

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 2020-21, increased to 104 students in Grade 2 in 2021-22, 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.

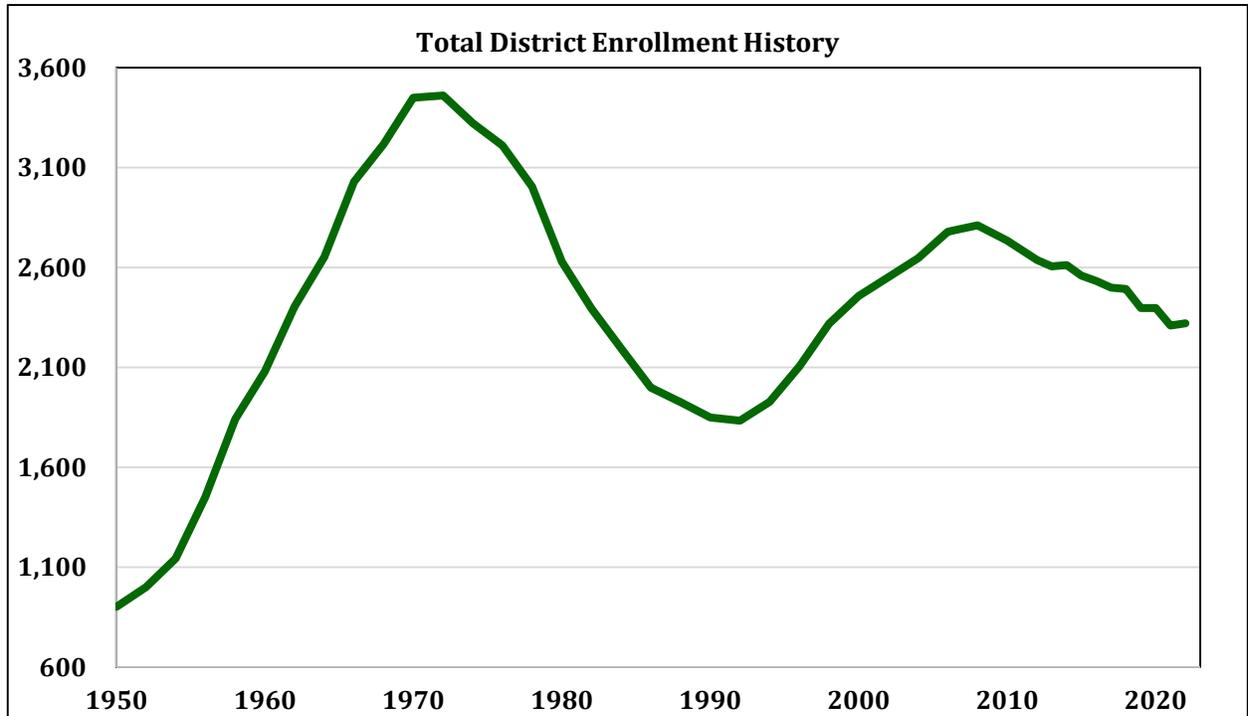
The data used to calculate this information includes birth records, census information, housing developments, real-estate market data and area private school enrollments. We find that we are able to predict the upcoming year’s totals typically within a 1% variance.

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.

