PHASE 1 REPORT: DEMOGRAPHIC ANALYSIS AND PROJECTIONS FOR WRSD

PREPARED BY THE

CENTRAL MASSACHUSETTS REGIONAL

PLANNING COMMISSION (CMPRC)

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Contents

Executive Summary

The Wachusett Regional School District (WRSD) 2023 Phase 1 Data project, initiated in December 2023, explored the demographic shifts affecting its five towns: Holden, Paxton, Princeton, Rutland, and Sterling. This initiative marks a pivotal effort to synchronize the district's educational framework with ongoing demographic transformations, aiming to provide the best possible education for students. By marrying quantitative demographic analysis with qualitative insights from community stakeholders, the project has shed light on the district's challenges and opportunities in terms of school enrollment, facility readiness, and resource allocation.

The analysis has uncovered a complex demographic landscape marked by aging populations, evolving family configurations, and variable school enrollments. Despite state mandates advocating for increased housing development, the cautious zoning practices adopted by local planning boards are unlikely to foster rapid growth or particularly encourage the development of single-family homes. This approach, geared towards preserving the towns' rural character and the slow pace of housing development, somewhat complicates the projection and planning for future school enrollments.

Interviews with district and town officials have pinpointed several vital concerns, including the imperative to modernize and enhance security across school facilities, address the wear and tear on aging infrastructure, ensure buildings align with contemporary educational demands, and tackle the financial challenges of necessary updates amid escalating construction costs.

We put forth strategic recommendations to navigate these identified challenges and capitalize on emerging opportunities. A critical step forward involves reinforcing the cooperative dynamic between the school district and municipal planning entities, anchored by a commitment to ensure educational planning benefits from current and comprehensive development insights. Importantly, the district is encouraged to leverage the annual projections they receive from the New England School Development Council (NESDEC), complemented by specific data on large, planned housing developments. This approach promises a richer, more accurate basis for adjusting to demographic shifts and planning resource allocation and facility upgrades.

Furthermore, strategic facility planning is underscored as a cornerstone for cultivating educational environments that are safe and conducive to the pedagogical innovations of the 21st century. Community engagement remains paramount, focusing on harmonizing educational planning with the towns' developmental preferences and character. The WRSD 2023 Phase 1 Data project has laid the groundwork for insightful, forward-looking decision-making capable of adapting to the Wachusett region's dynamic demographics. By following the recommendations and continued strategic planning, the district positions itself to maintain its

schools as vibrant hubs of learning, aptly equipped to navigate forthcoming challenges and seize opportunities ahead.

Introduction

The backdrop to this endeavor is a complex array of demographic shifts within the WRSD's jurisdictions. These changes encompass variations in population size, age distributions, and household compositions, each carrying significant implications for school enrollment figures, resource distribution, and the overall educational experience offered to students. The need for this project arises from an acute awareness of these dynamics and their potential to reshape the demand for educational services in the coming years. It reflects a proactive stance by the WRSD to anticipate and adapt to these trends, ensuring that its schools can continue to serve as beacons of learning, capable of meeting the diverse needs of an evolving student body.

Through a comprehensive analysis of current demographic trends and their projected trajectories, the initiative seeks to equip the WRSD with actionable insights. These insights are intended to guide strategic decisions around school capacity planning, resource allocation, and the adaptation of educational programs to align with shifting student demographics. Furthermore, the project aims to inform future facility planning efforts, addressing needs for expansions, renovations, or new constructions to accommodate changing enrollment patterns. In early February 2024, CMRPC applied for an Efficiency and Regionalization Grant from the Massachusetts Division of Local Services to fund future community outreach and facilities planning phases.

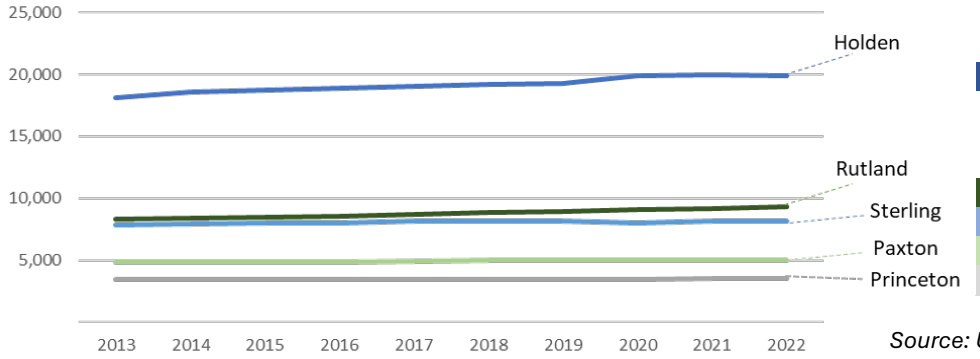
This project phase employs a rigorous methodology combining quantitative data analysis with qualitative stakeholder engagement to achieve these objectives. The project constructs a detailed picture of demographic changes by drawing on a wide range of data sources, including census information, school enrollment records, and local development trends. This quantitative foundation is enriched by perspectives gathered from community stakeholders, offering valuable context and insights into how demographic shifts are perceived at the local level and their anticipated impacts on schools. Together, these approaches provide a robust framework for projecting future demographic trends and understanding their implications for the WRSD. By grounding its planning and decision-making processes in a deep understanding of demographic dynamics, the WRSD reaffirms its commitment to providing high-quality education that reflects the needs and aspirations of its communities.

Town and School Demographic and Enrollment Analysis

Population and Enrollment

Between 2013 and 2022, all 5 towns that comprise WRSD grew in population. The largest growth occurred in Holden and Rutland at 10% and 12% respectively. Over the same period, total WRSD student enrollment trended downward, from 7,346 total students in 2014 to 6,676 students in 2023.

Population Change by Town 2013 - 2022

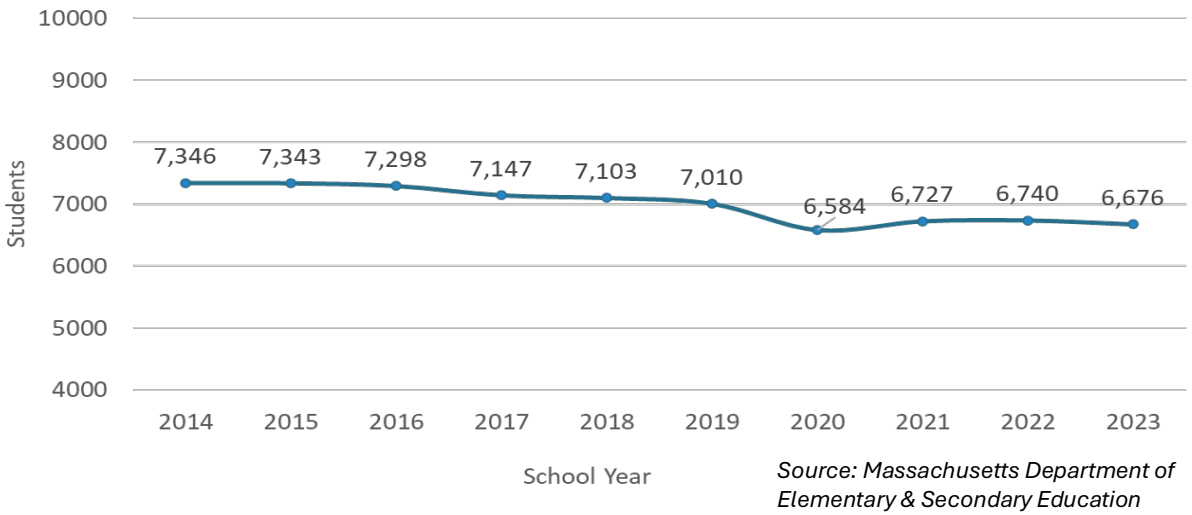


	2013	2022	% Change
Holden	18,113	19,880	10%
Rutland	8,282	9,298	12%
Sterling	7,871	8,139	3%
Paxton	4,825	5,024	4%
Princeton	3,444	3,504	2%

Source: UMass Donahue

Looking at the population under 18 years of age across the five towns – between the periods 2013-2017 and 2018-2022, the American Community Survey (ACS) estimates that the total population under 18 did not meaningfully change overall in the district. However, within the towns, both Paxton and Sterling saw a decline in their under-18 population, while the other three towns all experienced an increase.

WRSD Enrollment 2014 - 2023



Source: Massachusetts Department of Elementary & Secondary Education

Languages Spoken at Home

Ensuring that the WRSD is well prepared to educate dual language students or students from families with limited English proficiency, is an ongoing challenge. Within the WRSD five towns, American Community Survey (ACS) data indicates that the number of limited English proficiency (LEP) households is a relatively small share of the population and has changed little over the past 10 years. Holden has the most LEP households, estimated at 78 in the most recent 2022 ACS. Rutland is the only town that has experienced an increase in LEP Households – from 0 in the 2013-2017 ACS to 24 in the 2018-2022 ACS. It should be noted that the margin of error for all towns is high, making it difficult to determine whether change is or is not occurring. For example, the 2022 margin of error for Rutland is + or – 30 households, meaning that the change in estimated LEP households could be close to the 2017 estimate of 0 or twice as high.

	2013-2017		2018-2022	
	Limited English-speaking households	Percent of Households	Limited English-speaking households	Percent of Households
Holden	92	1%	78	1%
Paxton	0	0%	0	0%
Princeton	8	1%	7	1%
Rutland	0	0%	24	1%
Sterling	0	0%	0	0%
Worcester County	14,550	5%	16,146	5%
City of Worcester	8,448	12%	9,309	12%

Source: ACS 2013-2017 & 2018-2022 5-Year Estimates

The table below shows the primary language spoken at home for the population 5 to 17 years old. The predominant language in all 5 towns is English. Holden has the largest number of residents who speak languages other than English (476 total), with Spanish and European Languages making up the largest shares.

	English	Spanish	Indo-European Languages	Asian and Pacific Island languages	Other Language
Holden	3,365	114	236	32	94
Paxton	502	21	47	0	0
Princeton	561	8	0	0	0
Rutland	1,783	65	0	116	0
Sterling	1,082	0	109	0	0
Worcester County	104,679	14,717	7,652	3,657	3,177
City of Worcester	16,552	7,371	2,031	951	2,079

Source: ACS 2013-2017 & 2018-2022 5-Year Estimates. Language Spoken at Home for Pop ages 5-17

An important consideration for the future is the increasing number of LEP households in Worcester County and the City of Worcester. Within Worcester County, LEP households have increased by over 1500 over the last 10 years. Although these households seem to be locating primarily in the city of Worcester, given the City's rising housing costs and limited new construction, the WRSD towns may start to see more LEP households in the future.

Enrollment by Town

Enrollment by Town and Change in Enrollment from Prior Year 2013 - 2023

	Holden	Paxton	Princeton	Rutland	Sterling
2013	3,154	726	455	1,655	1,227
2014	3,188	730	441	1,665	1,192
2015	3,207	717	447	1,693	1,169
2016	3,261	704	451	1,673	1,168
2017	3,219	677	442	1,647	1,106
2018	3,258	654	423	1,612	1,060
2019	3,335	646	428	1,589	1,005
2020	3,153	621	399	1,505	908
2021	3,231	634	417	1,550	914
2022	3,235	635	405	1,628	906
2023	3,206	624	427	1,652	878
2014	34	4	-14	10	-35
2015	19	-13	6	28	-23
2016	54	-13	4	-20	-1
2017	-42	-27	-9	-26	-62
2018	39	-23	-19	-35	-46
2019	77	-8	5	-23	-55
2020	-182	-25	-29	-84	-97
2021	78	13	18	45	6
2022	4	1	-12	78	-8
2023	-29	-11	22	24	-28

Source: Massachusetts Department of Elementary & Secondary Education

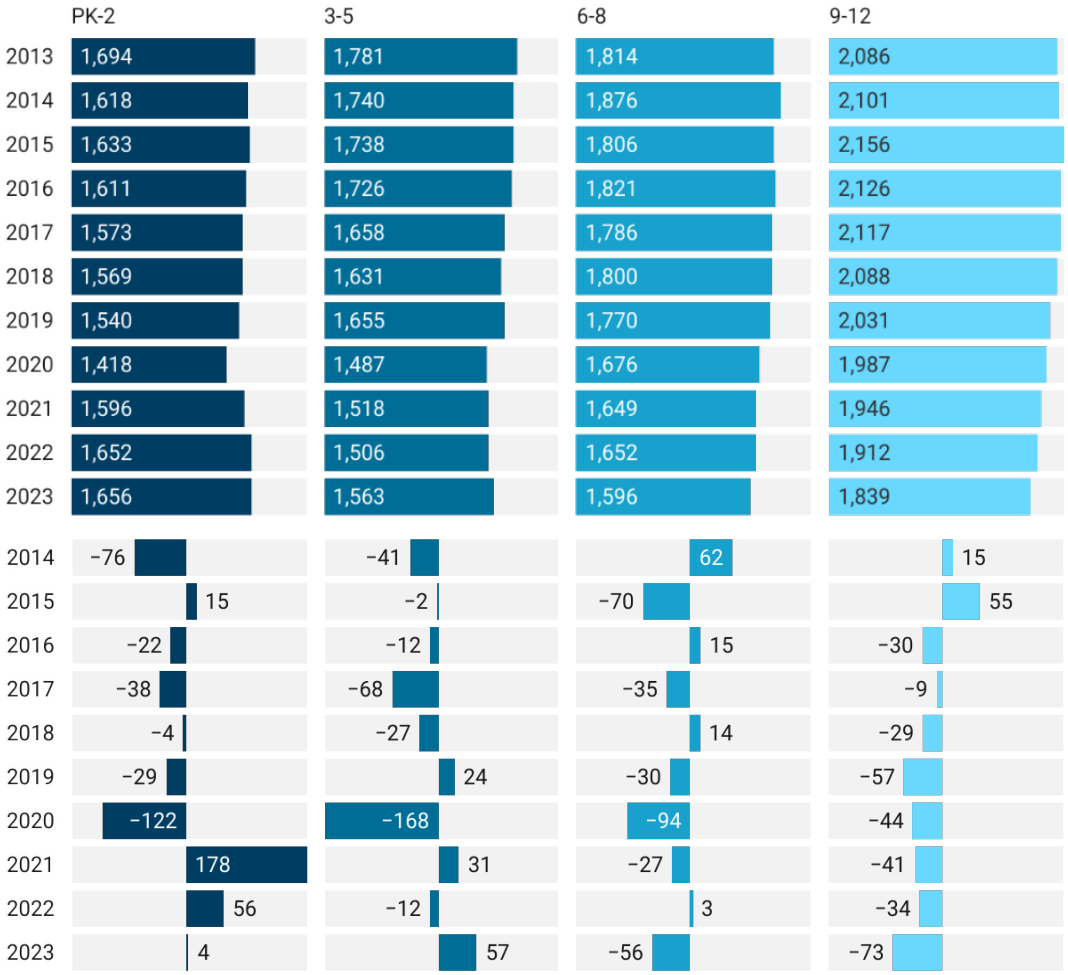
Year-to-year enrollment changes can create many challenges for Schools, Principals, and Teachers. Planning for too many students can waste resources, whereas planning for too few can lead to overcrowded classrooms and overburdened teachers and staff. Data from the MA Department of Elementary and Secondary Education (DESE) indicates that enrollment trends have differed by town. Between 2013 and 2023, Holden and Rutland saw steady enrollment figures. Prior to the COVID-19 pandemic, enrollment in Holden grew steadily from year to year, peaking in 2019 at 3,335 students. Enrollment in Rutland peaked in 2015 and slowly declined before the pandemic. Since 2020 both towns have seen enrollment figures climb. Enrollment in the other three towns has trended downward since 2013. Although annual variation in enrollment is often expected, high levels of yearly variation can create challenges for school officials and teachers – especially when enrollment unexpectedly drops or increases. Between 2013 and 2023, Holden and Rutland have each had periods of sharp enrollment swings. Each of the 5 towns saw a sharper-than-usual decline in 2020 due to the pandemic, followed by an increase in enrollment in 2021.

Enrollment by Grade

Prior to 2020, WRSD enrollment was generally trending down across all grades. Since 2020, middle and high school enrollment has continued to trend downward. However, since 2020, Pre-K through second grade has seen a sharp enrollment increase, surpassing pre-COVID enrollment levels: 1,656 in 2023 vs 1,540 in 2019.

