

THE PROGRESSION RATE METHOD

The basic assumption of the progression rate method for predicting school enrollments is that what has happened in the past, will continue to happen in the future; that is, given the number of births, the net effect of all other influences on enrollment will remain proportionately the same. The basic technique requires calculating the ratio of the number of children in one grade in one year compared to the number of children who “progress” the year and enroll in the next grade the following year. Fluctuations in such data from year to year create a pattern from which an average progression rate can be calculated to project an enrollment. 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 2021-22, increased to 104 students in Grade 2 in 2022-23, the percentage of progression 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 years.

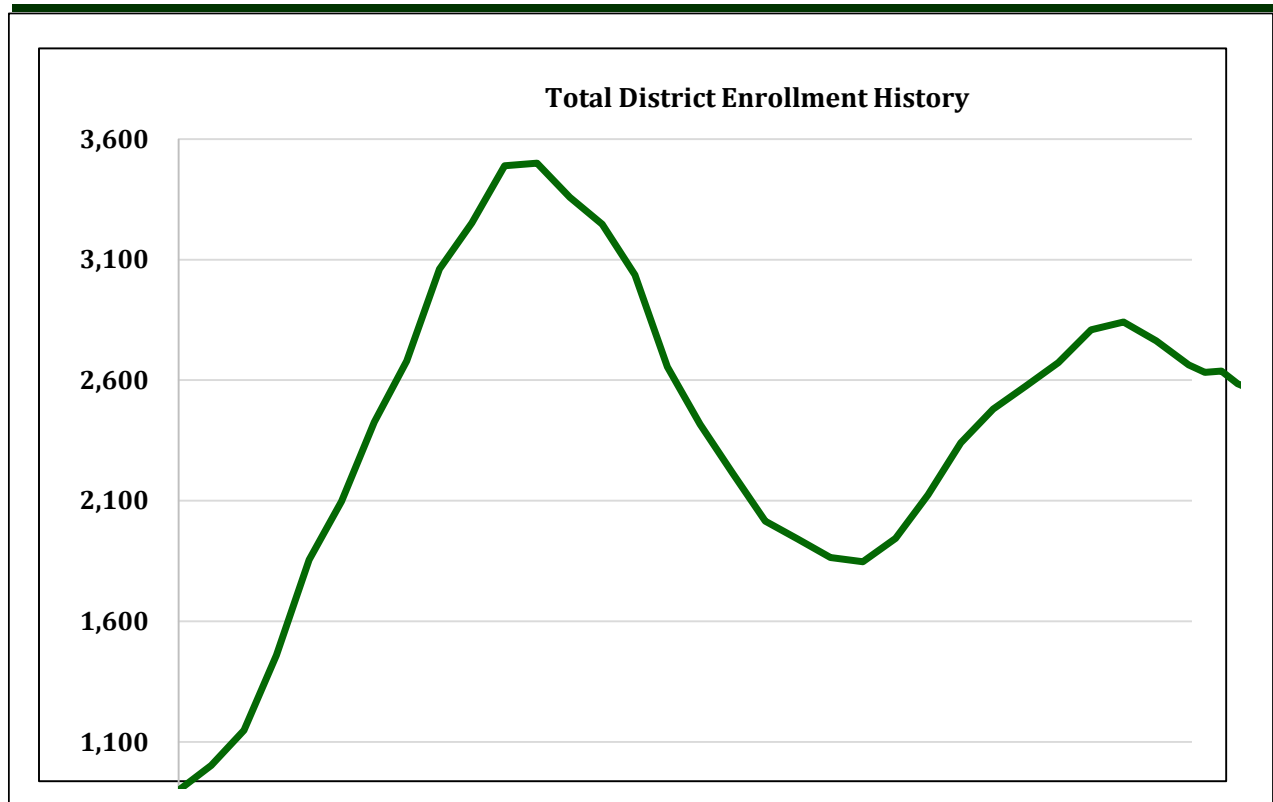
The data used to calculate this information includes birth records, census information, housing developments, real-estate market data and area private school enrollments. We find that we can predict the upcoming year’s totals typically within a 1% variance.

A progression rate method was calculated using a 3-year, 5-year, and 10-year historical database. Because North Reading is inward migration has begun to show evidence of increasing over the past three years, the three-year calculation is generally considered more reliable.