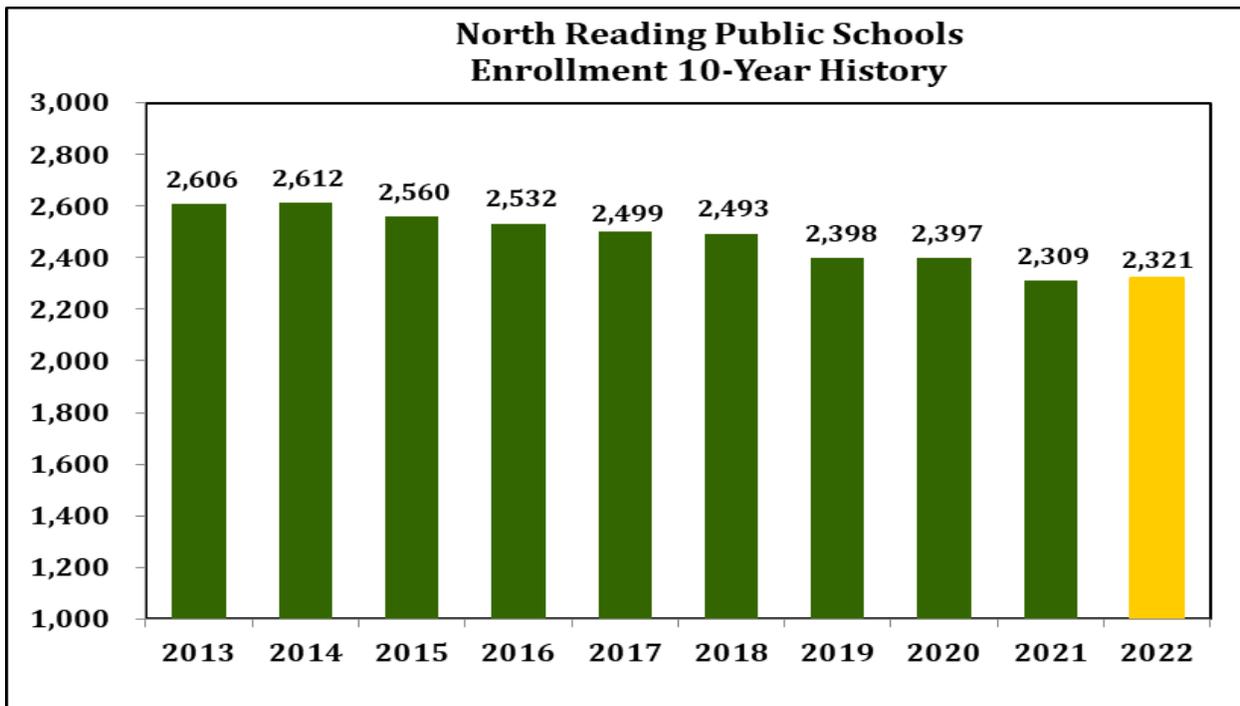
Enrollment Report

The enrollment report includes actual student enrollment from the 1949-50 School Year through 10/01/2021, and a projection of enrollment through June 30, 2033. 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 2,321.

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 212 students from 2,612 students in fiscal year 2014 to a current total in fiscal year 2022 of 2,321 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, 2011-Aug. 31, 2012 (FY'18)	141
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 Next Year Kindergarten Class))	162
Sept. 1, 2017-Aug. 31, 2018 (FY' 24)	149
Sept. 1, 2018-Aug. 31, 2019 (FY' 25)	147
Sept. 1, 2019-Aug. 31, 2020 (FY' 26)	151
Sept. 1, 2020-Aug. 31, 2021 (FY' 27)	152
Average	148

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 125 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 118-121 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 5% and 6% larger than the previous year's Kindergarten class, which is the ten-year average, despite the fact that it was much higher at 8% this past fall.

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 9%, 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 108 students over the three-year period. Grades 6-8 enrollment is predicted to decrease by 24 students over the next three years, with total enrollment in the 540 to 545 range. The high school enrollment will also increase by 50 students over the next three years and will begin to approach 700 students again at the high school.

