

# Massachusetts School Building Authority

*Funding Affordable, Sustainable, and Efficient Schools in Partnership with Local Communities*

## **Enrollment projections prepared for:**

**Town of Burlington  
Fox Hill Elementary School  
November 2021**

**BURLINGTON**  
■■■■■■■■■■ PUBLIC SCHOOLS

*The information herein represents historical enrollment and a projection using the latest data available from the Department of Elementary and Secondary Education, Department of Public Health, U.Mass Donahue Institute, and US Census. While every effort is made to have as accurate a projection as possible using the MSBA's established Enrollment Methodology, the MSBA does not and cannot predict the impact to enrollment of future, unknown events. The MSBA relies on the District to communicate and document any anticipated acute, local changes that may impact enrollment.*

*Refer to this link for additional information: [https://massschoolbuildings.org/index.php/building/prerequisites/enrollment\\_methodology](https://massschoolbuildings.org/index.php/building/prerequisites/enrollment_methodology)*

## Overview

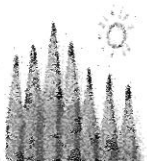
The Massachusetts School Building Authority (“MSBA”) works with local communities to create affordable, sustainable, and energy efficient schools across Massachusetts. A critical early component in achieving these objectives begins with an appropriate design enrollment that positions the district to efficiently meet space capacity needs throughout future enrollment variations. Based on an agreed upon design enrollment, the MSBA collaborates with each district and its designer to aggressively pursue strategies to create right-sized facilities that are more affordable to construct and less costly to operate and maintain.

The MSBA, with the assistance of its consultant, developed a data driven enrollment projection methodology based on the modified grade-to-grade cohort survival methodology (“enrollment methodology”). The MSBA’s enrollment methodology generates a baseline enrollment projection using historic enrollment data (Department of Elementary and Secondary Education), birth data (Massachusetts Department of Public Health), female population data (US Census Bureau) and female population projections (University of Massachusetts’s Donahue Institute, “UMDI”) as follows:

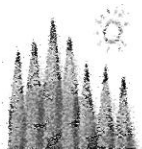
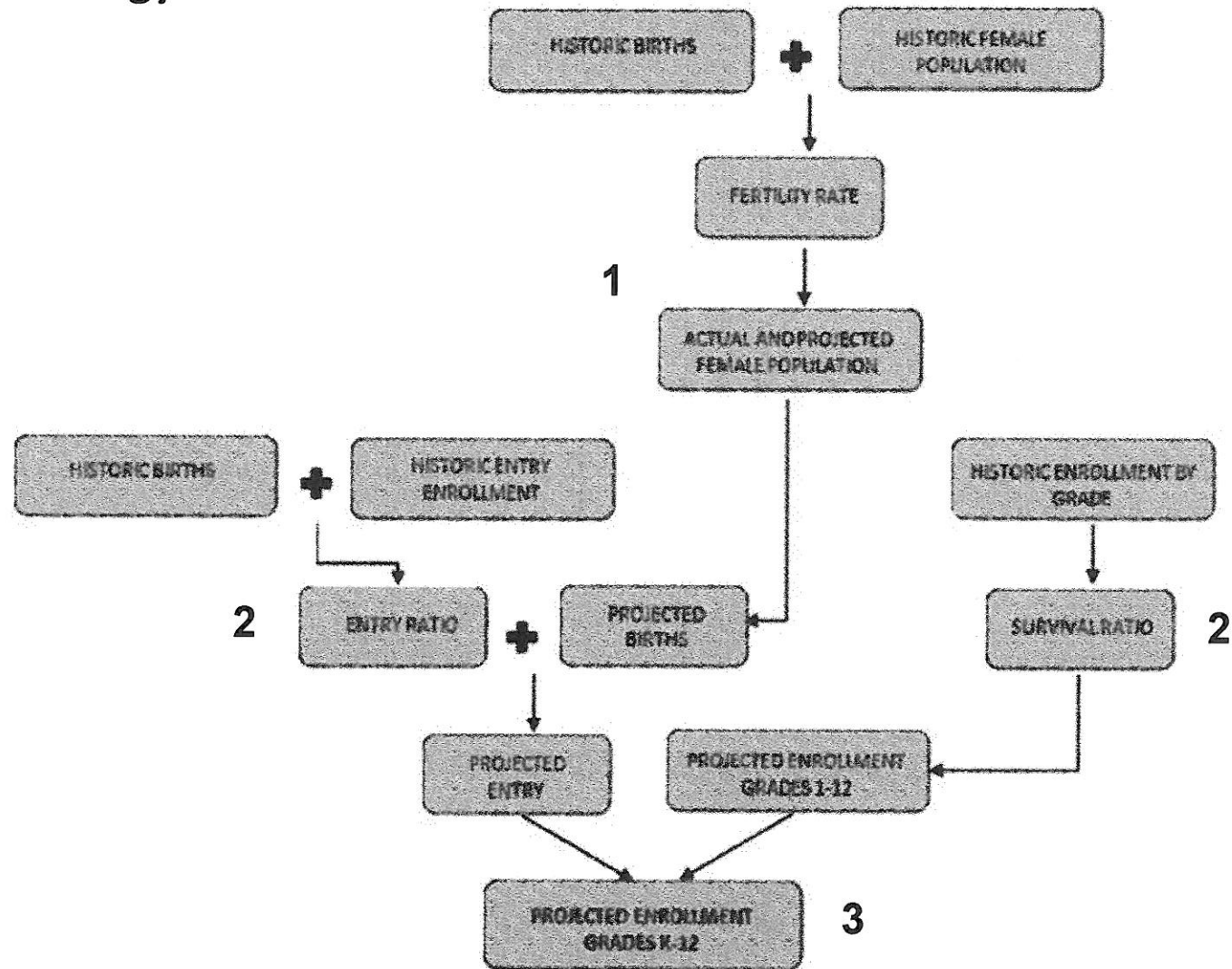
- Birth and female population data are used to calculate fertility rates;
- Fertility rates are applied to actual and projected female populations;
- Birth data and Kindergarten enrollment data is used to calculate an average birth-to-kindergarten ratio;
- The birth-to-kindergarten ratio is applied to actual and projected births to generate Kindergarten enrollments;
- Historic enrollment data is used to calculate average grade-to-grade survival ratios (the proportion of students enrolled in one grade and school year to the number of students enrolled in the next grade and school year) to project the number of students in each grade;
- Grade-to-grade survival ratios are applied to actual and projected student enrollments to generate grade 1-12 enrollment projections; and,
- The baseline enrollment is calculated using the 10-year average of projected enrollments for the grades to be considered in the proposed feasibility study.

A critical component in setting the design enrollment is an ongoing dialogue with the district throughout the process to understand what they are experiencing in their schools and in their community. Based on district-supplied information, the MSBA generates a baseline enrollment projection using its enrollment methodology. The MSBA and the district meet to share and review the baseline enrollment projection and to further discuss potential grade configurations, school consolidations, housing development and other local factors that the district believes may impact enrollment projections.

Upon agreement of a design enrollment, the MSBA and the district continue to collaborate to further develop the total square foot of the proposed project as informed by the MSBA’s space guidelines and the district’s educational program. The MSBA grant will be informed in large part by the eligible square footage of the project which is needed to house the student population generated by the enrollment projection.