Like variation in enrollment within towns, high levels of year-to-year enrollment variation in particular grades or schools can create challenges for teachers and students. The figure below shows the change in enrollment from the previous year by grade. Variation in the elementary grade groups (PK-2 and 3-5) appears to be higher than in the middle and high school (6-8 and 9-12) and since 2020, has shifted from a negative trend to positive. Acknowledging that each grade saw a sharper than usual decrease in enrollment during the COVID-19 Pandemic, the recent uptick in younger enrollment is likely to be partially driven by parents who homeschooled during the pandemic and then re-enrolled their kids in WRSD. However, the increase in PK-2 enrollment in 2021 surpassed the 2020 decrease and remained positive in 2022 and 2023. As these younger cohorts move through the school system, they may impact the downward trend in later grades.

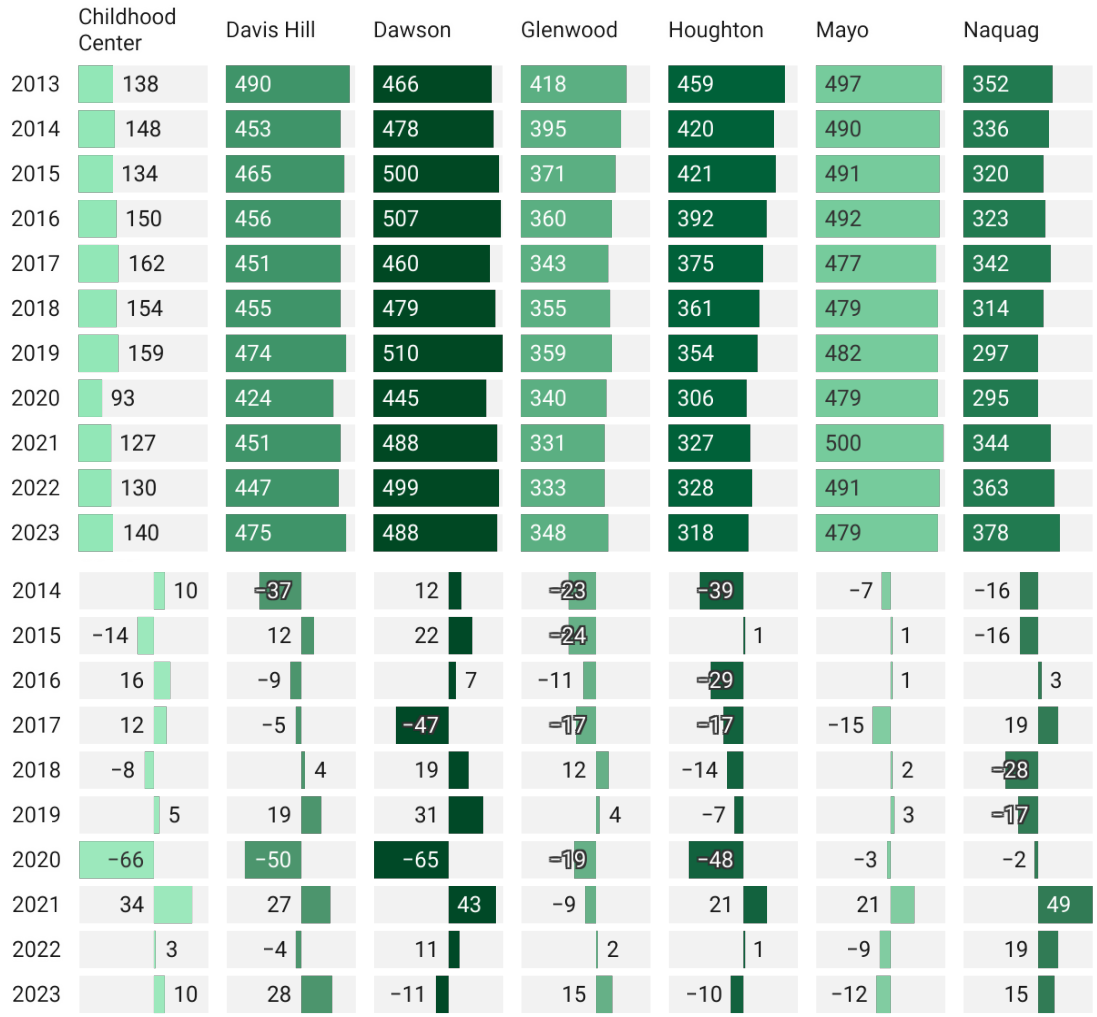
Enrollment by Grade and Change in Enrollment from Prior Year 2013 - 2023



Source: Massachusetts Department of Elementary & Secondary Education

Enrollment by School

WRSD Enrollment and Change from Year Prior by Elementary School



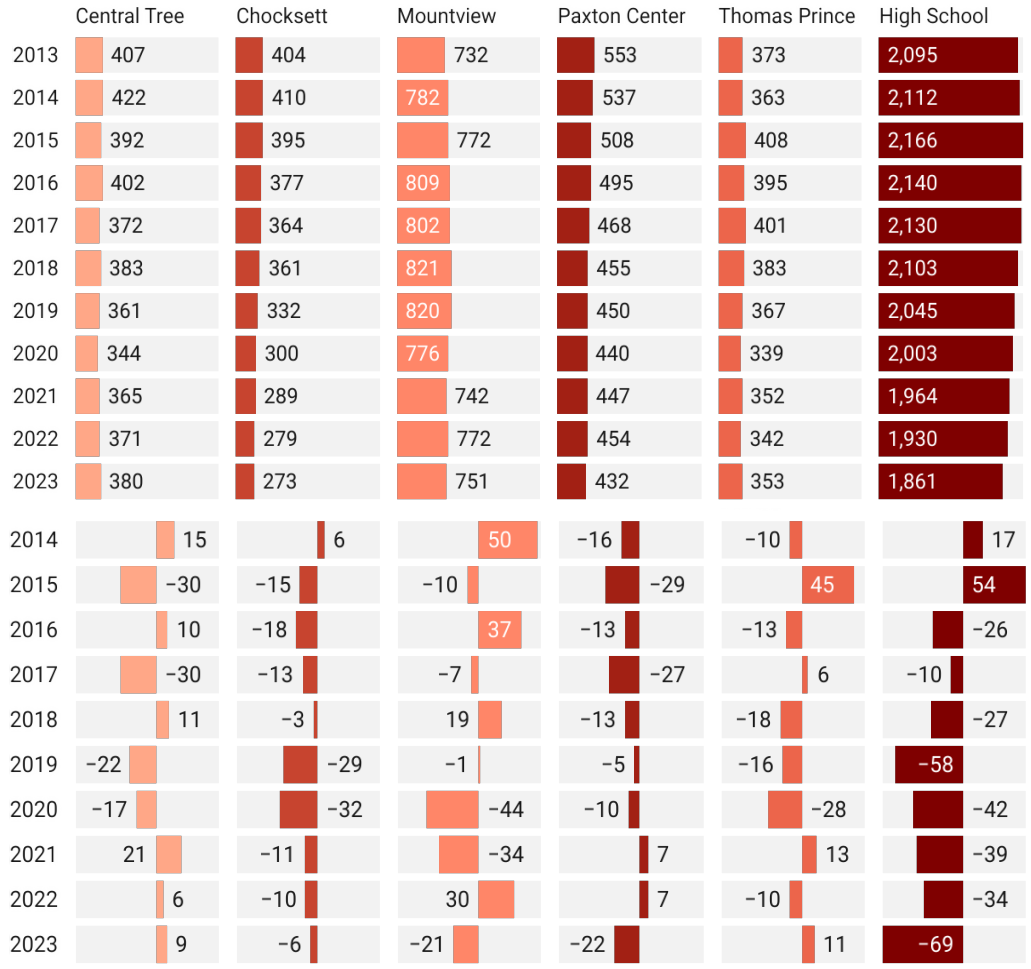
Source: Massachusetts Department of Elementary & Secondary Education

Examining enrollment trends by school sheds additional light on WRSD's challenges in planning for future enrollment. The figure below shows enrollment for the district's 7 elementary schools between 2013 and 2023. Enrollment at Houghton and Glenwood has trended downward over this period, while Dawson, Mayo, and Davis Hill have seen enrollment vary from year to year with little directional change overall. Enrollment at Naquag demonstrated similar trends prior to 2020 but has since grown by 83 students in 3 years.

The second figure shows the change in enrollment from the previous year by school. These trends mirror the overall enrollment trends within individual towns. For instance, Holden's K-8 schools (Davis Hill, Dawson, & Mayo) show relatively steady enrollment numbers. On the other hand, Sterling's school (Houghton) experienced the sharpest decline in students between 2013 and 2023.

The figure to the right shows enrollment in the district's five middle schools and high school between 2013 and 2023. Overall enrollment trended downward over the period, apart from Mountview Middle School. Mountview was a primary cause of concern among the principals that were interviewed. Given that Mountview is the district's newest building and enrollment hit a 10-year peak of 821 students in 2018, shortly after its opening, principals and teachers expressed concern about the growth trends within the school. Enrollment since 2018 in Mountview has trended downward – with a large decrease in 2020 likely exacerbated by the COVID-19 pandemic. A possible contributor to a drop-off in enrollment is the opening of the Middle School Division at Saint John's High School. We heard anecdotal evidence from several Town Administrators and School Principals that Saint John's has been an attractive option for parents in the district. Data collected on student outplacement (next page) to non-public schools supports this assumption, showing an increase over the last five years.

WRSD Enrollment by Middle/High School 2013 - 2023

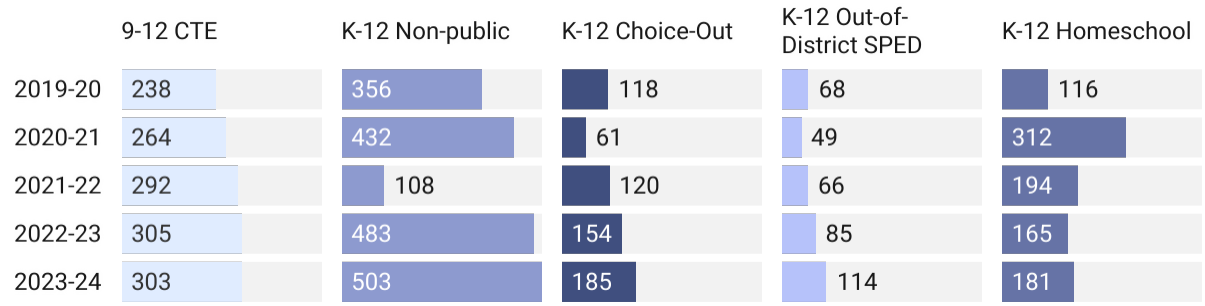


Source: Massachusetts Department of Elementary & Secondary Education

The figure on the bottom right shows the change in enrollment from the previous year by school. Of note, the High school and Chocksett have seen declining enrollment year-over-year since 2016. Paxton Center has only had two positive enrollment years over the last ten years – both coming in the years following the COVID-19 Pandemic.

Students Not Attending WRSD

Students living within the district but not attending WRSD schools have increased over the last five years. In the 2019 school year, a total of 896 students attended non-district schools. In 2023, that number had increased to 1,286. As a percentage of total school enrollment in the five towns, it has increased from 11% in 2019 to 16% in 2023. Non-public schools are the biggest source of outplacement in the district and have increased by close to 150 students since 2019 – currently 503 students. Homeschooling sharply increased during 2020 but dropped in 2021. However, homeschooling has remained above pre-pandemic levels since 2020.



Baseline Projection Using Cohort Model

Forecast Model Methodology

CMRPC utilized a grade progression or grade-to-grade cohort survival model to forecast future WRSD enrollment. Our methodology generates a baseline enrollment forecast using historical enrollment data (Department of Elementary and Secondary Education and WRSD), birth data (Massachusetts Department of Public Health and Town Annual Reports), 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 for the period 2017-2022.
- Fertility rate is applied to projected female populations from the UMass Donahue Institute to arrive at projected future births.
- Birth data (2014-2018) and Kindergarten enrollment data (2019-2023) are used to calculate a 5-year average birth-to-kindergarten ratio.
- The average birth-to-kindergarten ratio is applied to actual and projected births to generate Kindergarten enrollments.
- Historic enrollment data is used to calculate 5-year (2019-2023) 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.

The cohort survival method is the most frequently used method of preparing enrollment forecasts and is the technique used by the New England School Development Council (NESDEC) - which has produced annual forecasts for WRSD - and the Massachusetts School Building Authority (MSBA).

Does the Cohort Method Account for Future Residential Development?

In terms of accounting for future residential development, the cohort survival method assumes that the underlying geographically specific birth, death, migration, and grade-to-grade survival data and trends from a given time-period reflect the development that occurred in that place over the respective time period. For the CMRPC-produced enrollment forecasts, this means that although the baseline projections do not explicitly estimate additional students resulting from new residential development, they are implicit in the trends and data that are used. Therefore,

the baseline projections are considered to serve as reasonable reflections of future residential development should it continue at the same relative pace within the five WRSD towns.

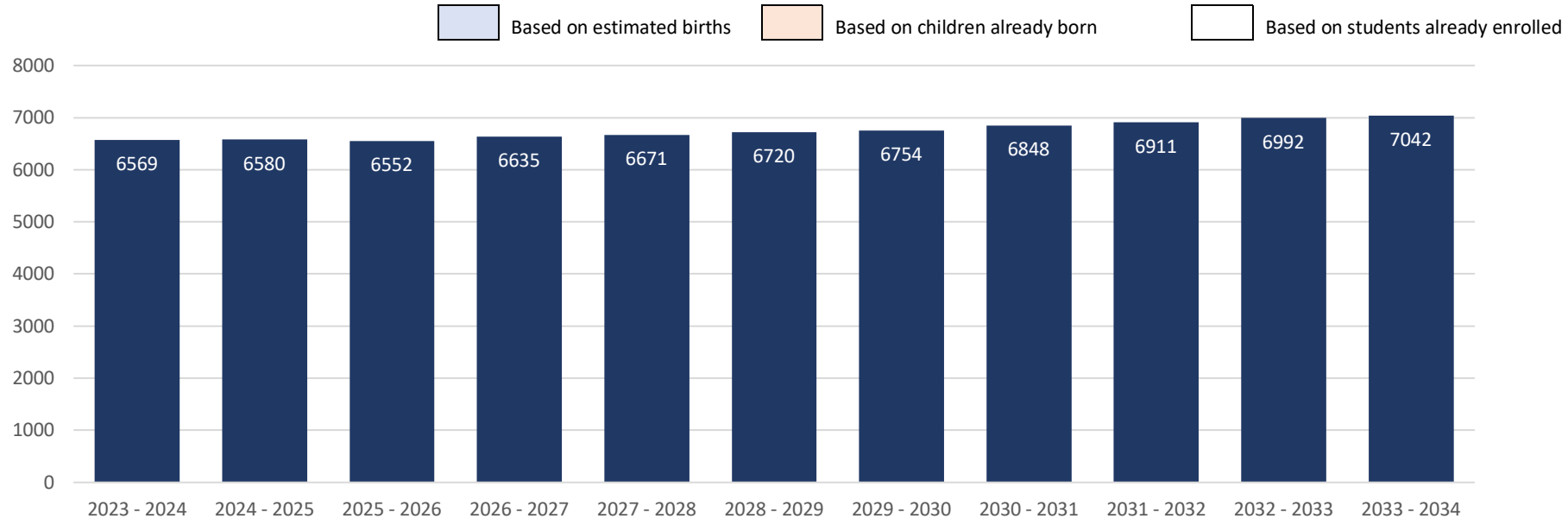
To examine factors that may result in deviations from underlying trends in the data, CMRPC has also incorporated 'adjustment factors' or 'scenarios' for zoning changes, future development, and migration to arrive at a set of forecast scenarios that are included in this report. The forecast scenarios are intended to portray a set of reasonable alternatives to the baseline, together creating a range of plausible futures. WRSD noted the importance of the forecast to align with the Mass School Building Authority's forecast model methodology, which is used in the context of future building projects that are undertaken in collaboration with MSBA. CMRPC met with MSBA's enrollment forecast team as part of this project and confirmed the alignment of the grade-to-grade cohort survival methodology.

How Reliable are Enrollment Projections?

Research suggests that enrollment projections are, at best, likely to come within about 1% of actual enrollment. So, this means that all future projections will have some level of error. Given that this type of model relies on historical data and trends, the magnitude and direction of that error is dependent upon whether various societal factors continue to follow historical trends or deviate in a major way. For this reason, enrollment projections are considered to be the most reliable in the years for which birth data is known and current enrollment makes up a larger share of overall enrollment – typically projected years 1 through 5. To provide WRSD with a better understanding of what to expect in terms of accuracy, Appendix C includes an analysis of how accurate past NESDEC enrollment projections have been when compared to actual enrollment. This analysis suggests that an error range of 3 to 7 percent may be a reasonable expectation. However, we also recommend considering the implications of worst-case-scenario error ranges when planning for the future. Additionally, our analysis highlights that there may be some underlying discrepancies in the enrollment data that has been used.