ENROLLMENT PROJECTIONS

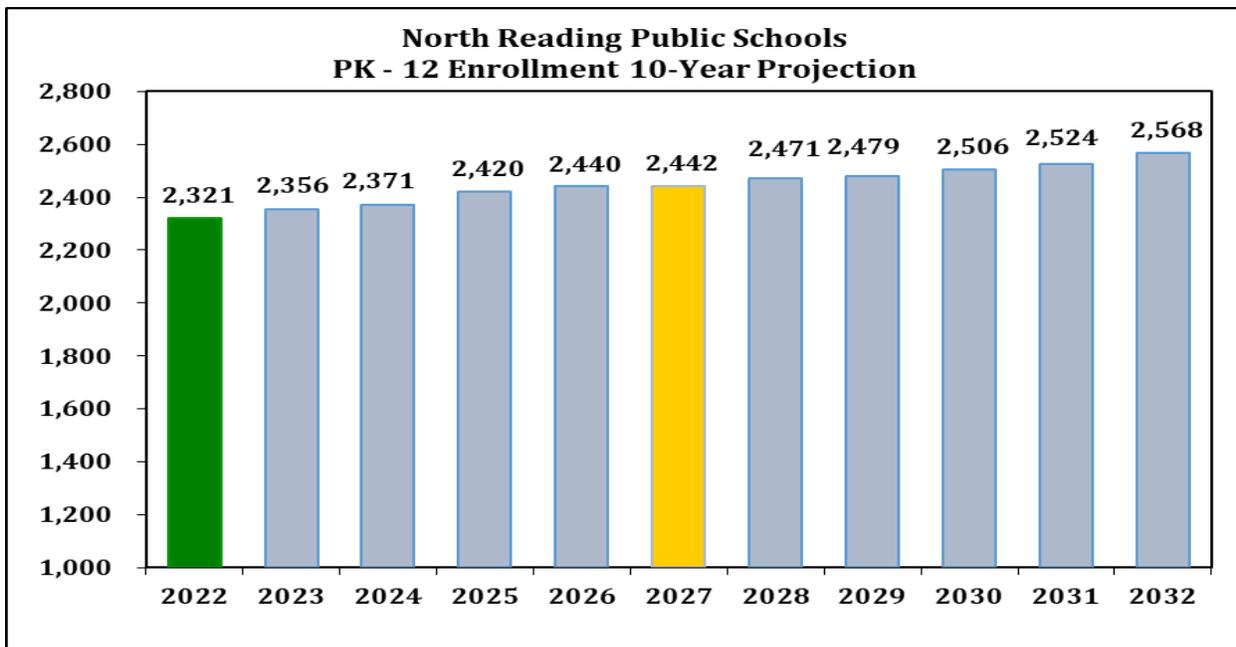
After that point, over the next five-year period projections show district wide enrollment will begin to steadily increase again from approximately 2,400 students to 2,500 students in grades Pre-kindergarten through grade 12, with about 1,225 at the elementary level, 600 at the Middle School, and 680 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 2021 was 1%.

FISCAL YEAR	2016	2017	2018	2019	2020	2021	2022
PROJECTION	2,561	2,512	2,453	2,444	2,392	2,357	2,299
ACTUAL	2,532	2,499	2,493	2,397	2,397	2,309	2,321
CHANGE (Actual-Projection)	-29	-13	40	-47	5	-48	22

Districtwide enrollment depicted in the graph below is expected to increase over the next five to ten years. In fiscal year, 2025 highlighted below enrollment could reach 2,450 students and could exceed 2,500 students again in fiscal year 2030. 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.