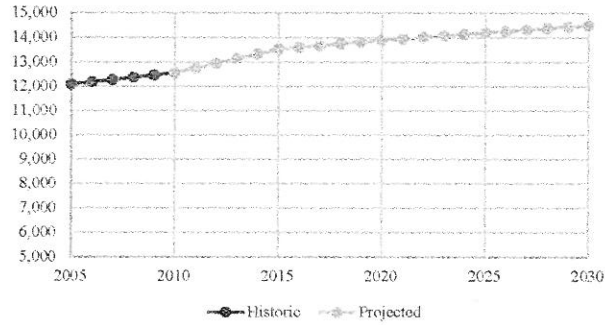


# Methodology Overview



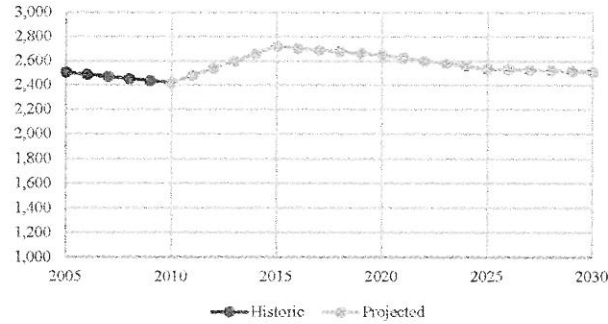
Overall female population has also been on the rise and is projected to continue. The 25-39 Female Age Group is projected to decline slightly going forward. Historic births in Hopkinton have been fairly stable, slightly declining in the past and are expected to remain stable going forward, perhaps declining slightly.

**Total Females**

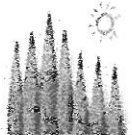
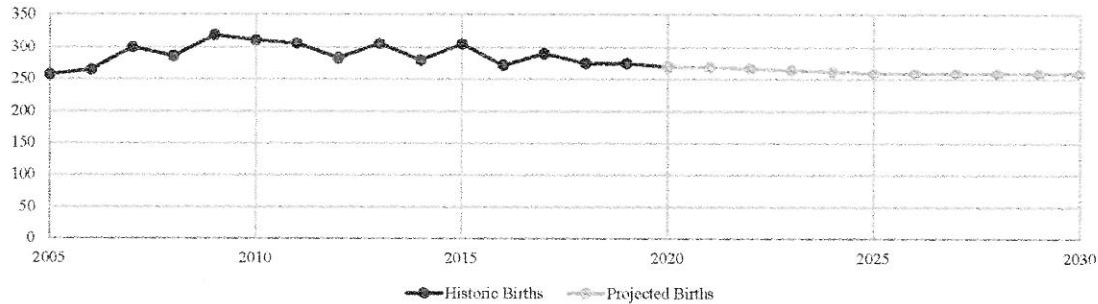


Maternal Age	Average Fertility Rate 2018-2020
10-14 Yrs	0.00%
15-19 Yrs	0.00%
20-24 Yrs	1.65%
25-29 Yrs	7.57%
30-34 Yrs	12.90%
35-39 Yrs	7.79%
40-44 Yrs	0.89%
Total Birth Rate	1.98%

