2016-17 Enrollment Projections

TO: Melinda A. Smith, Superintendent of Schools, North Providence, RI.
FROM: Donald G. Kennedy, Ed.D., Demographic Specialist
DATE: April 10, 2017
RE: Enrollment Projections

We are pleased to send you the enclosed documents displaying the past, present, and projected enrollments for the North Providence 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. That said, we have updated the 2015-16 and 2016-17 enrollments with data from RIDE, the Department of Education's officially approved October 1 enrollments for those two school years. It is worth noting that this time of transition is the most difficult of the past 25 years to reliably forecast future enrollments, due to the irregular/uneven pace of communities recovering from the effects of the economic cycle upon real estate markets and school enrollments.

NESDEC's enrollment projection totals from fall of 2015 data came within 8 students of the actual Grade K-12 enrollment total for fall, 2016 (3,405 projected v. 3,413 actual). In Grades K-5, 1,556 pupils were projected v. 1,565 enrolled. In Grades 6-8, 883 students were forecast v. 865 enrolled. And in Grades 9-12, 966 pupils were forecast v. 983 enrolled.

The two factors now at work which will have the greatest effect upon future enrollments are: a. a steady, yet slightly larger number of births to North Providence residents and, b. new in-migration (which had slowed, due to the 2008 real estate slowdown). The students currently in Grades 1-10 were born during a period when North Providence was averaging 322 births per year. More recently (and expected over the next 6-7 years) are 298-354 births annually…still averaging about 332 births per year – about 11 more than the earlier decade. 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 February, 2017 in US non-farm unemployment was 4.7%; CT 4.7%; **RI 4.5%;** New England average 3.5%; MA 3.4%; ME 3.2%; VT 3.0%; and NH 2.7% - other nearby states: PA 5.0%; NY 4.4%; and NJ 4.4%. 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 North Providence births and Kindergarten enrollments is displayed on the B-K graph. North Providence, over the past seven years, has registered about 82 Kindergarteners for every 100 births (five years previous), a relationship which has been remained steady. This fall there were 80 Kindergarteners for every 100 births as opposed to the 78 Kindergarteners for every 100 births in 2013-14. NESDEC Kindergarten projections for 2016-17 anticipated 249 children v. 247 enrolled…a difference of 2 children. Next year's Grade 1 is expected to be about +2.6% larger than the previous year's Kindergarten class.

"Hidden Trends" within the district: Like many nearby communities, North Providence 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 having little to do with students moving in/out of the community (in the case of North Providence the trend is to increase by +22%, in the Grade 8-to-9 transition). Re the Grade 1-8 stability, if last year the Grade 1-7 total was 1,900 children, then (if no one moved in or out) this fall's Grades 2-8 would equal about 1,900 – 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 North Providence, we know that the school district has experienced a "net in-migration" of new families with school age children during the last five years. For example, the 1,900 children in Grades 1-7 in 2013-14 **increased by 27 children** to 1,927 students in Grades 2-8 in 2014-15; and the 1,940 children in Grades 1-7 in 2014-15 **increased by 20 children** to 1,960 students in Grades 2-8 in 2015-16. More recently, the 1,930 students in Grades 1-7 in 2015-16 **increased by 15 children** to 1,945 students in Grades 2-8 in 2016-17 – averaging an increase of +46 students over each of the last five school years. The presence of a mixed in/out-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, K-5 enrollments are forecast to increase by 7 children; Grades 6-8 to increase by 15 pupils; and the high school level to increase by about 142 students…all within the next three years – as the classes move up the grades. After that point these projections show increasing enrollment in Grades K-5 of 93 students, combined with a increase in enrollment of 45 students at Grades 6-8; and a decrease of 67 pupils in Grades 9-12 – as classes work their way up 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 improved real estate conditions. The longer-term future also will be affected by the number of babies-yet-to-be-born…it is quite likely that the birth numbers will increase as 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

