered about 139 Kindergarteners for every 100 births (five years previous), a relationship which has been quite stable…however this fall there were 151 Kindergarteners for every 100 births five-years-previous, one of the two highest ratios in the past decade, and the cause of NESDEC's 9-student "under-projection" in Kindergarten. Note on the graph, however, that there was one year (2004) in which there were only 117 Kindergarteners for every 100 births. Grade 1 is expected to be about 4% larger than the previous year's Kindergarten class.

Like many nearby communities Cumberland-North Yarmouth continues to experience enrollment fluctuations of in/out-migration in Grades 1-12. Over the past ten years, there were only two years with 12% in-migration (2011 and 2012), three flat years, and five years of 1-2% out-migration. **Over the next five years, K-5 enrollments are forecast to decline by 137 students; by 52 pupils in Grades 6-8; and by 74 students at the high school level, due primarily to the smaller groups working their way up through the school system. Years #6-10 into the future are less reliable in any forecast, as the factors may change substantially.**

Will these patterns really last for as long as ten years? Perhaps not. As soon as the economy and real estate situation improve in the region, additional in-migration may return to Cumberland-North Yarmouth. Many communities in the region sold during 2008-2011, and 2012-to-date only about 60-80% as many homes as in 2005-2007. Building permits have slowed as well; see the "Additional Data" table below. See the description on Page 4 below regarding "reliability of projections".

Recent New England trends in the 275+ district for which NESDEC furnishes projections are primarily on the side of declining enrollments, due to fewer births combined with fewer new families moving into the districts…the latter factor, however, may be changing as it is in Cumberland-North Yarmouth. Large cities and their nearby communities have displayed flat or rising numbers of births, and enough new renters to keep the school population flat or rising slightly.

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 the 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, the greater is the chance that "enrollment surprises" will be minimized.

A word about PK projections: the trend in virtually every district is to serve additional 3 and 4-year olds each year, even if the number of Kindergarteners is in decline. Hence, the rising numbers in PK projections. The reasons why additional 3 and 4-years olds are being served are multiple: more children in need of Special Education services are being identified at early ages, including larger number of students on the autism spectrum. Further, many districts are moving to expand their services to "typically developing" 3 and 4-year olds in order to improve/enhance the educational quality of their existing programs. Longitudinal research continues to indicate both the educational and fiscal benefits of early intervention programs of schooling.

If your district has need for further assistance in the area of long range facilities planning, we urge you to call so that we might discuss our planning services which include our Demographic and Long-Range Enrollment Projection Studies.

We have enclosed suggestions for interpreting the printout and a brief description of the modified cohort survival methodology used in preparing the projections. As always, we would be delighted to hear from you regarding ways in which we might make the enrollment forecasts more useful to you. Please don't hesitate to call or email us at **ep@nesdec.org**. Best wishes for the school year.

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 are normally quite responsive to these fluctuations.

2. Look down the K and 1 columns and note 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 in-migration has probably occurred; if it is smaller, then out-migration has probably 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/junior high, 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

The cohort survival technique is the most frequently used method of preparing enrollment forecasts. NESDEC uses that technique, 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. 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 2010-11, increased to 104 students in Grade 2 in 2011-12, 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 possibility for change in the underlying assumptions/trends.

Projections based upon **the children already 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.** The least 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 difficulties); b. the District size was below 500 students, thus subject to fluctuations; 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 be starting. **In light of this, 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.

Using This Information Electronically

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 8.0:

1. Click on Tools Menu;
2. Choose "Select & Zoom;"
3. Choose "Snapshot Tool;"
4. 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;
5. Click in the document where you would like the information to appear;*
6. 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 Peggy, Don, or Carol.

*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.