**Females 25-39 Years**

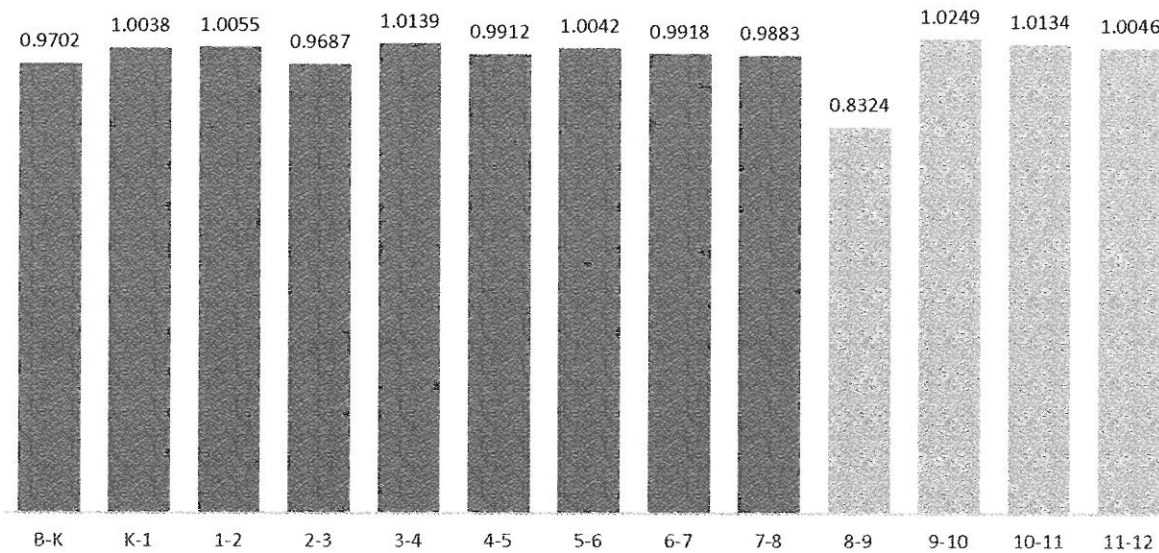


**Historic and Projected Births**



Below is a look at the District's five year average Grade-to-Grade ratios. Ratios above 1.0 indicate an in-migration of students as they transition to the next grade. Ratios below 1.0 indicate an out-migration of students. The average average survival ratios for all grades through grade 8 exceed are at or near 1.0 indicating balanced in/out-migration at those grade levels. Examples of how the MSBA calculated the Birth to Kindergarten ratio as well as Grade-to-Grade survival ratios are at the bottom of the page.

### Five Year Average Grade-to-Grade Survival Ratios

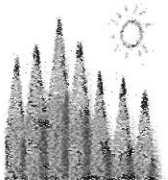


#### CALCULATING B-K RATIO:

$\frac{\text{FY15 'actual' K enrollment}}{\text{2010 'actual' births}} = \frac{255}{311} = 0.8199$	repeat for the next (4) yrs	avg the (5) yrs together	=	0.9702
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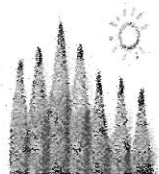
#### CALCULATING GRADE-TO-GRADE SURVIVAL RATIOS, grades K-1 example:

$\frac{\text{FY16 'actual' grade 1 enrollment}}{\text{FY15 'actual' K enrollment}} = \frac{288}{293} = 0.9829$	repeat for the next (4) yrs	avg the (5) yrs together	=	1.0038
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The 5-yr averages of the grade-to-grade survival ratios are shown at the top. The unshaded data below presents the District's K-12 enrollment as reported by DESE through FY21. FY22 enrollment data is the enrollment data you provided recently. The shaded area presents the MSBA's base projection by grade for the next ten years. Average enrollments for the 10 projected years are shown at the bottom.