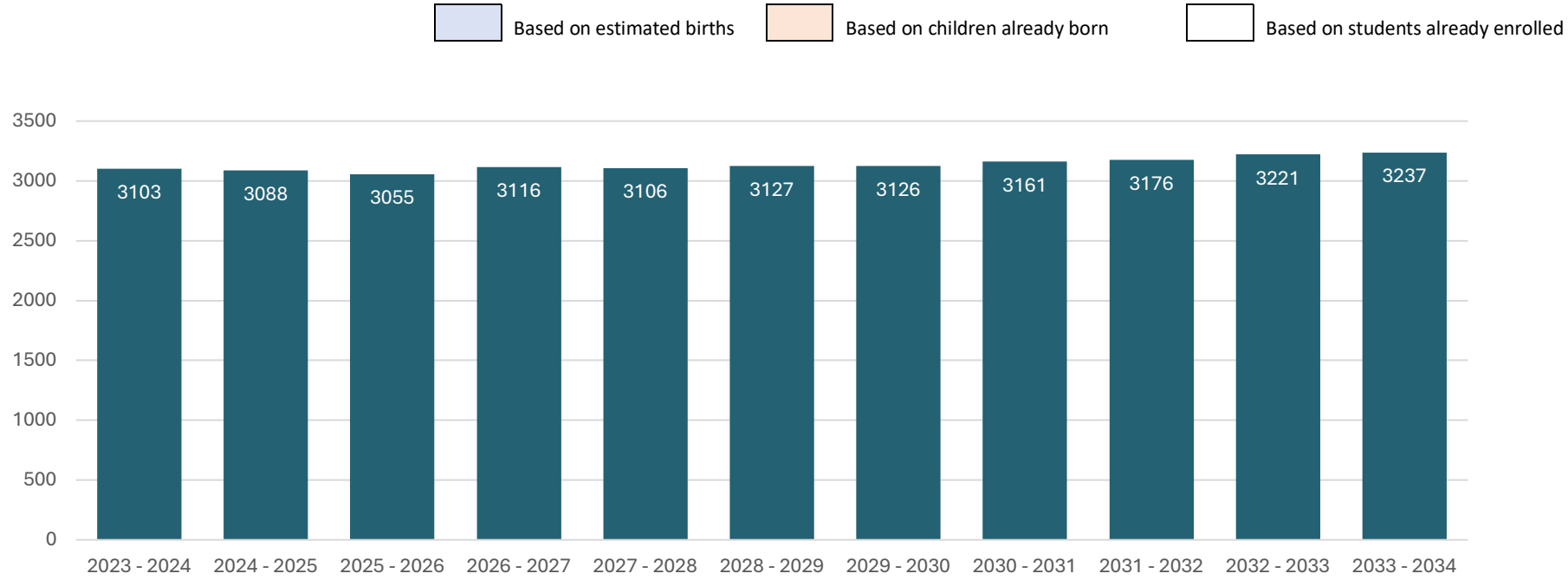
Baseline Forecast Enrollment for WRSD 2023-24 to 2033-34

Birth Year	Births		School Year	PK	K	1	2	3	4	5	6	7	8	9	10	11	12	K-12	PK-12
2018	376	actual	2023 - 2024	140	490	493	540	524	499	544	504	565	548	438	459	490	475	6569	6709
2019	397	actual	2024 - 2025	160	508	527	509	555	536	512	552	501	558	450	442	453	477	6580	6740
2020	365	actual	2025 - 2026	147	468	544	544	523	568	551	520	549	495	458	454	436	441	6552	6699
2021	414	actual	2026 - 2027	167	530	503	561	560	537	584	560	518	543	407	462	448	424	6635	6802
2022	369	actual	2027 - 2028	149	473	569	519	576	572	554	593	556	511	445	410	456	436	6671	6819
2023	386	estimate	2028 - 2029	156	494	507	588	534	588	587	564	590	550	420	449	405	444	6720	6876
2024	386	estimate	2029 - 2030	155	493	530	523	605	546	603	596	561	585	451	423	443	394	6754	6909
2025	398	estimate	2030 - 2031	160	510	529	547	537	618	561	614	593	555	480	455	418	431	6848	7008
2026	398	estimate	2031 - 2032	160	510	548	546	562	548	635	570	611	586	455	484	449	407	6911	7072
2027	398	estimate	2032 - 2033	160	511	548	565	561	576	562	644	567	603	481	459	478	437	6992	7153
2028	398	estimate	2033 - 2034	161	511	548	565	580	575	593	572	640	560	495	485	453	465	7042	7203



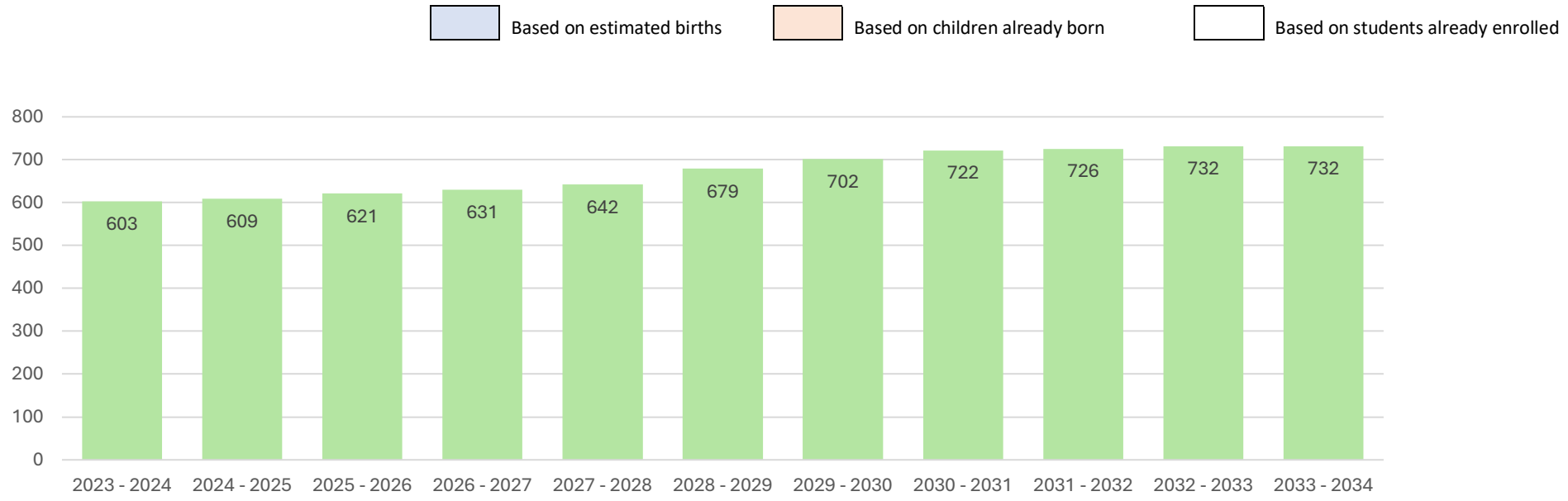
Holden Forecast Enrollment

Birth Year	Births		School Year	PK	K	1	2	3	4	5	6	7	8	9	10	11	12	K-12	PK-12	K-5	6-8
2018	165	actual	2023 - 2024	84	225	242	250	252	223	270	243	276	249	203	199	244	227	3103	3187	1462	768
2019	182	actual	2024 - 2025	73	228	241	252	255	260	231	271	239	271	204	205	196	237	3088	3162	1466	780
2020	176	actual	2025 - 2026	71	221	244	250	256	263	269	231	266	234	222	206	202	191	3055	3126	1503	731
2021	209	actual	2026 - 2027	84	262	236	254	255	264	272	269	227	260	192	224	204	197	3116	3200	1543	757
2022	159	actual	2027 - 2028	64	199	280	245	259	263	274	272	265	222	214	194	221	198	3106	3170	1520	760
2023	182	estimate	2028 - 2029	73	228	213	291	250	267	272	274	267	259	183	216	191	215	3127	3200	1522	801
2024	183	estimate	2029 - 2030	74	229	244	222	297	258	276	273	269	262	213	184	213	186	3126	3199	1526	804
2025	188	estimate	2030 - 2031	76	236	245	254	226	306	267	277	268	264	215	215	182	207	3161	3237	1534	808
2026	189	estimate	2031 - 2032	76	236	252	255	259	233	317	267	271	262	217	217	212	177	3176	3252	1552	801
2027	189	estimate	2032 - 2033	76	237	253	262	260	267	241	318	263	266	215	218	214	206	3221	3297	1520	846
2028	190	estimate	2033 - 2034	76	238	254	263	267	268	276	242	312	257	218	217	216	208	3237	3313	1566	811



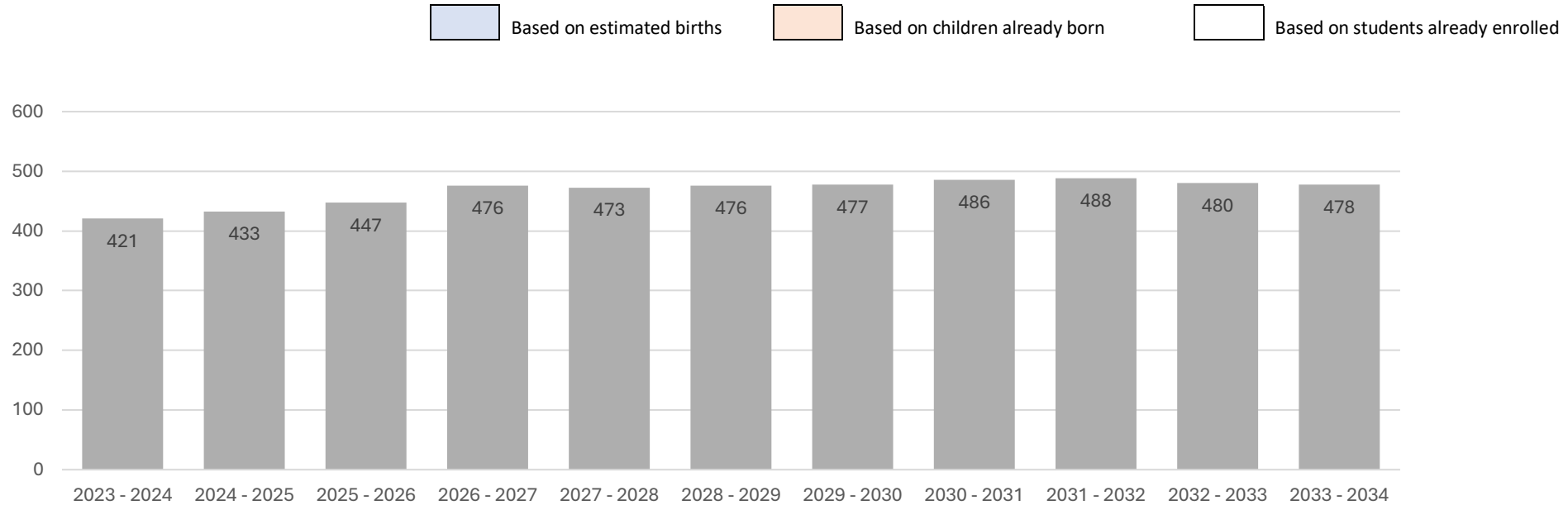
Paxton Forecast Enrollment

Birth Year	Births		School Year	PK	K	1	2	3	4	5	6	7	8	9	10	11	12	K-12	PK-12
2018	41	actual	2023 - 2024	18	38	59	44	46	47	48	38	54	39	47	52	40	51	603	621
2019	38	actual	2024 - 2025	15	46	41	62	46	51	51	52	38	53	32	47	51	39	609	624
2020	35	actual	2025 - 2026	14	42	49	43	64	50	55	55	53	38	44	32	47	50	621	635
2021	38	actual	2026 - 2027	15	46	45	51	44	71	54	59	56	52	31	44	32	46	631	646
2022	38	actual	2027 - 2028	15	46	49	47	53	49	76	59	60	55	43	31	44	31	642	658
2023	46	estimate	2028 - 2029	19	56	49	51	49	58	52	83	60	59	45	43	31	42	679	698
2024	45	estimate	2029 - 2030	18	54	60	51	53	54	63	57	84	59	49	46	43	30	702	720
2025	33	estimate	2030 - 2031	13	39	58	62	53	58	58	69	58	83	48	49	45	41	722	735
2026	32	estimate	2031 - 2032	13	39	42	61	65	58	63	63	69	57	68	49	48	44	726	739
2027	32	estimate	2032 - 2033	13	38	41	44	63	71	63	69	64	68	47	68	48	47	732	744
2028	31	estimate	2033 - 2034	13	37	41	43	45	70	77	69	69	63	56	47	68	47	732	744



Princeton Forecast Enrollment

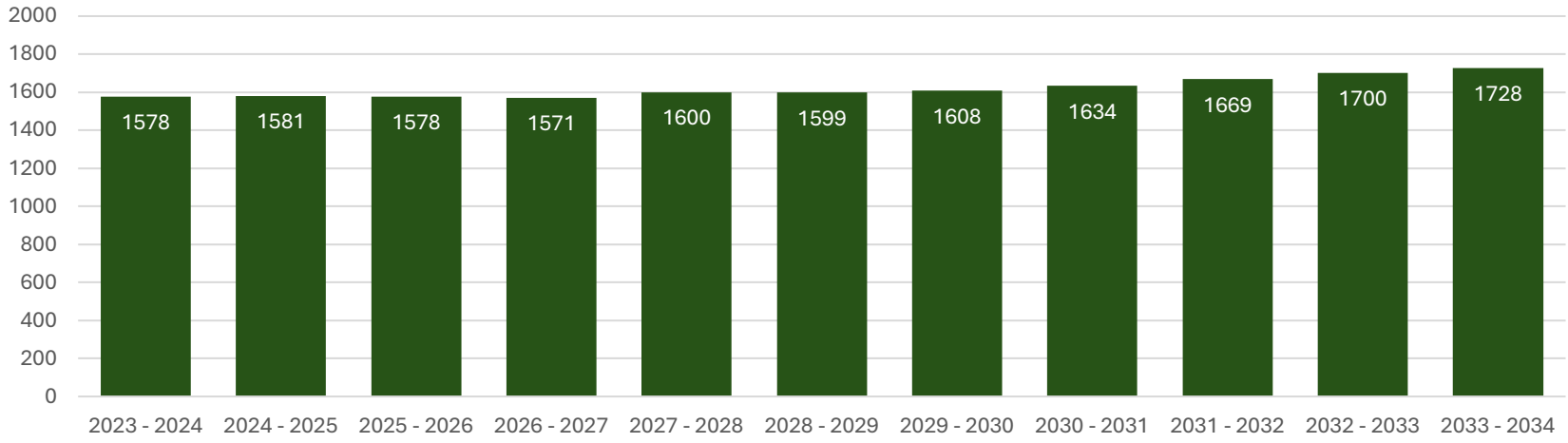
Birth Year	Births		School Year	PK	K	1	2	3	4	5	6	7	8	9	10	11	12	K-12	PK-12
2018	24	actual	2023 - 2024	6	41	28	36	40	44	36	27	37	33	36	21	22	20	421	427
2019	22	actual	2024 - 2025	9	31	46	30	40	39	45	35	26	35	27	36	21	21	433	441
2020	26	actual	2025 - 2026	10	36	34	49	33	39	40	44	34	25	29	27	36	20	447	458
2021	33	actual	2026 - 2027	13	46	40	37	54	32	39	39	43	33	21	29	27	35	476	489
2022	22	actual	2027 - 2028	9	31	51	44	41	53	33	38	38	41	27	21	29	26	473	481
2023	21	estimate	2028 - 2029	8	29	34	55	48	40	54	32	38	36	34	27	21	28	476	485
2024	21	estimate	2029 - 2030	8	29	33	37	61	47	40	53	32	36	30	34	27	20	477	486
2025	22	estimate	2030 - 2031	9	30	32	35	41	59	48	39	52	30	29	30	33	26	486	494
2026	21	estimate	2031 - 2032	9	30	34	35	39	40	61	47	39	49	25	30	30	33	488	497
2027	21	estimate	2032 - 2033	8	29	33	36	38	38	40	59	46	37	40	25	29	29	480	489
2028	21	estimate	2033 - 2034	8	29	33	36	40	37	38	39	58	44	30	41	25	29	478	486