Cumberland-North Yarmouth, ME Historical Enrollment

School District: **Cumberland-North Yarmouth, ME (MSAD#51)** **11/15/2012**

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
1997	141	2002-03	0	165	171	195	172	175	221	198	213	196	172	167	149	148	0	2342	2342
1998	106	2003-04	0	169	171	168	195	176	178	216	196	209	188	164	158	148	0	2336	2336
1999	122	2004-05	0	143	179	171	170	202	177	185	222	195	200	181	153	160	0	2338	2338
2000	114	2005-06	0	143	153	179	166	176	190	182	184	220	185	194	179	152	0	2303	2303
2001	130	2006-07	0	192	152	152	183	169	179	191	177	187	193	180	178	168	0	2301	2301
2002	102	2007-08	0	152	188	148	158	185	173	181	194	181	170	180	167	190	0	2267	2267
2003	128	2008-09	0	166	144	187	142	160	183	172	181	200	172	168	175	176	0	2226	2226
2004	106	2009-10	0	140	153	143	194	136	162	191	176	176	190	170	162	183	0	2176	2176
2005	108	2010-11	0	136	154	153	141	194	137	161	190	174	159	189	166	167	0	2121	2121
2006	88	2011-12	0	122	142	157	154	144	197	142	167	191	173	163	182	180	0	2114	2114
2007	96	2012-13	0	145	122	145	164	157	145	197	147	167	184	168	165	189	0	2095	2095

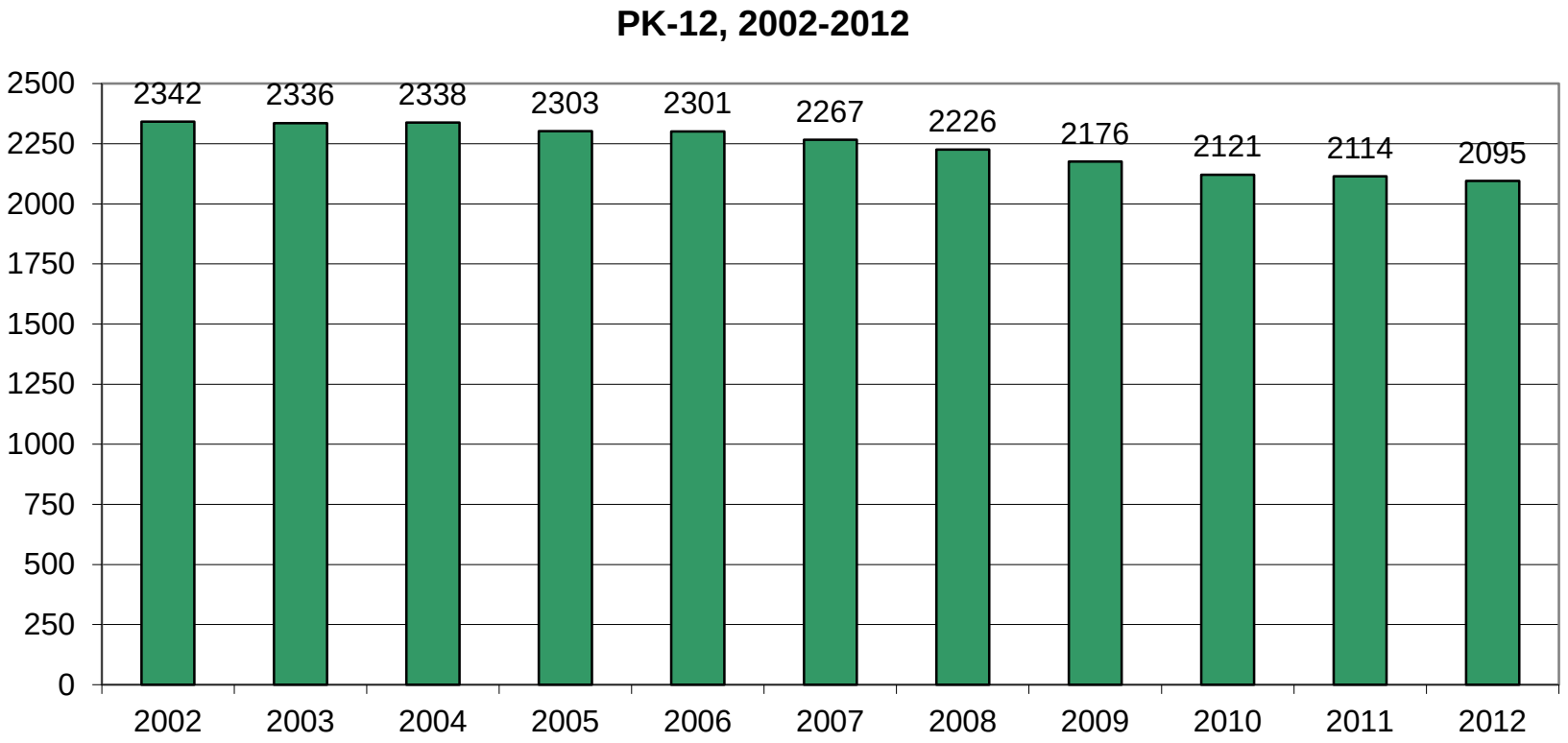
Historical Enrollment in Grade Combinations

