

## West Hartford Public School District

**Agenda Item:** Multi-Year Enrollment Projections

**Meeting Date:** November 22, 2011

**From:** Chip Ward, Director of Finance and Planning

**Through:** Karen L. List, Superintendent

### **Background:**

This report presents the multi-year enrollment projections for the district. Mr. Ward will be available to answer questions.

### **Overall Summary:**

We continue to project a long term decline in the overall enrollment in West Hartford Public Schools. This year, on October 1, 2011, we had 9,885 K-12 students enrolled in West Hartford Public Schools. Next year, on October 1, 2012, we are projecting a total of 9,892 – essentially a flat enrollment with an increase of just 7 students. Thereafter, the enrollment is expected to gradually decline to 9,450 students in 10 years’ time. The trend comes from a decline in the number births in West Hartford since 2001, the relative stability in recent cohort survival ratios, and the declining trend statewide in K-12 enrollments. Next year we project that we will average 776 students per grade in grades 3 through 12 and 712 students in grades K through 2. Future grades are expected to average near 700 and so we will see a gradual decline as smaller classes enter the system and larger classes leave. We are projecting an average decline of 45 students per year for the next 10 years. We have adequate space at all school levels throughout the forecast period.

### **Multi-year Enrollment Projections:**

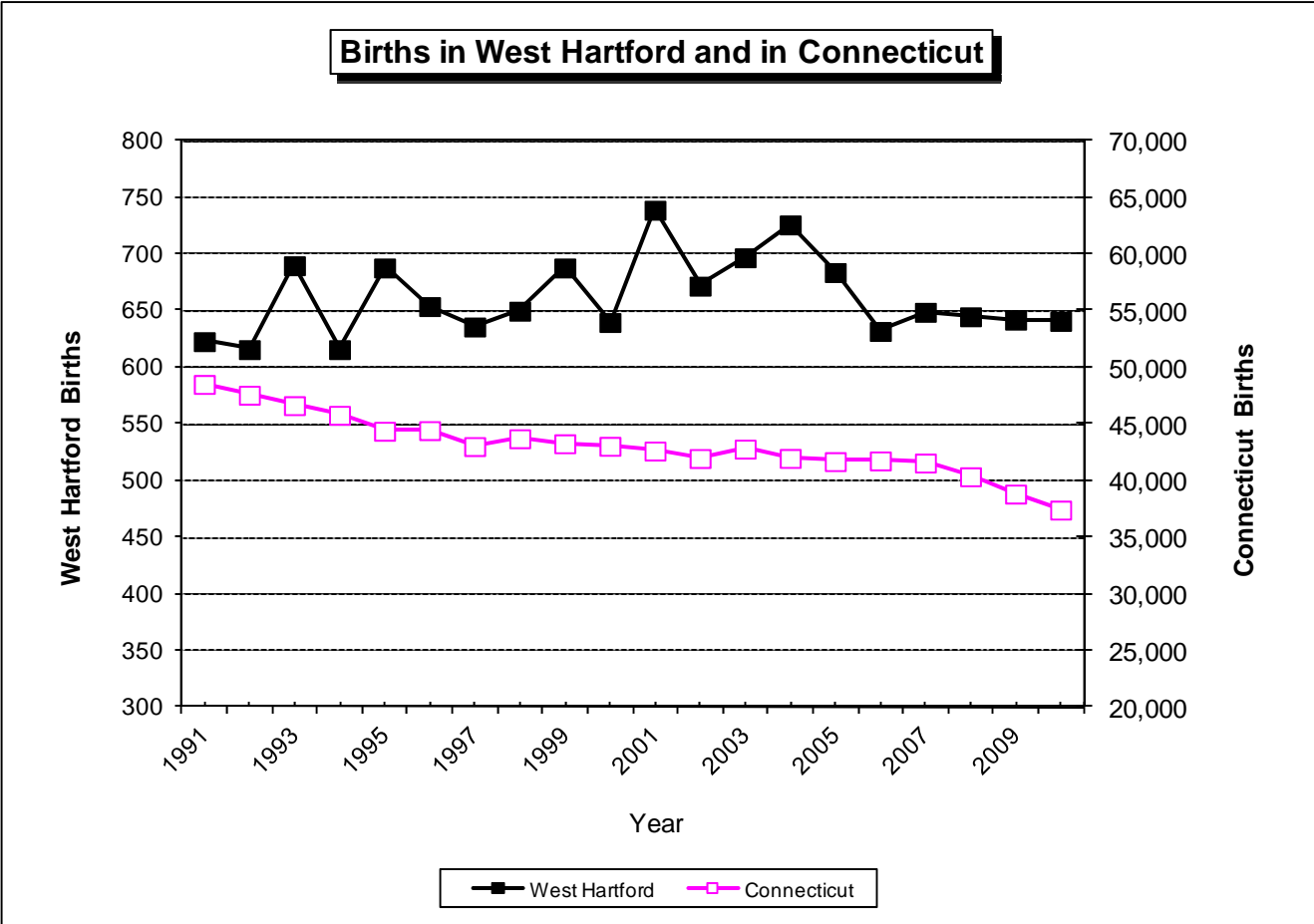
Enrollment projections serve as the guidepost for staffing and capital allocations in the school district. Long-term enrollment projections are made once a year, soon after the October 1 enrollments have been tallied. This section of the report will discuss the enrollment projections and methodology and highlight the implications of the latest set of enrollment projections for the capital budgets.

The enrollment projections are based on the cohort-survival methodology. In this methodology, we follow a cohort of students as they move through the school system from birth to kindergarten to middle school to high school. We analyze the historical data to determine the specific cohort-survival ratios. The cohort-survival ratio is the ratio of the number of students at a grade level in one year to the number of students in the

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previous grade level the prior year. The single ratio encompasses a vast array of social and demographic factors - families moving to West Hartford for the schools, families making the decision to send their students to private school, families leaving West Hartford for economic or career reasons, and the turnover in the real estate market with older residents leaving and younger families moving in. The historical cohort-survival ratios, when combined with the birth rates and the current enrollment profile, allow us to project enrollments a number of years into the future.

There are limitations to the reliability and accuracy of the cohort-survival methodology. It is most accurate in the short term and for the calculating the district’s enrollment as a whole. As the forecast period becomes greater and the purview of the forecast becomes smaller (e.g. for a school and not the whole district), the accuracy and reliability decrease.



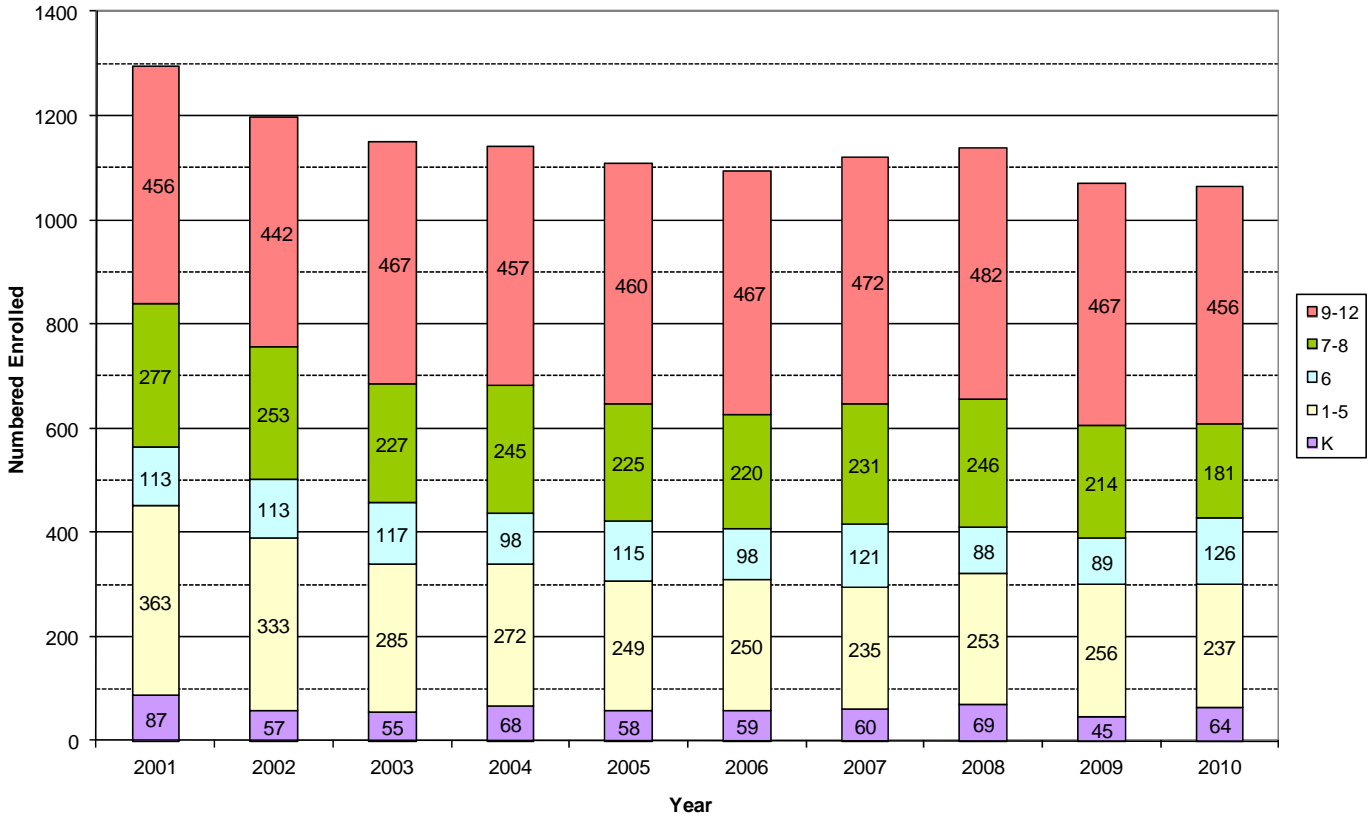
The chart above shows the trends over the last 20 years in the number of births in West Hartford and the number of births in the state of Connecticut. Total births in the state peaked at approximately 50,000 in 1990 and have declined slowly and steadily over the last 19 years to just over 37,000 in 2010. Over that same period West Hartford has experienced a significantly different trend with an increase in the number of births from 600 in 1990 to 739 in 2001 and 726 in 2004 (this year’s first grade). The increase in births has been reflected in the steady enrollment growth in the district over the past years. It is important to note that trends reflected in the birth rates do not show up until 5 years later when

those children enroll in the elementary schools. The big boom in birth rates in 2001 hit the district's kindergartens in 2006 when we had 788 students in K. Two years ago with 726 births in 2004 we had 787 students in Kindergarten. However this year we had only 690 Kindergarten students from the 632 births in 2006. From 2007 through 2010, births have averaged just under 650. Thus we are expecting 692 Kindergarten students next year and similar numbers in the future. This is a major factor in the decline in the elementary enrollments in the out years.

