



14 Heywood Rd.
Westford, MA 01886
November 7, 2019

Ms. Jodi Ross
Town Manager
55 Main St.
Westford, MA 01886

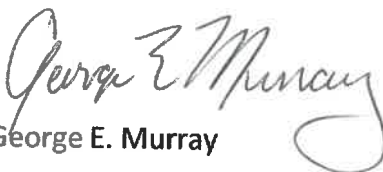
Dear Jodi,

For the past 34 years, I have provided the Westford School Committee with enrollment forecasts. They have been accepted by the MSBA (Massachusetts School Building Authority) for review and funding of building projects in town, and were useful in determining required building capacities and timing of construction over six building projects from 1989-2006.

In the past, I have provided these projections to the School Administration and School Committee for use in budget preparation as well.

This year, in the interest of openness and transparency, I have decided to share this report with the Finance Committee and Town Manager's office as well. As you review these results, if you have any questions about the methodology of arriving at the predictions, I'd be happy to try to answer them.

Yours truly,


George E. Murray

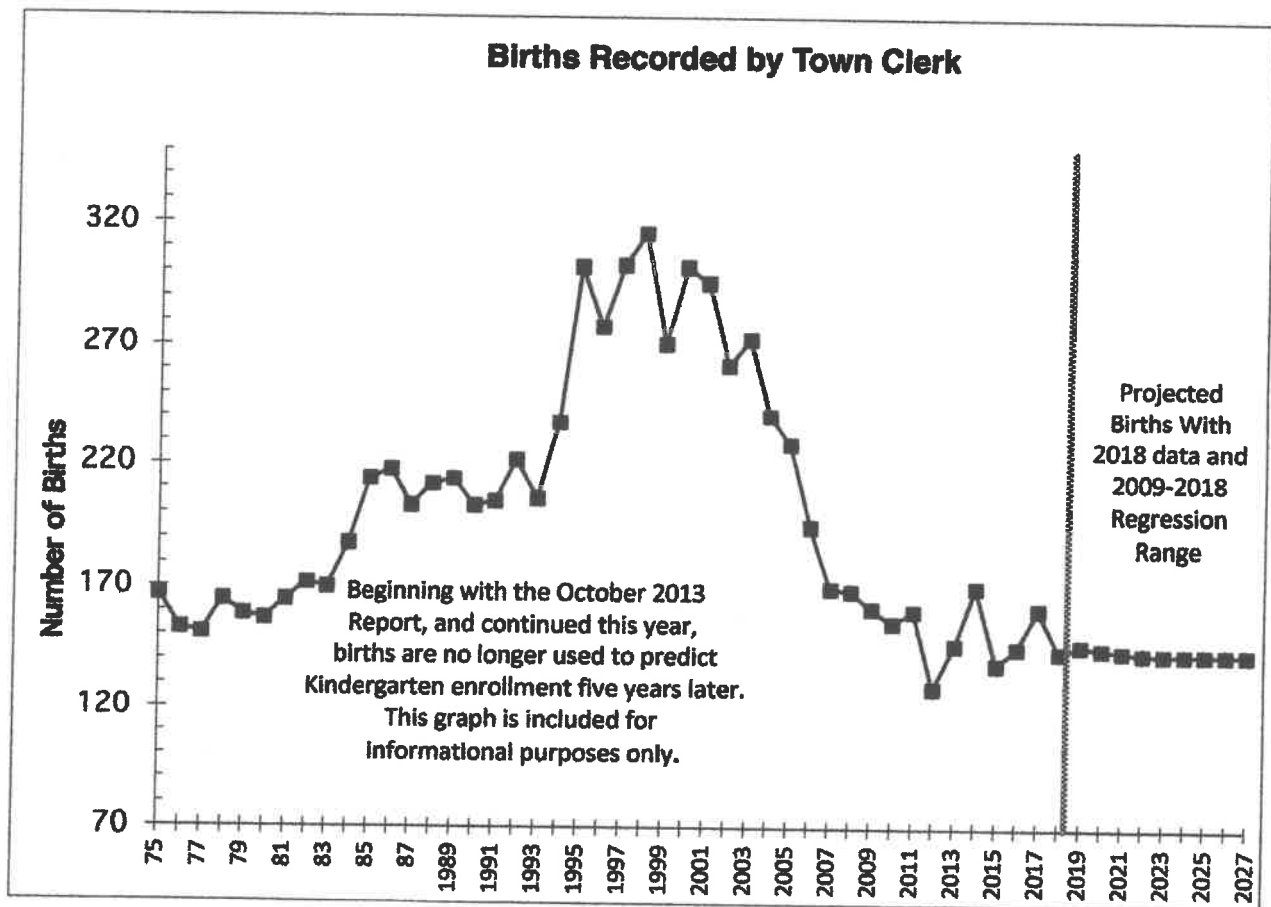
14 Heywood Rd
Westford, MA 01886
October 28, 2019