Rutland Forecast Enrollment

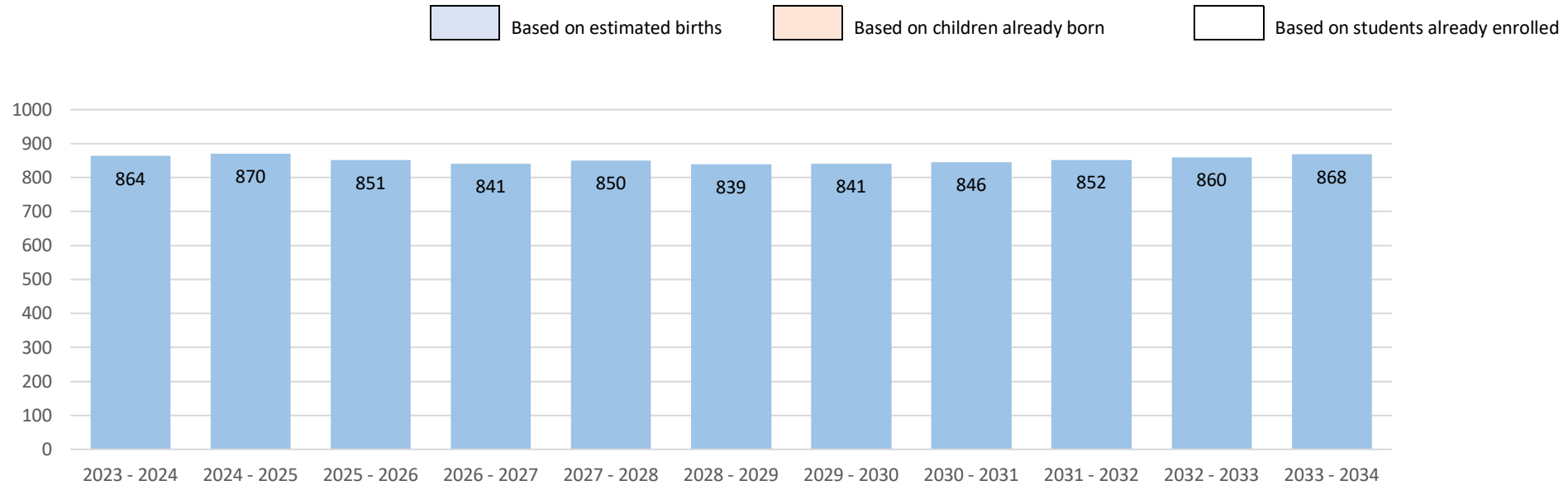
Birth Year	Births		School Year	PK	K	1	2	3	4	5	6	7	8	9	10	11	12	K-12	PK-12	K-2	3-5	6-8
2018	92	actual	2023 - 2024	55	124	108	152	122	117	120	119	132	148	91	117	117	111	1578	1633	384	359	399
2019	85	actual	2024 - 2025	34	115	135	110	156	125	119	123	121	135	122	92	116	114	1581	1615	360	400	378
2020	81	actual	2025 - 2026	33	109	125	138	113	160	128	122	124	123	110	123	91	112	1578	1610	372	401	369
2021	76	actual	2026 - 2027	31	103	119	127	141	116	163	130	123	127	101	111	121	88	1571	1602	349	421	380
2022	85	actual	2027 - 2028	34	115	112	121	131	145	118	167	132	126	104	102	110	118	1600	1634	348	394	425
2023	84	estimate	2028 - 2029	34	113	125	114	125	134	148	121	169	135	103	105	101	107	1599	1633	352	407	424
2024	85	estimate	2029 - 2030	34	114	124	127	117	128	137	151	122	172	111	104	104	98	1608	1642	365	381	446
2025	95	estimate	2030 - 2031	38	129	124	126	131	120	130	140	153	125	141	111	103	101	1634	1673	379	381	417
2026	97	estimate	2031 - 2032	39	130	140	127	129	134	122	133	142	156	102	143	110	100	1669	1708	398	386	431
2027	98	estimate	2032 - 2033	39	132	142	143	130	133	137	125	135	144	128	103	141	107	1700	1739	417	400	404
2028	99	estimate	2033 - 2034	40	133	144	145	147	134	135	140	127	138	118	129	102	137	1728	1768	422	416	404

Based on estimated births Based on children already born Based on students already enrolled



Sterling Forecast Enrollment

Birth Year	Births		School Year	PK	K	1	2	3	4	5	6	7	8	9	10	11	12	K-12	PK-12
2018	54	actual	2023 - 2024	55	62	56	58	64	68	70	77	66	79	61	70	67	66	864	919
2019	70	actual	2024 - 2025	28	89	65	56	59	61	67	72	77	64	65	62	69	65	870	898
2020	47	actual	2025 - 2026	19	59	92	65	57	56	60	69	72	75	53	65	61	67	851	870
2021	58	actual	2026 - 2027	23	73	62	92	65	54	55	61	69	71	62	53	65	59	841	865
2022	65	actual	2027 - 2028	26	82	76	62	93	62	53	56	62	67	58	62	53	63	850	876
2023	53	estimate	2028 - 2029	21	67	86	76	63	89	61	54	57	60	55	58	62	51	839	861
2024	52	estimate	2029 - 2030	21	66	70	86	77	60	87	63	55	55	49	56	58	60	841	862
2025	60	estimate	2030 - 2031	24	76	69	70	87	74	58	90	63	53	45	50	55	56	846	870
2026	59	estimate	2031 - 2032	24	75	79	69	71	82	72	60	90	61	44	46	49	53	852	876
2027	59	estimate	2032 - 2033	24	74	78	79	70	67	81	74	60	88	50	44	45	48	860	883
2028	58	estimate	2033 - 2034	23	73	77	78	80	66	66	83	74	59	72	51	44	44	868	892



Summary of Interviews

Demographic Insights

The interviews conducted with stakeholders within the WRSD reveal a nuanced picture of the demographic trends affecting the district's schools and their impact on enrollment and resource allocation. Notably, interviewees noted a trend of changing demographics with younger professionals, often with fewer or no children, reshaping the community profile. This shift has a dual effect on school enrollments: on the one hand, it can lead to a decrease in the number of children entering the public school system if these professionals opt for smaller families or private schooling options. On the other hand, selling homes to these younger families by an older, established population can lead to a sudden influx of school-age children, contributing to unpredictability in school enrollment numbers.

Private schools like St. Johns, which recently added a middle school, are mentioned as drawing students away from WRSD. This competition for students can decrease public school enrollment, which impacts funding and resource planning. Additionally, the presence of other private educational institutions in the area, such as Notre Dame, can draw away potential students, particularly male students, from the district.

Another aspect of the demographic change is the movement within the district's towns. The creation of in-demand 55 and over communities will reshuffle the existing population, with older residents downsizing and their larger family homes being bought by younger families. This internal migration can lead to sudden changes in school populations as family homes traditionally linked to school-age children change hands.

These demographic changes necessitate a flexible and responsive approach to school facility planning and resource allocation. Schools need to be prepared for fluctuations in enrollment, which may require adjustments in staffing, classroom sizes, and even the physical expansion of facilities. Furthermore, a deeper understanding of these demographic trends can help school leadership anticipate future needs and allocate resources more effectively. The interviews suggest a need for WRSD to closely monitor these demographic shifts, engage with private schools to understand their impact on public school enrollment, and maintain flexibility in strategic planning to accommodate the changing needs of the district's communities.

Development Trends

The insights from the interviews highlight the importance of understanding and integrating development trends within the Wachusett Regional School District (WRSD) to support effective school facility planning and address the community's evolving needs. Specific development

projects and demographic shifts across the towns served by WRSD offer a glimpse into the future challenges and opportunities facing the district's schools.

In Holden, development is methodically paced by local bylaws, with projects like the 80 single-family homes unfolding over several years, only reaching halfway completion in seven years. This slow and steady approach to development ensures manageable growth but also necessitates continuous monitoring to align school facilities planning with the gradual increase in population. Rutland is also seeing large subdivision development, which has made an impact on the town, especially over the past ten years. In Sterling, the recent introduction of a 260-apartment complex is characterized by smaller units that may attract fewer families. Such developments indicate a shift towards higher-density housing, which could have varying impacts on school enrollment numbers, potentially leading to a lower-than-expected increase in student population due to the unit sizes.

Conversely, Paxton and Princeton exhibit stability with no significant projects on the horizon except for MBTA zoning considerations. This stability offers a degree of predictability in planning for school resources and facilities, though it remains crucial to stay attuned to any changes that might arise from zoning adjustments.

The interviews also underscore the need for schools to be informed of large housing developments, with Sterling's town planner suggesting annual updates on development trends. This practice would greatly aid the district in anticipating demographic changes, allowing for more proactive planning in terms of staffing, classroom sizes, and facility expansions or renovations.

Facilities and Maintenance

A proactive approach to maintenance emerged as a significant theme, with stakeholders expressing the need for a systematic and forward-looking strategy. This approach involves regular assessments of facilities to identify potential issues before they escalate into major problems, thereby ensuring a safe and conducive learning environment while potentially saving costs in the long run. Implementing such a strategy requires a detailed understanding of the current condition of school facilities, including their life expectancy and the anticipated timeline for major system replacements or upgrades.

The importance of strategic, long-term facility planning is clear, particularly in the context of evolving educational requirements and demographic changes. Strategic planning encompasses not just the physical maintenance of buildings but also considerations of how space is utilized to support the district's educational goals. This includes planning for future growth, incorporating technology enhancements, and designing flexible learning spaces that can adapt to changing teaching methods and student needs.

Effective coordination and communication between the school district, town officials, and the broader community are vital components of successful facility planning and maintenance. Regular, transparent communication can help align expectations, prioritize projects based on community needs, and ensure that investments in school facilities are understood and supported by all stakeholders. This collaborative approach can facilitate the sharing of resources and expertise, leading to more efficient and impactful outcomes.

Managing the budget and allocating resources efficiently is a perennial challenge in facility planning and maintenance. Balancing immediate needs with long-term investments requires careful planning and prioritization. It's essential for the district to develop a framework for evaluating the cost-effectiveness of maintenance activities and capital projects, ensuring that resources are directed towards initiatives that offer the greatest benefit to the school community.

Space Needs and Trends in Education

The discussions on school construction, space needs, and educational trends in the Wachusett Regional School District (WRSD), alongside the importance of enhanced security systems, paint a picture of the district's challenges and opportunities in facility planning. As WRSD adapts to demographic shifts and the evolving needs of modern education, there is a requirement for facilities that are flexible and supportive of new teaching methods as well as secure.

With changing student populations, schools are utilizing modular buildings for immediate space solutions and recognizing the need for long-term strategic planning to manage growth effectively. The recent cost-effective use of modular classrooms in Holden has been well-received by the school, with only the need for additional bathrooms causing issues. The move towards personalized, technology-driven education demands reconfigured spaces that support digital learning and collaboration while accommodating all students' specific needs, including those with special needs.

Principals and stakeholders have highlighted the critical need for improved security systems to ensure student and staff safety. This includes upgrading surveillance, securing entry points, and implementing comprehensive emergency protocols. Such measures are integral to creating an environment where students feel safe, supporting a positive educational experience.

The intra-district school choice model currently in place provides families with flexibility and aids in managing enrollment levels across the district, particularly as towns experience fluctuations in student numbers. However, the notion of mandating students to attend schools outside their hometowns is considered politically unviable. Any redistribution of students across the district would need to be voluntary, with the potential to attract more students to particular schools by introducing appealing programs. Continuous communication with all stakeholders is

crucial to ensure that this school choice initiative aligns with the broader goals of the district. Discussions must cover the logistical and resource impacts while also focusing on maintaining fairness and access for every student. Regarding the possibility of reintroducing inter-district school choice, feedback suggests that WRSD might be an attractive option for many in the area. While many interviewees suggested this would not be necessary unless there was a drop in enrollment, it could be used to even out year-to-year changes in enrollment.

Communication and Collaboration

In the Wachusett Regional School District (WRSD), fostering effective communication and collaboration is essential for aligning the district's educational objectives with the dynamic needs of the communities it serves. The district has established strong relationships with the Towns, benefiting from a foundation of mutual understanding and shared goals. This positive dynamic is crucial for addressing the varied needs across the district and ensuring that the educational environment evolves in tandem with community growth.

A vital aspect of this collaboration involves exchanging information between the schools and Town Planners or Planning Boards. As towns within the WRSD experience development and demographic shifts, keeping the schools informed of major housing developments becomes imperative. The impact of such developments on school enrollment and resource allocation cannot be understated. Early notification of planned housing projects allows school administrators to proactively assess and prepare for potential increases in student population, ensuring that facilities and staffing levels remain adequate to maintain the quality of education.

Furthermore, the suggestion from Sterling's Town Planner for an annual update on development trends presents an exemplary practice that could greatly benefit the entire district. Instituting a formal mechanism for these updates would enhance strategic planning efforts, allowing schools to anticipate changes and adapt more efficiently. This could involve annual briefings, regular reports, or forums that bring together school officials, Town Planners, and community members to discuss forthcoming developments and their implications for the schools. Such communication mechanisms not only support better planning but also foster a sense of community involvement and transparency. By engaging in open dialogue about development trends and their potential impacts on schools, WRSD can build stronger partnerships with the towns it serves. This collaborative approach ensures that the educational infrastructure remains responsive to the student population's needs.

Zoning Adjustment Factors (Scenarios) to Baseline

Town Zoning and Affordable Housing Changes

In Massachusetts, land development is primarily regulated through zoning; a framework that divides land into use-based categories. The most common general zoning categories include residential, commercial, and industrial. Many municipalities also include special use zones such as agriculture and open space. The basic purpose and function of Zoning is to divide a municipality into districts that are, for the most part, separate from one another, with the use of property within each district being reasonably uniform. Within each type of zone, there will generally be additional land development standards, such as size, height, open space, parking requirements, density standards, and setback lines from adjacent properties and rights of way. Changing zoning laws can greatly impact both the potential for and style of new development.

Within the WRSD, all five towns have adopted zoning bylaws and subdivision regulations. The vast majority of land in each town is zoned for low-density single-family residential development. In meeting with each Town, we inquired about any anticipated changes to zoning bylaws or other regulatory changes that could impact or accelerate the development of new residential units. Across the five towns, the two primary factors that could impact development are the state MBTA zoning law and potential 40B affordable housing projects, both defined in the next page. The following summarizes what we heard from each town regarding regulatory changes.

Holden: Holden expressed that they were looking to support more multi-family development in some ways. The town is going through a recertification of its zoning bylaws and the development of a new mixed-use (residential and commercial) overlay for the village center. However, they did not expect either to substantially alter current development trends in the near term.

Paxton: Paxton does not expect any substantive changes to its zoning bylaws outside of MBTA Zoning (next page) that would impact housing development trends.

Princeton: Princeton indicated that since adoption of their Housing Production Plan in 2023, its Housing Implementation Committee is now exploring ways to encourage more affordable housing in the town. This could include zoning bylaw amendments to encourage additional development. However, nothing has been implemented to date.

Rutland: Rutland is trying to be proactive in identifying sites that could meet their 40B requirement. If successful in identifying a site, they would be looking to partner with a developer to construct as many as 300 units. Outside of 40B, the town is also considering a zoning change to an 80-acre parcel to allow mixed-use development. They have been in initial

communication with the property owner but are expecting further conversations later this year to determine feasibility.

Sterling: Sterling is seeing tension between some community members wanting to support additional multi-family and others that want to make development more restrictive. The town is currently reviewing its zoning bylaw and expects to start reviewing the residential section sometime next year (2025). The town recently updated its accessory dwelling bylaw to make it more restrictive. There is no clear movement toward changing zoning laws that would increase development trends.

Multi-Family and MBTA Zoning

In 2021, Massachusetts passed the MBTA Communities Law, establishing multi-family zoning requirements for communities within close proximity of MBTA transit. Within WRSD, Princeton, Sterling, and Paxton were identified as MBTA adjacent small towns and Holden was identified as an adjacent community. The following table shows the total multi-family unit capacity required by the Massachusetts Executive Office of Housing and Livable Communities. Paxton, Princeton, and Sterling have each had an MBTA Zoning action plan approved and are working toward full compliance with the law. Holden has not submitted an action plan to date. It is important to note that simply rezoning land to accommodate a certain number of new units does not necessarily mean that the units will be built. All development in Holden is also subject to their phased growth bylaw, outlined in the next section.