Year	K-3	K-5	4-5	K-8	5-8	6-8	7-8	7-12	9-12
2002-03	703	1099	396	1706	828	607	409	1045	636
2003-04	703	1057	354	1678	799	621	405	1063	658
2004-05	663	1042	379	1644	779	602	417	1111	694
2005-06	641	1007	366	1593	776	586	404	1114	710
2006-07	679	1027	348	1582	734	555	364	1083	719
2007-08	646	1004	358	1560	729	556	375	1082	707
2008-09	639	982	343	1535	736	553	381	1072	691
2009-10	630	928	298	1471	705	543	352	1057	705
2010-11	584	915	331	1440	662	525	364	1045	681
2011-12	575	916	341	1416	697	500	358	1056	698
2012-13	576	878	302	1389	656	511	314	1020	706

Historical Percentage Changes

Year	K-12	Diff.	%
2002-03	2342	0	0.0%
2003-04	2336	-6	-0.3%
2004-05	2338	2	0.1%
2005-06	2303	-35	-1.5%
2006-07	2301	-2	-0.1%
2007-08	2267	-34	-1.5%
2008-09	2226	-41	-1.8%
2009-10	2176	-50	-2.2%
2010-11	2121	-55	-2.5%
2011-12	2114	-7	-0.3%
2012-13	2095	-19	-0.9%
Change		**-247**	**-10.5%**

Cumberland-North Yarmouth, ME Historical Enrollment



Cumberland-North Yarmouth, ME Projected Enrollment

School District: **Cumberland-North Yarmouth, ME (MSAD#51)** **11/15/2012**

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
2007	96		2012-13	0	145	122	145	164	157	145	197	147	167	184	168	165	189	0	2095	2095
2008	73		2013-14	0	101	151	124	147	166	159	146	201	147	159	183	165	173	0	2022	2022
2009	84		2014-15	0	116	105	153	126	149	168	161	149	201	140	159	180	173	0	1980	1980
2010	82		2015-16	0	114	121	106	155	128	150	170	165	149	192	140	156	189	0	1935	1935
2011	85	(est.)	2016-17	0	117	119	123	107	157	129	152	174	165	142	191	138	164	0	1878	1878
2012	84	(est.)	2017-18	0	116	122	121	125	108	159	130	155	174	157	142	188	145	0	1842	1842
2013	82	(est.)	2018-19	0	113	121	124	123	127	109	161	133	155	166	157	140	198	0	1827	1827
2014	83	(est.)	2019-20	0	115	118	123	126	125	128	110	165	133	148	166	154	147	0	1758	1758
2015	83	(est.)	2020-21	0	115	120	120	125	128	126	129	112	165	127	148	163	162	0	1740	1740
2016	83	(est.)	2021-22	0	115	120	122	121	127	129	127	132	112	157	127	146	171	0	1706	1706
2017	83	(est.)	2022-23	0	115	120	122	124	123	128	130	130	132	107	157	125	153	0	1666	1666

*Projections should be updated on an annual basis. Based on an estimate of births | Based on children already born | Based on students already enrolled

Projected Enrollment in Grade Combinations*

Year	K-3	K-5	4-5	K-8	5-8	6-8	7-8	7-12	9-12
2012-13	576	878	302	1389	656	511	314	1020	706
2013-14	523	848	325	1342	653	494	348	1028	680
2014-15	500	817	317	1328	679	511	350	1002	652
2015-16	496	774	278	1258	634	484	314	991	677
2016-17	466	752	286	1243	620	491	339	974	635
2017-18	484	751	267	1210	618	459	329	961	632
2018-19	481	717	236	1166	558	449	288	949	661
2019-20	482	735	253	1143	536	408	298	913	615
2020-21	480	734	254	1140	532	406	277	877	600
2021-22	478	734	256	1105	500	371	244	845	601
2022-23	481	732	251	1124	520	392	262	804	542