Bill Olsen
Superintendent of Schools
35R Depot Street
Westford, MA 01886

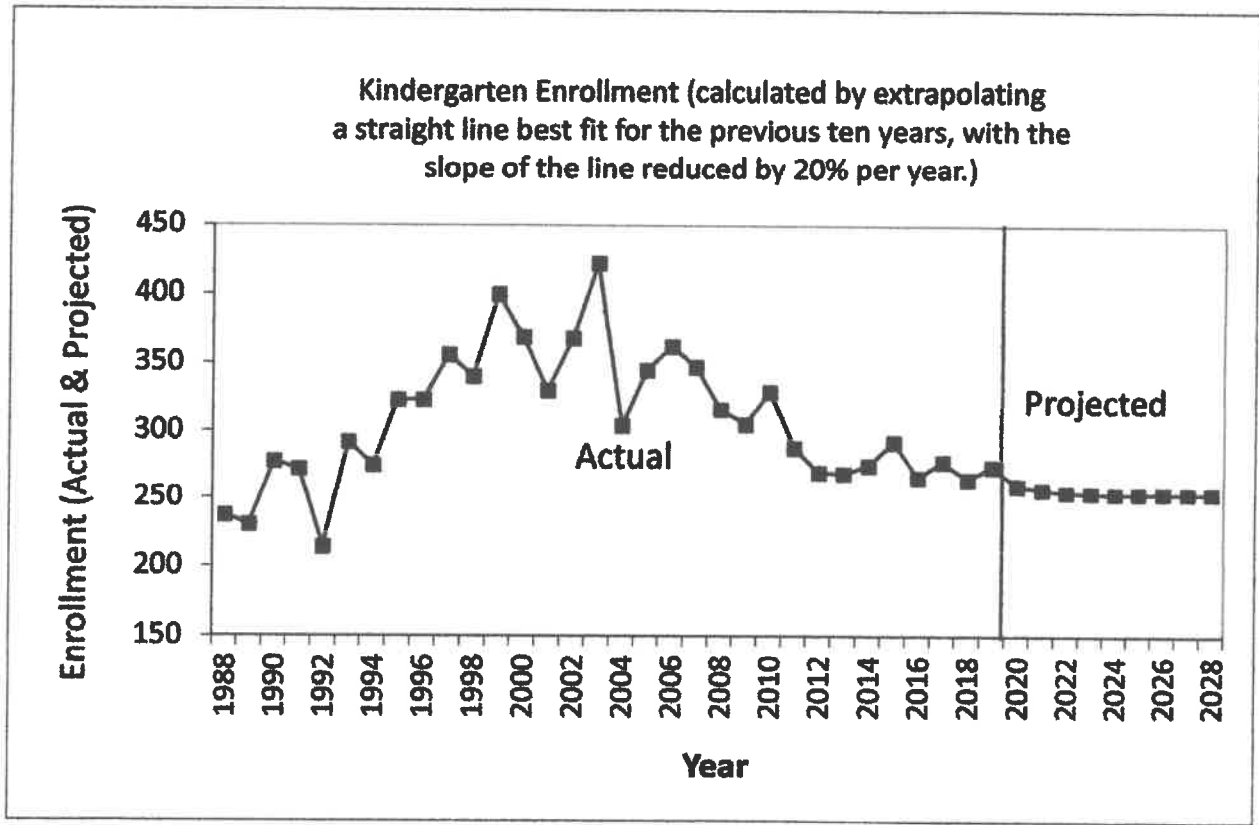
Dear Bill,

Here's my report on Westford Public Schools past and forecasted enrollments. Although I've never found a strong correlation between births recorded in town and Kindergarten enrollment five years later, it's appropriate to keep an eye on what's happening with births. The sharp decline in births in the 1998-2012 period appears to be leveling off.

In ten of the past eleven years, births recorded by the Town Clerk have been below 170, compared to approximately 300 in the 1995-2000 period. Births are now averaging below where they were in 1975-1980. Obviously, this demographic shift has an effect on enrollments.

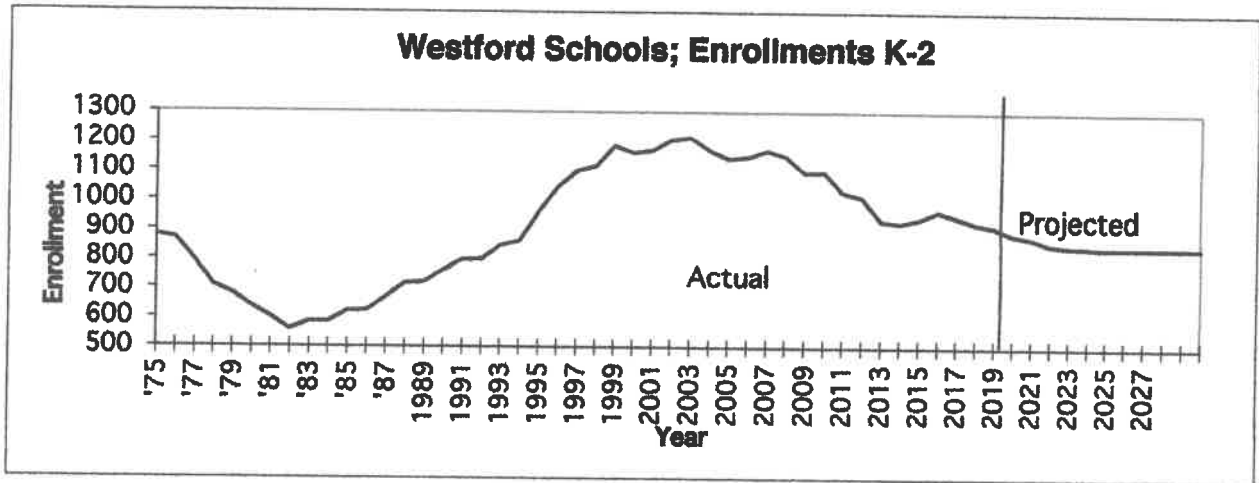


Although I have never been able to establish a clear correlation between number of births and Kindergarten enrollment five years later, the graph of Kindergarten class size shows a similar downward trend. Kindergarten enrollment, at 274 in 2019, is about 100 students below the 1997-2000 time period, but the rate of decline appears to leveling out.



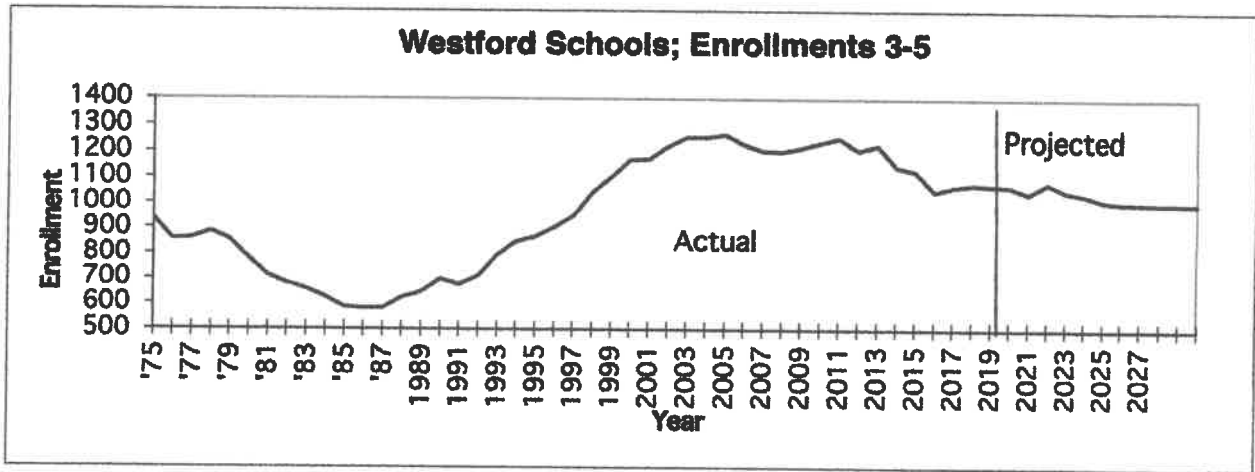
This reduction, which I have pointed out in earlier reports, shows that enrollment is projected to level out at about 255 in the next 3-5 years. This will result in downward pressure on enrollment in higher grades for the next 10-12 years, which should be watched closely.