become more stable in the region, additional in-migration may occur in North Providence. Many communities in the region sold during 2008-2014 only about 60-80% as many homes as in 2003-2007. In the case of North Providence, an average of 314 single-family homes were being sold each year "on the bubble" prior to the Recession. This pace slowed to 194 homes sold in 2013 (62% of the earlier pace). More recently, 263 homes were sold in 2015 and a robust 373 homes in 2016. Median prices were in the $240-260,000 range "on the bubble"; the 2016 median was only $199,500. Similarly, an average of 226 condos were sold "on the bubble" in 2005-07, a pace declining to only 56 units in 2013 (25% of the earlier pace). In 2015, only 115 condos were sold, and in 2016, 152 units. Condo medians were in the $205,000 range "on the bubble" - in 2016, selling prices were in the range of only $124,000. Building permits had slowed as well; see the "Additional Data" table below. **As additional families move in, any forecasted declines may moderate.** See the description on Page 4 below regarding "reliability of projections". The birth numbers used in the projections, through 2014, are from the RI Department of Public Health. The "estimated" years, beginning with 2015 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 North Providence residents born out-of-state (information which will eventually become known to the RI 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.

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.

6

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.

North Providence, RI Historical Enrollment
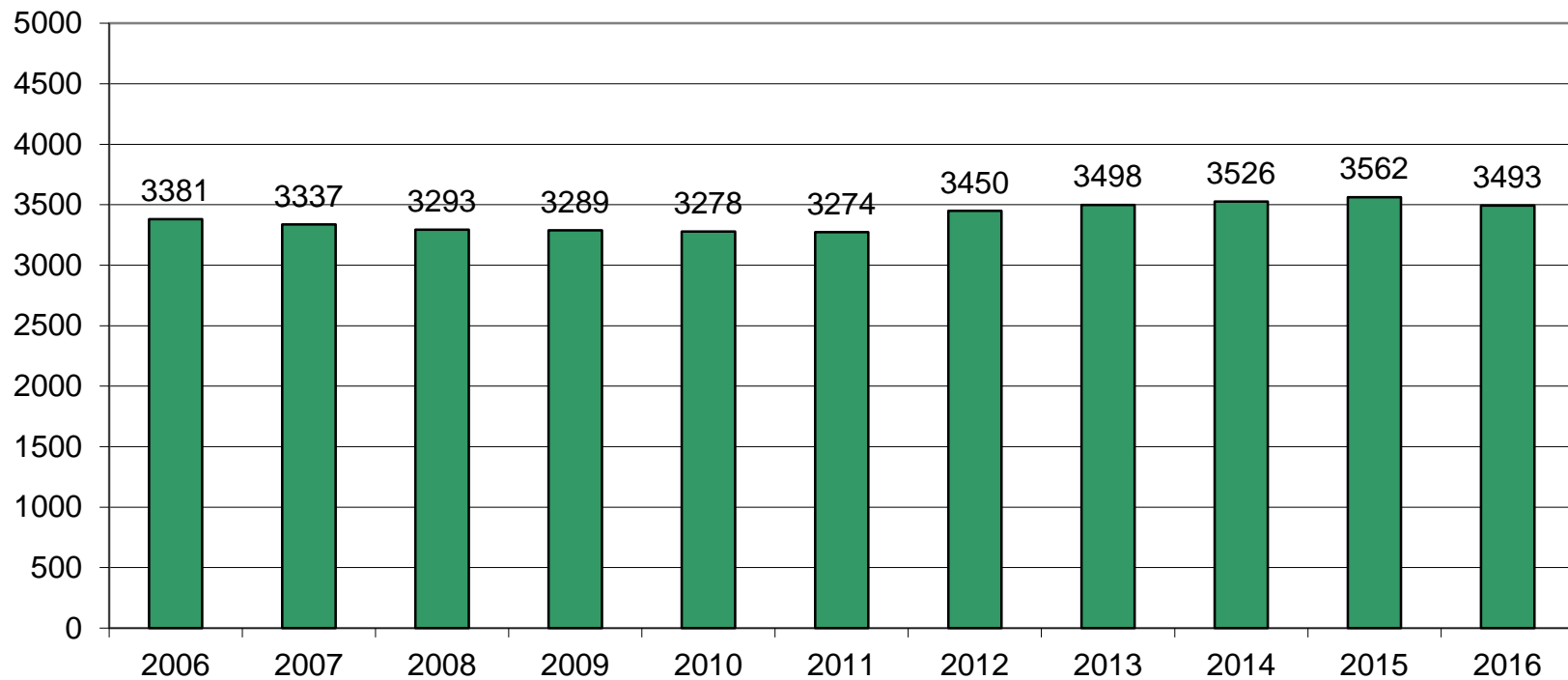
School District: **North Providence, RI**