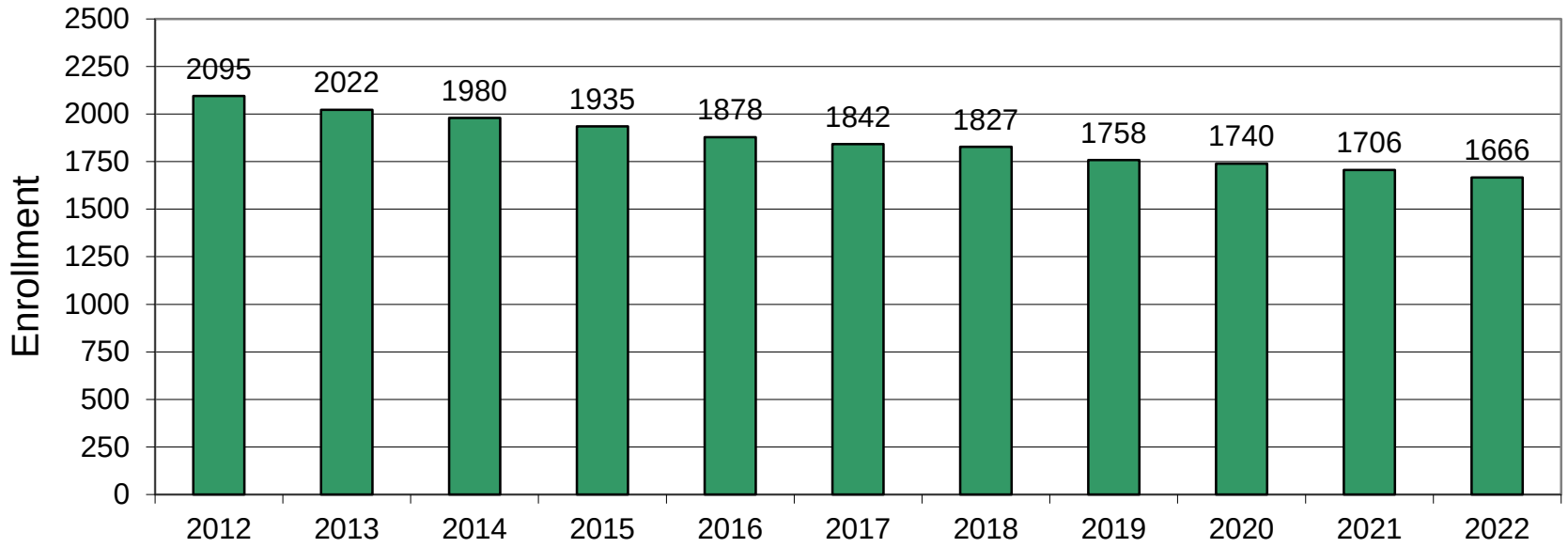
See "Reliability of Enrollment Projections" section of accompanying letter.
Projections are more reliable for Years 1-5 in the future than for Years 6 and beyond.

Projected Percentage Changes

Years	K-12	Diff.	%
2012-13	2095	0	0.0%
2013-14	2022	-73	-3.5%
2014-15	1980	-42	-2.1%
2015-16	1935	-45	-2.3%
2016-17	1878	-57	-2.9%
2017-18	1842	-36	-1.9%
2018-19	1827	-15	-0.8%
2019-20	1758	-69	-3.8%
2020-21	1740	-18	-1.0%
2021-22	1706	-34	-2.0%
2022-23	1666	-40	-2.3%
Change		**-429**	**-20.5%**