MBTA Zoning Housing Requirement by Town

Community	Community category	2020 Housing Units	Minimum multi-family unit capacity*
Holden	Adjacent community	7,439	750
Paxton	Adjacent small town	1,689	84
Princeton	Adjacent small town	1,383	69
Sterling	Adjacent small town	3,117	156
		Total	**1059**

Source: *MA Office of Housing and Livable Communities*

40B Affordable Housing

Chapter 40B is a state statute that enables local Zoning Boards of Appeals to approve affordable housing developments under flexible rules if at least 20-25% of the units have long-term affordability restrictions. In municipalities that fail to meet their affordable housing obligations under Chapter 40B, a developer can apply for a "Comprehensive Permit" that enables them to build more densely than municipal zoning bylaws would permit if at least 25% (or 20% in certain cases) of the new units are affordable. For the purposes of comprehensive permitting, "adequate progress" means that more than 10% of the year-round housing units qualify as affordable in the Subsidized Housing Inventory (see more detail below) or that the municipality has an approved housing production plan and has met annual or biennial housing production

targets. Across the five towns, no town currently meets the 40B 10% affordable housing unit requirement. The following is the estimated current liability for each town.

Potential 40B Affordable Housing Liability by Town

Community	2020 Housing Units	2023 Subsidized Housing Units	Potential 40B Liability	Current Housing Production Plan?
Holden	7,419	410 (5.53%)	332	No
Paxton	1,677	71 (4.23%)	97	No
Princeton	1,375	26 (1.89%)	112	Yes
Rutland	3,341	86 (2.57%)	248	No
Sterling	3,086	216 (7%)	93	Yes
		Total	**881**	

Note: *Calculated using MA Subsidized housing inventory. Other types of housing could count toward the 10% requirement, so this should be treated as a current upper bound.*

Source: *https://www.mass.gov/doc/subsidized-housing-inventory-2/download*

Zoning Adjustment Factors/Scenarios

The MBTA and 40B laws intend to spur housing production. However, it is difficult to say with any level of certainty how quickly or to what extent each of these will result in additional housing units over the next 10 years. Therefore, we utilize this information to estimate a high and low potential impact – taking the total estimated housing unit liability under the MBTA and Chapter 40B laws and applying a yearly ratio over the projection timeframe. For the low estimate, we use 25% of the total units over the next 10 years; for the high estimate, we use 75% over the next 10 years. In both cases, we start housing production in year two of the forecasts since year 1 (2023-24) is the current school year. In both cases, the additional homes are distributed evenly across the modeling time frame – e.g., 2.5% additional housing units each year in the lower estimate and 7.5% in the high estimate. Even with these adjustments offering a 'reasonable' range of potential outcomes, it is also possible that, given the private sector forces and utility constraints that dictate home construction, very few additional units are constructed as a result of these laws.

The best way to think about this analysis is: *'If these changes happen, this is the impact you might expect to see in terms of enrollment.'* None of the towns felt that developer interest was at this level yet. However, they also cautioned uncertainty.

The table below provides a summary of the yearly adjustment factors and resulting students by town. Given the uncertainty of the aforementioned town-by-town (non-MBTA or 40B) zoning changes, we did not include any additional factors in these scenarios.

Town	Estimated Unit Liability MBTA	Estimated Unit Liability 40B	Low (Housing Units Per Year)	High (Housing Units Per Year)	Enrolled Students Per Household*	Low Additional Students Per Year	High Additional Students Per Year
Holden	750	332	23	68	0.45	10	30
Paxton	84	97	4	11	0.34	1	4
Princeton	69	112	4	11	0.30	1	3
Rutland	0	248	5	16	0.52	3	8
Sterling	156	93	5	16	0.26	1	4
Total	**1059**	**882**					

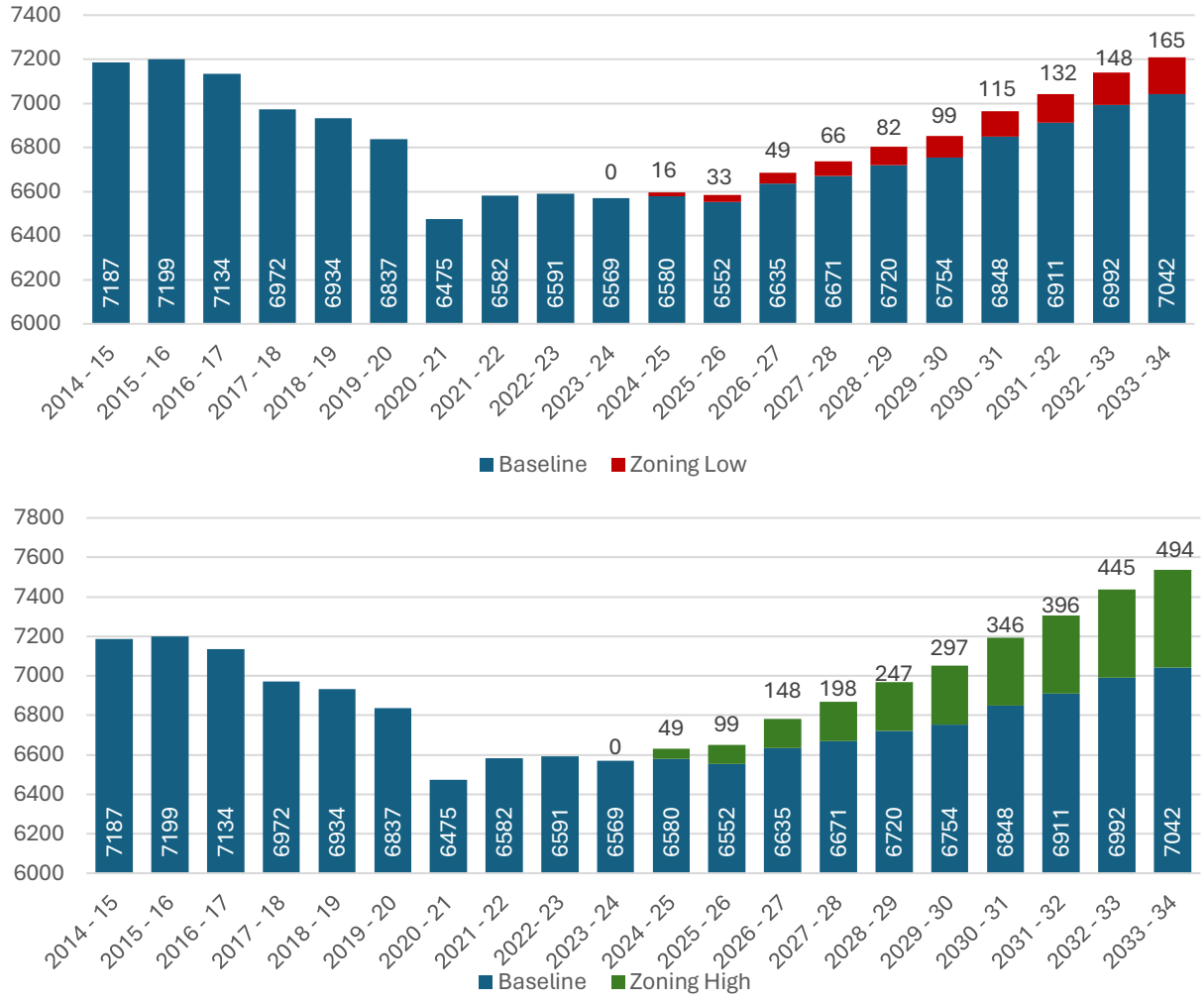
***Enrolled Students per Household by Town:** To estimate newly enrolled students per additional housing unit, we used total WRSD enrollment divided by total households (American Community Survey) in each town for the year 2022. The resulting multiplier is the estimated number of new students that would result from each new housing unit.

Although it is a very unlikely scenario, we estimate that if all of the MBTA and 40B housing unit liability was constructed, it could result in upward of 790 students. Given the lack of adopted MBTA zoning and 40B identified sites, this should be seen as a not currently plausible scenario.

Zoning Scenario Forecast Results – District Level

The results of the two zoning scenarios are presented in the charts below. In the low scenario, where about 16 additional housing units are constructed districtwide annually, the resulting student population is 165 students higher than our baseline enrollment forecasts. This is based on an estimate of enrolled students per housing unit that was calculated using historic enrollment and housing unit data. If realized, this scenario would be a return to 2015-16 districtwide enrollment figures – roughly 7200 students.

In the high housing production scenario, the resulting additional students beyond the baseline is 494. For this scenario to be realized, many factors would have to align – namely, much higher levels of regional population growth and housing demand beyond current trends. Even so, this provides an important look at what the impact would be if housing production and population growth accelerated well beyond current trends.



Zoning Low and High Housing Production Scenarios

Zoning Scenario Forecast Results – Town-Level

The following table shows the baseline enrollment forecast and additional students by town in the low and high zoning scenarios.

Year	Holden			Paxton			Princeton			Rutland			Sterling		
	Baseline Enrollment	Zoning Low	Zoning High	Baseline Enrollment	Zoning Low	Zoning High	Baseline Enrollment	Zoning Low	Zoning High	Baseline Enrollment	Zoning Low	Zoning High	Baseline Enrollment	Zoning Low	Zoning High
2023 - 24	3103	0	0	603	0	0	421	0	0	1578	0	0	864	0	0
2024 - 25	3088	10	30	609	1	4	433	1	3	1581	3	8	870	1	4
2025 - 26	3055	20	60	621	3	8	447	2	7	1578	5	16	851	3	8
2026 - 27	3116	30	90	631	4	11	476	3	10	1571	8	24	841	4	12
2027 - 28	3106	40	121	642	5	15	473	5	14	1600	11	32	850	5	16
2028 - 29	3127	50	151	679	6	19	476	6	17	1599	13	40	839	7	20
2029 - 30	3126	60	181	702	8	23	477	7	21	1608	16	48	841	8	24
2030 - 31	3161	70	211	722	9	27	486	8	24	1634	19	56	846	9	28
2031 - 32	3176	80	241	726	10	30	488	9	28	1669	21	64	852	11	32
2032 - 33	3221	90	271	732	11	34	480	10	31	1700	24	72	860	12	36
2033 - 34	3237	100	301	732	13	38	478	11	34	1728	27	80	868	13	40

Future and Planned Residential Development Unit Adjustments

In our initial conversations with WRSD, we heard a concern that several major subdivisions and other residential developments that had been approved in Holden, Rutland, and Sterling could suddenly increase student enrollment. The underlying concern is that if several hundred residential units are finished all at once, the school district may not have the time and resources to adequately prepare for a sudden bump in enrollment.

General Development Potential

As part of this analysis, we wanted to provide an overall sense to the school district of the development potential in each of the five towns. To do so, we used town zoning and assessor data to create maps showing where vacant and potentially developable land is and to calculate the total amount of developable land in each town. Appendix B provides maps for each town showing vacant and potentially developable land. The table to the right provides a summary of the total land area in each town that would support residential development. It is important to note that this is just for illustrative purposes. In reality, there are many constraints, such as water protection areas, steep slopes, and wetlands that would negate potential development in many parts of each town. However, as a 2018 'buildout' analysis that was conducted for the Holden Master Plan illustrates, under current land use regulations, each of these towns can support high levels of additional residential development.

Community	Total Developable Land (Acres)
Holden	6356
Paxton	4015
Princeton	7790
Rutland	12004
Sterling	8576

Holden Phased Growth Bylaw

Holden has been the second fastest growing town in the school district over the last decade. WRSD raised specific concerns about the impact that several large residential developments that had been approved in Holden could have on the district. Unlike the other four towns, Holden currently has a phased growth bylaw. Such a bylaw seeks to moderate growth at a rate that minimizes impacts to public services. The bylaw in Holden works as follows.

- Limits construction to 200 dwelling units over any two-year period.
- In residential developments with more than 3 units, a maximum rate of development is applied:
    - 4 - 10 Units – up to 75% of dwelling units per year
    - 11 - 20 Units - up to 33% of dwelling units per year

- 21 – 40 Units – up to 24% of dwelling units per year
- 41+ Units – up to 20% of dwelling units per year

In an illustrative example of a 200-unit subdivision, this bylaw means that the development would be phased in at 40 units per year maximum. The Holden Town Planner indicated that this bylaw has been very effective in ensuring more predictable development in the town.

Residential Development Trends

Residential development in the five towns has been relatively steady over the last decade. The following chart shows the annual residential building permits approved in each town from 2013 to 2022 (the most recent year for which we have data). Over the aforementioned 10-year period, Holden and Rutland have seen the highest number of building permits, averaging 60 and

Total Residential Building Permits Issued by Year

	Holden	Paxton	Princeton	Rutland	Sterling
2013	188	3	0	32	11
2014	57	3	0	39	17
2015	79	12	0	30	29
2016	35	8	3	55	29
2017	70	7	7	50	20
2018	52	8	10	50	12
2019	36	6	8	56	16
2020	37	16	9	54	16
2021	14	4	7	58	1
2022	28	2	3	50	30

47 permits per year, respectively. Sterling averaged 18, while Paxton and Princeton both averaged under 10 permits per year.

Building permits, although useful in understanding development trends, may not translate directly into the exact number of residential units that are completed each year. In other words, although a building permit for a home is approved in a particular year, it may not be fully

Total Residential Units by Build Year

	Holden	Paxton	Princeton	Rutland	Sterling
2013	73	4	2	32	11
2014	62	2	1	34	42
2015	57	7	5	27	19
2016	62	10	3	55	24
2017	57	7	6	56	25
2018	59	3	7	56	16
2019	37	8	13	36	18
2020	42	3	9	49	29
2021	12	0	2	63	1
2022	45	0	0	59	0

constructed and ready for occupancy in that same year. To give WRSD a better understanding of how building permits align with unit construction, we also examine the number of units that are completed each year over the same period using town assessor data. The following chart displays each town's total number of residential units by build year.

Approved Residential Developments

Conversations with each of the towns yielded a list of current and future major residential developments in Holden, Rutland, and Sterling. For the purposes of this analysis, we are most concerned with single family development – including duplex and townhomes – which are the predominant housing types associated with school-age children. The National Multi-Family Housing Council estimates that the number of school-age children per 100 households is 20 for multi-family renters and 42 for single-family owner households. We did not hear about any major developments in Paxton or Princeton and do not consider them in this analysis.

Holden

Our conversation with the Holden Town Administrator and Planner indicated that the town has approved five major new residential developments. However, most of these are multi-family and age 55+ developments. Importantly, the Town Planner noted that some of the new developments are phasing in very slowly, and there is no expectation that actual units built each year will trend outside of what they have seen over the last 10 years. In total, we estimate that there are roughly 286 residential units approved that could impact school enrollment, adding an estimated additional 114 to 128 students.

Rutland

Rutland has approved three major residential subdivisions in recent years - one being a 55+ community and two being single-family. The Town Planner estimated that around 200 units have yet to be built that could add an estimated 89 to 110 students.

Sterling

Sterling has three major residential developments that have been approved recently. Two of the projects are multi-family apartments and condos, and the third is a duplex subdivision. We estimate that the school could see an additional 30 – 50 students enrolled across the three projects.