4/10/2017

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
2001	302	2006-07	33	167	216	186	218	245	270	251	277	289	303	316	297	313	0	3348	3381
2002	335	2007-08	68	197	218	211	192	224	256	269	245	274	294	321	295	273	0	3269	3337
2003	367	2008-09	64	229	235	220	209	190	219	261	290	254	269	288	286	279	0	3229	3293
2004	331	2009-10	54	235	253	236	228	213	200	245	264	280	266	286	265	264	0	3235	3289
2005	318	2010-11	54	253	240	256	237	228	216	227	253	260	261	278	258	257	0	3224	3278
2006	352	2011-12	44	286	255	257	257	254	183	234	224	272	262	267	240	239	0	3230	3274
2007	281	2012-13	90	258	285	254	280	281	262	245	245	231	265	250	264	240	0	3360	3450
2008	333	2013-14	96	259	265	286	255	287	283	276	248	251	213	277	247	255	0	3402	3498
2009	305	2014-15	86	247	273	259	270	254	302	300	282	260	241	236	278	238	0	3440	3526
2010	292	2015-16	93	245	260	277	250	285	270	292	296	290	243	249	233	279	0	3469	3562
2011	307	2016-17	80	247	238	259	281	252	288	275	289	301	268	241	243	231	0	3413	3493

Historical Enrollment in Grade Combinations

Year	PK-5	K-5	K-6	K-8	5-8	6-8	7-8	7-12	9-12
2006-07	1335	1302	1553	2119	1087	817	566	1795	1229
2007-08	1366	1298	1567	2086	1044	788	519	1702	1183
2008-09	1366	1302	1563	2107	1024	805	544	1666	1122
2009-10	1419	1365	1610	2154	989	789	544	1625	1081
2010-11	1484	1430	1657	2170	956	740	513	1567	1054
2011-12	1536	1492	1726	2222	913	730	496	1504	1008
2012-13	1710	1620	1865	2341	983	721	476	1495	1019
2013-14	1731	1635	1911	2410	1058	775	499	1491	992
2014-15	1691	1605	1905	2447	1144	842	542	1535	993
2015-16	1680	1587	1879	2465	1148	878	586	1590	1004
2016-17	1645	1565	1840	2430	1153	865	590	1573	983

Historical Percentage Changes

Year	K-12	Diff.	%
2006-07	3348	0	0.0%
2007-08	3269	-79	-2.4%
2008-09	3229	-40	-1.2%
2009-10	3235	6	0.2%
2010-11	3224	-11	-0.3%
2011-12	3230	6	0.2%
2012-13	3360	130	4.0%
2013-14	3402	42	1.3%
2014-15	3440	38	1.1%
2015-16	3469	29	0.8%
2016-17	3413	-56	-1.6%
Change		65	1.9%

PK-12, 2006-2016

North Providence, RI Projected Enrollment

School District: **North Providence, RI**   **4/10/2017**

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
2011	307		2016-17	80	247	238	259	281	252	288	275	289	301	268	241	243	231	0	3413	3493
2012	298		2017-18	94	244	253	237	254	287	263	295	275	298	283	280	238	240	0	3447	3541
2013	331		2018-19	94	271	250	252	233	259	299	270	295	284	280	296	277	235	0	3501	3595
2014	354		2019-20	94	290	278	249	247	238	270	306	270	304	267	292	293	273	0	3577	3671
2015	338	(prov.)	2020-21	94	276	298	277	244	252	248	277	306	278	286	279	289	289	0	3599	3693
2016	326	(est.)	2021-22	94	266	283	297	272	249	263	254	277	316	261	299	276	285	0	3598	3692
2017	329	(est.)	2022-23	94	269	273	282	292	277	259	270	254	286	297	273	296	272	0	3600	3694
2018	336	(est.)	2023-24	94	274	276	272	277	298	289	265	270	262	269	310	270	292	0	3624	3718
2019	337	(est.)	2024-25	94	275	281	275	267	283	310	296	265	278	246	281	307	266	0	3630	3724
2020	333	(est.)	2025-26	94	272	282	280	270	272	295	318	296	273	261	257	278	303	0	3657	3751
2021	332	(est.)	2026-27	94	272	279	281	275	275	283	302	318	305	257	273	254	274	0	3648	3742

*Projections should be updated on an annual basis in order to reflect changes in births, real estate sales, in-/out-migration of families, and housing construction.