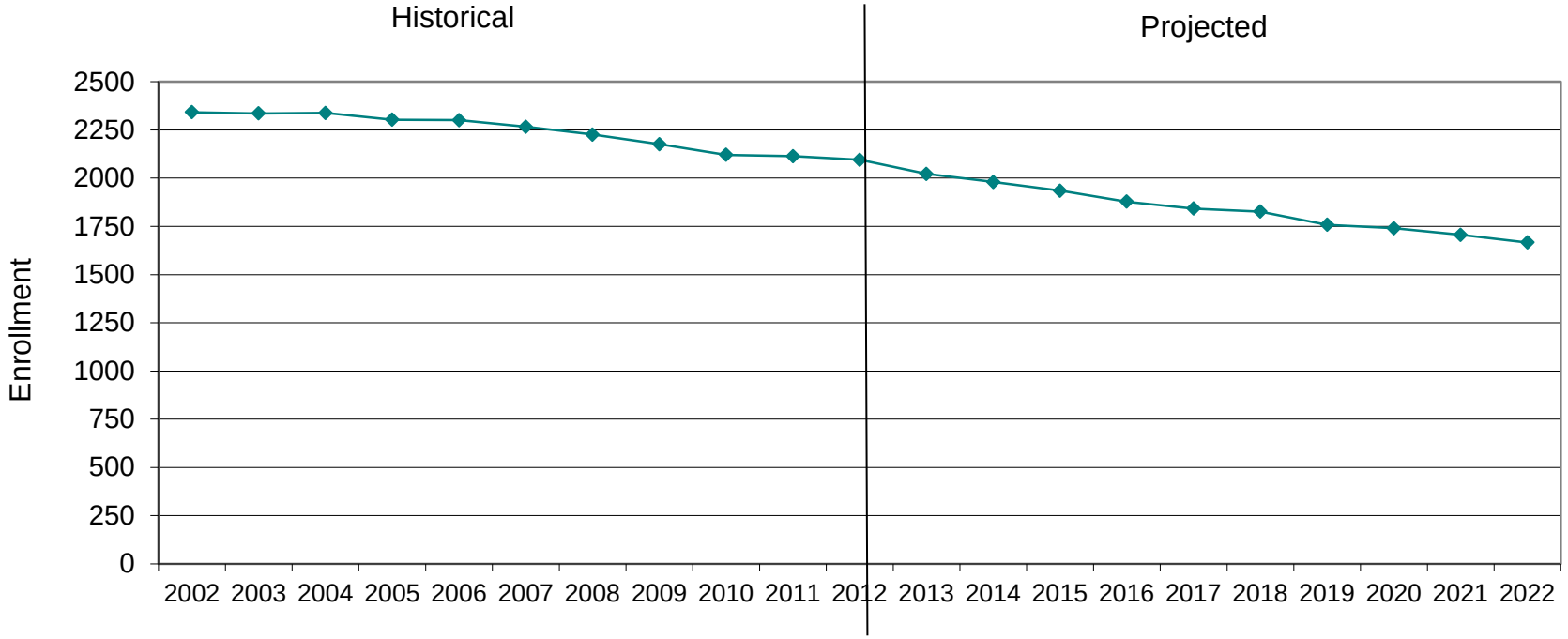
Cumberland-North Yarmouth, ME Projected Enrollment