With the birth rates established, the most critical assumptions in the enrollment projection are the assumed future cohort-survival ratios. Figure 1 shows the actual average of all the individual grade K to grade 12 cohort-survival ratios from 2000 to 2011 and includes the base projection for the six-year enrollment projections. Figure 1 demonstrates that there has been some variability in the average cohort-survival ratio. The average CSR peaked in 2000 at 1.025 and has been slowly declining ever since. It has recently increased from a low of 0.9974 in 2007 to 1.0107 in 2010. In 2011 we saw another drop to 1.0031. For the base enrollment projections we are assuming an overall CSR ratio of 1.0075.

We carefully track private school enrollments to determine the relative attractiveness of the public and private school systems among parents. The chart below highlights the increasing competitiveness of West Hartford Public Schools with respect to private schools. Private school enrollment peaked at around 1300 students from 2000 to 2001. From that peak through 2010 (the latest data available), private school enrollment declined by about 250 students (mostly at the elementary and middle levels). Over that same period public school enrollment grew by 600 students. Our schools continue to remain an attractive option for all parents.

### Private School Enrollment



CSR's have stabilized in recent years and we are using a CSR of just slightly over 1.0 that we are using for future projections. Each year we will have roughly the same number of students in each cohort. These factors - limited growth in each cohort, a leveling of the birth rate and a decline in more recent years, and high school senior classes equal in size to or greater than incoming Kindergarten grades - means we will see the school population decline over the next 10 years.

Figure 2 shows the historical and assumed cohort-survival ratios (CSR's) for each of the four key grade groupings: Birth to Grade K, Grade 1 through Grade 5, Grade 6, and Grade 7 through Grade 12.

The birth-to-grade K CSR is significantly above 1.00 reflecting the fact that West Hartford is a town where we get a significant fraction of students whose parents move into town after their children are born in order to enroll them in school here. The CSR observed in 2011 rebounded to slightly above levels of 1.092. For the enrollment projections we are using a three-year average of 1.055 meaning we are expecting 5.5% more Kindergartners than births five years ago.

The grade 1 to 5 CSR has remained consistently above 1.00 indicating that each cohort of students grows as they pass through the elementary years – again reflecting the trend of

families with elementary aged children moving to West Hartford for the schools. The 2011 average CSR for this group of students was 1.013. The base projected CSR for these grade levels is the simple three-year average of the most recent CSR's. (1.015)

The Grade 6 CSR has historically been the lowest CSR in the system (typically at or below 0.98) as this is a natural breaking point for more affluent families to send their children to private/parochial school. This is also when many private/parochial schools have additional space and capacity for students. In 2011, the grade 6 CSR stayed the same as last year – 0.933. The future CSR is simply the three year average of the most current CSR's (0.939)

The average grade 7 to 12 CSR has varied mostly between 0.99 and 1.01 for the last 5 years, and 2011 was a typical year with an average of 0.992. This average is really a compilation of many different factors at the different grade levels. The CSR's for grade 7 and 8 decreased to 0.997 in 2010 from 1.022 in 2010. The grade 9 CSR, which partly measures the net return of students to the high schools from private and parochial middle schools, was low at 1.031. Grade 10 to 12 CSR's dropped to 0.974 in 2011 from 0.992 in 2010. Using a three-year average, the average projected CSR for grade 7 to 12 is 1.004.

Figure 3 presents the 10-year enrollment projection for the elementary, middle and high schools. These projections show the elementary population has peaked at approximately 4,680 students in 2009-10 and 2010-11. The elementary enrollment will drop next year to 4,551 and continue a slow decline to under 4,300 students in 2016-17 and stabilize at that level in the out years of the forecast. The combined middle school enrollments will grow slowly but steadily from 2,249 this year to 2,303 in 2015-16 and then decline to 2,100 in the out years. The high school population is projected to grow steadily to 3,250 students in 2018-19. The decline in high school enrollments begins in 2019-2020.

Figure 4 presents a comparison of the projected 10-year district enrollments that have been made over the last 6 years. In the oldest forecasts, Nov 2006, the enrollment projections foresaw total enrollment reaching 10,300 students by 2015-16 school year. With the low set of CSR's observed in 2007, the peak enrollment figures dropped another 300 students to just under 10,000, but the enrollment was expected to remain stable at that level. Lower birth rates impacted the out years of the November 2008 projections and lowered out-year enrollments to 9,500 students. The November 2009 enrollment projections were similar to the 2008 projections – forecasting a long term general decline in the overall enrollment to 9,400 students. The November 2010 projections had the same trend, but project a higher enrollment in the out years – 9,600 students. The November 2011 projections are very similar to last years – a little lower and with an end population of 9,450.

While the overall district projections are the most accurate, the most relevant projections for policy makers are the building by building projections.

### **Elementary School Forecasts:**

The tables and charts at the end of this report provide the enrollment and space needs projection for each elementary school. Because of the inherent difficulty in projecting the enrollment for a single elementary building, the projections for years 4 through 6 need to be viewed as more speculative.

The total space needs include the space needs for regular education classrooms, art, vocal music, and any town-wide special education programs housed in the building. The notes at the bottom of the table detail the specific number of classrooms used for art, music and special education.

To calculate the number of regular education classrooms needed, a maximum class size of 23 was used for K-3 and 27 was used for grade 4 and 5. At Charter Oak and Smith, the maximum class sizes were 22 for K-3 and 23 for 4 and 5.

Long term, the elementary enrollment is projected to decline as the lower birth rates (after 2004) result in fewer elementary students. With that longer term decline in elementary enrollments, space needs at the elementary school will be adequate with current facilities. There may be space crunches at individual schools but, overall, we are projecting a surplus of 20 to 30 classrooms.

### **Middle School Forecasts:**

The tables for Bristow, King Philip, and Sedgwick are presented in a similar format as for the elementary schools - both population and space needs. The two middle school districts each comprise about one-half of the district's population rather than 1/11 at the elementary level. Bristow's enrollments will be totally controlled by lottery. As a consequence, there is a greater level of certainty in the out-year projections at the middle school level.

The middle school enrollments are projected to be relatively stable in total over the next couple of years. Growth in KP's population to near 1,000 students will be offset by declines in Sedgwick's population to under 900.

With the completion and full operation at Bristow, there is adequate space at all middle schools throughout the forecast period.

### **High School Forecasts:**

Last year, enrollment projections showed a potential for concern at Conard with enrollment growing to over 1,700 students in 2014-15. However, this year – Conard's enrollment came in 56 students under projection. The combination of the lower starting point and the lower CSR's has resulted in a lower peak enrollment projection of 1,550 students in 2015-16. We will continue to monitor the enrollments at Conard and

enrollment projections do vary from year to year, but based on current projections, the impacts on Conard will be much less than last year.

Hall's enrollments are expected to remain stable at about 1,500 students for the next 3 years and then grow to near 1,600 students at the end of the forecast period. Project 21 expanded both high schools to a capacity of 1,500 students. With the addition of the modular classrooms, Hall has the capacity for 1,600 students.

**Implications of Building Enrollment Forecasts on the Capital Budget:**

Based on this year's enrollment projections which project a long term decline in the future enrollments, we have adequate space at the elementary and middle school levels in the long term. We will monitor enrollment trends at Conard in the near term to assess any impacts on space needs there. Longer term (5 to 6 years out) a small amount of space may be needed at one or both high schools.