Enrollment actuals and projections, starting with the K-2 grade level grouping, shows this trend.



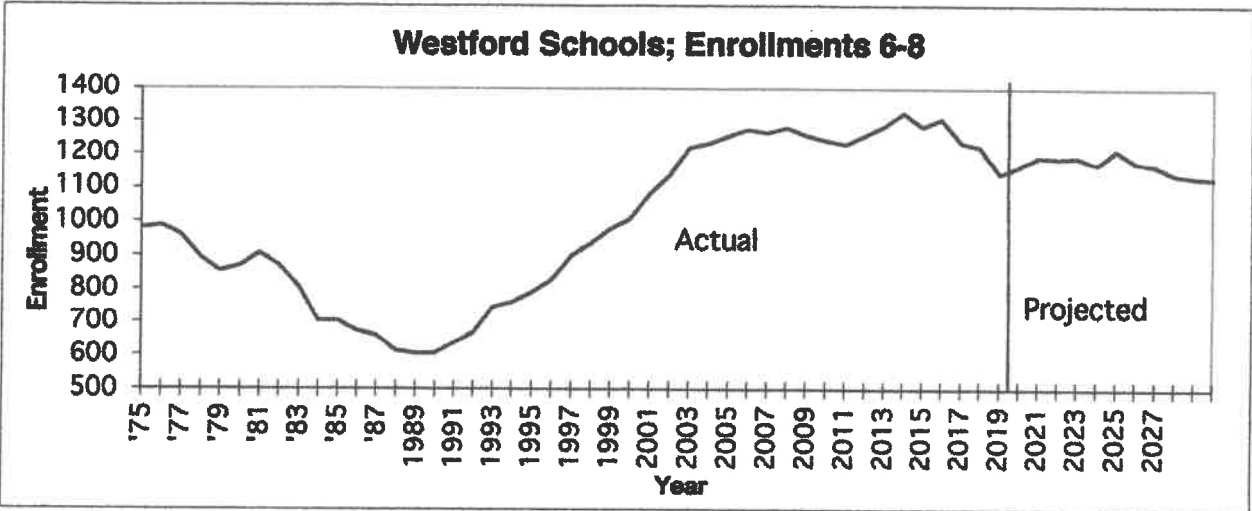
K-2 enrollments have been declining for fifteen years. They are projected to level off at about 850 over the next few years, down by 30% from the peak in 2003.

Upper elementary enrollments, grades 3-5, show a similar trend.

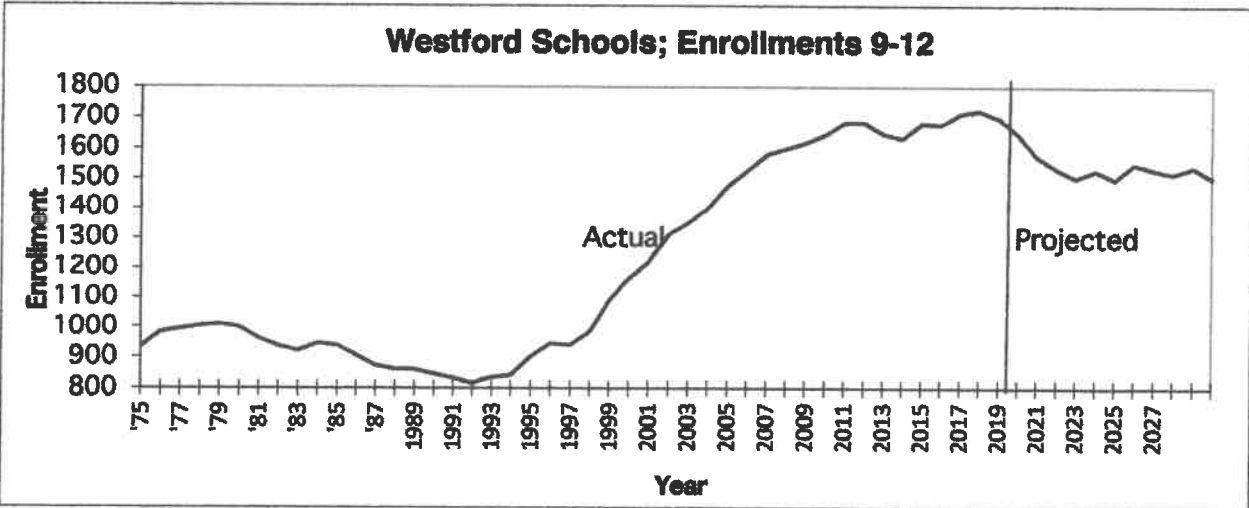


Enrollment peaked at 1266 in 2005, and has declined to 1072, a 15% drop in the last 14 years.

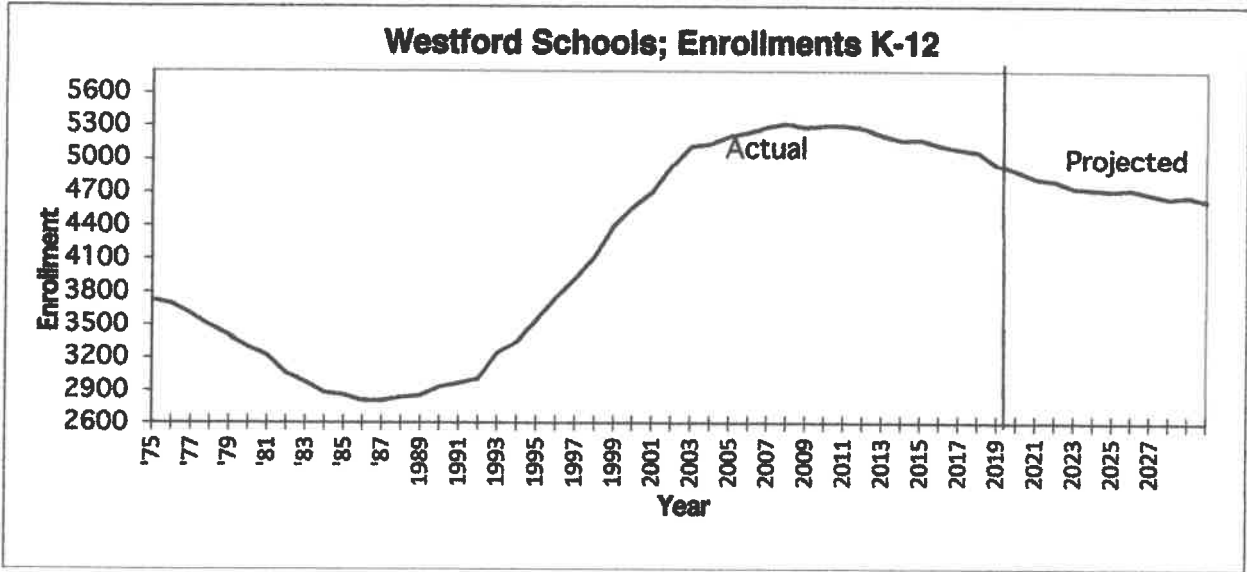
At the two middle schools, enrollment peaked later – in 2014 – at 1327. Five years later, it is at 1141, a 14% drop in five years. Enrollment at this grouping of grades is predicted to level out at about 1200.