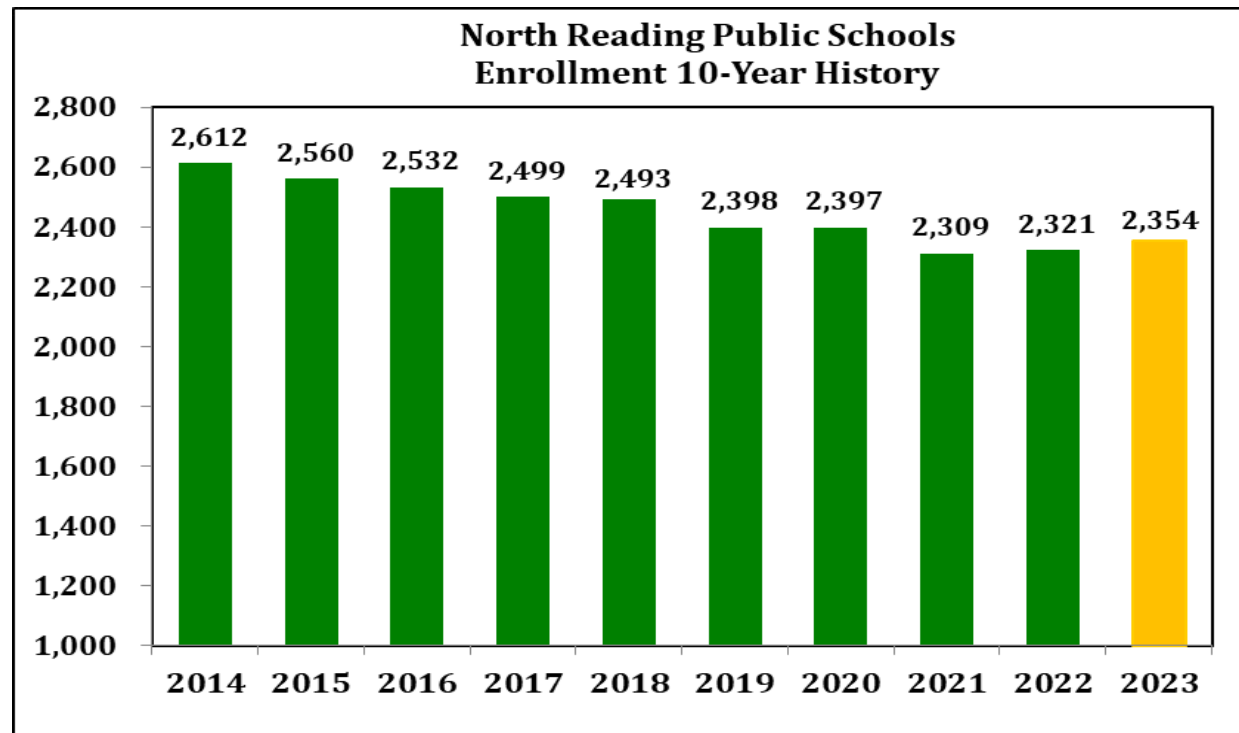
Enrollment Report

The enrollment report includes actual student enrollment from the 1949-50 School Year through 10/01/2022, and a projection of enrollment through June 30, 2034. As depicted in the chart below. North Reading’s total student enrollment has been cyclical. In the early fifties’ enrollment grew quickly from 900 to 1,841 students. The 1960’s saw the numbers rise to 3,217. In the 1970’s enrollment grew as high as 3,461. Then in the 1980’s enrollment decreased to 1,926 only to rise again during the 1990’s, peaking at 2,319. The period since then has seen a growth back to 2,812 in 2008 with a steady decline since then. Currently, student enrollment stands at 2,354.

ENROLLMENT PROJECTIONS



Historical enrollment over the last ten years has remained relatively stable as the below chart indicates. Enrollment did peak in fiscal year 2008 at 2,812 students and has slowly declined over the last several years by 256 students from 2,612 students in fiscal year 2014 to a current total in fiscal year 2023 of 2,354 students.



ENROLLMENT PROJECTIONS

There are two factors at work, which will have the greatest impact on future enrollments:

1. A steady number of births to North Reading residents and, 2. New in-migration of families with school age children. North Reading has experienced between 130 and 162 births annually over the last several years as shown in the chart below, a range that is expected to continue over the next 6 to 7 years, this will allow North Reading to continue to average approximately, 148-150 births per year.