Figure 1:  
Average Cohort Survival Ratio  
History and Projections

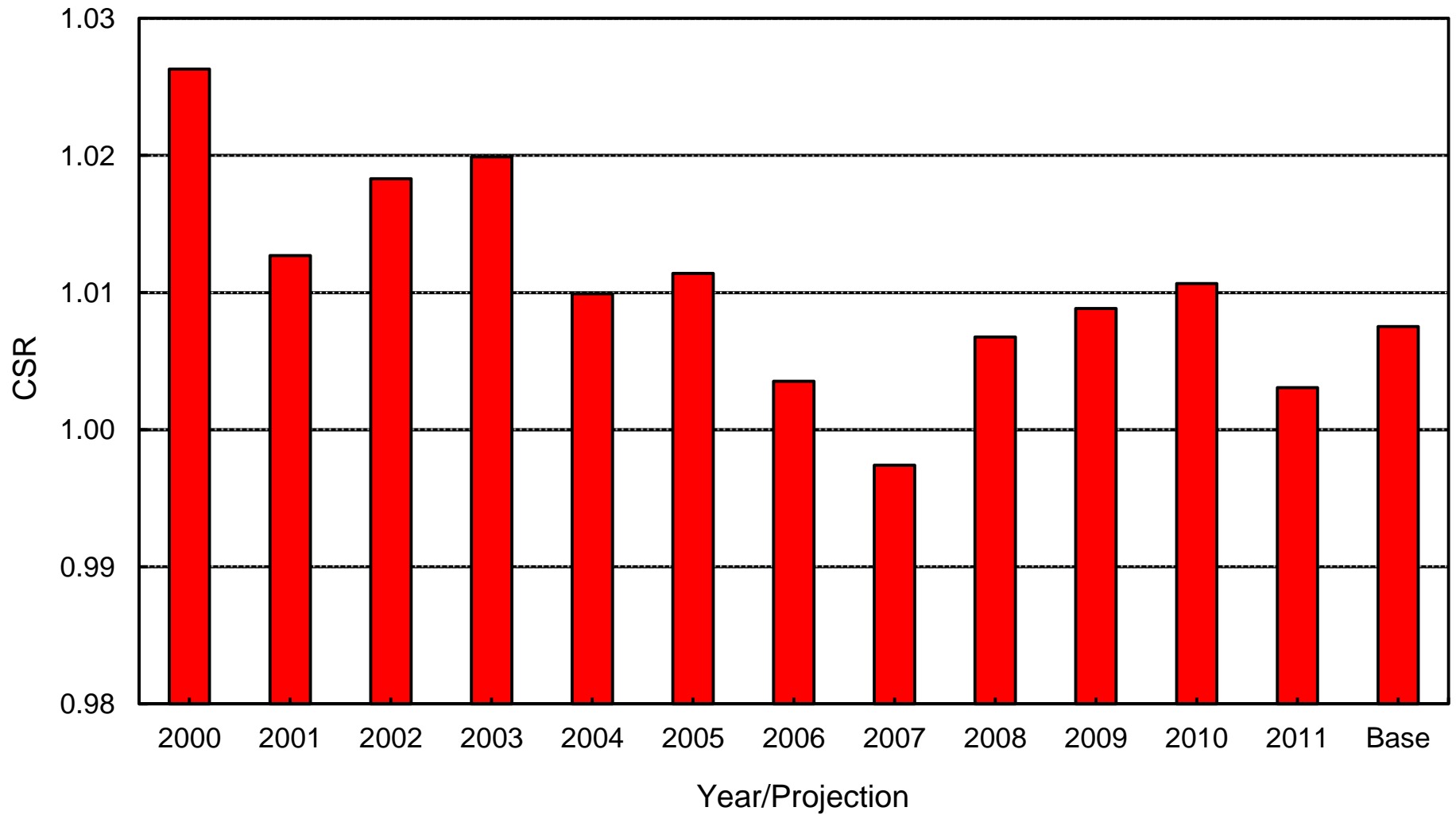




Figure 2:

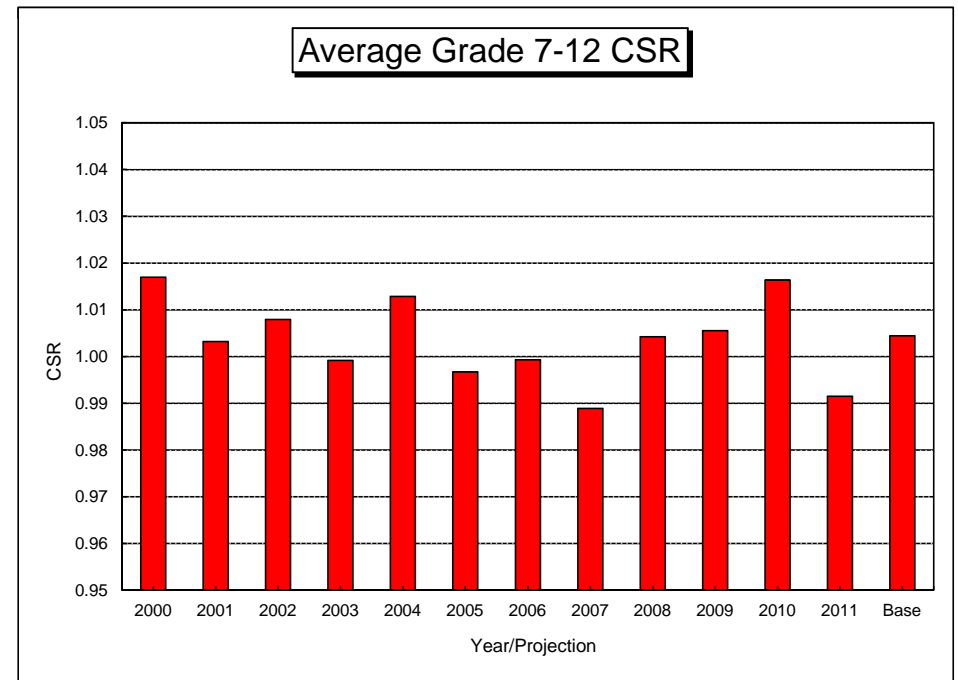
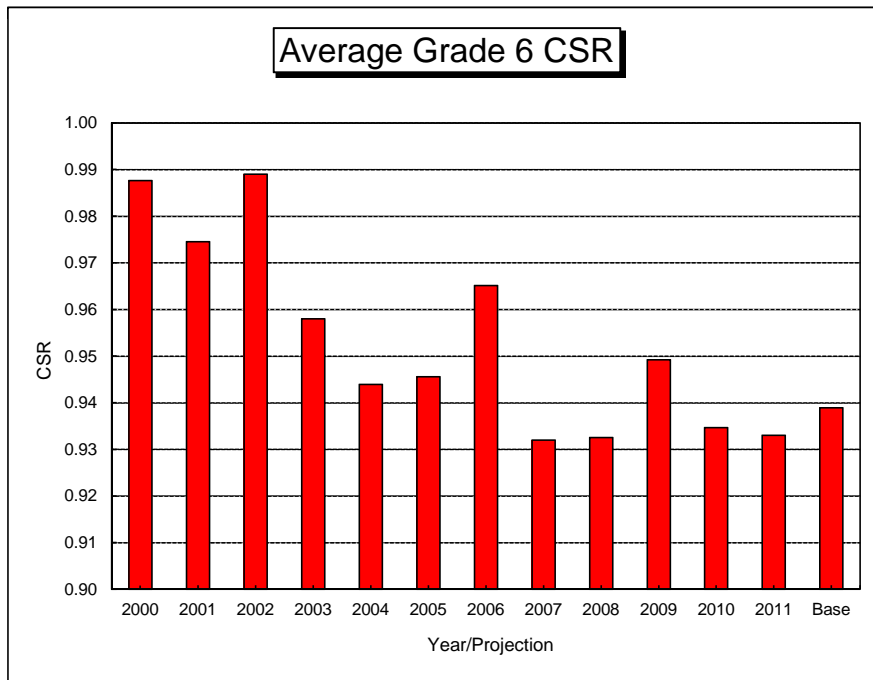
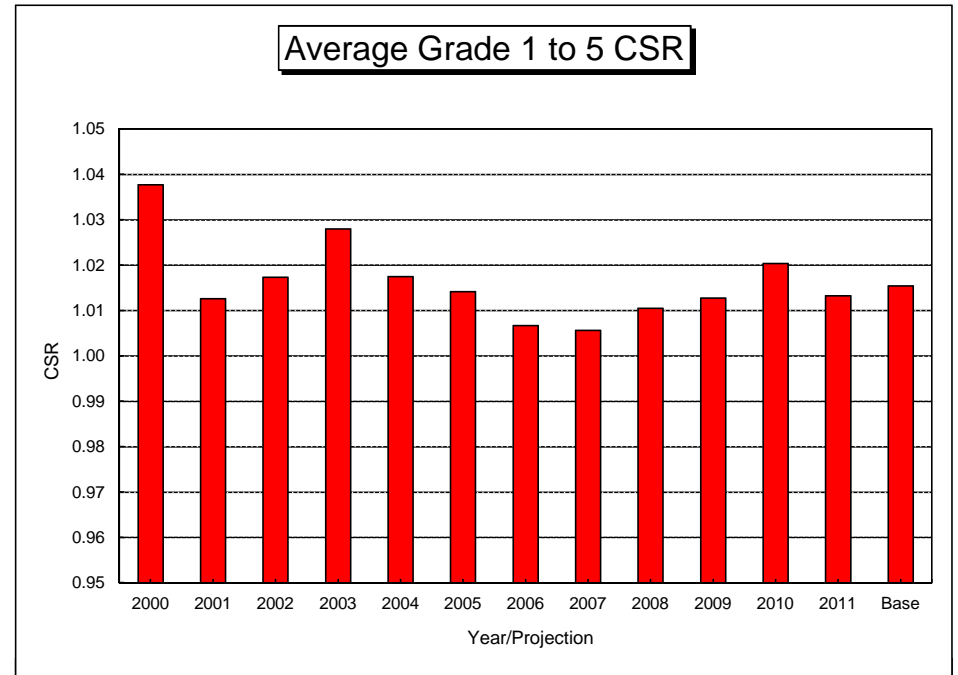
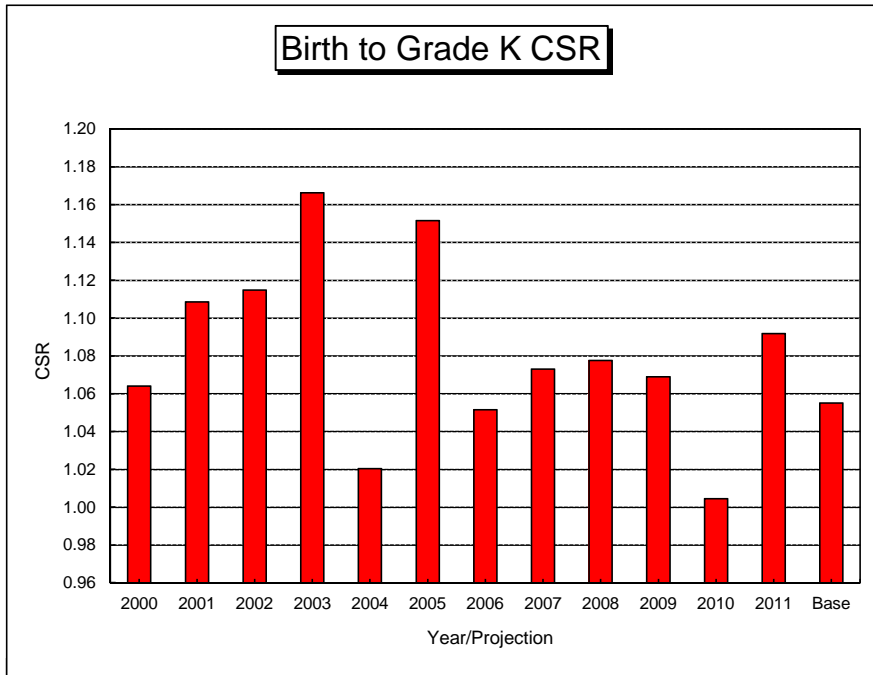
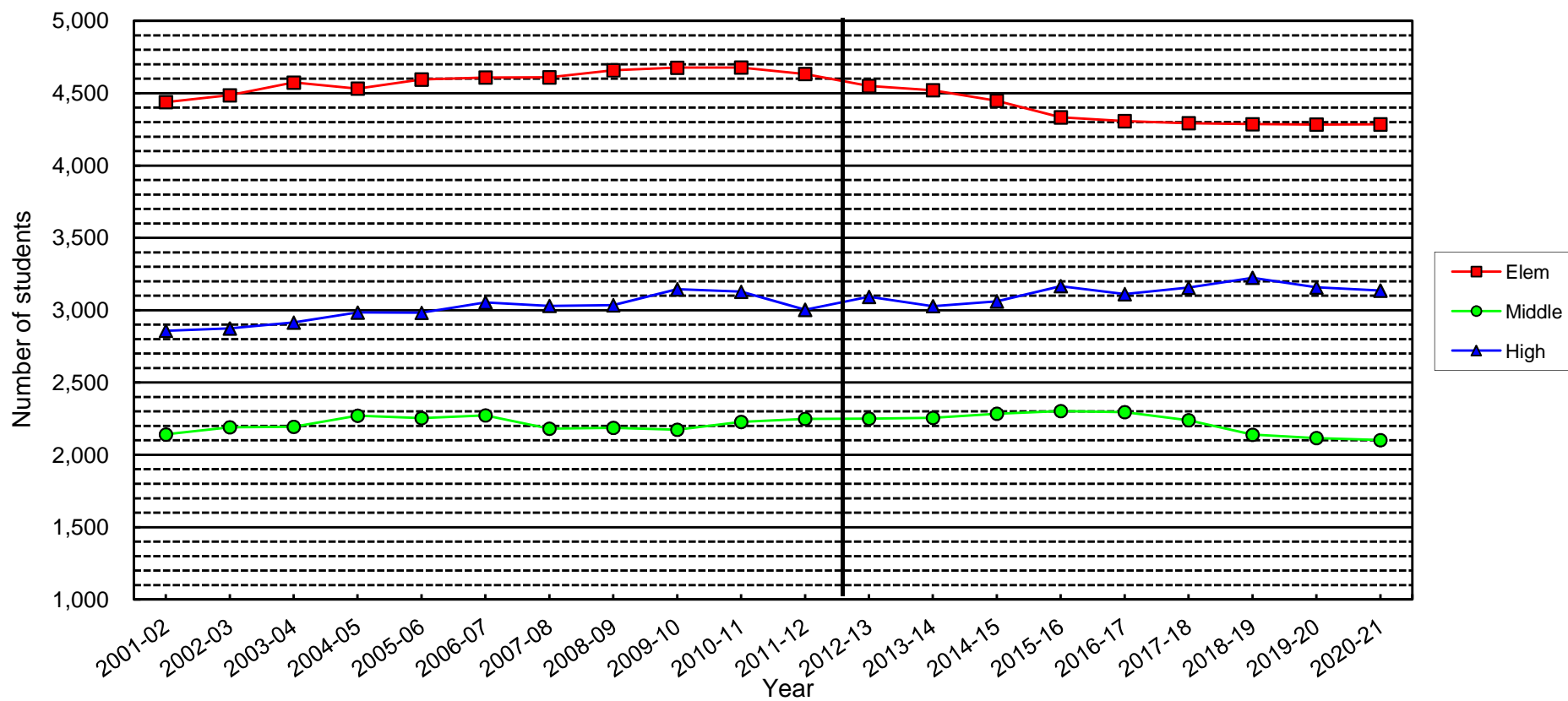
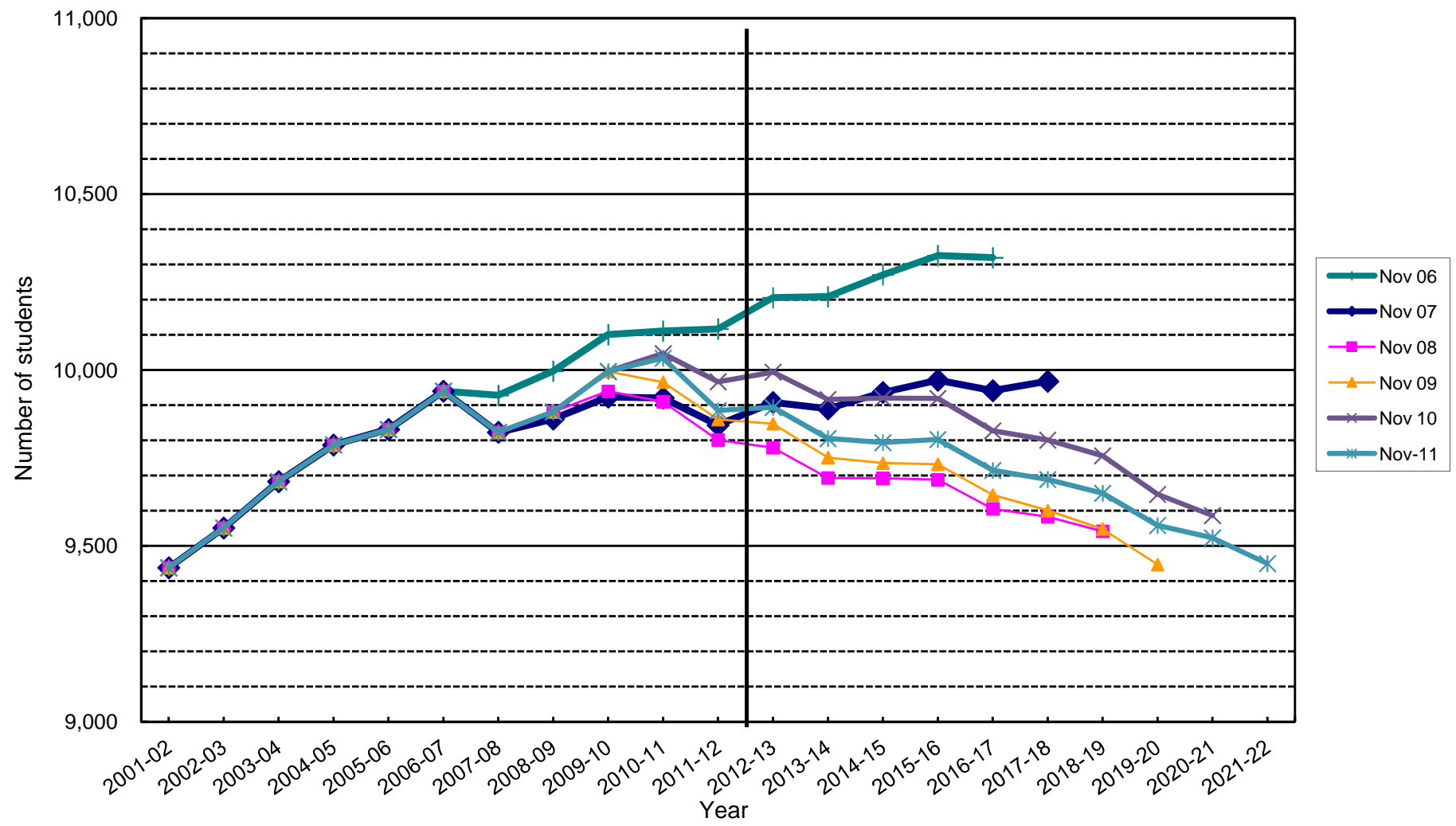


Figure 3  
Enrollment History and Projections



**Figure 4**  
**Comparison of K-12 Enrollment Projections**



# 6 Year Enrollment Summary and Capacity Summary - November 2011

## Elementary Schools

School	School Year	Projected Enrollment	Standard Classrooms				Surplus/(Deficit)
			Needed for Reg. Ed.	Other Needs	Total Needs	Total Available	
<b>Aiken (23/27)</b>	2011-12	440	21	4	25	26	1
	2012-13	434	21	4	25	26	1
	2013-14	423	21	4	25	26	1
	2014-15	397	20	4	24	26	2
	2015-16	377	19	4	23	26	3
	2016-17	359	18	4	22	26	4
	2017-18	340	17	4	21	26	5
<b>Braeburn (23/27)</b>	2011-12	417	19	3	22	25	3
	2012-13	394	19	3	22	25	3
	2013-14	385	18	3	21	25	4
	2014-15	378	18	3	21	25	4
	2015-16	379	19	3	22	25	3
	2016-17	374	17	3	20	25	5
	2017-18	374	17	3	20	25	5
<b>Bugbee (23/27)</b>	2011-12	440	20	1	21	21	0
	2012-13	431	20	1	21	21	0
	2013-14	453	21	1	22	21	-1
	2014-15	456	21	1	22	21	-1
	2015-16	436	20	1	21	21	0
	2016-17	444	22	1	23	21	-2
	2017-18	428	23	1	24	21	-3
<b>Charter Oak (22/23)</b>	2011-12	284	17	3	20	22	2
	2012-13	295	17	3	20	22	2
	2013-14	307	17	3	20	22	2
	2014-15	304	17	3	20	22	2
	2015-16	313	17	3	20	22	2
	2016-17	317	17	3	20	22	2
	2017-18	335	18	3	21	22	1
<b>Duffy (23/27)</b>	2011-12	525	26	4	30	31	1
	2012-13	504	25	3	28	31	3
	2013-14	482	23	3	26	31	5
	2014-15	460	22	2	24	31	7
	2015-16	425	20	2	22	31	9
	2016-17	412	19	2	21	31	10
	2017-18	402	19	2	21	31	10
<b>Morley (23/27)</b>	2011-12	356	17	2	19	21	2
	2012-13	343	17	2	19	21	2
	2013-14	339	17	2	19	21	2
	2014-15	326	16	2	18	21	3
	2015-16	311	16	2	18	21	3
	2016-17	307	16	2	18	21	3
	2017-18	312	17	2	19	21	2