Based on an estimate of births   Based on children already born   Based on students already enrolled

Projected Enrollment in Grade Combinations*

Year	PK-5	K-5	K-6	K-8	5-8	6-8	7-8	7-12	9-12
2016-17	1645	1565	1840	2430	1153	865	590	1573	983
2017-18	1632	1538	1833	2406	1131	868	573	1614	1041
2018-19	1658	1564	1834	2413	1148	849	579	1667	1088
2019-20	1666	1572	1878	2452	1150	880	574	1699	1125
2020-21	1689	1595	1872	2456	1109	861	584	1727	1143
2021-22	1724	1630	1884	2477	1110	847	593	1714	1121
2022-23	1746	1652	1922	2462	1069	810	540	1678	1138
2023-24	1780	1686	1951	2483	1086	797	532	1673	1141
2024-25	1785	1691	1987	2530	1149	839	543	1643	1100
2025-26	1765	1671	1989	2558	1182	887	569	1668	1099
2026-27	1759	1665	1967	2590	1208	925	623	1681	1058

Projected Percentage Changes

| Year	K-12	Diff.	%
2016-17	3413	0	0.0%
2017-18	3447	34	1.0%
2018-19	3501	54	1.6%
2019-20	3577	76	2.2%
2020-21	3599	22	0.6%
2021-22	3598	-1	0.0%
2022-23	3600	2	0.1%
2023-24	3624	24	0.7%
2024-25	3630	6	0.2%
2025-26	3657	27	0.7%
2026-27	3648	-9	-0.2%
Change		**235**	**6.9%**