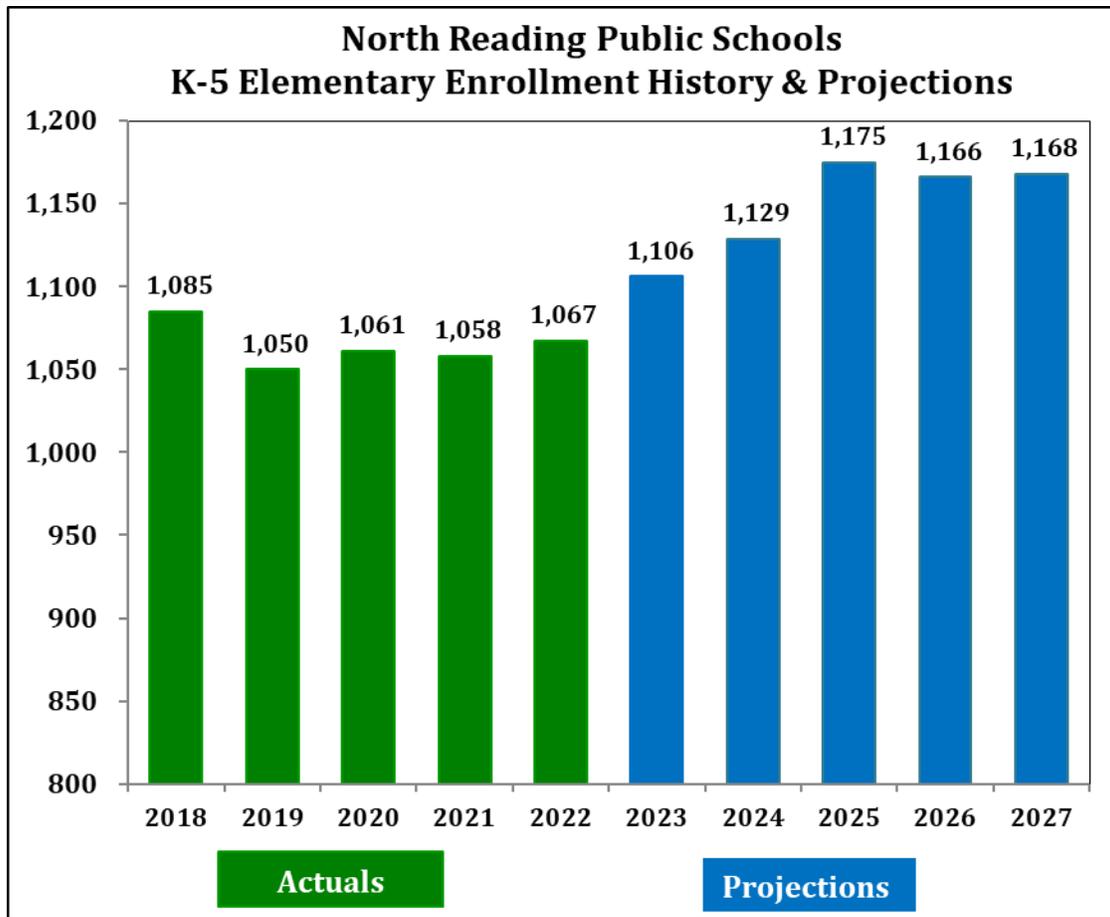
ENROLLMENT PROJECTIONS

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
2021-22 Actual	1,118	1,067	564	639	2,270	2,321
2022-23 Projection	1,161	1,106	540	655	2,301	2,356
2023-24 Projection	1,184	1,129	547	640	2,316	2,371
2024-25 Projection	1,228	1,175	503	689	2,367	2,420
2025-26 Projection	1,220	1,166	540	680	2,386	2,440
2026-27 Projection	1,222	1,168	554	666	2,388	2,442
2027-28 Projection	1,225	1,170	603	643	2,416	2,471
2028-29 Projection	1,212	1,157	608	659	2,424	2,479
2029-30 Projection	1,216	1,161	610	680	2,451	2,506
2030-31 Projection	1,222	1,167	607	695	2,469	2,524
2031-32 Projection	1,220	1,165	593	755	2,513	2,568

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 108 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 remain steady over the next three years to four years averaging about 540 students before experiencing another increase in enrollment. The high school enrollment is expected to increase by 50 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