Birth Time Period	# Births
Sept. 1, 2012-Aug. 31, 2013 (FY' 19)	127
Sept. 1, 2013-Aug. 31, 2014 (FY'20)	162
Sept. 1, 2014-Aug. 31, 2015 (FY' 21)	151
Sept. 1, 2015-Aug. 31, 2016 (FY' 22)	140
Sept. 1, 2016-Aug. 31, 2017 (FY' 23)	162
Sept. 1, 2017-Aug. 31, 2018 (FY' 24) Next Year's Kindergarten Class	130
Sept. 1, 2018-Aug. 31, 2019 (FY' 25)	148
Sept. 1, 2019-Aug. 31, 2020 (FY' 26)	162
Sept. 1, 2020-Aug. 31, 2021 (FY' 27)	150
Sept. 1, 2021-Aug. 31, 2022 (FY' 28)	151
Average	149

North Reading, over the past five years, has registered on average about 121 kindergarteners for every 100 births (five years previous), a relationship which has increased steadily over the past several years from an average of about 118. This fall, the ratio was slightly greater than the average at 123 kindergarteners for every 100 births, proving that it is difficult to predict the trend of in and out migration of families with school age children. Proposed or planned residential development and/or turnover of homes in North Reading can influence the cohort numbers. There are no major housing developments plans that would bring a surge of households with school age children to North Reading, the future looks like the District will continue registering between 118-122 kindergartners per 100 births. The report attempts to adjust the projected kindergarten enrollments to reflect typical incoming enrollments and to include a prediction of an increase in families with school age children based on market trends. Relying solely on birth rates five years earlier is not always accurate. Grade 1 is expected to remain between 3% and 5% larger than the previous year's Kindergarten class, which is the ten-year average.

Up until the last eight years, the high school had typically experienced a consistent loss of between 12-14% of students enrolling in grade 9 at the end of Grade 8. However, this trend has decreased in recent years to only a loss of between 4-7%, this past fall that loss was slightly higher at 11%, which the District believes can be mostly contributed to several families opting to educate their children remotely due to the COVID-19 pandemic. Over the next three years, K-5 enrollments are forecasted to increase by 44 students over the three-year period. Grades 6-8 enrollment is predicted to increase by 24 students over the next three years, with total enrollment in the 555 to 560 range. The high school enrollment will also increase by 31 students over the next three years and will begin to approach 700 students again at the high school.

ENROLLMENT PROJECTIONS

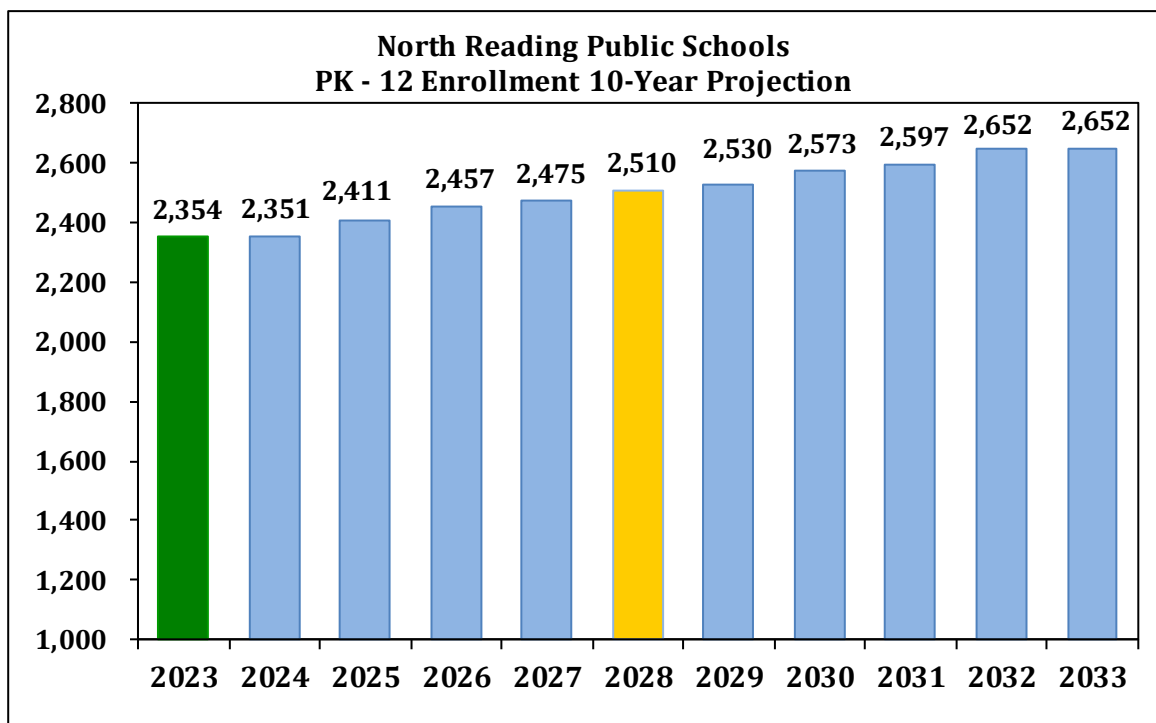
After that point, over the next five-year period projections show district wide enrollment will begin to steadily increase again from approximately 2,400 students to 2,500 students in grades Pre-kindergarten through grade 12, with about 1,200 at the elementary level, 600 at the Middle School, and 700 at the high school. The projections indicate that as the real estate market continues to increase, it will continue to bring additional new families to North Reading, if the real estate market slows down or is impacted by an economic recession it would have an impact of these projections in the outer years.