### Description of needs for other standard classroom space

- Aiken Art, Vocal Music, ELC (2)
- Braeburn Art, Vocal Music, Special Education (1)
- Bugbee Art, Vocal Music in basement classrooms
- Charter Oak Art, Family Resource Center , Pre - K , Vocal Music in smaller space
- Duffy Art, Vocal Music, Spec. Ed. (0.5/0 as AC prog phases out), PT Art/Music thru 13-14
- Morley Art, Vocal Music

## 6 Year Enrollment Summary and Capacity Summary - November 2011 Elementary Schools

School	School Year	Projected Enrollment	Standard Classrooms				
			Needed for Reg. Ed.	Other Needs	Total Needs	Total Available	Surplus/(Deficit)
<b>Norfeldt (23/27)</b>	2011-12	425	20	4	24	26	2
	2012-13	404	19	4	23	26	3
	2013-14	377	17	4	21	26	5
	2014-15	371	17	4	21	26	5
	2015-16	361	17	4	21	26	5
	2016-17	354	17	4	21	26	5
	2017-18	346	17	4	21	26	5
<b>Smith (22/23)</b>	2011-12	321	18	5	23	24	1
	2012-13	324	18	5	23	24	1
	2013-14	313	18	5	23	24	1
	2014-15	315	18	5	23	24	1
	2015-16	306	17	5	22	24	2
	2016-17	299	17	5	22	24	2
	2017-18	304	17	5	22	24	2
<b>Webster Hill (23/27)</b>	2011-12	454	22	2	24	25	1
	2012-13	467	22	2	24	25	1
	2013-14	475	23	2	25	25	0
	2014-15	505	24	2	26	25	-1
	2015-16	498	25	2	27	25	-2
	2016-17	506	24	2	26	25	-1
	2017-18	514	25	2	27	25	-2
<b>Whiting Lane (23/27)</b>	2011-12	458	21	10	31	31	0
	2012-13	449	20	10	30	31	1
	2013-14	449	21	10	31	31	0
	2014-15	438	21	10	31	31	0
	2015-16	425	21	10	31	31	0
	2016-17	411	19	10	29	31	2
	2017-18	415	18	10	28	31	3
<b>Wolcott (23/27)</b>	2011-12	513	23	5	28	30	2
	2012-13	506	23	5	28	30	2
	2013-14	517	24	5	29	30	1
	2014-15	499	23	5	28	30	2
	2015-16	503	23	5	28	30	2
	2016-17	525	24	5	29	30	1
	2017-18	522	24	5	29	30	1
<b>Elementary</b>	2011-12	4633	224	43	267	282	15
	2012-13	4551	221	42	263	282	19
	2013-14	4520	220	42	262	282	20
	2014-15	4449	217	41	258	282	24
	2015-16	4334	214	41	255	282	27
	2016-17	4308	210	41	251	282	31
	2017-18	4292	212	41	253	282	29

Description of needs for other standard classroom space

Norfeldt	Art, Vocal Music, Special Education (2)
Smith	Art, Vocal Music, Instrumental Music, Science Lab, Preschool
Webster Hill	Art, Preschool, Vocal Music in smaller space
Whiting Lane	Art, Vocal Music, Special Education (2), Early Learning Center (6)
Wolcott	Art, Vocal Music, Special Education (3)

# 6 Year Enrollment Summary and Capacity Summary - November 2011

## Middle Schools

School	School Year	Projected Enrollment	Standard Classrooms				Surplus/(Deficit)
			Needed for Reg. Ed.	Other Needs	Total Needs	Total Available	
<b>King Philip</b>	2011-12	884	40	19	59	74	15
	2012-13	928	40	19	59	74	15
	2013-14	952	42	19	61	74	13
	2014-15	984	45	19	64	74	10
	2015-16	997	45	19	64	74	10
	2016-17	1001	45	19	64	74	10
	2017-18	975	45	19	64	74	10
<b>Sedgwick</b>	2011-12	942	45	21	66	67	1
	2012-13	901	40	21	61	67	6
	2013-14	884	40	21	61	67	6
	2014-15	879	40	21	61	67	6
	2015-16	884	40	21	61	67	6
	2016-17	875	40	21	61	67	6
	2017-18	845	40	21	61	67	6
<b>Bristow</b>	2011-12	423	22	5	27	27	0
	2012-13	420	22	5	27	27	0
	2013-14	420	22	5	27	27	0
	2014-15	420	22	5	27	27	0
	2015-16	420	22	5	27	27	0
	2016-17	420	22	5	27	27	0
	2017-18	420	22	5	27	27	0
<b>Middle Schools</b>	2011-12	2249	107	45	152	168	16
	2012-13	2249	102	45	147	168	21
	2013-14	2256	104	45	149	168	19
	2014-15	2283	107	45	152	168	16
	2015-16	2301	107	45	152	168	16
	2016-17	2296	107	45	152	168	16
	2017-18	2240	107	45	152	168	16

### Description of needs for other standard classroom space

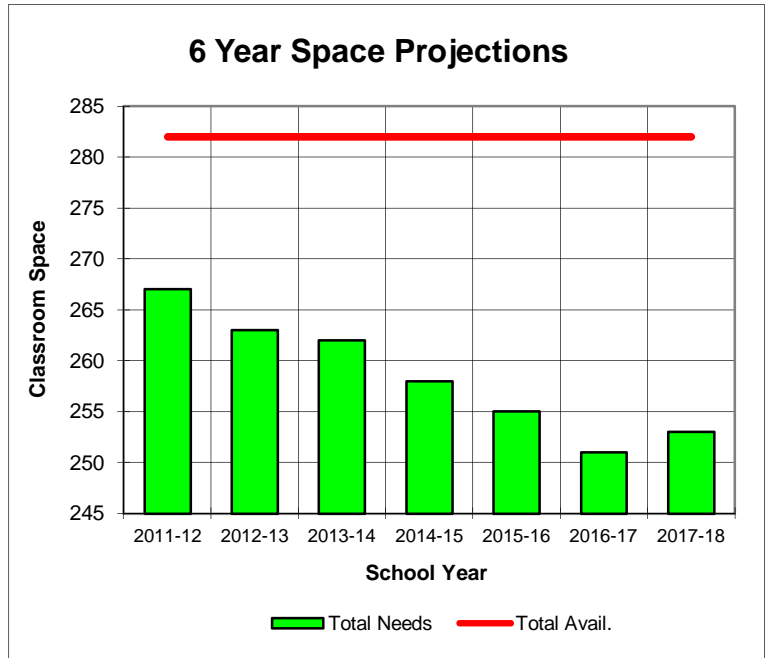
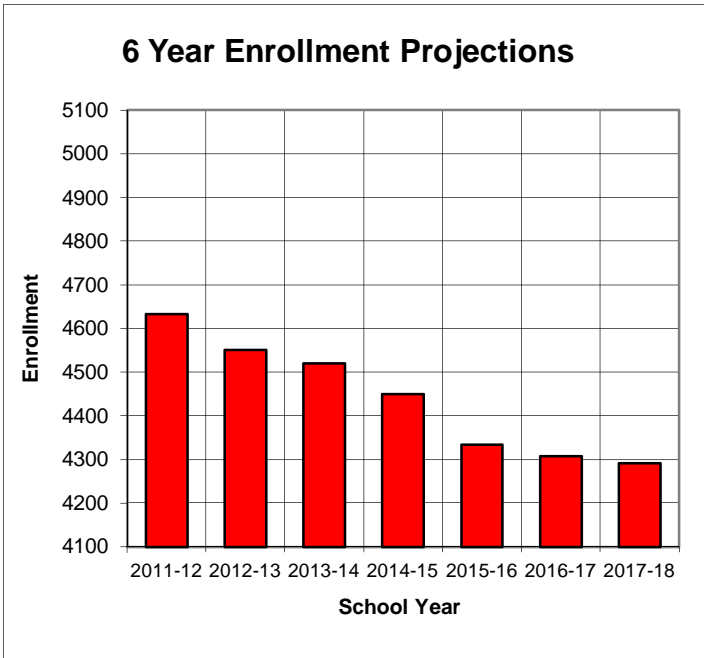
King Philip	Unified Arts (12), Special Ed (2), Computer Lab (2), 10th math teacher (1), Quest (1) Strive (1),
Sedgwick	Unified Arts (12), Special Ed (4), ESOL (1), Computer Lab (1), 10th math teacher (1) Strive (1), Alternative Middle School (1)
Bristow	Unified Arts (4), Computer Lab (1)

**6 Year Enrollment Summary and Capacity Summary - November 2011**  
**High Schools**

School	School Year	Projected Enrollment
<b>Conard</b>	2011-12	1431
	2012-13	1516
	2013-14	1472
	2014-15	1498
	2015-16	1547
	2016-17	1476
	2017-18	1480
<b>Hall</b>	2011-12	1517
	2012-13	1519
	2013-14	1500
	2014-15	1506
	2015-16	1564
	2016-17	1578
	2017-18	1618
<b>High Schools</b>	2011-12	2948
	2012-13	3035
	2013-14	2972
	2014-15	3004
	2015-16	3111
	2016-17	3054
	2017-18	3098