Future Development Adjustment Factors (Scenarios)

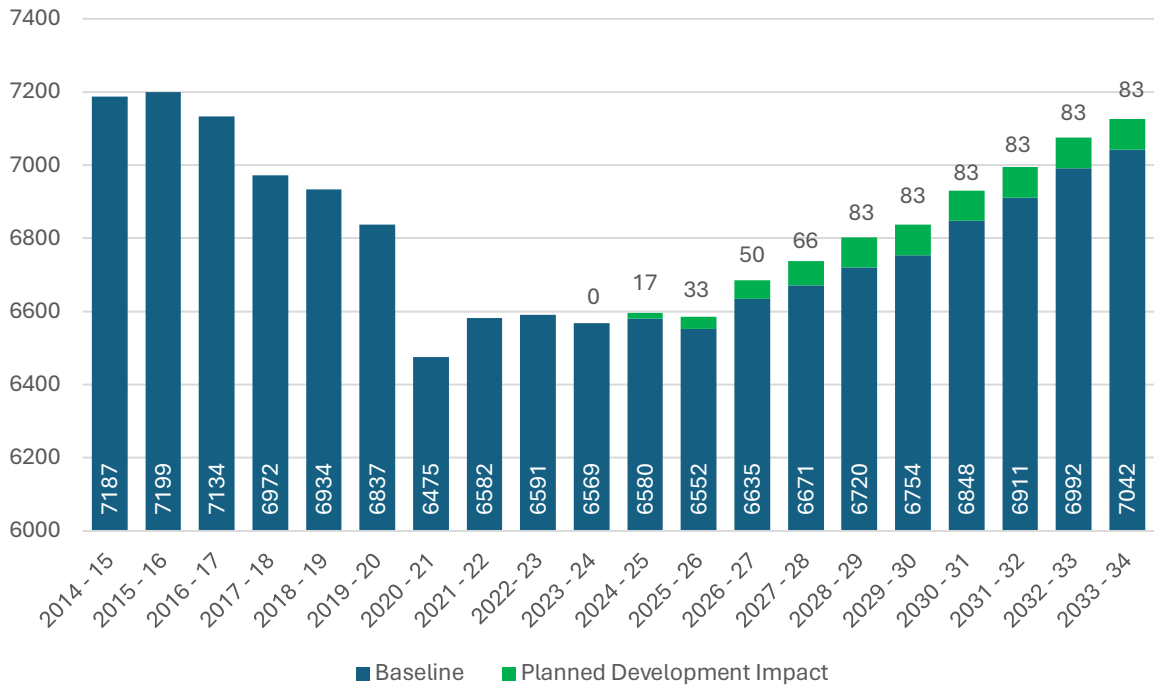
Evaluating the impact of approved developments on school enrollment is challenging, given that our baseline forecast captures the impact of past development in the underlying data's trends. Therefore, this analysis is focused on how the abovementioned known residential developments differ from recent development trends. In other words, we try to answer the question – *do the known residential development projects represent a deviation from existing development trends*?

To do this, we assume an average time-to-completion of 5 years for each of the known projects and compare the total number of approved units to the past 5 years of assessor data to estimate the number of units above what we might expect in a 'normal' 5-year period. The following table summarizes this analysis and shows that, given recent development trends, the known projects in Holden and Sterling may represent a slight increase above the trends captured in our baseline projections. Rutland's known projects, on the other hand, are directly in line with recent development trends in the town – which have consistently resulted in about 50 additional units per year over the last 5 years. Given these results, our adjustment factor scenario only considers Holden and Sterling.

It is important to note that, although we use the assumption of 5 years to completion, many of the town's planners noted that some of the approved projects have been on the books for multiple years with little movement on construction. Therefore, it is likely that these estimates represent an upward-bound scenario where currently approved projects arrive at completion faster than the towns are expecting.

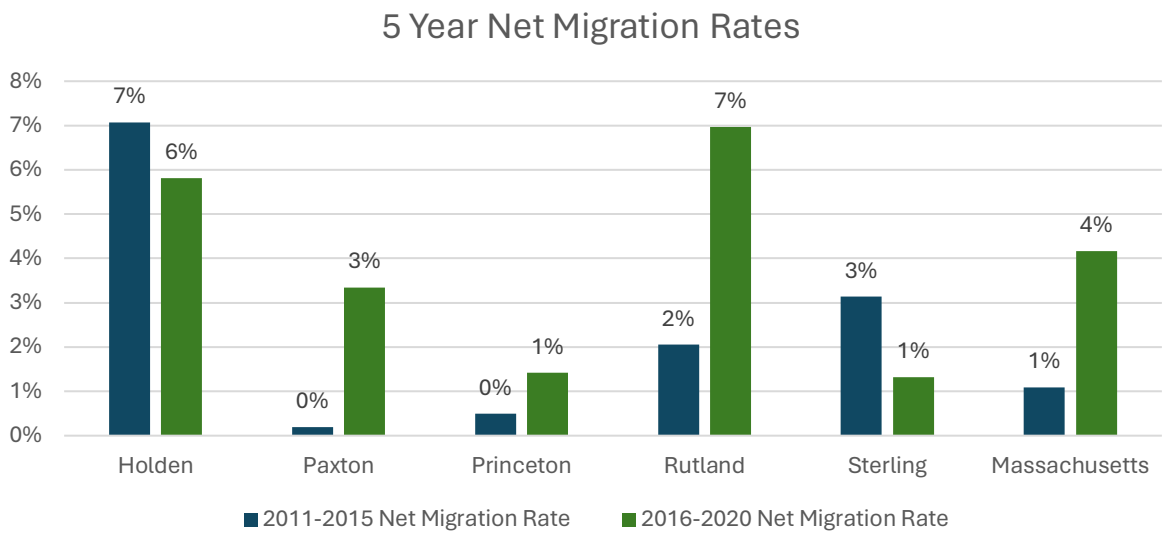
Town	Number of Units Built – Mass GIS Assessor Database					5-year Total Built Units	Known Approved Units	Difference from Last 5-Years	Potential New Students Above Baseline
	2018	2019	2020	2021	2022				
Holden	52	36	37	14	28	167	286	119	**53**
Rutland	50	56	54	58	50	268	213	-55	0
Sterling	12	16	16	1	30	75	190	115	**30**

To model the incremental impacts of known residential development projects, we distribute the estimated number of students from the table above (83) evenly across a five-year period starting with the 2024-2025 school year. The following graph shows the results of the adjusted enrollment forecast at the district level.



Migration Rates

Migration refers to the movement of people from one geographical area to another, with the intent to settle temporarily or permanently in a new location. This movement can be intranational (within the same country, domestic) or international (between countries). The net migration rates for the towns and the state, calculated by dividing the net migration from 2015-2020 by the total population at the beginning of the period (2015), are as follows:



This comparison shows that Rutland had the highest net migration rate among the towns and was also higher than the state's rate. Holden also had a higher net migration rate compared to the state average. On the other hand, Paxton, Princeton, and Sterling had lower net migration rates than the state average.

In the time since 2020, a more nuanced picture emerges. The pandemic brought international migration to extremely low levels, which have only now recovered to pre-pandemic levels. However, when combined with Massachusetts's relatively high domestic out-migration, the net migration rate for the state is only .165% and was slightly negative in the two years prior. For instance, with their moderate growth rates, Holden and Rutland may reflect more attractive housing options compared to communities closer to Boston. On the other hand, Princeton, Sterling, and Paxton, which have witnessed declines or minimal growth, suggest a different set of local dynamics.

Over the past year, the Migrant Crisis has made headlines in Massachusetts due to an increase in migrants, causing a strain on the state’s shelter system. While reports vary, the state has reported that its shelter system has reached its capacity of 7,500 families. It's important to note that while this number of migrants may represent a disruption to the statewide shelter system,

the total migration numbers seen by Massachusetts in 2023 are a return to normal pre-pandemic levels, and the WRSD towns have seen little, if any, impact from the Migrant Crisis.

Considering these migration trends and the characteristics of the Wachusett Regional School District (WRSD) towns, it appears that the broader migrant crisis may not significantly influence local demographic changes. The lack of a strong correlation between state migration rates and those of the individual towns suggests that local factors play a more decisive role in determining migration patterns within the WRSD.

Given the limited availability of appropriate sites for migrant shelters within these towns, which in Massachusetts have commonly been hotels or motels, it's unlikely that the towns will be directly affected by the state's shelter system reaching capacity. This suggests that the migrant crisis is not expected to contribute to demographic shifts in the WRSD towns in any significant way. We could consider the following scenarios when projecting high and low migration scenarios for these towns.

High-Range Scenario, Continued Independence from State Trends: In this scenario, WRSD towns maintain their unique demographic trajectories, largely independent of statewide trends. The towns continue to attract and retain residents based on their own merits, such as quality of life, local economic opportunities, community services, and school performance. Even as Massachusetts confronts challenges related to the migrant crisis, these towns remain insulated due to a combination of limited housing options for large-scale shelters and a possibly less attractive proposition for migrants compared to urban centers.

As a result, towns like Holden and Rutland may see a steady or even an increasing rate of in-migration, particularly if they can offer favorable conditions for families and professionals looking for a balance between urban access and suburban comfort. Meanwhile, towns like Princeton, Sterling, and Paxton may experience stable or slightly fluctuating populations, reflecting their more rural character and specific local dynamics rather than the broader state situation. This report's housing and zoning adjustment factors would primarily capture this scenario.

Low Range Scenario, Minimal Impact and Local Stability: In the low-range scenario, the WRSD towns experience minimal impact from the migrant crisis and the state's return to pre-pandemic migration levels. These towns continue to display stable demographic patterns with only marginal changes in population. The lack of facilities for large-scale migrant shelters translates to a continued focus on local factors influencing migration—factors such as the appeal of the towns to potential newcomers based on amenities, community atmosphere, and employment opportunities within or near the towns.

In both high and low scenarios, the WRSD towns navigate their future independently of the state's broader issues. They may continue to see a divergence in population change, with each town's unique characteristics defining its growth or stability. The towns' responses to these conditions, including any strategic planning and development, will shape their demographic paths in the future. Therefore, we anticipate minimal impacts from larger migration trends, with housing driving local migration. Again, adjustments for the changes in housing are captured in this report's zoning and housing chapters.

Challenges and Opportunities

The WRSD is navigating through a complex landscape of challenges that put its adaptability and strategic planning to the test. Central among these challenges are the demographic shifts across its constituent towns, which have led to fluctuating school enrollments and a reevaluation of how educational resources are allocated. As populations within the district's towns grow, shrink, or age, WRSD must continuously adjust its strategies to ensure that every student has access to quality education in an environment that fosters learning. This is especially difficult for small schools experiencing significant differences from grade to grade, necessitating quick adaptation and reorganization.

Adding a layer of complexity to these demographic challenges are specific concerns regarding the district's school facilities. Reports from the interview notes reveal issues such as potential pyrrhotite in the concrete of the Glenwood Elementary school building, raising concerns about the integrity of some of the building infrastructure. This challenge highlights the broader issue of aging and deteriorating school facilities across the district. Many buildings are old and display evident wear and tear from years of deferred maintenance. Amidst the broader challenges and opportunities facing the WRSD, a major priority highlighted by school officials is the enhancement of security systems across the district. The capacity of these facilities to accommodate growing or shifting student populations is also a pressing concern, with some schools nearing or exceeding their optimal enrollment numbers, thereby straining resources and space.

Moreover, the financial aspect of addressing these facility challenges presents another hurdle. The construction and renovation cost has been rising sharply, making it increasingly difficult for the district to undertake necessary upgrades without straining its budget. Public construction projects are notorious for their extended timelines and escalating costs, complicating the district's efforts to improve and expand its educational facilities promptly and within budgetary constraints.

These challenges are further compounded by the need for improved communication and collaboration between the district and the towns it serves. Although there are examples of effective communication, such as the annual updates on development trends suggested by Sterling's town planner, consistently implementing such practices across all towns remains a challenge. Effective communication is essential for strategic planning, as it enables the district to anticipate and prepare for changes that affect school enrollment and facility needs.

In navigating through these challenges, WRSD is not just addressing immediate concerns but is also laying the groundwork for a future where education in the district is more responsive, equitable, and attuned to the needs of its communities. These opportunities, born out of current difficulties, hold the promise of fostering an educational environment where every student thrives, supported by facilities that are safe, innovative, and reflective of a commitment to excellence in education.

Conclusions and Recommendations

The demographic analysis reveals a nuanced picture of population dynamics within the towns served by WRSD. While there are mandates for affordable housing and MBTA-related expansions that ostensibly require more housing development, the approach taken by planning boards often tends toward meeting only the minimum requirements. This approach to zoning does not actively encourage more housing development, particularly single-family homes that are more likely to attract families with school-age children. This conservative stance on housing development is reflective of a broader desire to maintain the rural character of these towns and manage growth carefully.

Moreover, even as new housing developments come online, the pace of this growth remains slow. This slow pace of development has implications for school enrollment projections and facility planning. The growth that does occur may not sufficiently offset the demographic trends of aging populations and smaller household sizes, leading to fluctuating or declining school enrollments in certain areas.

This context of cautious development, coupled with the demographic shifts, presents a complex challenge for WRSD. It must navigate the balance between accommodating the educational needs of its current and future students and aligning with the town's growth and housing strategies. The following recommendations are designed to address these challenges, leveraging the insights gained from the demographic analysis to inform a strategic path forward for WRSD.

- Enhanced Communication and Collaboration: Strengthening the dialogue between the school district and municipal officials is imperative. This will ensure a cohesive approach

to planning that considers educational requirements alongside community development goals.

- Strategic Facility Planning: Prioritize the strategic planning of school facilities to ensure they are adaptable and capable of meeting the student body's diverse needs now and in the future. This planning should also include considerations for the physical expansion or reconfiguration of spaces in response to demographic trends.
- Security System Enhancements: Separately, undertake a comprehensive review and enhancement of security measures across all schools. This is crucial for ensuring the safety and well-being of students and staff, fostering an environment where learning can thrive without concerns over security.
- Community Engagement: Engage with the community to build a shared understanding and support for educational planning efforts. This engagement should respect and consider the towns' preferences regarding growth and community character, seeking a balance between educational needs and maintaining the rural essence of the towns.
- Demographic Monitoring and Utilization of NESDEC Projections: The district should regularly utilize projections provided by the New England School Development Council (NESDEC), which align closely with our findings and the model used by the Massachusetts School Building Authority (MSBA), the state agency that directs school building funding. This approach will enable WRSD to effectively monitor demographic trends and make informed decisions based on reliable data. Additionally, the district should layer these baseline projections with considerations for significant planned housing developments within their towns. By incorporating this information into their annual review process, WRSD can ensure a comprehensive understanding of potential shifts in school enrollment and facility needs, facilitating timely and effective planning responses to demographic changes. CMRPC is exploring whether they could add enrollment projections to their Community Snapshots at https://cmrpc.org/data-center/community-snapshots/
- Enhanced Communication Channels for Development Updates: Implement a system for receiving regular updates from town planners on housing and development trends. This could mirror the best practice suggested by Sterling's town planner for annual development updates, ensuring the school district can proactively respond to changes that may impact school enrollment and facility needs.

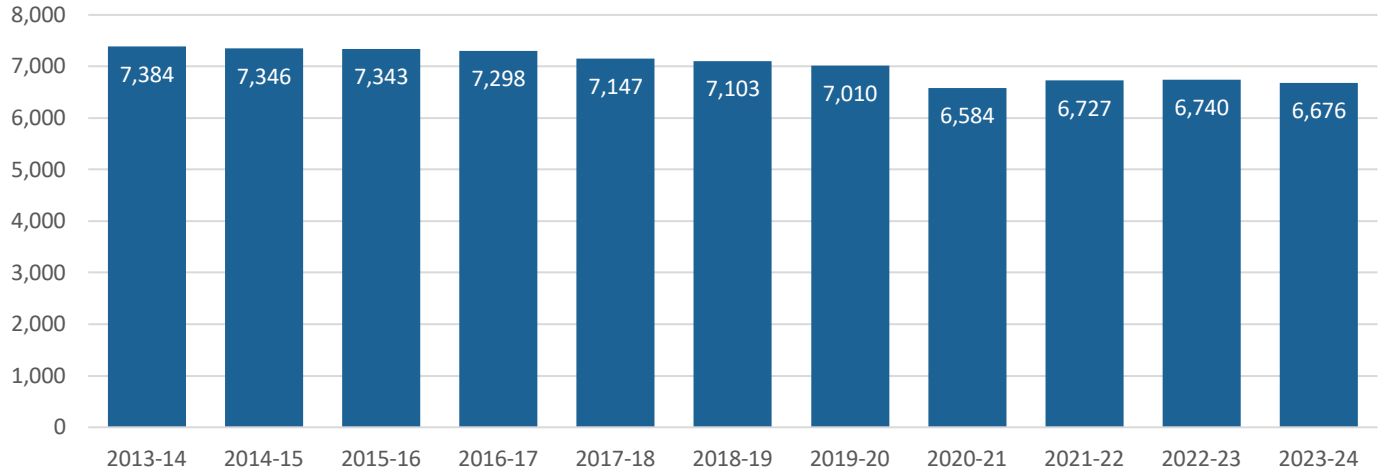
Appendix A: School Enrollment Charts and Tables