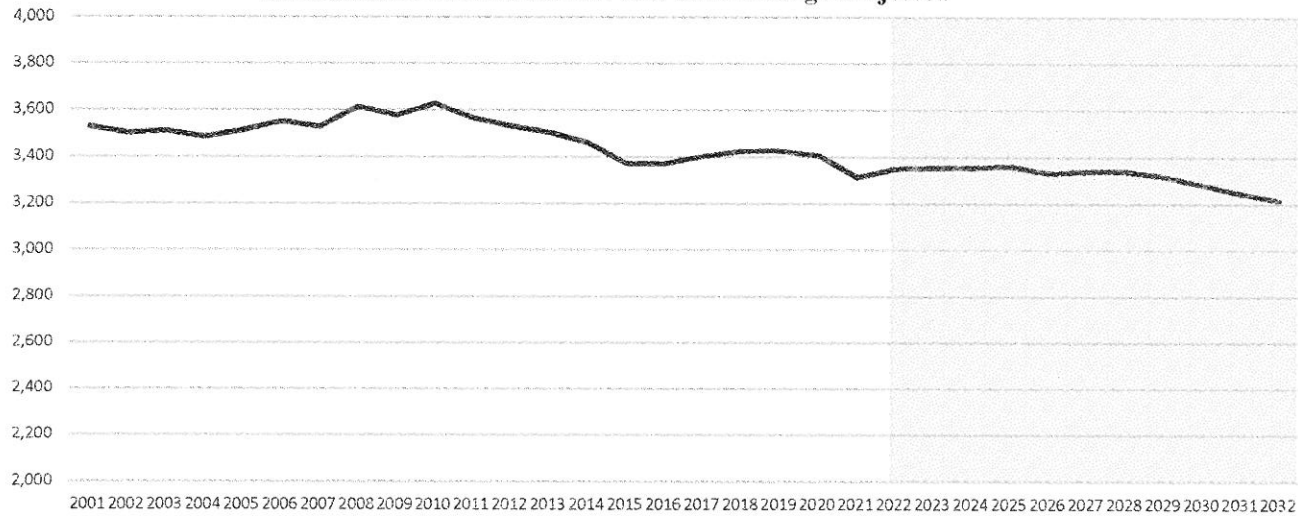
		B-K	K-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12				
5yr survival:		0.9702	1.0038	1.0055	0.9687	1.0139	0.9912	1.0042	0.9918	0.9883	0.8324	1.0249	1.0134	1.0046				
FY	Births (in CY) minus 5 yrs	K	1	2	3	4	5	6	7	8	9	10	11	12	TTL	K-5	6-8	9-12
2001	303	300	283	290	287	308	315	284	293	278	223	214	242	212	3,529	1,783	855	891
2002	328	288	289	279	289	281	298	301	273	287	248	221	214	235	3,503	1,724	861	918
2003	290	306	307	276	274	288	293	282	305	276	232	241	218	213	3,511	1,744	863	904
2004	305	278	291	292	266	274	292	280	282	303	240	232	239	217	3,486	1,693	865	928
2005	257	283	299	277	286	264	272	289	284	282	266	240	236	236	3,514	1,681	855	978
2006	265	269	294	300	285	286	275	280	293	288	244	262	239	236	3,551	1,709	861	981
2007	300	272	271	285	296	287	286	279	274	288	249	242	261	238	3,528	1,697	841	990
2008	286	292	299	271	293	305	291	288	281	270	268	253	252	251	3,614	1,751	839	1,024
2009	319	281	305	297	266	294	288	282	294	277	234	259	258	241	3,576	1,731	853	992
2010	311	293	288	312	290	275	293	287	279	293	262	247	261	248	3,628	1,751	859	1,018
2011	306	255	288	281	309	281	278	290	281	278	268	259	232	265	3,565	1,692	849	1,024
2012	283	255	271	282	282	309	280	279	292	273	257	262	260	229	3,531	1,679	844	1,008
2013	306	254	252	256	281	290	304	274	275	291	245	259	264	261	3,506	1,637	840	1,029
2014	280	244	268	245	265	285	284	303	284	266	254	253	252	258	3,461	1,591	853	1,017
2015	305	255	240	259	242	261	271	275	296	284	234	259	241	254	3,371	1,528	855	988
2016	272	268	254	241	270	243	266	279	272	293	248	232	257	249	3,372	1,542	844	986
2017	290	310	282	264	236	269	244	271	273	277	241	249	232	255	3,403	1,605	821	977
2018	275	299	310	297	254	238	266	253	272	276	229	251	251	230	3,426	1,664	801	961
2019	275	299	294	301	283	265	247	269	251	267	217	237	247	250	3,427	1,689	787	951
2020	270	265	296	298	297	284	259	244	272	254	221	224	244	248	3,406	1,699	770	937
2021	269	260	269	282	286	297	277	256	239	256	205	218	229	241	3,315	1,671	751	893
2022	267	277	268	279	277	290	290	276	249	238	234	211	223	239	3,351	1,681	763	907
2023	265	281	278	269	270	281	287	291	274	246	198	240	214	224	3,354	1,667	811	876
2024	262	267	282	280	261	274	278	289	289	271	205	203	243	215	3,356	1,642	848	866
2025	260	267	268	284	271	265	272	280	286	285	225	210	206	244	3,362	1,626	851	885
2026	260	262	268	269	275	275	262	273	277	283	238	231	213	207	3,332	1,611	833	888
2027	259	261	263	269	261	279	272	263	271	274	235	244	234	214	3,340	1,606	808	927
2028	259	259	262	264	261	264	276	273	261	267	228	241	247	235	3,341	1,588	802	951
2029	259	257	260	264	256	264	262	278	271	258	223	234	245	248	3,319	1,563	807	949
2030	259	254	258	261	255	260	262	263	275	268	215	228	237	246	3,283	1,551	807	926
2031	260	252	255	259	253	259	257	263	261	272	223	220	231	238	3,245	1,536	796	912
2032	262	252	253	257	251	257	257	258	261	258	227	229	223	232	3,214	1,526	778	910
10 yr projected avg:	261	265	268	261	268	269	273	273	273	268	222	228	229	230	3,315	1,592	814	909