History of Enrollment Projections vs. Actuals

You may wonder how enrollments projections have compared to our actual enrollment over the last several years. The chart below indicates that our historical projections using this method have typically been within 1% of actual enrollment. The variance this past year in 2022 was 0%.

FISCAL YEAR	2017	2018	2019	2020	2021	2022	2023
PROJECTION	2,512	2,453	2,444	2,392	2,357	2,299	2,356
ACTUAL	2,499	2,493	2,397	2,397	2,309	2,321	2,354
CHANGE (Actual-Projection)	-13	40	-47	5	-48	22	-2

Districtwide enrollment depicted in the graph below is expected to increase over the next five to ten years. In fiscal year, 2028 highlighted below enrollment could reach 2,511 students and could exceeding 2,500 students again. However, one should realize that it is very likely these patterns will not last as long as ten years. Enrollment projections are most accurate in the early year and are less reliable more than three and five years into the future. The economy, real-estate market, and timeline of development in town will all have an impact on the projections in the outer years.



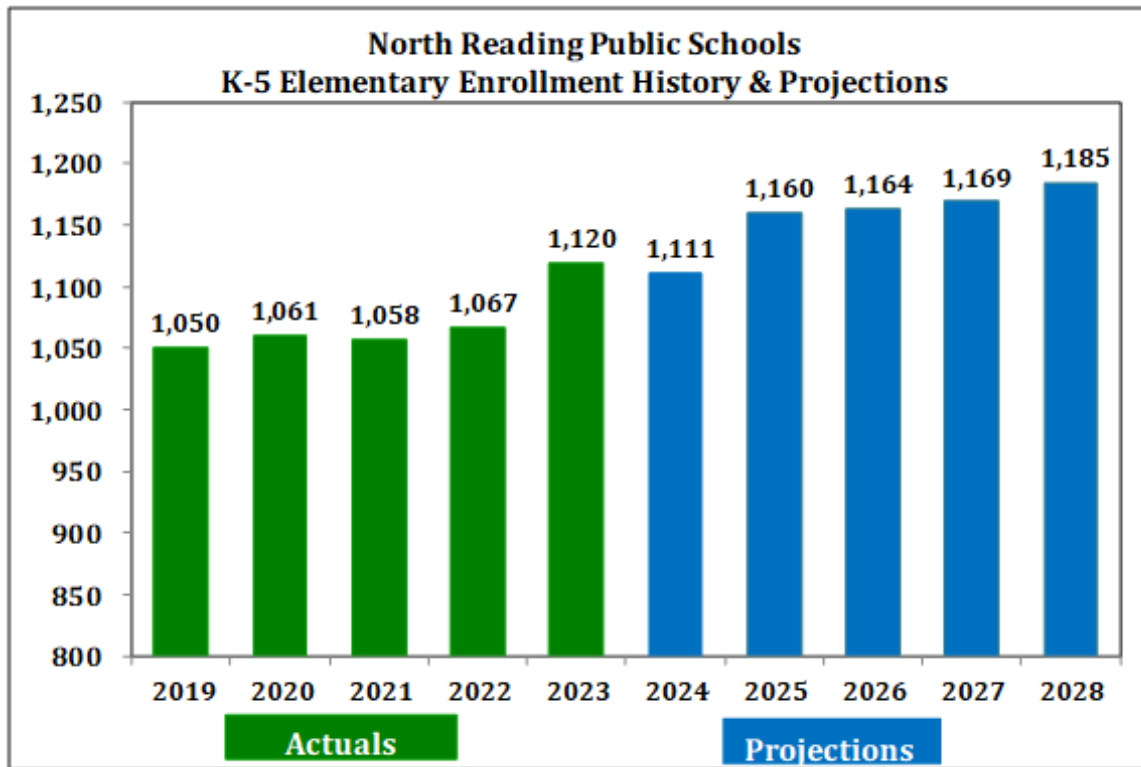
ENROLLMENT PROJECTIONS

Evidence suggest that the real estate market continues to improve. During the period of 2013-2018, many communities in the region sold only about 60-80% as many homes as in 2008-2013. In the case of North Reading, recent trends show an increase in the number of single-family homes sold in recent years. During the period of 2013-15, an average of 125 homes were sold. However, sales have rebounded to 159 homes sold in 2016, 161 in 2017, and 162 in 2018. Most recently, North Reading sold 201 homes in 2019, 221 in 2020 and are on pace of exceed 276 homes sold in 2021. This is a significant increase than the previous three-year period. This trend indicates an increase in new families with school age children in North Reading and we have begun to see this trend influence the enrollment projections. As single-family home prices, continue to reach a ten-year high, more “Baby Boomers” who have been waiting to downsize, have been encouraged to place their homes on the market. Evidence suggests that young families are moving into North Reading. As additional families move in, previous forecasted enrollment declines has changed and enrollment projections is now indicating an increase. The increase could be even more significantly, in the outer years if the real estate, market continues to improve and recent developments planned in town come on-line. There is also planned developments in North Reading including single-family home developments and age 55 plus affordable housing units that are anticipated to come on-line over the next two to three years, which will have an impact of these projections on the outer years.

Projected Enrollment in Grade Combinations						
Year	PK-5	K-5	6-8	9-12	K-12	PK -12
2022-23 Actual	1,169	1,120	541	644	2,305	2,354
2023-24 Projection	1,166	1,111	555	630	2,296	2,351
2024-25 Projection	1,215	1,160	516	680	2,356	2,411
2025-26 Projection	1,217	1,164	565	675	2,404	2,457
2026-27 Projection	1,223	1,169	574	678	2,421	2,475
2027-28 Projection	1,239	1,185	616	655	2,456	2,510
2028-29 Projection	1,230	1,175	621	679	2,475	2,530
2029-30 Projection	1,265	1,210	598	710	2,518	2,573
2030-31 Projection	1,275	1,220	610	712	2,542	2,597
2031-32 Projection	1,265	1,210	610	777	2,597	2,652
2032-33 Projection	1,273	1,218	638	741	2,597	2,652

The above chart shows projected in grade combinations over the next ten years. All projections are most reliable in the first five years and less reliable in years six through ten. Over the next three years, K-5 enrollments are forecasted to increase by 44 students. Most of the increase can be contributed to higher anticipated kindergarten classes due to higher birth rates and higher in-migration of families with school age children, these larger cohorts are expected to move through the elementary grades. Grades 6-8 is expected to increase by 24 students over the next three years averaging about 545 students before experiencing another increase in enrollment. The high school enrollment is expected to increase by 31 students over the next three years, before leveling out at about 675 students on average. Moving forward these projections show a moderate increase in enrollment.