Enrollment by Grade

School Year	PK	K	1	2	3	4	5	6	7	8	9	10	11	12	SP	PK-12 Total*	% Change from Year Prior
2013-14	138	463	528	565	574	573	634	576	640	598	509	567	518	492	9	7,384	
2014-15	148	421	507	542	577	584	579	631	594	651	505	525	563	508	11	7,346	-0.5%
2015-16	134	489	479	531	566	585	587	576	633	597	577	509	518	552	10	7,343	0.0%
2016-17	150	436	522	503	537	582	607	597	585	639	528	589	502	507	14	7,298	-0.6%
2017-18	162	379	498	534	512	556	590	613	590	583	522	521	581	493	13	7,147	-2.1%
2018-19	154	450	445	520	539	527	565	597	605	598	480	526	513	569	15	7,103	-0.6%
2019-20	159	423	504	454	552	552	551	570	601	599	509	499	523	500	14	7,010	-1.3%
2020-21	93	426	426	473	433	517	537	538	551	587	494	504	488	501	16	6,584	-6.1%
2021-22	127	508	492	469	505	473	540	560	541	548	483	493	495	475	18	6,727	2.2%
2022-23	130	467	528	527	493	521	492	556	557	539	447	490	493	482	18	6,740	0.2%
2023-24	140	486	490	540	529	500	534	498	555	543	426	447	481	485	22	6,676	-0.9%

* Includes SP

Total Enrollment 2013-14 to 2023-24



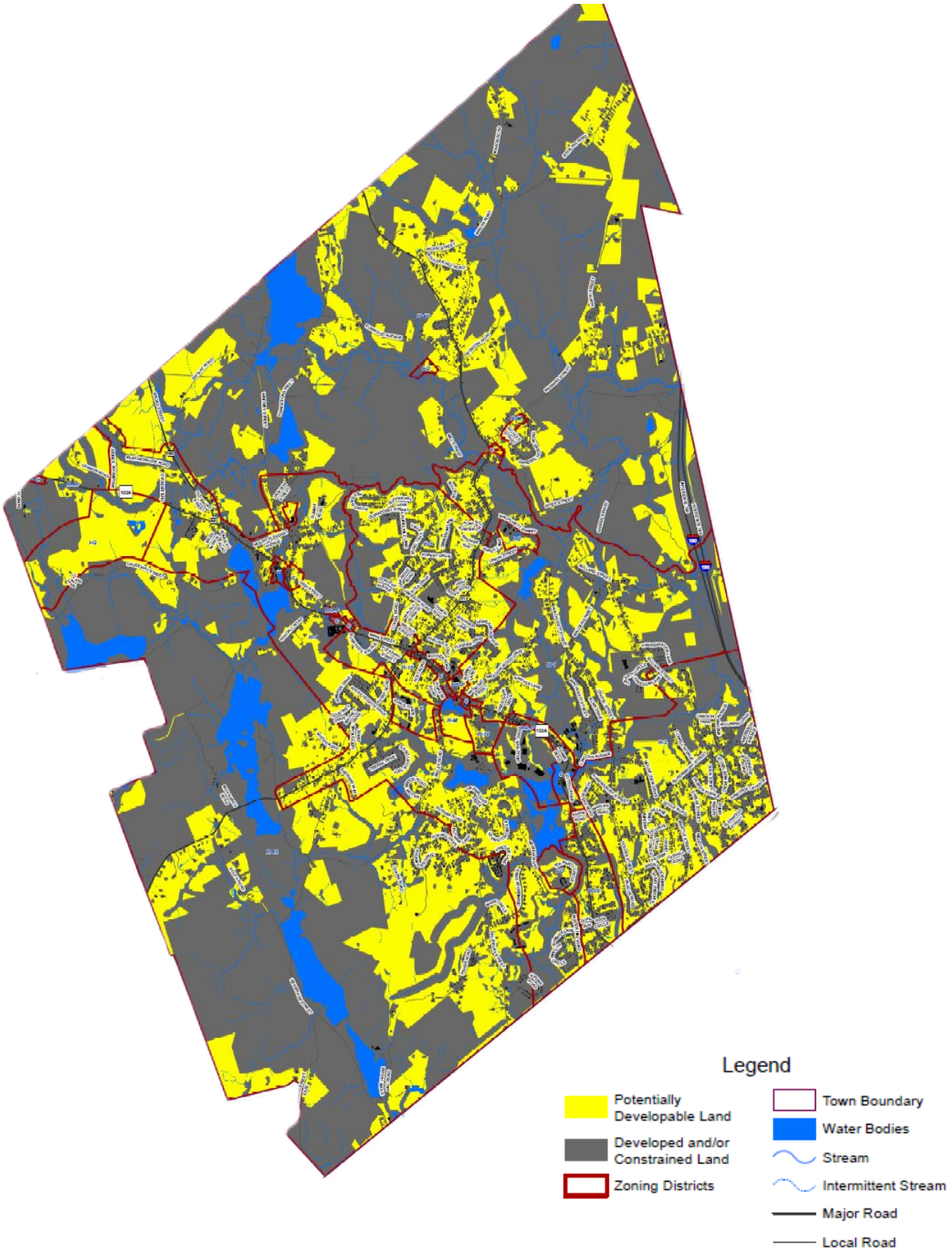
Appendix B: Potentially Developable Land In Each Town

The following maps display vacant and potentially developable land in each town. The maps are produced using assessor parcel data to identify vacant land and zoning data to identify which parcels are zoned for residential or commercial development. In the resulting maps, areas in yellow are those that are both vacant and zoned for development. All areas that are either developed or have permanent development constraints (such as open space designation) are shaded in grey. Although these maps are a useful picture of how much development each town could potentially support under existing land use regulations, myriad factors impact how quickly or whether development actually happens. Therefore, these should be used for illustrative purposes only and not as a predictor of future development.

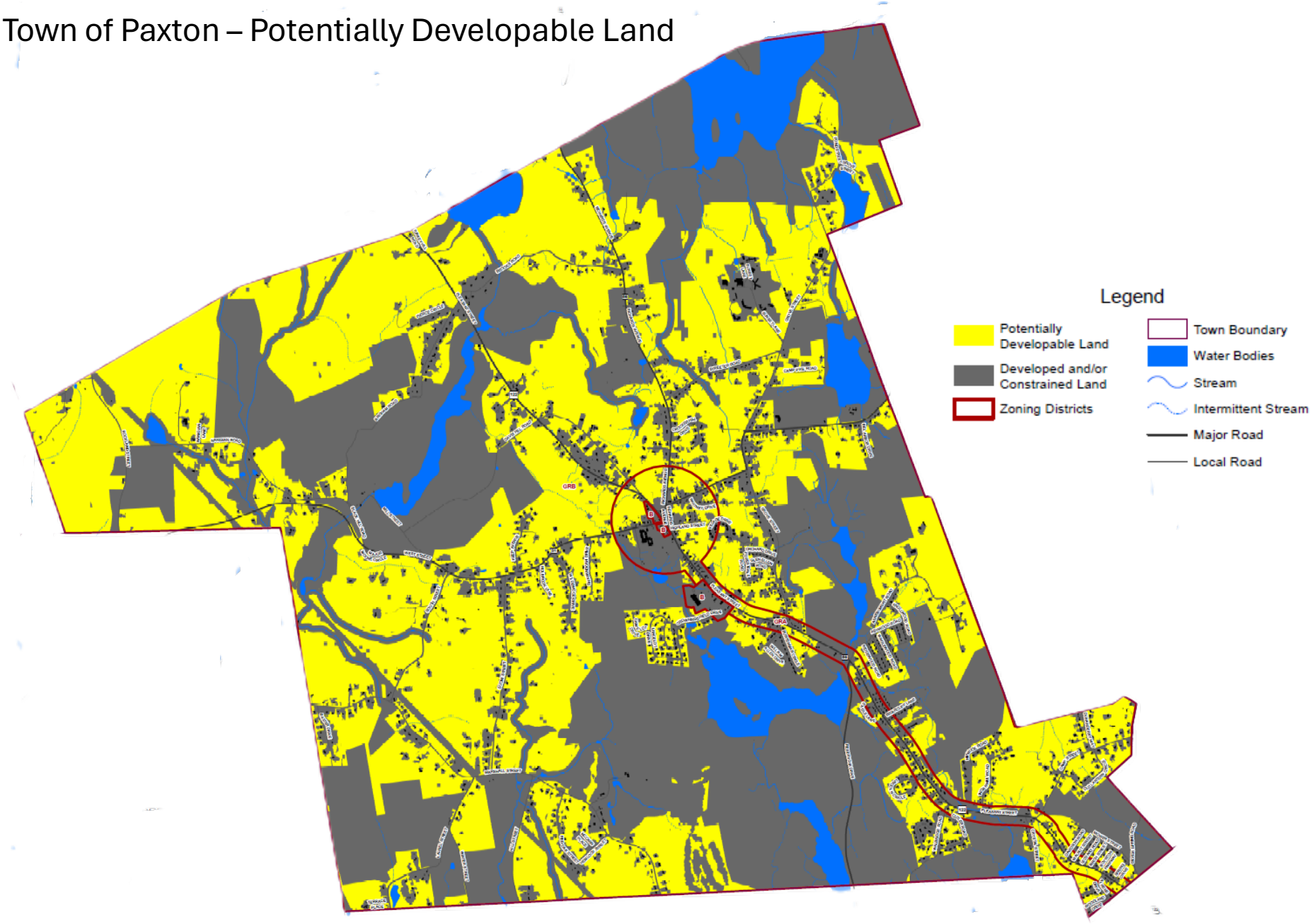
The following table provides a summary of the total vacant residentially zoned land in each town. It is important to note that in some towns, such as Holden, a range of residential zones support a different intensity and density of development.

Community	Total Potentially Developable Land
Holden	6356
Paxton	4015
Princeton	7790
Rutland	12004
Sterling	8576

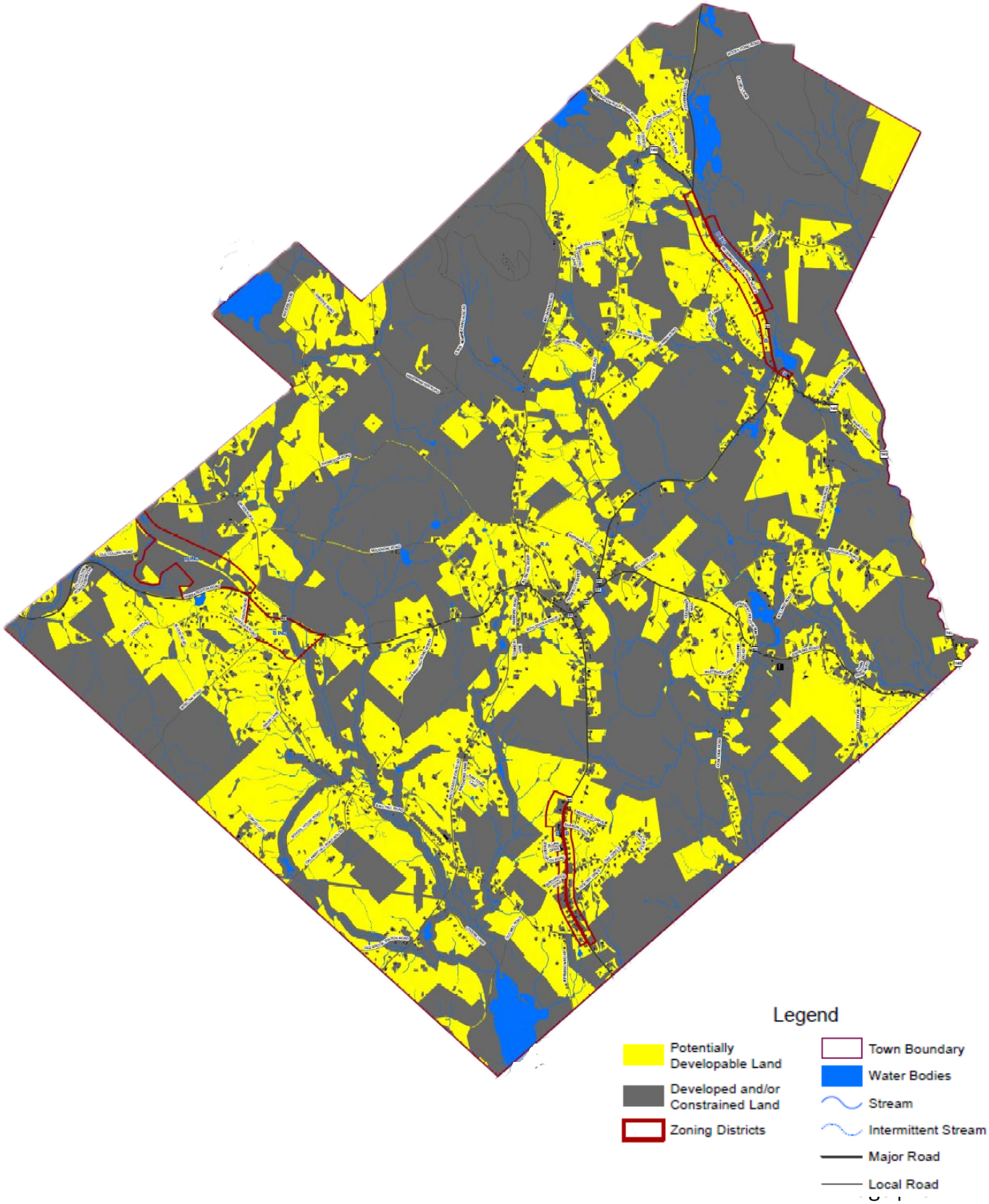
Town of Holden – Potentially Developable Land



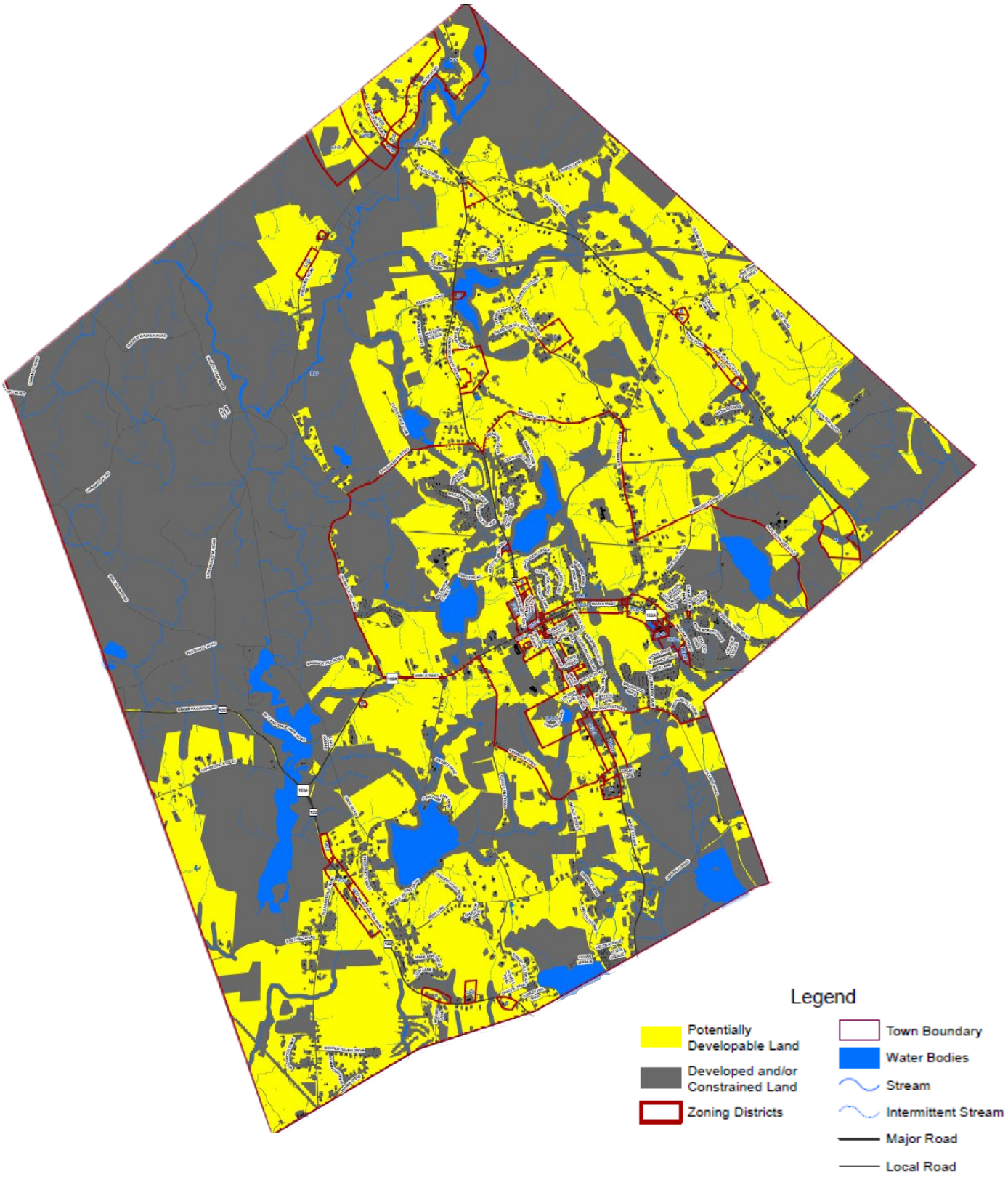
Town of Paxton – Potentially Developable Land