Westford Academy’s enrollment has continued a slight upward trend from 2011-2019, following a rapid period of growth from 1992-2011. However, it will soon enter a period of declining enrollment, simply because of the downward pressure of declining enrollment in the grades feeding into the Academy. At this point, it is expected to level off at about 1500 over the next several years. This needs to be watched closely, because the impact of the rapidly dropping elementary enrollment levels on High School enrollments is difficult to predict this far out.



Finally, the K-12 school system in total reached a peak enrollment of 5325 in 2008, and has dropped by 7% since then, to a total enrollment of 4950 in 2019. It is expected to level off at about 4700 over the next few years.



Adenda to this report are:

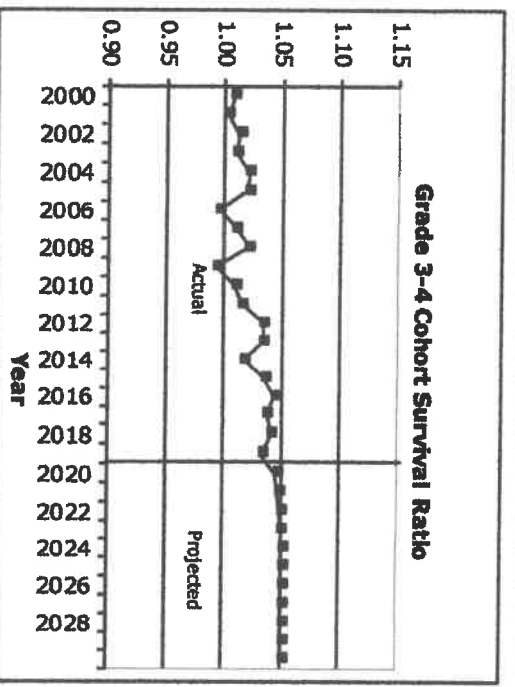
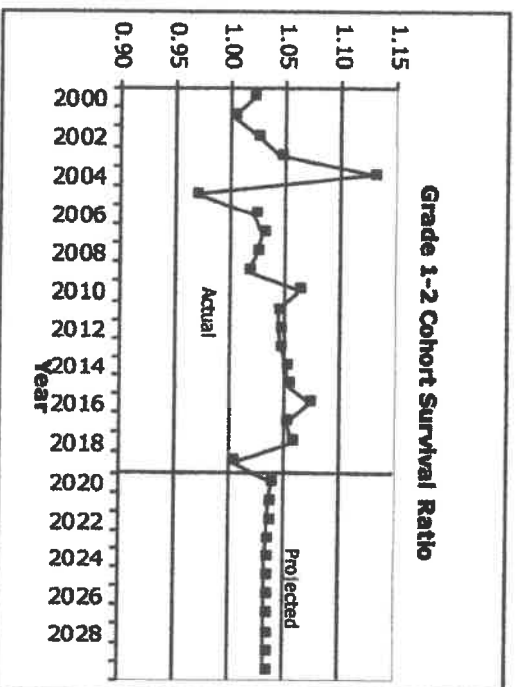
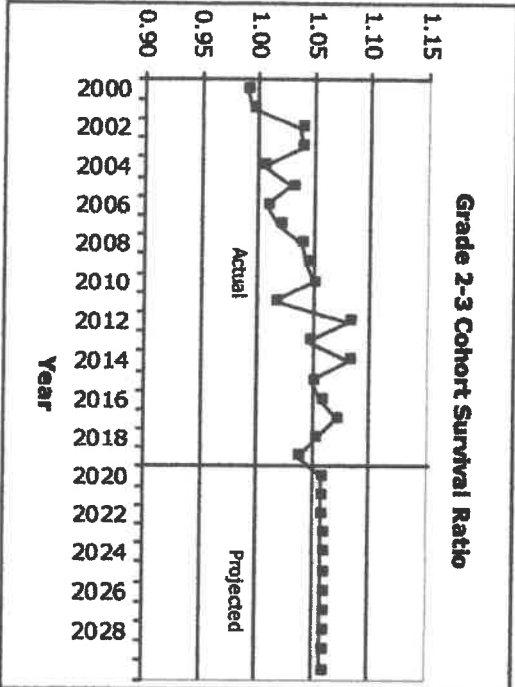
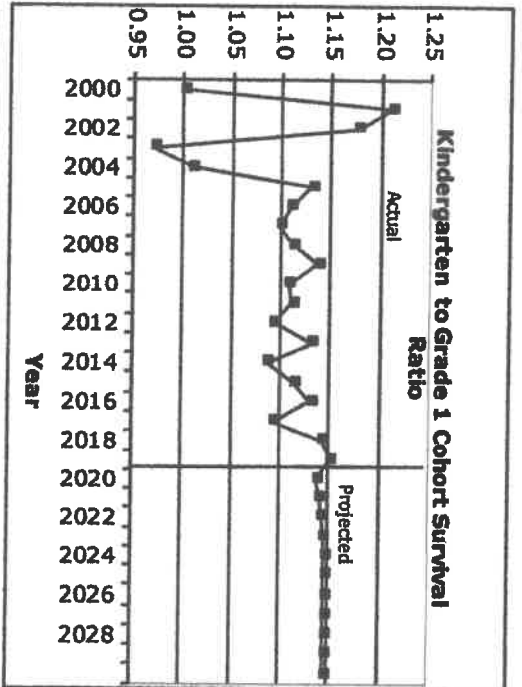
- Historical and projected enrollments
- Historical and projected Cohort Survival Ratios
- Graphs of Cohort Survival Ratios by grade
- Graphs of historical and projected enrollments by grade (new)