North Providence, RI Projected Enrollment

PK-12 TO 2026 Based On Data Through School Year 2016-17
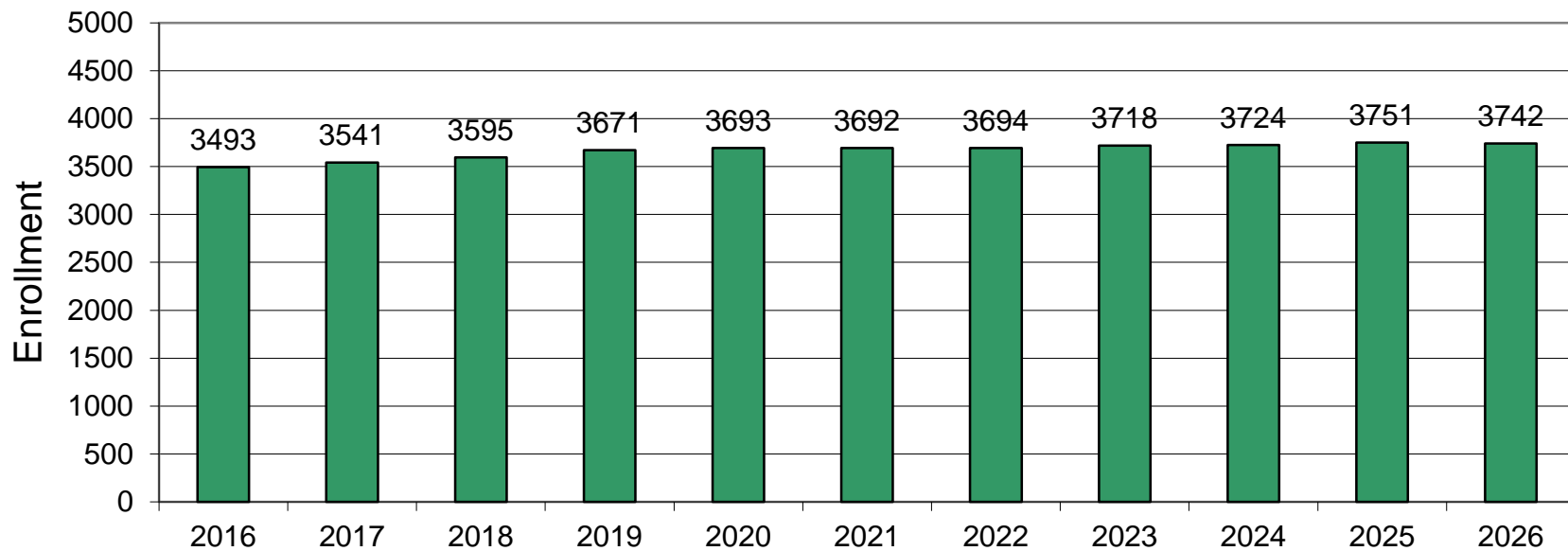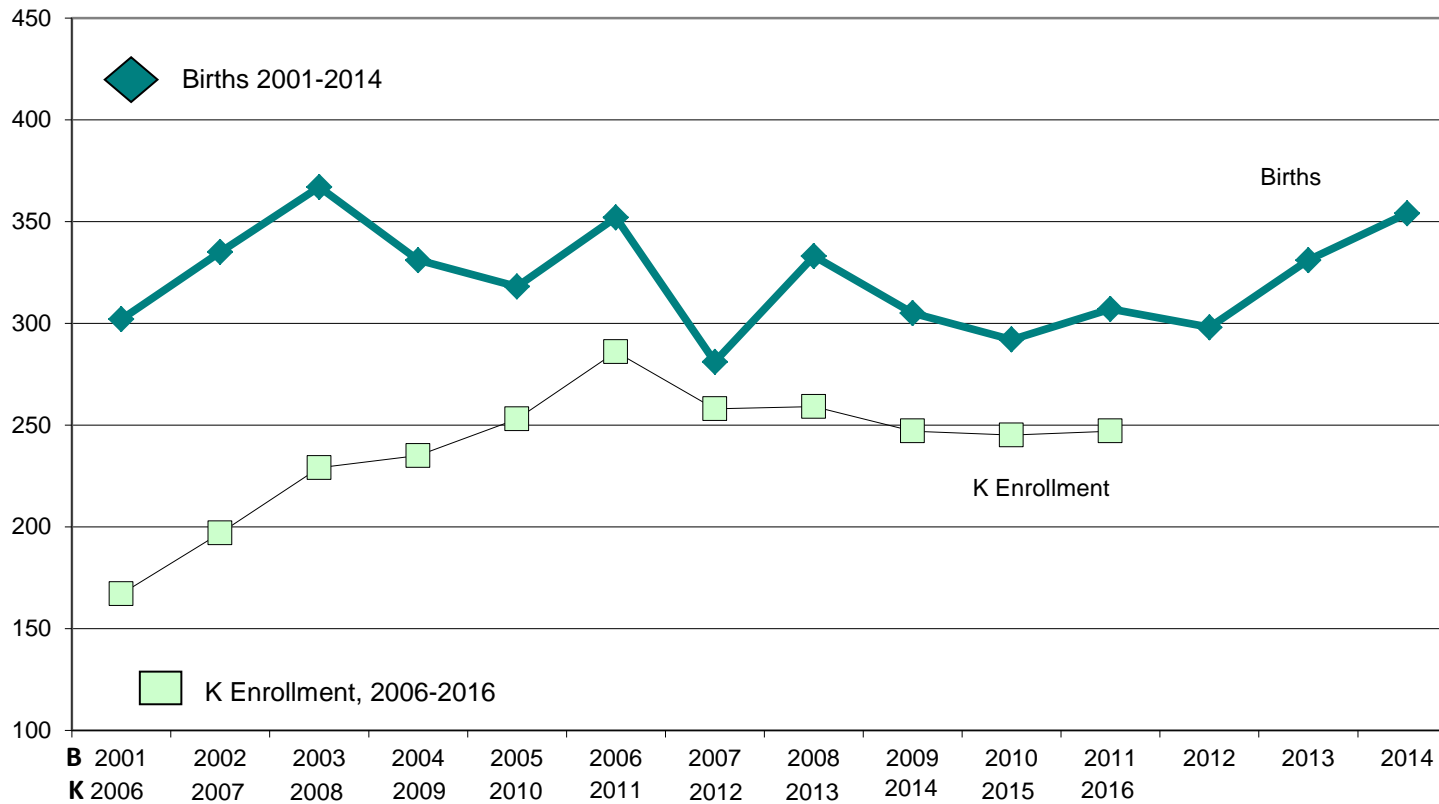
North Providence, RI Historical & Projected Enrollment