ENROLLMENT PROJECTIONS

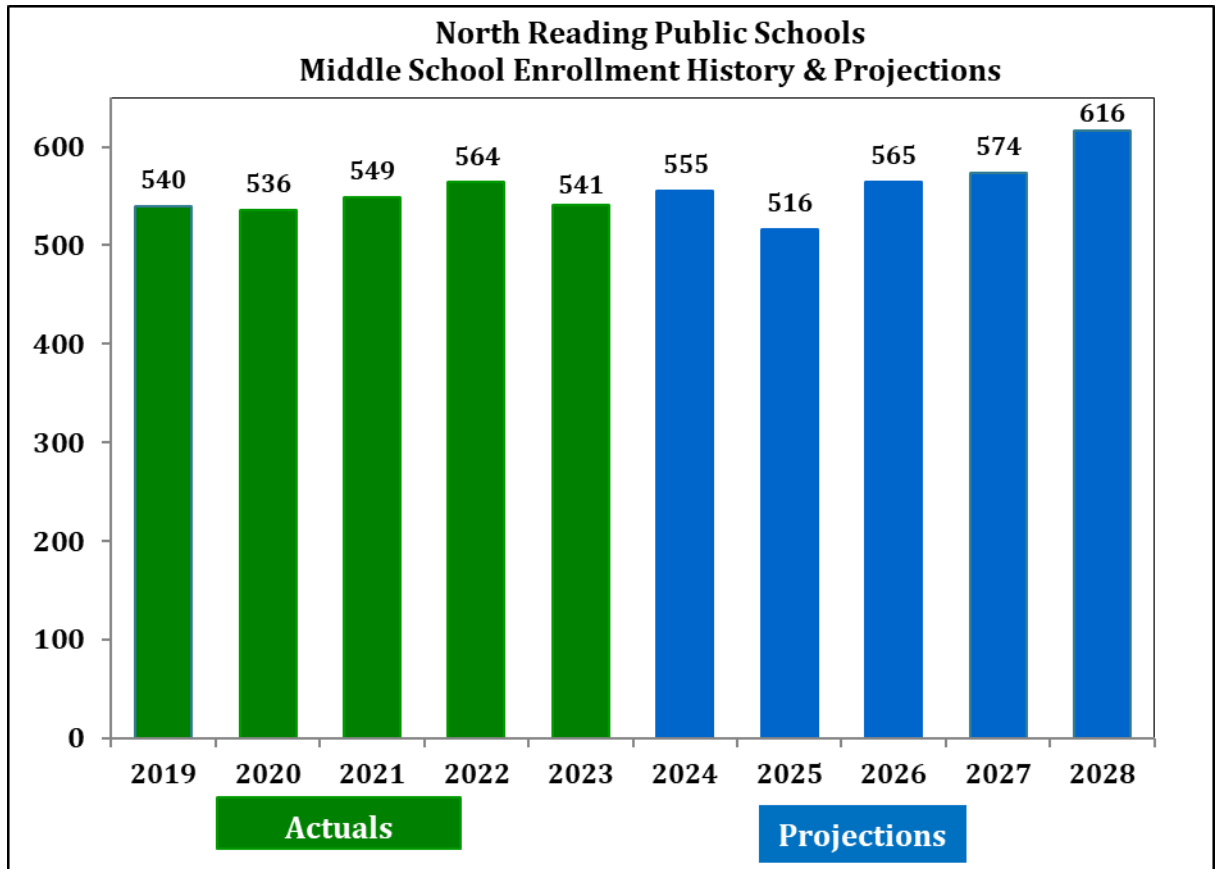


Elementary enrollment (K-5), next school year is projected to decrease by 9 students system-wide. As you can see from the table below, Kindergarten enrollment is anticipated to decrease by 38 students, which can be contributed to a lower birth rate statistic from five years earlier but kindergarten enrollment can be very difficult to predict. Grade 4 enrollment will increase significantly, as that larger cohort moves from grade 3 to grade 4. Given the decreases in Kindergarten enrollment, but increases at grade 1 the District does anticipate similar or potentially a slight decrease in staffing due to enrollment next year.

School Year	K	1.0	2.0	3.0	4.0	5.0	Total K-5
2022-23 Actual	200	181	190	207	150	192	1,120
2023-24 Projection	162	207	183	192	213	154	1,111
2024-25 Projection	184	168	209	184	197	218	1,160
2025-26 Projection	201	191	170	211	189	202	1,164
2026-27 Projection	186	208	193	171	217	194	1,169
2027-28 Projection	188	193	210	195	176	223	1,185

As evidenced by the chart and table above, long-term enrollment projections at the elementary level is anticipated to increase. Over the next three years, K-5 enrollments are forecasted to increase by 44 students and then remain stable at about 1,170 students.