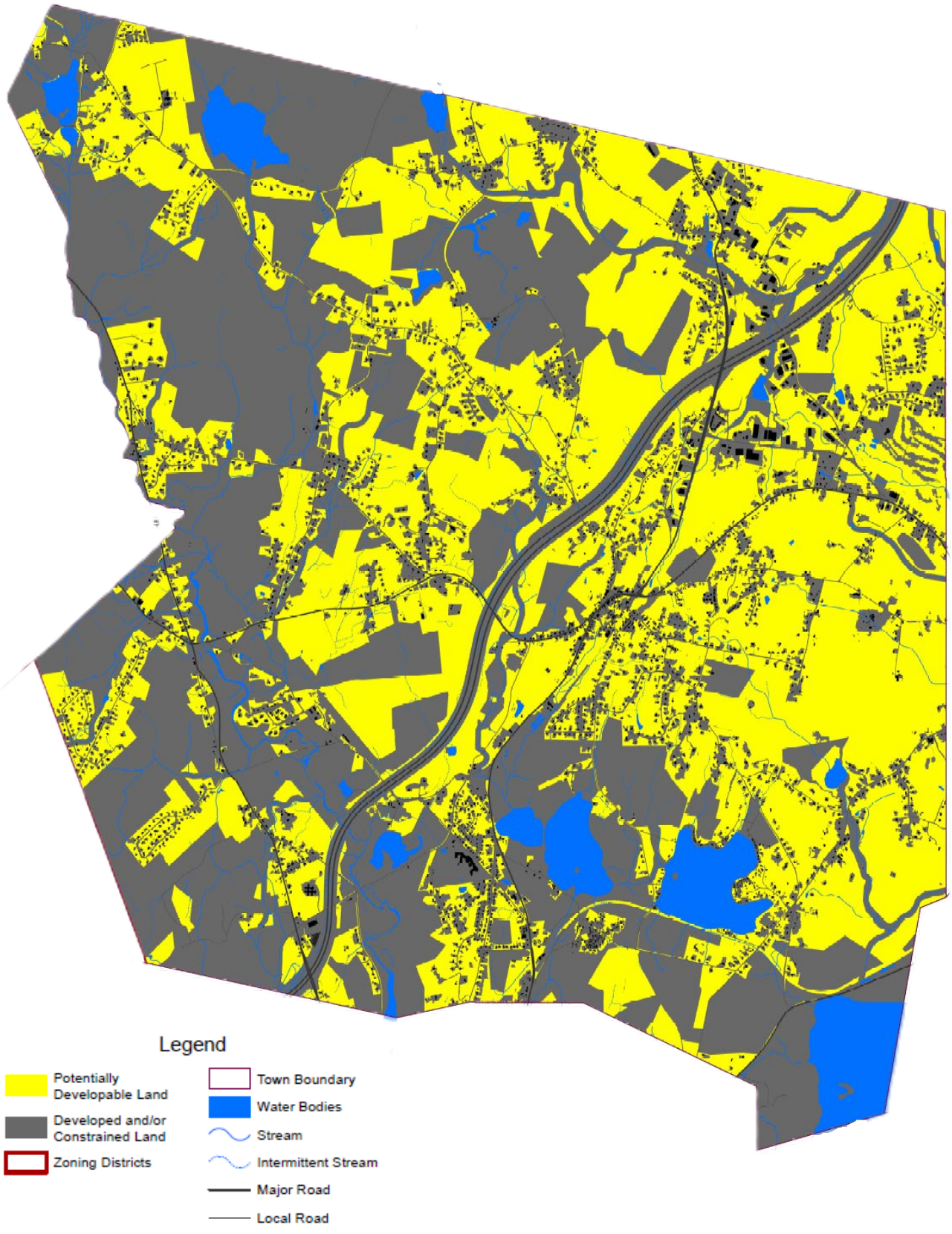
Town of Princeton – Potentially Developable Land



Town of Rutland – Potentially Developable Land



Town of Sterling – Potentially Developable Land



Appendix C: Analysis of Enrollment Projection Accuracy

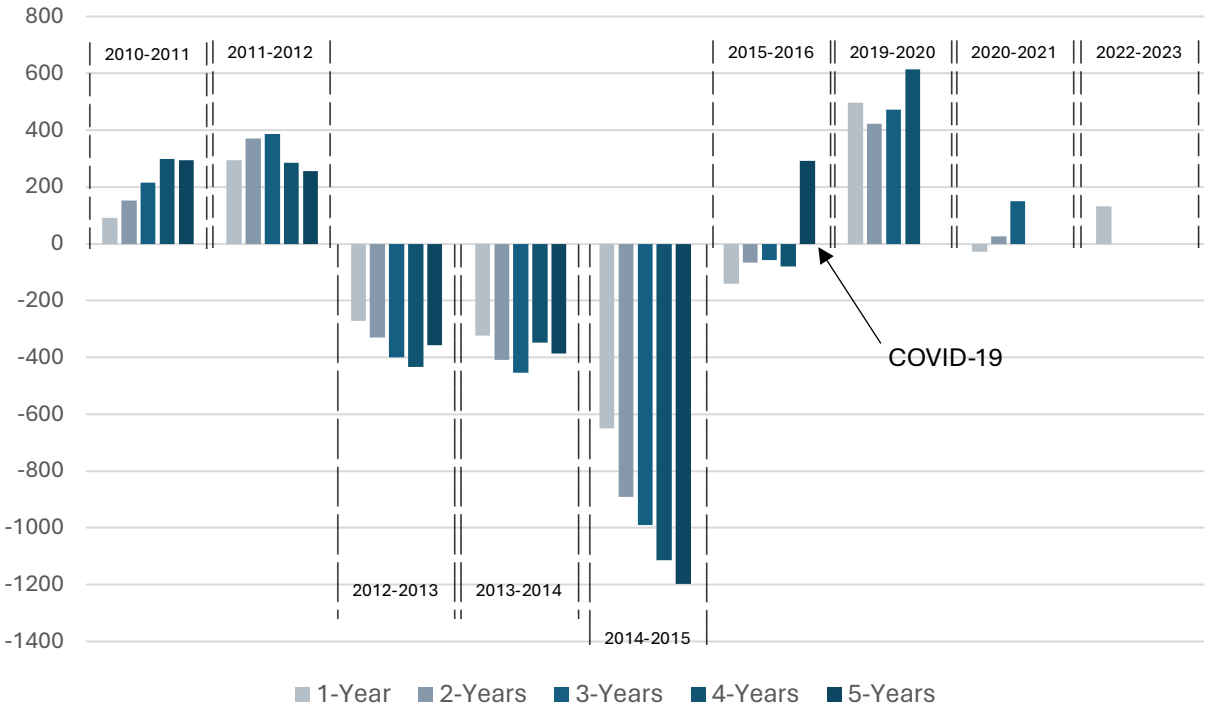
This section evaluates the accuracy of past NESDEC enrollment projections and discusses how anticipating error could be a useful lens for using future enrollment projections.

In general, cohort survival method projections are considered to be the most reliable across the years for which district or town births are known and existing enrollment makes up a larger share of the projected enrollment. For prior NESDEC forecasts, this has typically included the projection years 1-5. For example, the NESDEC enrollment projections beginning with the 2014-2015 school year underestimated the total districtwide enrollment by 651 students for the 2015-2016 school year (projection year 1). The error in projected enrollment increased in each subsequent projection year. However, it is not always the case that error in the first projected year is the lowest in the projection time-horizon.

Nominal Projection Error

The figure below shows the nominal error (positive and negative) for nine NESDEC enrollment projections that WRSD provided to CMRPC. The chart demonstrates relative consistency in the error magnitude and direction within each projection set - meaning that an underestimate in projection year 1 translates into underestimates in subsequent projection years. The nominal error range across the provided projection sets for projection years 1 through 5 is + 613 and – 1,198 students. Most of the projections have nominal errors of less than + or – 400 students.

Nominal NESDEC Enrollment Projection Error (difference from actual enrollment) for Projected Years 1-5



The table below shows the maximum, minimum and average absolute nominal projection errors by projection year (absolute = disregarding the error direction). The range in error magnitude across each of the first five projection years is substantial. Some of NESDEC's projections have been incredibly accurate, differing to actual enrollment by tens of students, whereas others have differed by over 600 students. An important note here is that the projections that NESDEC provided in the 2014-2015 school year are anomalously off and substantially increase the average and max error. The second table below shows the max, min, and average error without the 2014-2015 projection year data, and demonstrates a significantly smaller error range. The second table may be a more accurate representation of the expected error. Although it is common practice to remove outliers from data, considering both the normal expected error and worst-case scenario may both serve important purposes in planning for enrollment.

Maximum, Minimum, and Average Absolute Error by Projection Year

Projection Year	Max Absolute Error	Min Absolute Error	Avg Error
1-Year	651	28	270
2-Years	890	25	333
3-Years	991	57	391
4-Years	1113	81	453
5-Years	1198	256	464

Maximum, Minimum, and Average Absolute Error by Projection Year (2014-2015 removed)

Projection Year	Max Absolute Error	Min Absolute Error	Avg Error
1-Year	496	28	222
2-Years	423	25	253
3-Years	473	57	305
4-Years	613	81	343
5-Years	387	256	317

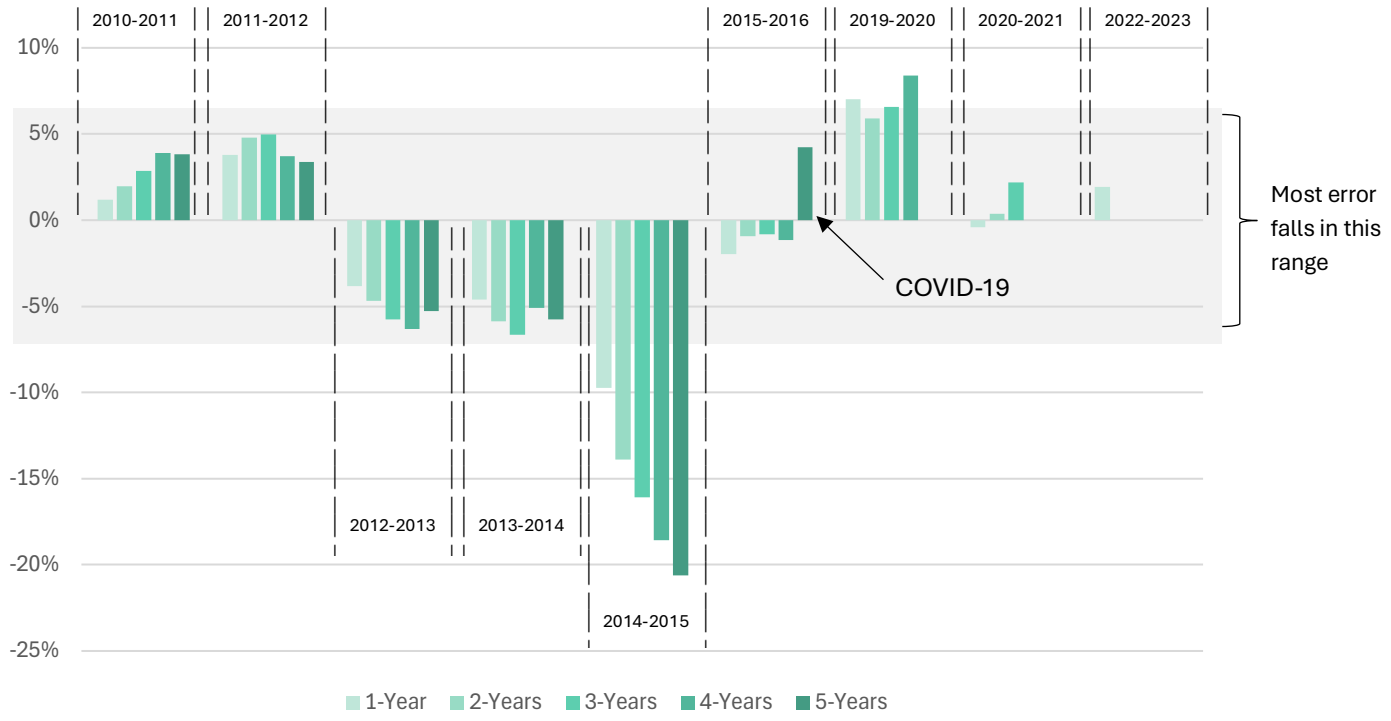
Error as a Percentage of Projected Enrollment

Another way to consider projection error is to look at it as percentage of projected enrollment – i.e.

$$\frac{\text{projected enrollment in year n} - \text{actual enrollment in year n}}{\text{projected enrollment in year n}} \times 100$$

The figure below shows the data using the above formula. Most of NESDEC's projections deviate from actual enrollment by 3 to 7% - both positive and negative. Again, the projections for the 2014-2015 year represent an anomaly in the provided projection sets, deviating from actual enrollment by over 15%.

NESDEC Enrollment Projection Error as Percent of Actual Enrollment for Projected Years 1-5



The two tables below provide the Max, Min, and average error across the provided NESDEC projections. The first table includes the 2014-2015 error data, and the second table does not. The average error for projection year 1 is 3.1 to 3.8 percent of actual enrollment – depending on whether the 2014-2015 data is included.

Maximum, Minimum, and Average Absolute Error by Projection Year

Projection Year	Max Absolute Error	Min Absolute Error	Avg Error
1-Year	9.7%	0.4%	3.8%
2-Years	13.9%	0.4%	4.8%
3-Years	16.1%	0.8%	5.7%
4-Years	18.6%	1.2%	6.7%
5-Years	20.6%	3.4%	7.2%

Maximum, Minimum, and Average Absolute Error by Projection Year (2014-2015 removed)

Projection Year	Max Absolute Error	Min Absolute Error	Avg Error
1-Year	7.0%	0.4%	3.1%
2-Years	5.9%	0.4%	3.5%
3-Years	6.6%	0.8%	4.3%
4-Years	8.4%	1.2%	4.8%
5-Years	5.8%	3.4%	4.5%

Some Key Takeaways

The following takeaways may be useful for using future enrollment projections.

1) **Enrollment projection error should be expected in all future enrollment projections – consider the level of error that is most impactful to WRSD.**

Based on this analysis, the average error associated with NESDEC's projections is 270 in the first projected year, increasing to 464 in year 5 (3.8 and 6.6 percent of actual enrollment respectively). When viewing future enrollment projections, it may be helpful to ask the question:

"How would we be affected if enrollment was 270 students more or less than what is being projected?"

or

"How would we be affected if total enrollment was 3.8 percent higher or lower than what is being projected?"

2) **Consider using the error percentages with future enrollment projections to estimate a plausible enrollment range.**

This is an extension of the takeaway above. To estimate a reasonable range that actual enrollment may fall within, use the following formula.

Projected enrollment X (1 + or - assumed error)

Example:

7200 X 1.03 (1 + 3% error) = 7416 (Upper estimate)

7200 X 0.97 (1 – 3% error) = 6984 (Lower estimate)

3) Ensure the base enrollment figures are accurate in future projections.

In our analysis, we noticed that the baseline enrollment numbers in each of NESDEC's projections differed from the enrollment data that we obtained from the Massachusetts Department of Elementary and Secondary Education. The table below shows the difference between DESE's recorded PK-12 enrollment and the base year enrollment for each of the NESDEC projection sets that were provided.

	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2019-2020	2020-2021	2022-2023
DESE Recorded Enrollment PK-12	7490	7469	7467	7,384	7,346	7,343	7,010	6,584	6,740
NESDEC Base Year Enrollment PK-12	7470	7677	7189	7112	6895	7260	7,021	6586	6776
Difference	**-20**	**208**	**-278**	**-272**	**-451**	**-83**	**11**	**2**	**36**
Year 1 Error	**91**	**294**	**-271**	**-324**	**-651**	**-141**	**496**	**-28**	**131**

Unless there is an acute cause of sudden enrollment changes (such as a pandemic), error in a base year will carry through subsequent years and result in less reliable projections. Based on the above analysis, it would appear that in some cases, the error in NESDEC's projected total enrollment may be related to discrepancies in the underlying base year data. We do not have a clear sense of why this difference exists.