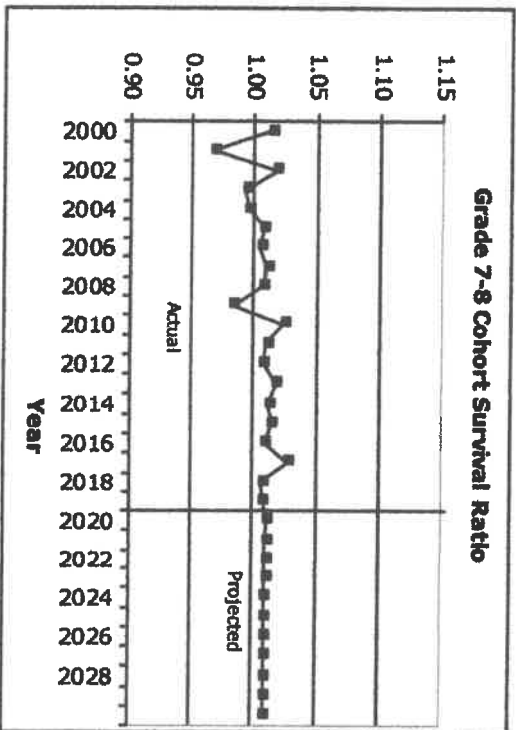
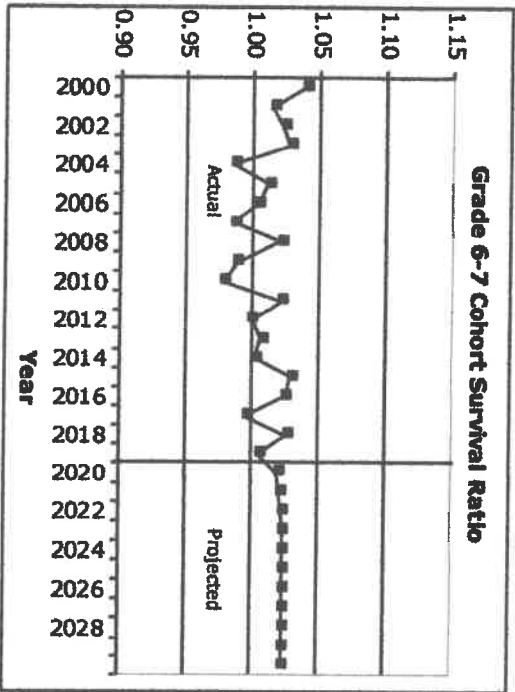
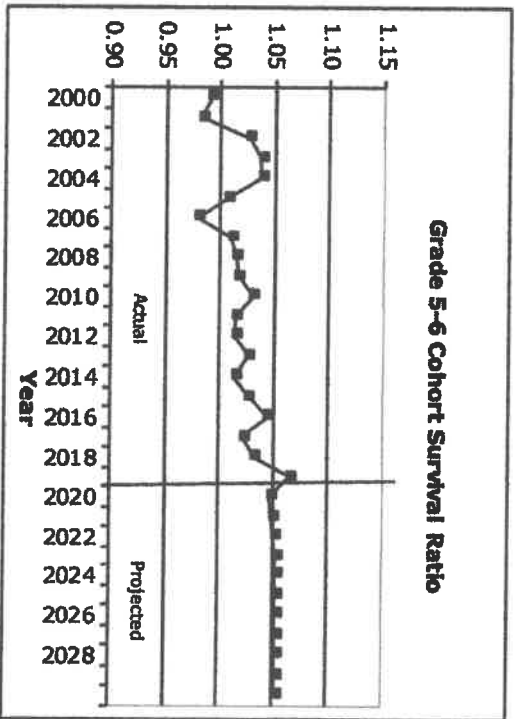
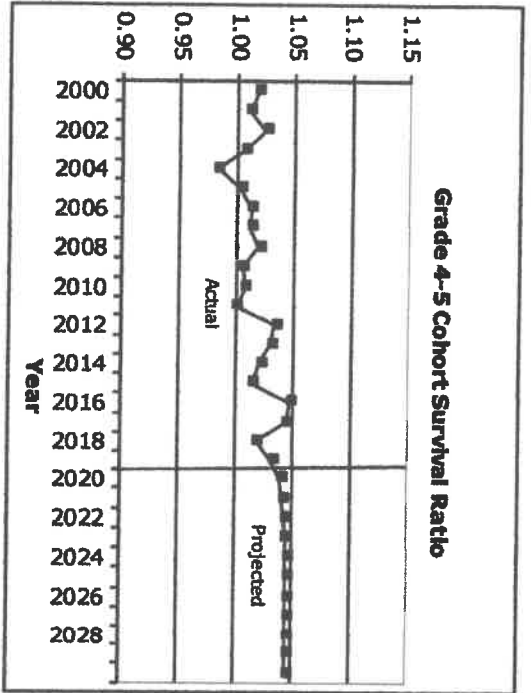
Westford Public Schools
K-12 Historical Enrollments and
Projections based on 10-1-19 Enrollment