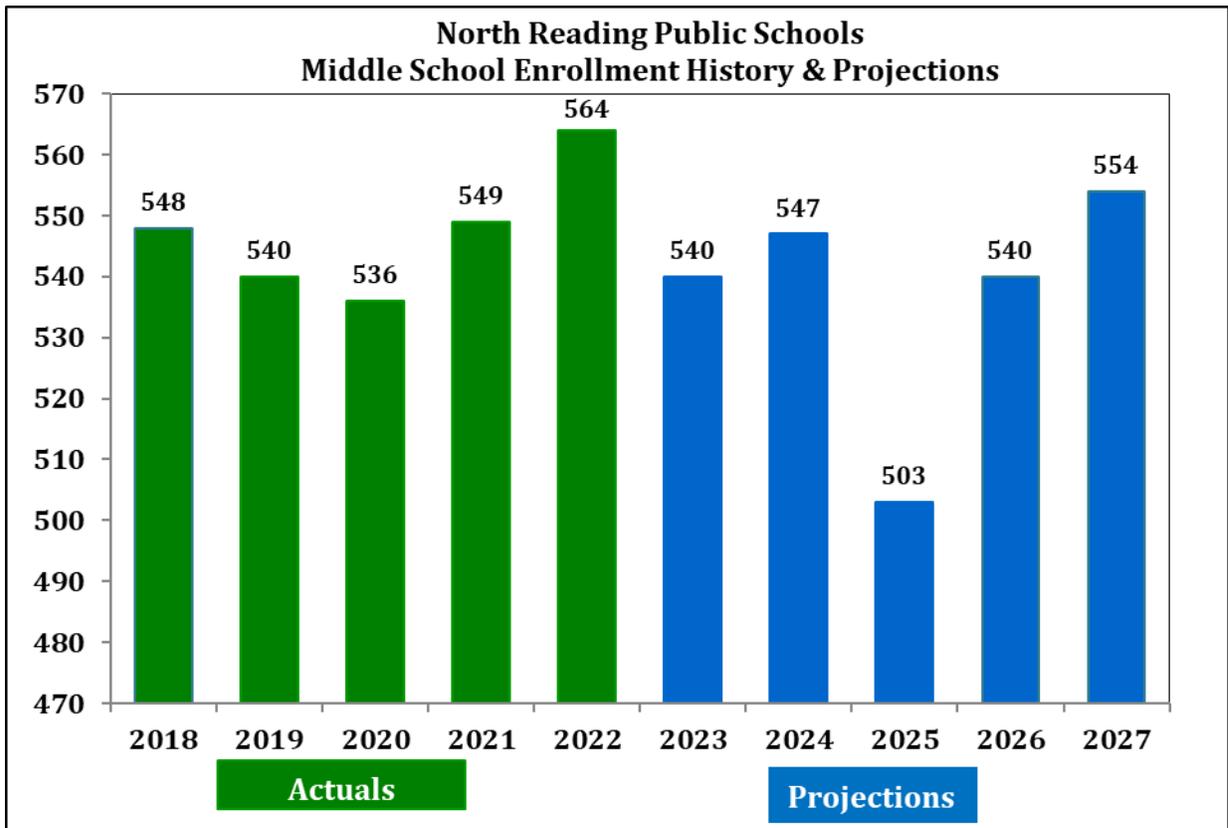


Elementary enrollment (K-5), next school year is projected to increase by 39 students system-wide. As you can see from the table below, Kindergarten enrollment is anticipated to increase by 21 students, which can be contributed to a higher birth rate statistic from five years earlier but kindergarten enrollment can be very difficult to predict. Grade 3 enrollment will increase significantly, as that larger cohort moves from grade 2 to grade 3. Given the increases in Kindergarten enrollment, the District does anticipate staffing increases at the elementary level in FY 23.

School Year	K	1.0	2.0	3.0	4.0	5.0	Total K-5
2021-22 Actual	175	189	204	145	181	173	1,067
2022-23 Projection	196	186	190	204	149	181	1,106
2023-24 Projection	180	208	193	190	209	149	1,129
2024-25 Projection	178	191	209	193	195	209	1,175
2025-26 Projection	183	189	192	209	198	195	1,166
2026-27 Projection	180	194	190	192	214	198	1,168

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 108 students and then remain stable at about 1,170 students.