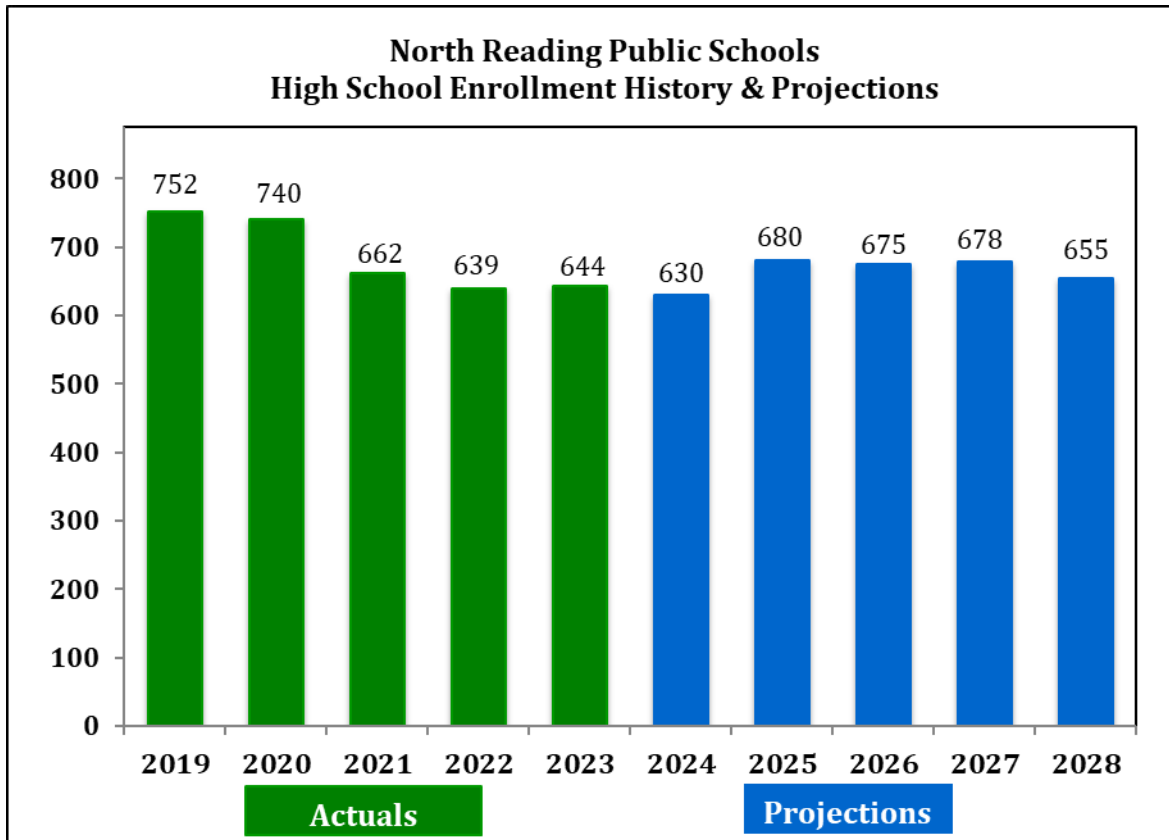
ENROLLMENT PROJECTIONS



School Year	6	7	8	Total 6-8
2022-23 Actual	168	192	181	541
2023-24 Projection	191	168	196	555
2024-25 Projection	153	191	172	516
2025-26 Projection	217	153	195	565
2026-27 Projection	201	217	156	574
2027-28 Projection	193	201	222	616

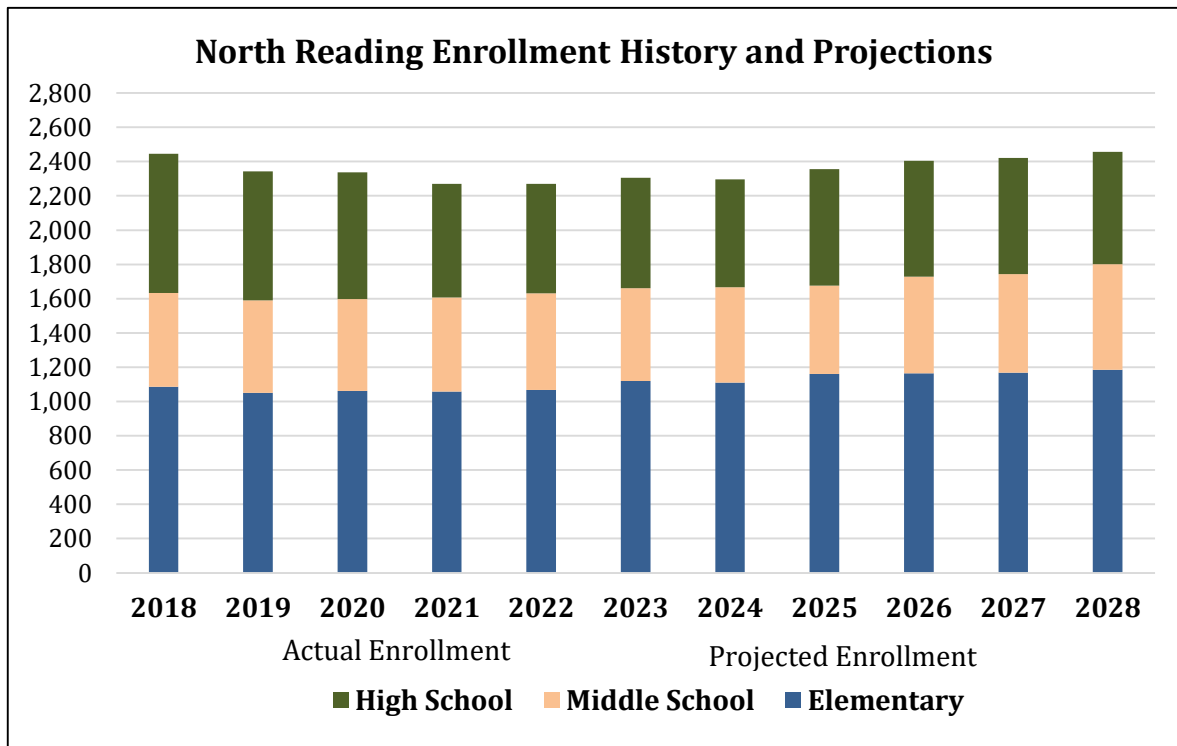
Middle School enrollment is expected to increase by 14 students next school year. Over the next three years it is anticipated that grades 6-8 will increase by (24) total students. As you can see by the above chart, long-term enrollment projections indicate the middle school enrollment experience a moderate increase and level out at about 600 students. No additional staffing should be necessary at the middle school to address changes in enrollment.