PK-12 TO 2022 Based On Data Through School Year 2012-13

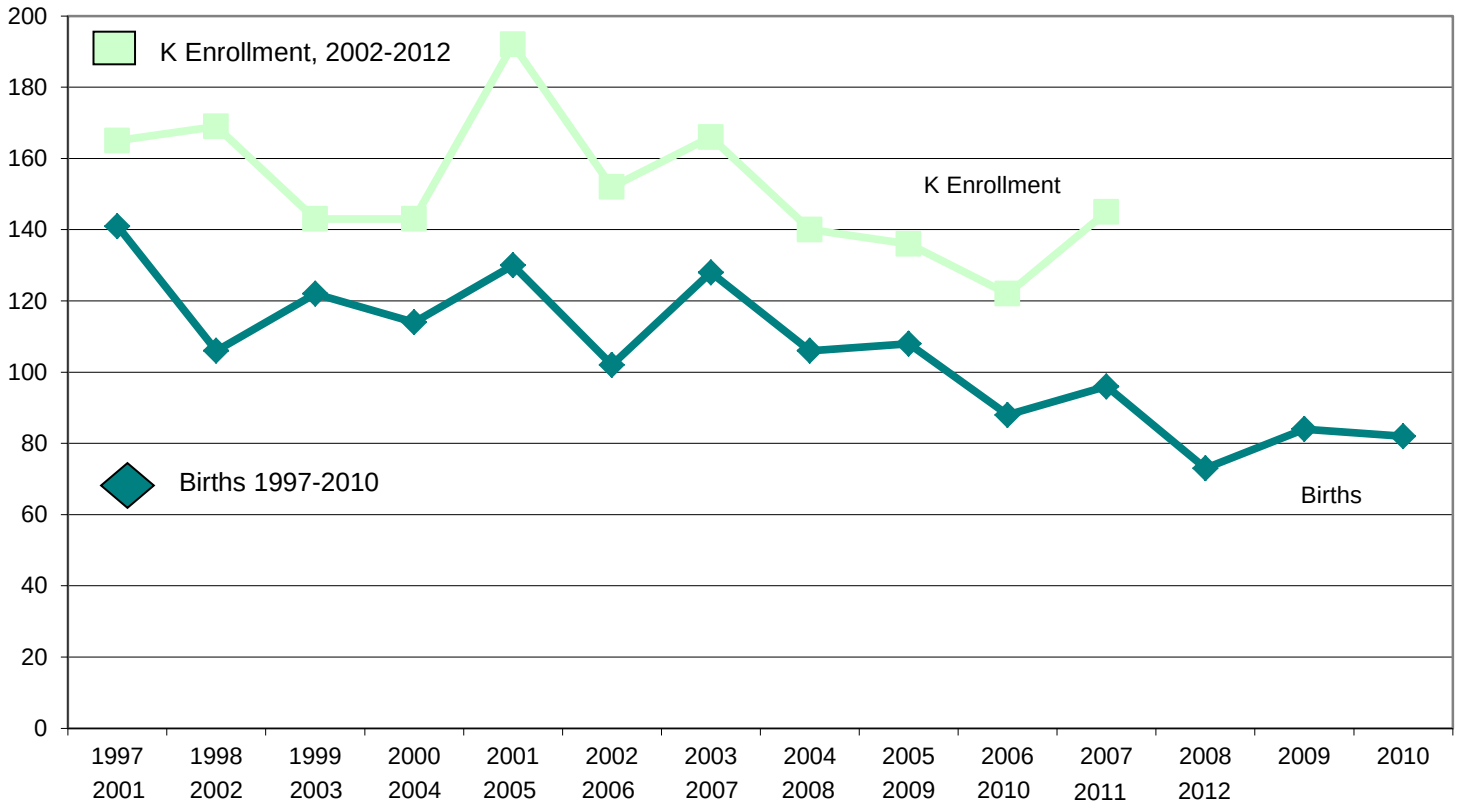


Cumberland-North Yarmouth, ME Historical & Projected Enrollment

PK-12, 2002-2022



Cumberland-North Yarmouth, ME Birth-to-Kindergarten Relationship



Cumberland-North Yarmouth, ME Additional Data

Building Permits Issued		
Year	Single-Family	Multi-Units
2000	120	0
2008	28	0
2009	23	0
2010	20	0
2011	22-C; 9-NY	0
2012	18-C; 6-NY to 9/30	0

Source: HUD and Building Department

Enrollment History		
Year	Voc-Tech 9-12 Total	Non-Public K-12 Total
2001-02	n/a	n/a
2008-09	n/a	n/a
2009-10	n/a	n/a
2010-11	n/a	149
2011-12	n/a	n/a
2012-13	n/a	113

Residents in Non-Public Independent and Parochial Schools (Regular Education)														
Enrollments as of Oct. 1	K	1	2	3	4	5	6	7	8	9	10	11	12	K-12 TOTAL
	6	4	2	3	4	2	10	4	8	19	21	18	12	113

K-12 Home-Schooled Students	
2012	21

K-12 Residents "Choiced-out" or in Charter or Magnet Schools	
2012	n/a

K-12 SpEd Outplaced Students	
2012	1

K-12 Choiced-In, Tuitioned-In, & Other Non-Residents	
2012	11

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