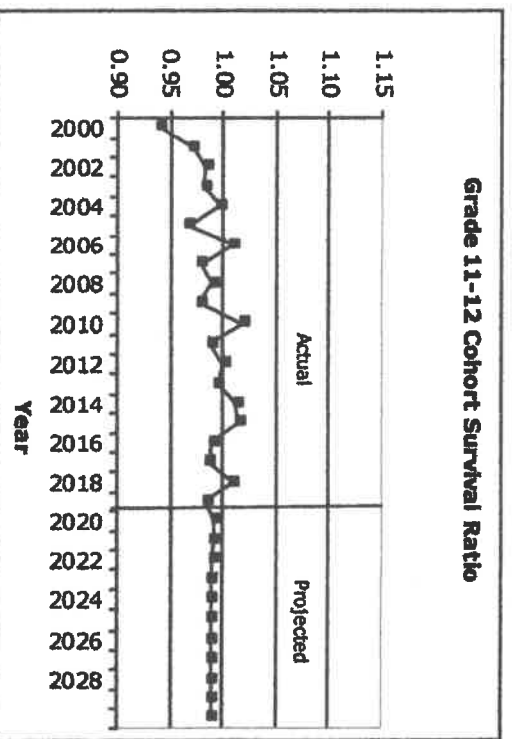
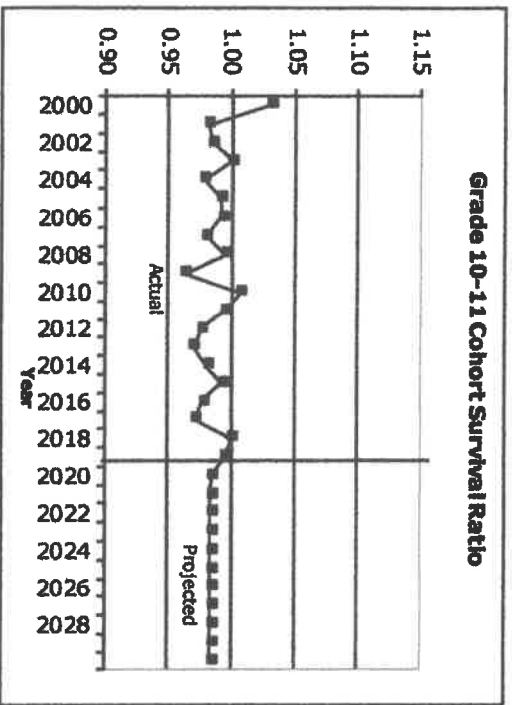
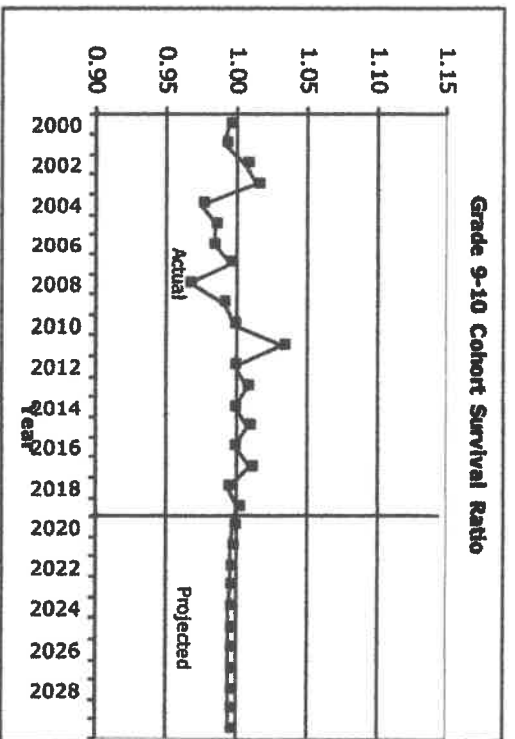
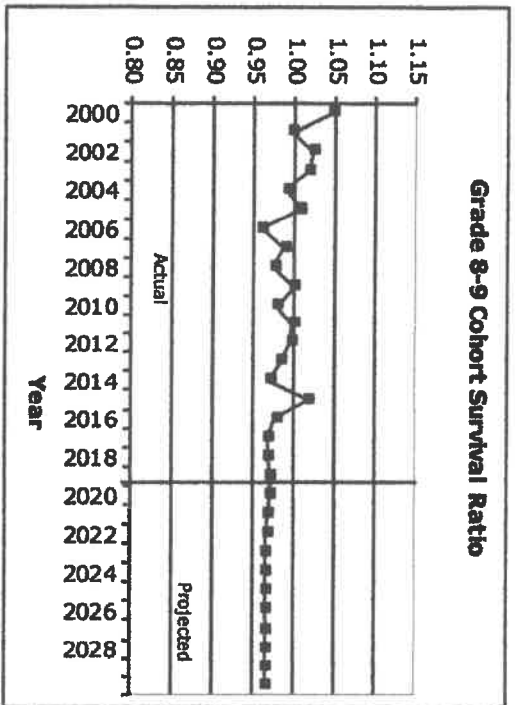
YEAR	TREND	BORN	K	P-1	1	2	3	4	5	6	7	8	9	10	11	12	UNG.	K-2	3 to 5	6-8	9-12	K-12
1990	210	203	278	24	231	229	236	236	226	200	220	186	202	219	227	198	19	762	698	606	846	2931
1991	210	205	272	17	281	228	219	233	226	224	196	219	179	198	237	219	20	798	678	639	833	2968
1992	210	222	214	34	276	276	239	231	240	229	233	207	209	188	200	219	14	800	710	669	816	3009
1993	210	206	292	32	239	285	298	253	243	261	241	244	216	223	193	202	20	848	794	746	834	3242
1994	238	238	275	34	310	244	291	302	256	249	269	244	233	216	214	179	29	863	849	762	842	3345
1995	275	302	323	28	309	302	260	295	314	266	252	273	248	232	213	209	32	962	869	791	902	3556
1996	313	278	323	42	348	329	322	276	306	311	270	246	267	249	230	200	35	1042	904	827	946	3754
1997	304	303	356		385	359	334	323	293	311	319	270	239	254	238	210	39	1100	950	900	941	3930
1998	316	316	340		388	389	369	337	338	298	313	328	257	248	256	224	39	1117	1044	939	985	4124
1999	302	271	400		386	401	376	387	340	351	305	323	325	262	252	252	45	1187	1103	979	1091	4405
2000	288	302	369		400	394	397	379	394	337	365	309	338	323	270	237	53	1163	1170	1011	1168	4565
2001	274	296	330	31	409	401	392	398	383	387	342	353	308	335	317	262	48	1171	1173	1082	1222	4656
2002	260	262	368	39	379	419	416	397	408	393	396	348	361	310	330	312	59	1205	1221	1137	1313	4935
2003	246	273	422	39	357	396	435	420	400	423	404	393	354	366	310	324	77	1214	1255	1220	1354	5120
2004	224	241	304	51	414	403	398	444	413	415	417	402	389	345	358	309	78	1172	1255	1234	1401	5140
2005	198	229	345	33	364	401	415	406	445	416	420	420	405	383	342	346	69	1143	1266	1256	1476	5210
2006	174	195	362	42	373	372	404	413	411	436	418	422	403	398	380	345	68	1149	1228	1276	1526	5247
2007	172	170	347	37	403	384	379	408	418	415	430	422	417	401	390	372	74	1171	1205	1267	1580	5297
2008	169	169	316	46	376	413	399	387	416	424	424	433	411	403	399	386	92	1151	1202	1281	1599	5325
2009	166	162	305	26	382	382	431	396	389	423	419	417	433	407	388	390	100	1095	1216	1259	1618	5288
2010	163	156	329	44	318	406	401	435	399	401	414	429	408	432	410	395	85	1097	1235	1244	1645	5306
2011	160	161	288	31	380	332	412	407	435	405	410	418	428	421	430	405	105	1031	1254	1233	1684	5307
2012	158	129	270	40	305	397	359	426	421	441	405	413	416	427	411	430	122	1012	1206	1259	1684	5283
2013	155	147	269	36	310	319	415	371	439	432	444	412	406	419	414	409	126	934	1225	1288	1648	5221
2014	152	171	275	41	287	326	345	422	379	445	438	449	399	405	411	419	137	929	1146	1327	1634	5173
2015	149	139	292	33	315	302	342	357	428	389	458	439	457	402	402	417	145	942	1127	1286	1682	5182
2016	146	146	266	35	328	338	319	357	374	447	399	462	429	456	393	398	130	967	1050	1308	1676	5131
2017	143	162	278	44	281	345	362	331	373	382	445	410	447	433	443	388	127	948	1066	1237	1715	5093
2018		144	265	28	336	297	363	377	337	385	392	448	397	444	433	447	120	926	1077	1225	1724	5072
Actual Through 2019		147	274		305	337	308	375	389	359	387	395	435	397	442	426	121	916	1072	1141	1700	4950
Projected (2020-2033)		146	260		312	316	356	322	390	407	366	391	383	434	391	438	129	888	1068	1164	1646	4896
2020		145	257		297	323	335	373	336	409	416	370	379	382	427	387	135	877	1043	1195	1574	4825
2021		144	255		294	307	342	351	389	353	418	420	358	377	375	423	139	857	1082	1191	1532	4801
2022		144	255		292	304	325	359	367	410	361	422	406	356	371	371	142	851	1051	1193	1503	4740
2023		144	254		291	302	322	342	375	386	420	364	408	403	350	367	141	848	1039	1171	1528	4725
2024		144	254		291	301	319	338	357	395	396	424	352	406	397	346	141	847	1015	1214	1500	4717
2025		144	254		291	301	319	336	354	376	404	399	409	350	399	393	141	846	1008	1180	1550	4725
2026		144	254		291	301	318	335	351	372	385	408	386	407	344	395	141	846	1004	1166	1531	4688
2027		144	254		291	301	318	335	350	370	381	389	394	383	400	340	141	846	1003	1140	1518	4648
2028		144	254		291	301	318	335	350	369	378	385	375	392	377	396	141	846	1003	1132	1540	4662
2029		144	254		291	301	318	335	350	368	378	382	372	373	386	373	141	846	1003	1128	1503	4621
2030		144	254		291	301	318	335	350	368	377	381	369	369	367	381	141	846	1003	1127	1487	4603
2031		144	254		291	301	318	335	350	368	377	381	369	369	367	381	141	846	1003	1127	1461	4578
2032		144	254		291	301	318	335	350	368	377	381	368	367	363	363	141	846	1003	1127	1461	4578
2033		144	254		291	301	318	335	350	368	377	381	368	366	361	360	141	846	1003	1127	1454	4570