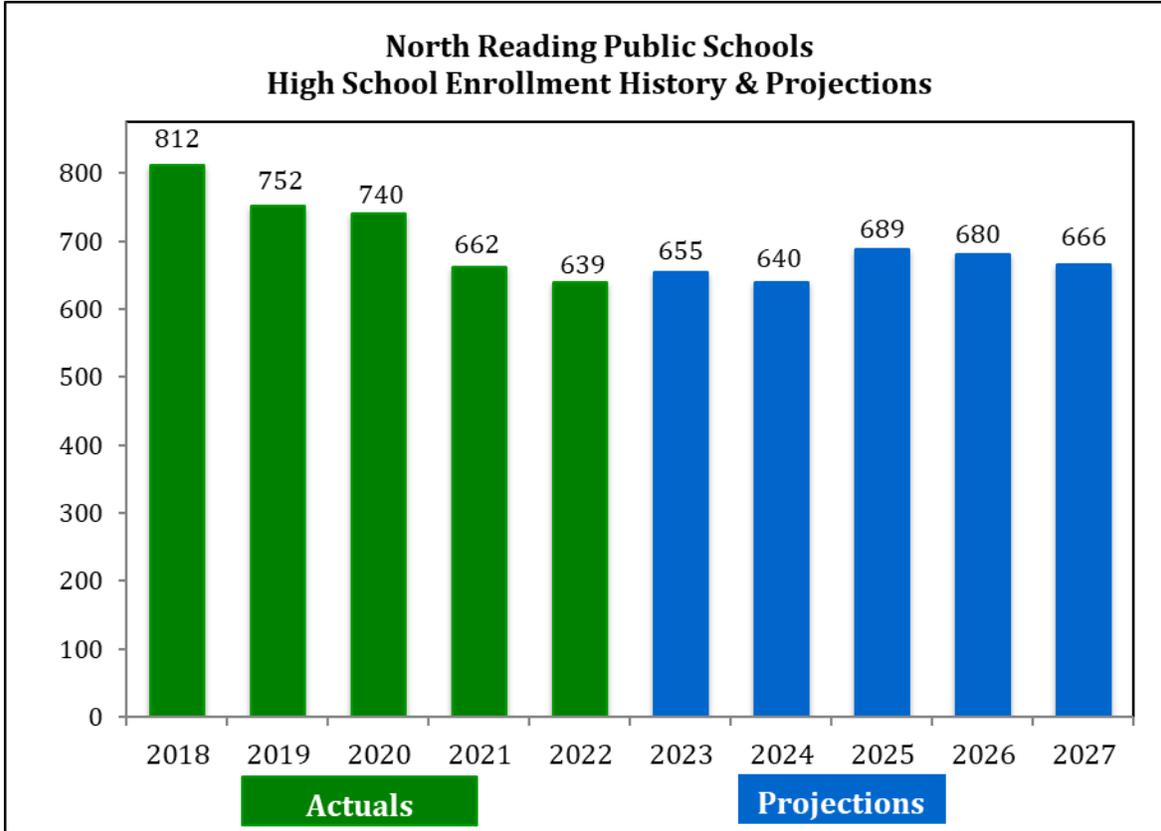
ENROLLMENT PROJECTIONS



School Year	6	7	8	Total 6-8
2021-22 Actual	193	174	197	564
2022-23 Projection	173	193	174	540
2023-24 Projection	181	173	193	547
2024-25 Projection	149	181	173	503
2025-26 Projection	210	149	181	540
2026-27 Projection	195	210	149	554

Middle School enrollment is expected to decrease by 24 students next school year. Over the next three to four years, it is anticipated that grades 6-8 will decrease by (24) total students. As you can see by the above chart, long-term enrollment projections indicate the middle school enrollment; will decrease the next three years and then experience an increase and level out at about 550 students. No additional staffing should be necessary at the middle school to address changes in enrollment.