PK-12, 2006-2026
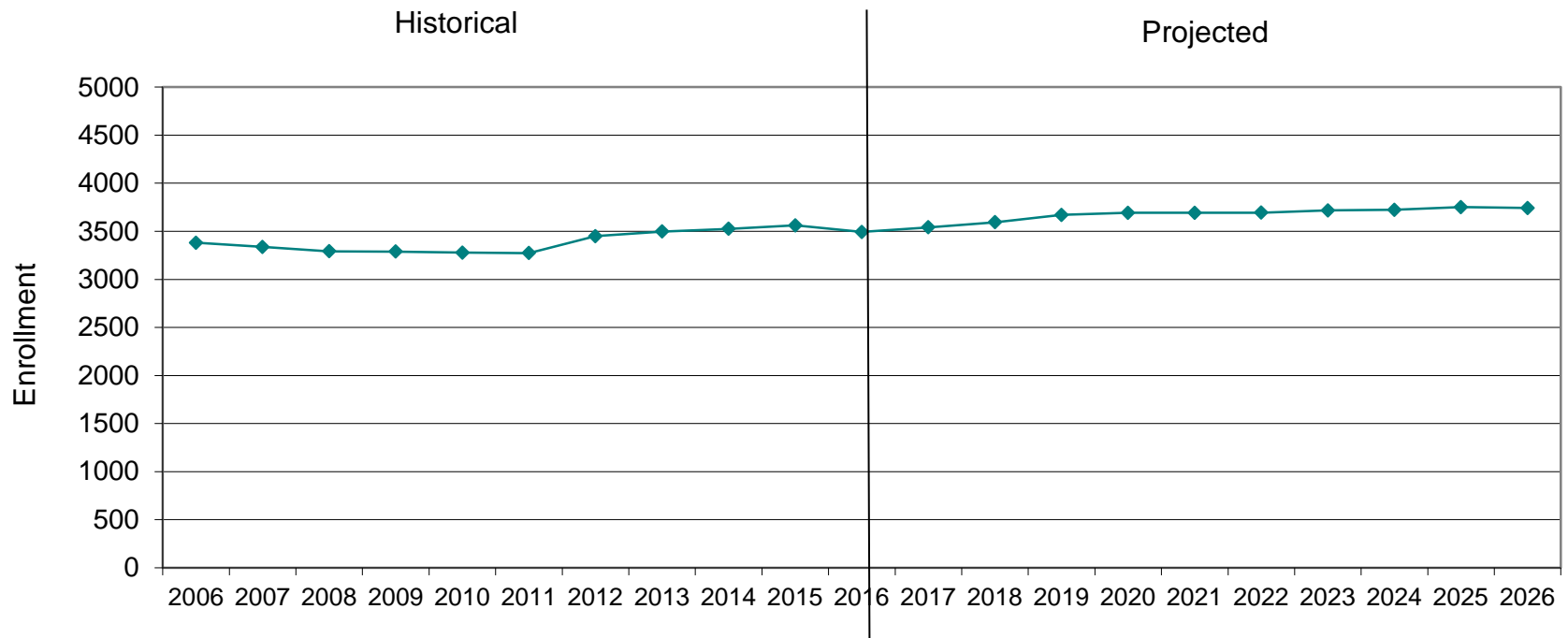
North Providence, RI Birth-to-Kindergarten Relationship

North Providence, RI Additional Data

Building Permits Issued		
Year	Single-Family	Multi-Units
2005	46	42
2012	12	0
2013	12	0
2014	8	22
2015	21	0
2016	11	0

Source: HUD and Building Department

Enrollment History		
Year	Voc-Tech 9-12 Total	Non-Public K-12 Total
2005-06	n/a	718
2012-13	n/a	507
2013-14	67	n/a
2014-15	2	364
2015-16	79	502
2016-17	75	436

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
	4	34	30	24	23	43	32	44	35	45	40	52	30	436

K-12 Home-Schooled Students	
2016	36

K-12 Residents "Choiced-out" or in Charter or Magnet Schools	
2016	68

K-12 Special Education Outplaced Students	
2016	54

K-12 Choiced-In, Tuitioned-In, & Other Non-Residents	
2016	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.