ENROLLMENT PROJECTIONS



School Year	9	10	11	12	Ungraded	Total 9-12
2022-23 Actual	176	163	127	177	1	644
2023-24 Projection	166	176	161	127	0	630
2024-25 Projection	180	166	173	161	0	680
2025-26 Projection	158	180	164	173	0	675
2026-27 Projection	179	158	177	164	0	678
2027-28 Projection	143	179	156	177	0	655

High School enrollment is expected to experience a decrease in enrollment next year by 14 students and is then expected to increase enrollment and level off at about 680 students over the next five years. No additional staffing should be necessary at the high school to address changes in enrollment. The opening of the new building has contributed to a higher progression ratio of 8th grade students moving into ninth grade, which has averaged 92% since the opening of the new middle/high school compared to 87% previously.



As the projections indicate above, the biggest enrollment shifts will take place at the Elementary and high school level over the next five years. The elementary and high school will experience a moderate increase in enrollment, with the high school trending back-up towards 680 students and the elementary level increasing by as much as 50 students over the next three years as the real estate boom and development in the community bring a return of in-migration of school age children to North Reading.

ENROLLMENT PROJECTIONS

NORTH READING PUBLIC SCHOOLS - 2023/2024 Projected Class Enrollments

Batchelder Elementary School							
GRADE	STUDENTS 2022-23	CLASSES 2022-23	CLASS SIZE 2022-23	STUDENTS 2023-24	CLASSES 2023-24	CLASS SIZE 2023-24	CHANGE
PK	N/A	N/A	N/A	N/A	N/A	N/A	N/A
K	73	3.5	(63 F 10 H)	65	3	22,22,21	-0.5
1	75	4	18,18,19,19	70	4	17,17,18,18	-
2	78	4	20,20,19,19	75	4	18,18,19,19	-
3	88	4	22,22,22,22	78	4	20,20,19,19	
4	70	4	18,18,17,17	88	4	22,22,22,22	-
5	80	4	20,20,20,20	70	4	18,18,17,17	-
Total: K-5	464	23.5	AVG 20	446	23	AVG 20	-0.5

Hood Elementary School							
GRADE	STUDENTS 2022-23	CLASSES 2022-23	CLASS SIZE 2022-23	STUDENTS 2023-24	CLASSES 2023-24	CLASS SIZE 2023-24	CHANGE
PK	22	1	Half Day 11,11	24	1	Half Day 12/12	-
K	66	3	22,22,22	55	3	18,18,19	0
1	62	3	21,21,20	74	4	18,18,19,19	1
2	63	3	21,21,21	62	3	21,21,20	0
3	61	3	21,20,20	63	3	21,21,21	0
4	53	3	18,18,17	61	3	21,20,20	0
5	56	3	19,19,18	53	3	18,18,17	0
Total: K-5	361	18	AVG 20	368	19	AVG 21	1.0
Total: PK-5	383	19	AVG 20	392	20	AVG 21	1.0

ENROLLMENT PROJECTIONS

Little Elementary School							
GRADE	STUDENTS 2022-23	CLASSES 2022-23	CLASS SIZE 2022-23	STUDENTS 2023-24	CLASSES 2023-24	CLASS SIZE 2023-24	CHANGE
PK	27	2	14,13	25	2	12/13	0
K	61	3	20,20,21	42	2	21,21	-1
1	44	3	15,15,14	67	3	22,22,23	0
2	50	3	19,19,19	44	3	15,15,14	0
3	58	3	20,19,19	50	3	17,17,16	0
4	27	2	14,13	58	3	20,19,19	1
5	56	3	19,19,18	27	2	14,13	-1
Total: K-5	296	17	AVG 17.5	288	16	AVG 19	-1
Total: PK-5	323	19	AVG 17.0	313	18	AVG 18	-1

North Reading Middle School							
2022-2023				2023-2024			
GRADE	STUDENTS 2022-23	CLASSES 2022-23	CLASS SIZE 2022-23	STUDENTS 2023-24	CLASSES 2023-24	CLASS SIZE 2023-24	CHANGE ENROLLMENT
6	168	10	16.8	6	190	10	22
7	192	10	19.2	7	168	10	-24
8	181	10	18.1	8	196	10	15
Total	541	30	18	Total	554	30	13

North Reading High School				
2022-2023		2023-2024		Change Enrollment
Grade	Enrollment	Grade	Enrollment	
9	177	9	166	-11
10	163	10	177	14
11	127	11	161	34
12	177	12	127	-50
SP	1	SP	0	-1
Total	645	Total	631	-14