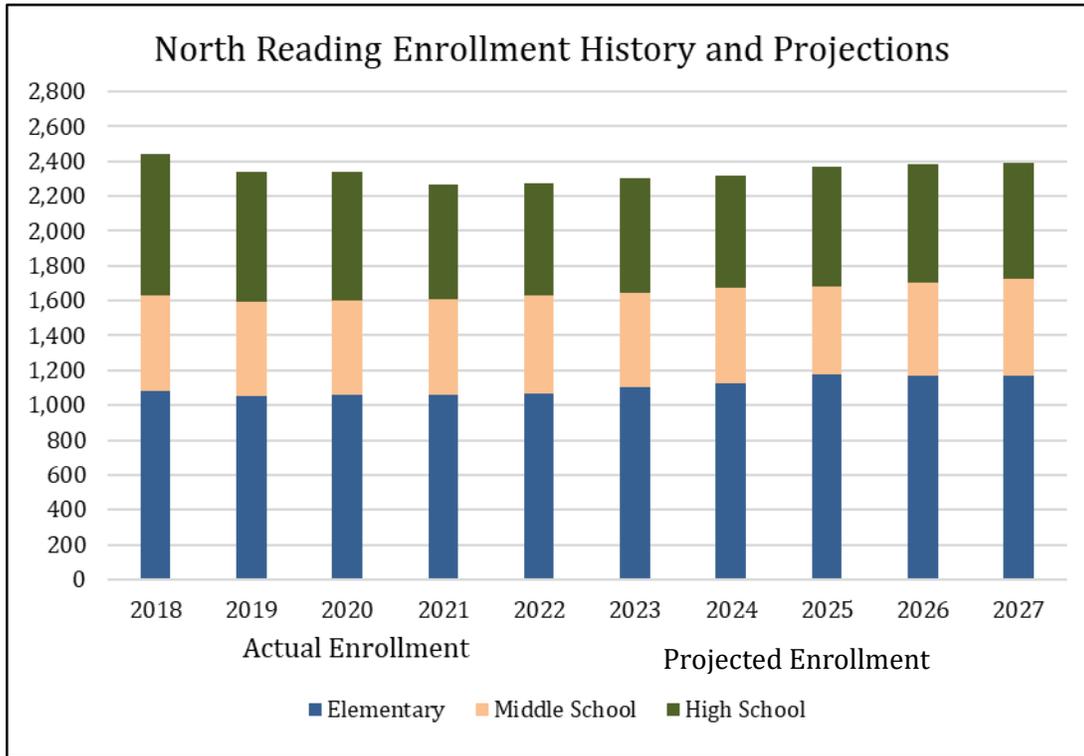
ENROLLMENT PROJECTIONS



School Year	9	10	11	12	Ungraded	Total 9-12
2021-22 Actual	170	130	176	162	1	639
2022-23 Projection	183	170	128	174		655
2023-24 Projection	162	183	168	127		640
2024-25 Projection	180	162	181	166		689
2025-26 Projection	161	180	160	179		680
2026-27 Projection	169	161	178	158		666

High School enrollment is expected to experience an increase in enrollment next year by 16 students and is expected to level off at about 675 students. 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.

ENROLLMENT PROJECTIONS



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 100 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 - 2022/2023 Projected Class Enrollments

Batchelder Elementary School							
GRADE	STUDENTS 2021-22	CLASSES 2021-22	CLASS SIZE 2021-22	STUDENTS 2022-23	CLASSES 2022-23	CLASS SIZE 2022-23	CHANGE
PK	N/A	N/A	N/A	N/A	N/A	N/A	N/A
K	78	3.5	(66 F 12 H)	81	3.5	(67 F 14 H)	0
1	76	4	19,19,19,19	81	4	20,21,20,20	-
2	90	4	22,22,23,23	76	4	19,19,19,19	-
3	70	4	18,19,18,18	90	4	22,22,23,23	-
4	77	4	19,19,19,20	71	4	19,19,18,18	-
5	74	4	18,18,19,19	77	4	19,19,19,20	-
Total: K-5	465	23.5	AVG 19	476	23.5	AVG 19	0

Hood Elementary School							
GRADE	STUDENTS 2021-22	CLASSES 2021-22	CLASS SIZE 2021-22	STUDENTS 2022-23	CLASSES 2022-23	CLASS SIZE 2022-23	CHANGE
PK	27	1	Half Day 14/13	28	1	Half Day 14/14	-
K	53	2.5	(44 F 9 H)	62	3	(47 F 15 H)	0.5
1	60	3	20,20,20	52	3	18,17,17	0
2	57	3	18,18,19	60	3	20,20,20	0
3	49	3	17,17,18	57	3	18,18,19	0
4	51	3	17,17,16	50	3	17,18,18	0
5	59	3	19,20,20	51	3	17,17,16	0
Total: K-5	329	17.5	AVG 18.5	333	18.0	AVG 18.5	0.5
Total: PK-5	356	18.5	AVG 19	360	18.5		0

ENROLLMENT PROJECTIONS

Little Elementary School							
GRADE	STUDENTS 2021-22	CLASSES 2021-22	CLASS SIZE 2021-22	STUDENTS 2022-23	CLASSES 2022-23	CLASS SIZE 2022-23	CHANGE
PK	24	2	12,12	25	2	12/13	-
K	44	2	(22,22)	54	2.5	44 F, 10 H	0.5
1	53	3	17,17,18	53	3	17,18,18	-
2	57	3	19,19,19	53	3	17,17,18	-
3	26	*2	26	57	3	19,19,19	+1
4	53	3	17,17,18	26	2	26	-1
5	40	2	20,20	53	3	17,17,18	1
Total: K-5	273	14	AVG 19.5	296	15.5	AVG 18	1.5
Total: PK-5	297	16	AVG 18.5	321	17.5	AVG 17	0

North Reading Middle School							
2021-2022				2022-2023			
GRADE	STUDENTS 2021-22	CLASSES 2021-22	CLASS SIZE 2021-22	STUDENTS 2022-23	CLASSES 2022-23	CLASS SIZE 2022-23	CHANGE
6	193	10	19.3	6	173	10	0
7	174	10	17.4	7	193	10	0
8	197	10	19.7	8	174	10	0
Total	564	30	19	Total	540	18	18.5

North Reading High School				
2021-2022		2022-2023		Change Enrollment
Grade	Enrollment	Grade	Enrollment	
9	170	9	183	13
10	130	10	170	40
11	176	11	128	-48
12	162	12	174	12
SP	1		0	-1
Total	639	Total	655	16