# Space Needs Analysis November 2011 Projections

## All Elementary Schools

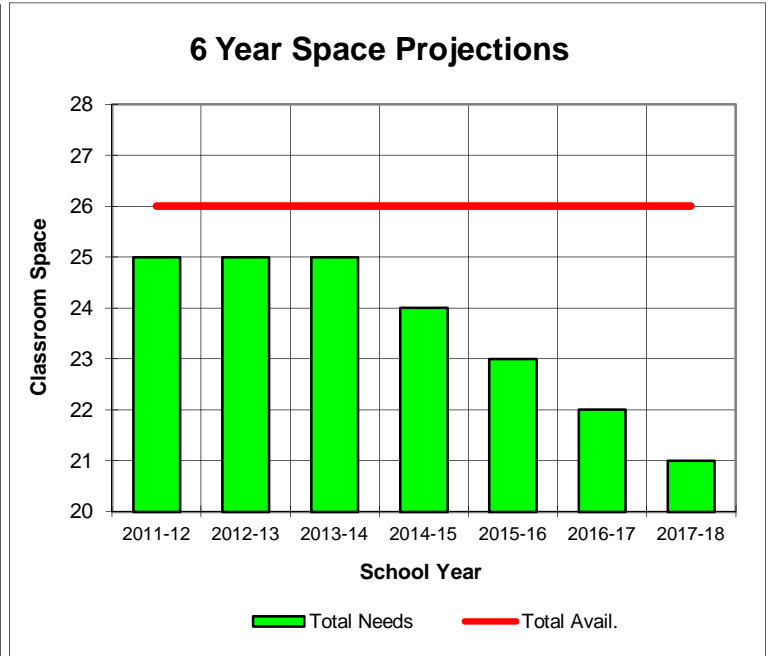
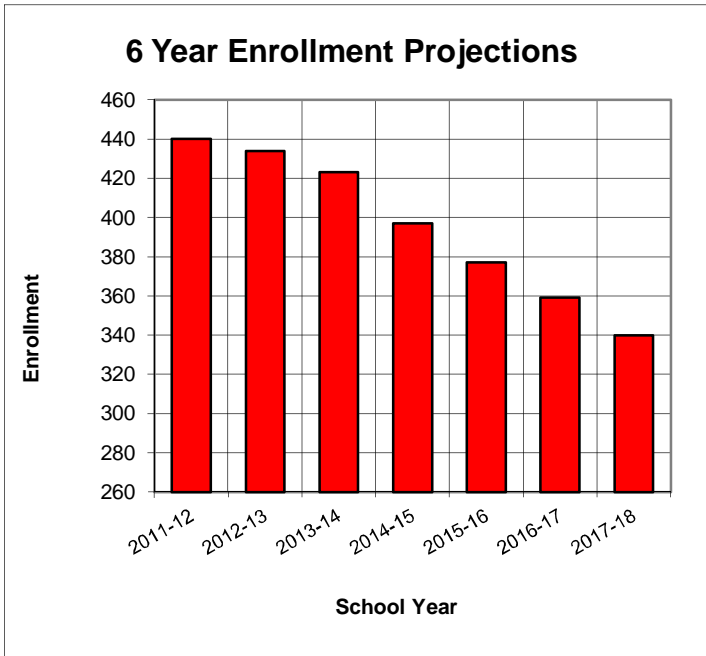


Comments:



# Space Needs Analysis November 2011 Projections

## Aiken School



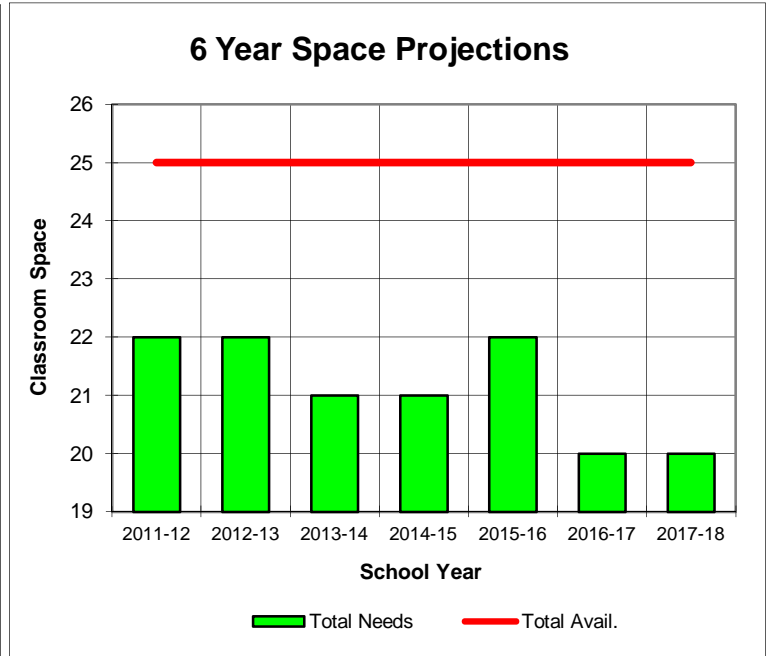
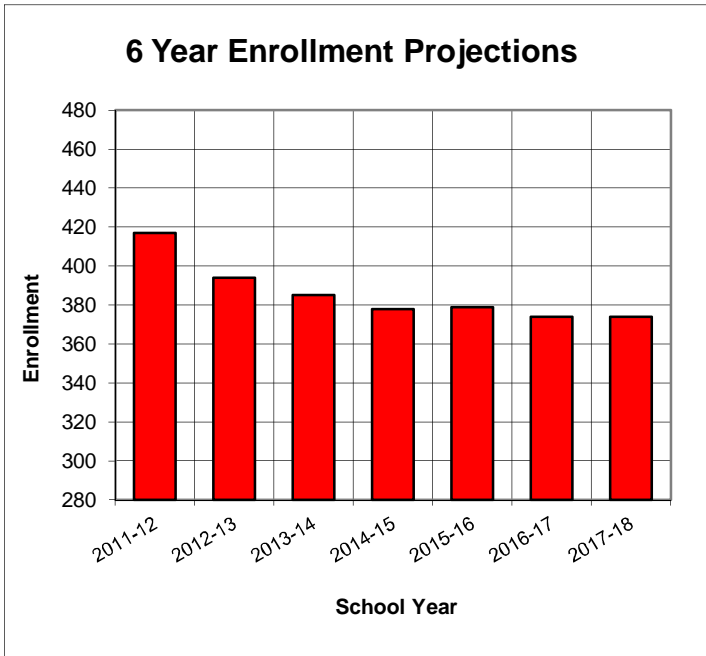
### Comments:

Aiken shows a slowly decreasing population trend

Aiken looks to have adequate space in the near term, and a surplus of space in the longer term

# Space Needs Analysis November 2011 Projections

## Braeburn School



#### Comments:

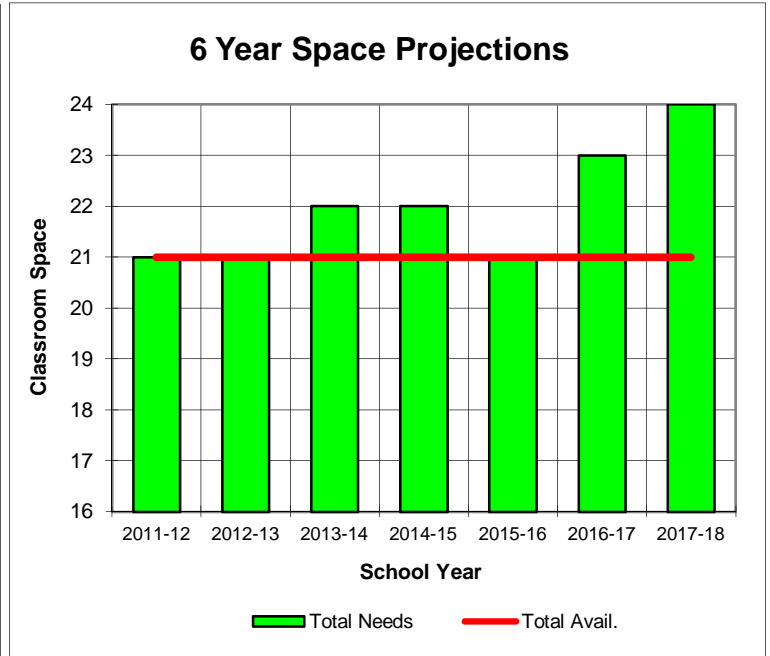
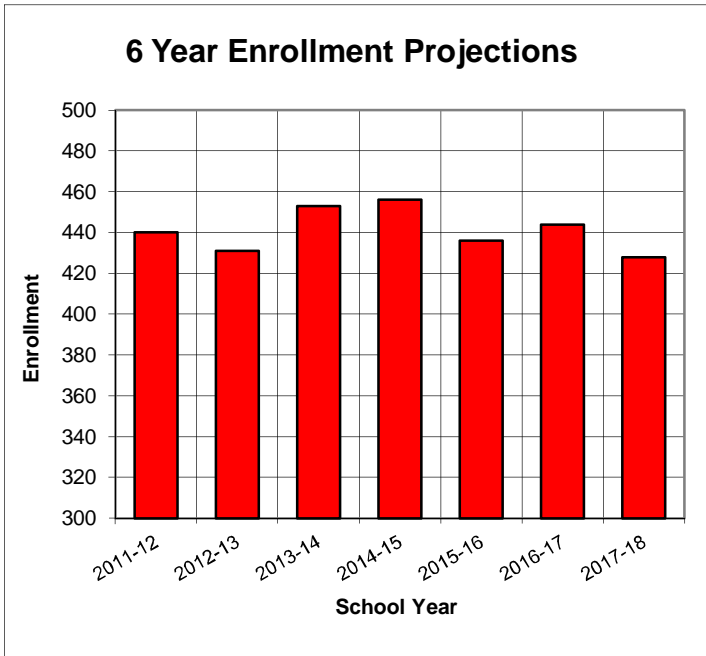
Braeburn shows a slowly decreasing population trend