Cohort Survival Ratios, Actual and Projected using 10 year Regression Line with Five Year Declining Slope

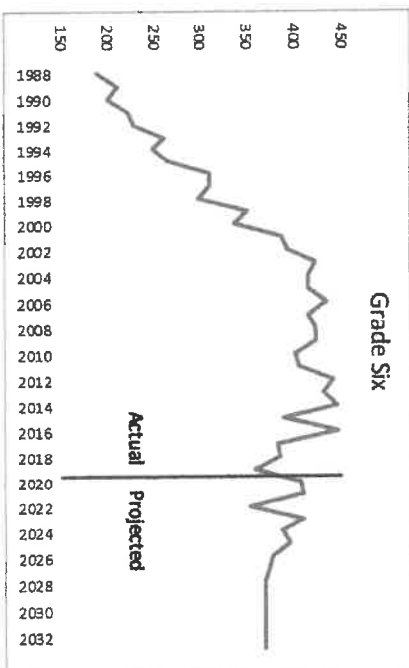
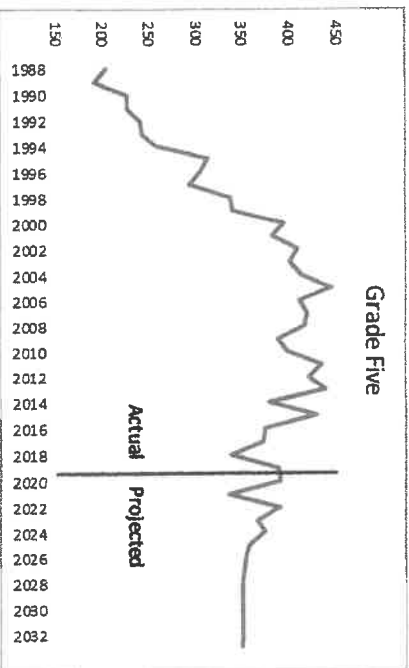
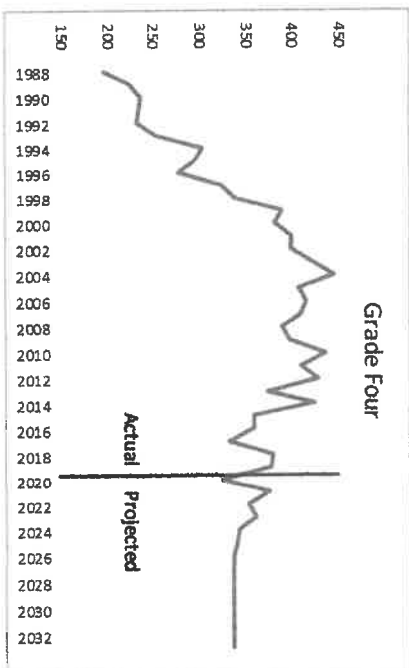
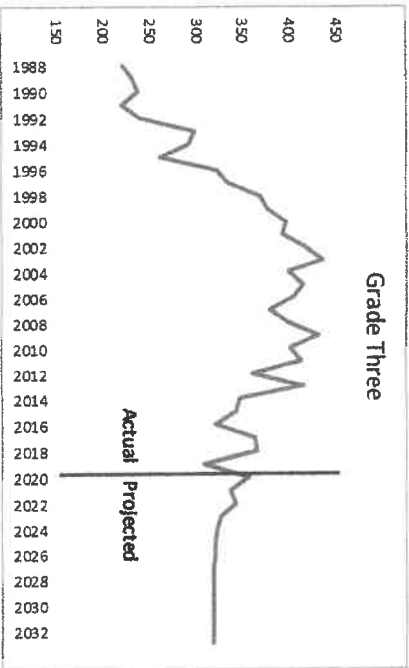
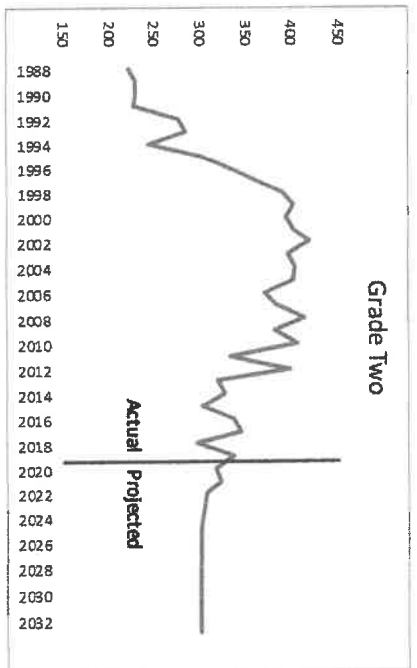
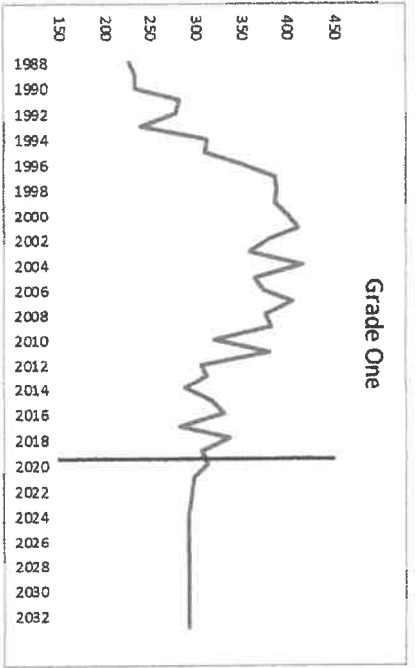
	B-K	K-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	
Actual Cohort Survival Ratios	2000	1.34	1.00	1.02	0.99	1.01	1.02	0.99	1.04	1.01	1.05	0.99	1.03	0.94
	2001	1.05	1.21	1.00	0.99	1.00	1.01	0.98	1.01	0.97	1.00	0.99	0.98	0.97
	2002	1.21	1.18	1.02	1.04	1.01	1.03	1.03	1.02	1.02	1.02	1.01	0.99	0.98
	2003	1.34	0.97	1.04	1.04	1.01	1.01	1.04	1.03	0.99	1.02	1.01	1.00	0.98
	2004	1.01	1.01	1.13	1.01	1.02	0.98	1.04	0.99	1.00	0.99	0.97	0.98	1.00
	2005	1.20	1.13	0.97	1.03	1.02	1.00	1.01	1.01	1.01	0.98	0.99	0.99	0.97
	2006	1.32	1.11	1.02	1.01	1.00	1.01	0.98	1.00	1.00	0.96	0.98	0.99	1.01
	2007	1.33	1.10	1.03	1.02	1.01	1.01	0.99	1.01	0.99	1.00	0.98	0.98	0.98
	2008	1.28	1.11	1.02	1.04	1.02	1.02	1.01	1.01	0.97	0.97	1.00	0.99	0.99
	2009	1.36	1.14	1.02	1.04	0.99	1.01	1.02	0.99	0.98	1.00	0.99	0.96	0.98
	2010	1.66	1.11	1.06	1.05	1.01	1.01	1.03	0.98	1.02	0.98	1.00	1.01	1.02
	2011	1.65	1.11	1.04	1.01	1.00	1.02	1.02	1.01	1.00	1.03	1.00	0.99	0.99
	2012	1.57	1.09	1.04	1.08	1.03	1.03	1.01	1.00	1.00	1.00	0.98	1.00	1.00
	2013	1.13	1.13	1.05	1.05	1.03	1.03	1.03	1.01	1.02	0.98	1.01	0.97	1.00
	2014	1.09	1.09	1.05	1.08	1.02	1.02	1.01	1.00	0.97	1.00	0.98	1.01	1.01
	2015	1.11	1.11	1.05	1.05	1.03	1.01	1.03	1.03	1.01	1.02	1.01	0.99	1.01
	2016	1.13	1.13	1.07	1.06	1.04	1.05	1.04	1.03	1.01	0.98	1.00	0.98	0.99
	2017	1.09	1.09	1.05	1.07	1.04	1.04	1.02	1.00	1.03	0.97	1.01	0.97	0.99