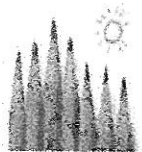
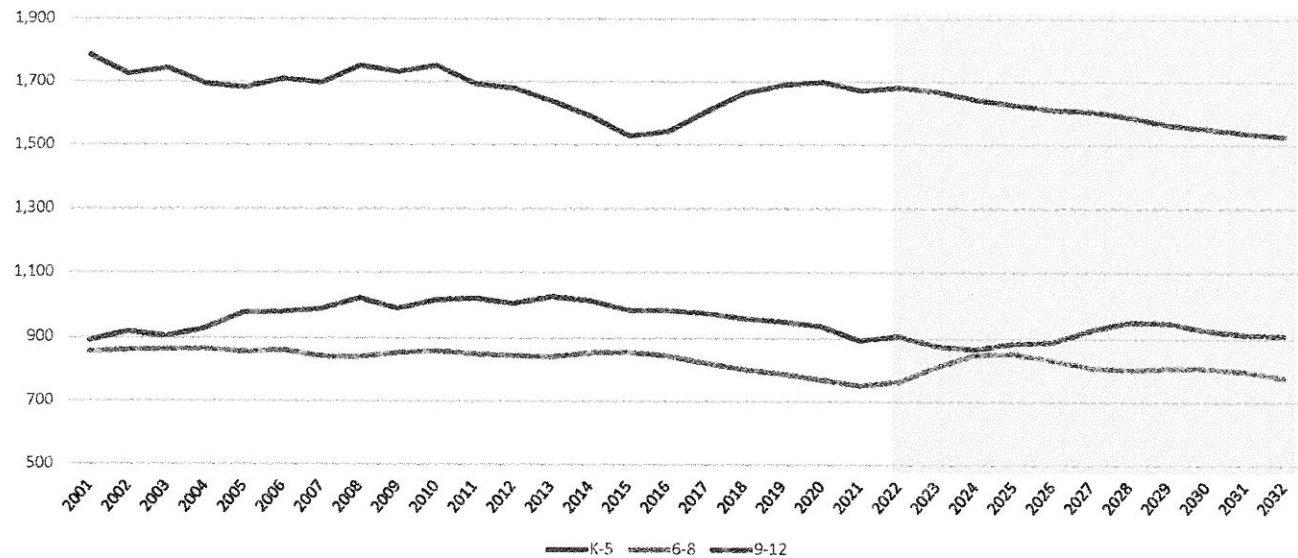


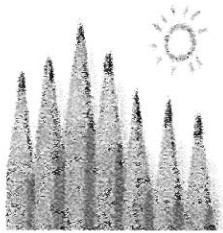
The MSBA's base enrollment projection indicates that total enrollment has been fairly stable in the recent past and will continue, trailing downward later in projection period. K-5 enrollment dipped in 2015 but has increased since, apparently peaking in 2020. K-5 enrollment is projected to experience a slight declining trend through the 2031-2032 school year.

**Total Historic Enrollment and Ten-Year Average Projected**



**Ten-year Average, by Grade Group**





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# Questions / Discussion