Braeburn looks to have a surplus of space throughout forecast period

The space available figure includes three modular classrooms

# Space Needs Analysis November 2011 Projections

## Bugbee School



### Comments:

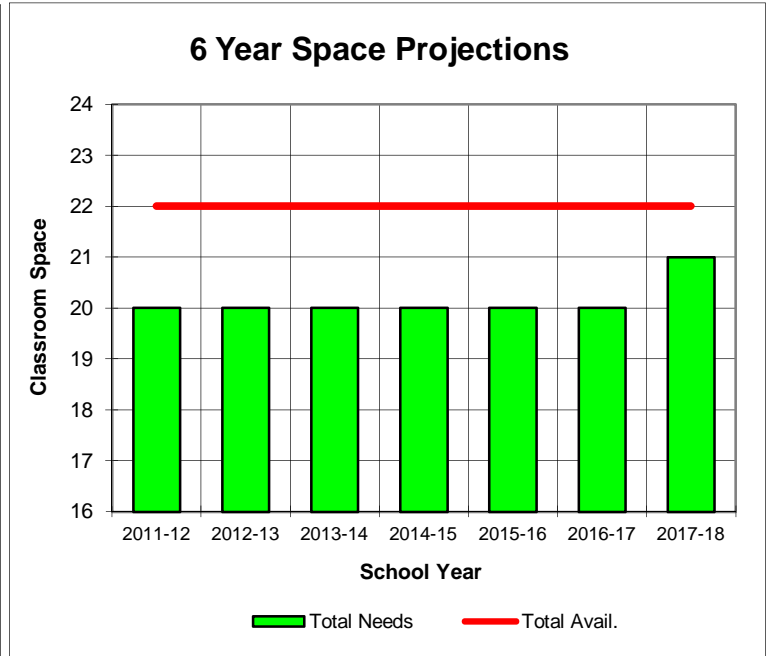
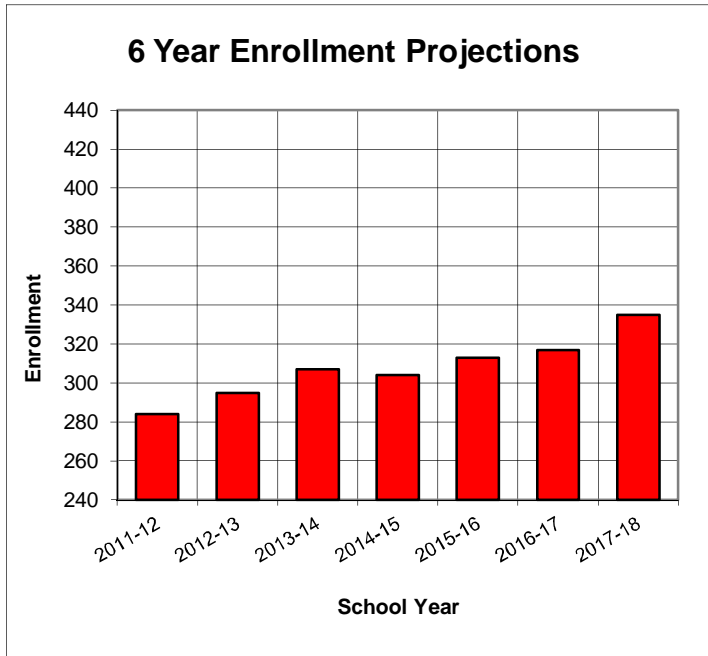
Bugbee shows a steady population trend

Space is tight throughout the forecast period and then inadequate at the end of the period  
Actual space requirements will depend on future K enrollments which are speculative at this point

Bugbee has five modular classrooms in use.

# Space Needs Analysis November 2011 Projections

## Charter Oak School



#### Comments:

Charter Oak's enrollment is slightly increasing throughout forecast period

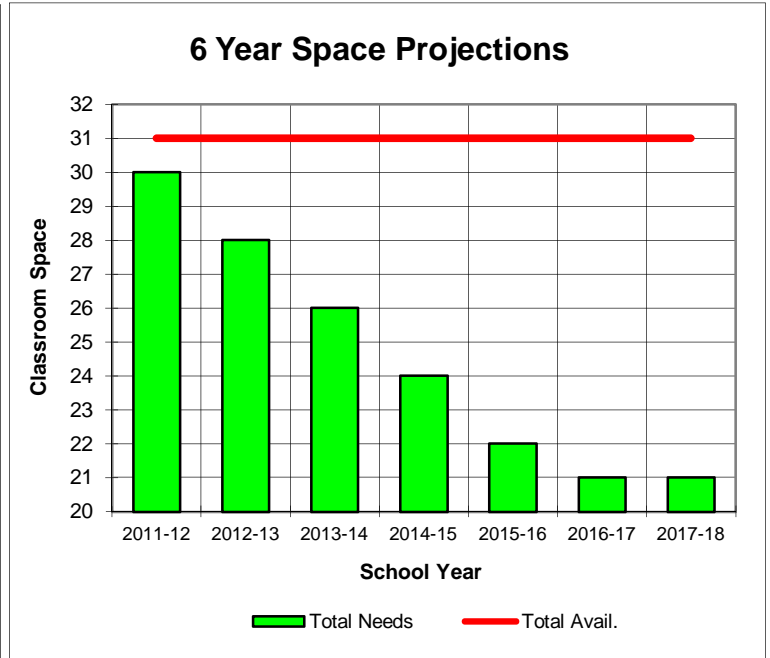
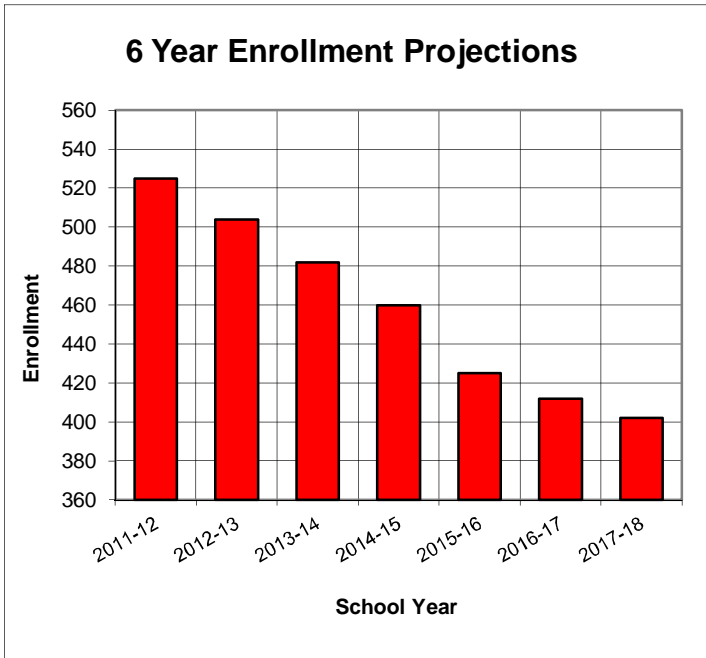
Charter Oak has adequate space throughout the forecast period

Charter Oak averages 10 new magnet enrollments a year at the Kindergarten level and has room for more

Charter Oak has 2 modular classrooms in use

# Space Needs Analysis November 2011 Projections

## Duffy School



### Comments:

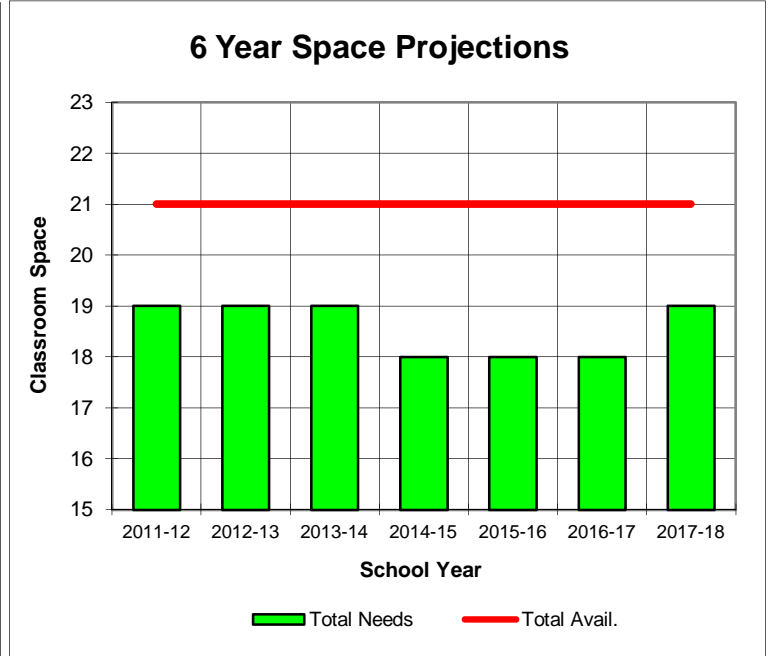
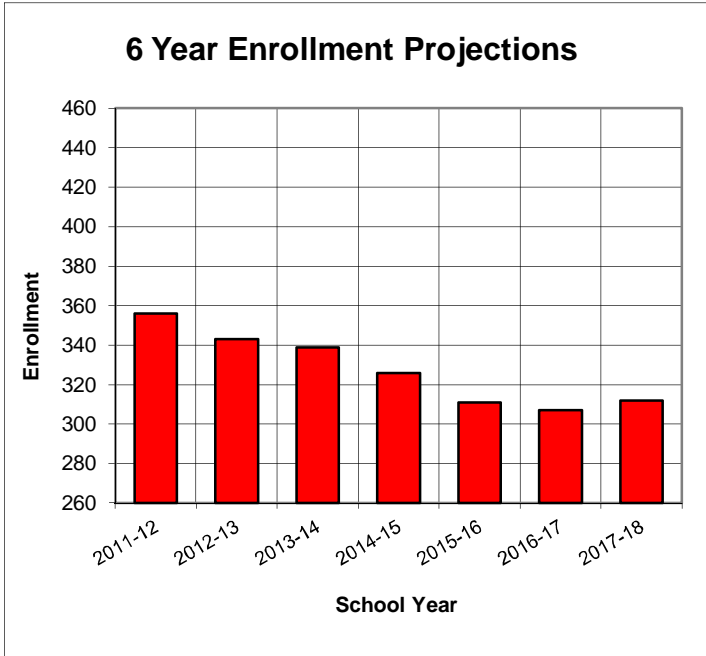
Duffy shows a declining trend in enrollment