	2018	1.14	1.14	1.06	1.05	1.04	1.02	1.03	1.03	1.01	0.97	0.99	1.00	1.01
	2019	1.15	1.15	1.00	1.04	1.03	1.03	1.01	1.01	0.97	1.00	1.00	0.98	0.98
Projected 2020	2020	1.14	1.14	1.04	1.06	1.05	1.04	1.05	1.02	1.01	0.97	1.00	0.98	0.99
	2021	1.14	1.14	1.04	1.06	1.05	1.04	1.05	1.02	1.01	0.97	1.00	0.98	0.99
	2022	1.14	1.14	1.03	1.06	1.05	1.04	1.05	1.02	1.01	0.97	1.00	0.98	0.99
	2023	1.14	1.14	1.03	1.06	1.05	1.04	1.05	1.02	1.01	0.97	0.99	0.98	0.99
Survival Ratio Extrapolated 2010-2019	2024	1.15	1.15	1.03	1.06	1.05	1.05	1.05	1.02	1.01	0.97	0.99	0.98	0.99
	2025	1.15	1.15	1.03	1.06	1.05	1.05	1.05	1.02	1.01	0.97	0.99	0.98	0.99
	2026	1.15	1.15	1.03	1.06	1.05	1.05	1.05	1.02	1.01	0.97	0.99	0.98	0.99
	2027	1.15	1.15	1.03	1.06	1.05	1.05	1.05	1.02	1.01	0.97	0.99	0.98	0.99
	2028	1.15	1.15	1.03	1.06	1.05	1.05	1.05	1.02	1.01	0.97	0.99	0.98	0.99
	2029	1.15	1.15	1.03	1.06	1.05	1.05	1.05	1.02	1.01	0.97	0.99	0.98	0.99
ratio after 5 years.	2030	1.15	1.15	1.03	1.06	1.05	1.05	1.05	1.02	1.01	0.97	0.99	0.98	0.99
	2031	1.15	1.15	1.03	1.06	1.05	1.05	1.05	1.02	1.01	0.97	0.99	0.98	0.99
	2032	1.15	1.15	1.03	1.06	1.05	1.05	1.05	1.02	1.01	0.97	0.99	0.98	0.99
	2033	1.15	1.15	1.03	1.06	1.05	1.05	1.05	1.02	1.01	0.97	0.99	0.98	0.99
	2034	1.15	1.15	1.03	1.06	1.05	1.05	1.05	1.02	1.01	0.97	0.99	0.98	0.99
	2035	1.15	1.15	1.03	1.06	1.05	1.05	1.05	1.02	1.01	0.97	0.99	0.98	0.99
	2036	1.15	1.15	1.03	1.06	1.05	1.05	1.05	1.02	1.01	0.97	0.99	0.98	0.99
	2037	1.15	1.15	1.03	1.06	1.05	1.05	1.05	1.02	1.01	0.97	0.99	0.98	0.99







Westford Public Schools
 Enrollment by Grade 1988-2019, Projected to 2033
 October 1, 2019 Enrollments



Westford Public Schools
 Enrollment by Grade 1988-2019; Projected to 2033
 October 1, 2019 Enrollments