Duffy has a surplus of space in the long term

Duffy has 3 modular classrooms in use

# Space Needs Analysis November 2011 Projections

## Morley School



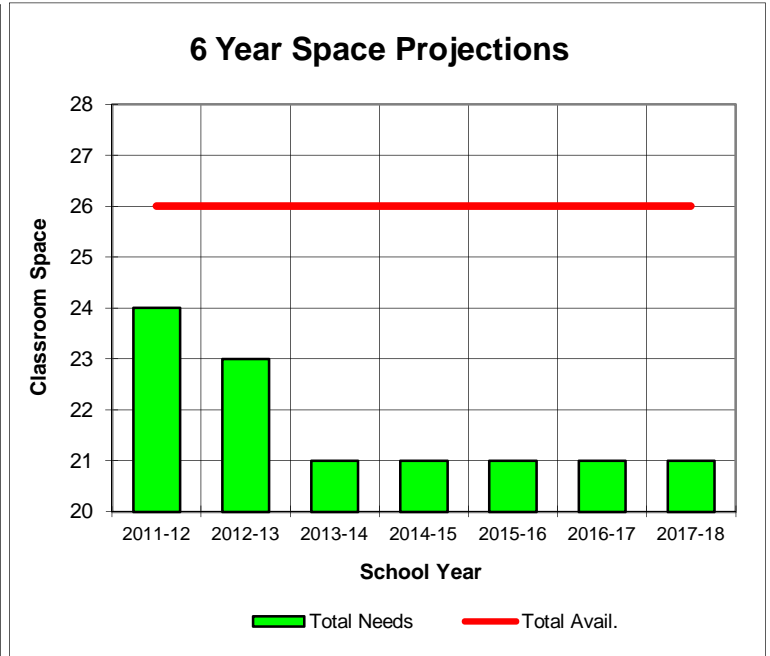
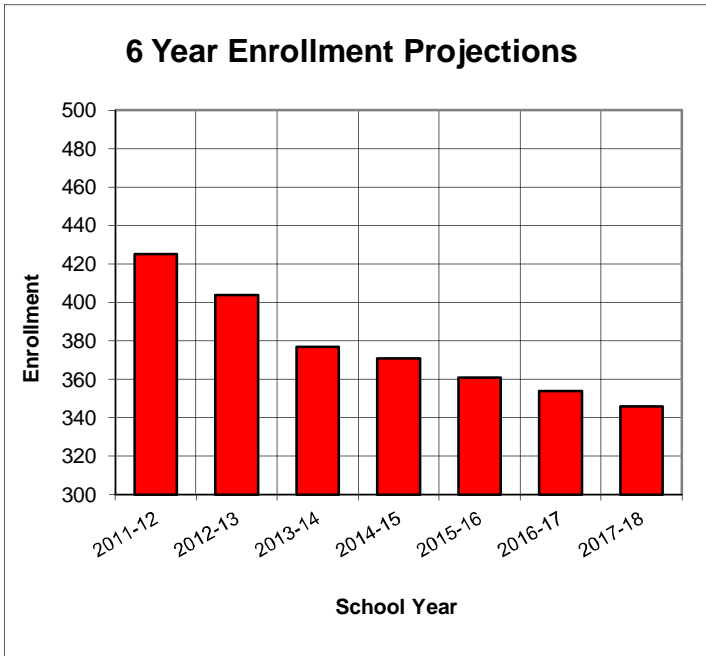
#### Comments:

Morley's enrollment is stable/slightly decreasing over the forecast period

Space is adequate at Morley

# Space Needs Analysis November 2011 Projections

## Norfeldt School



### Comments:

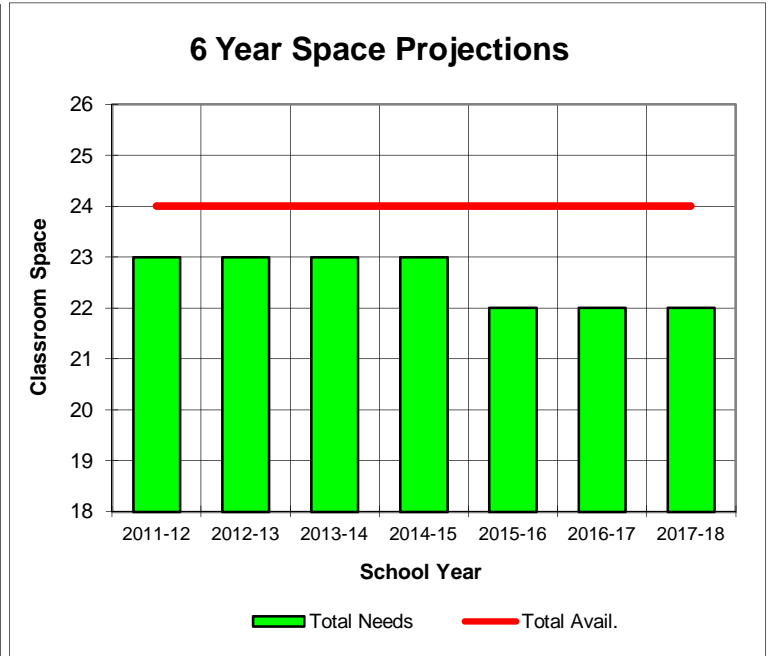
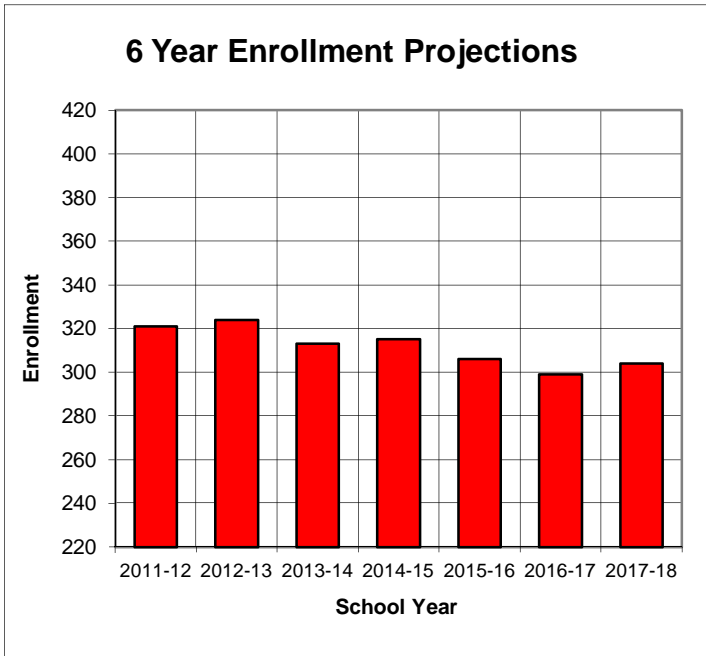
Norfeldt shows a stable/slightly decreasing enrollment trend.

Space is adequate across forecast period, with a surplus in the long term

Norfeldt has 3 modular classrooms

# Space Needs Analysis November 2011 Projections

## Smith School



### Comments:

Smith's enrollments are stable/declining slightly.

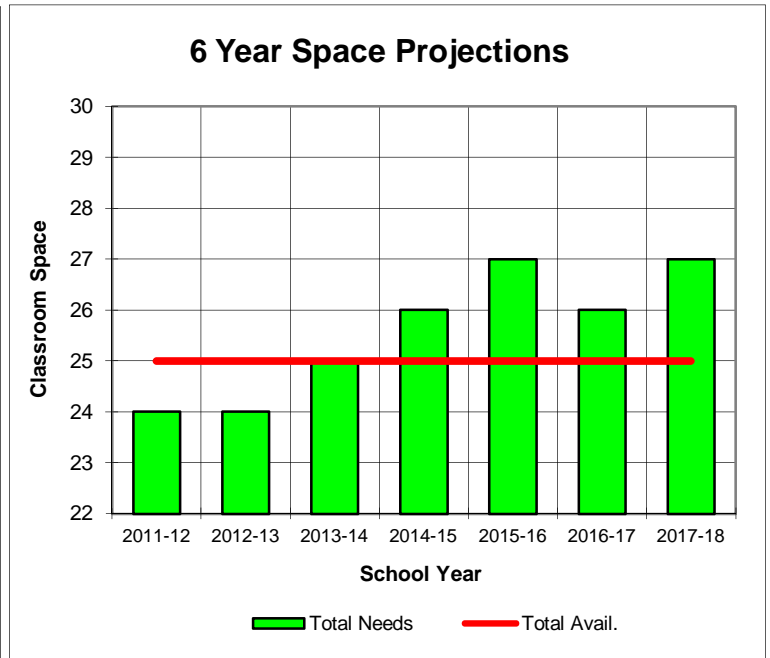
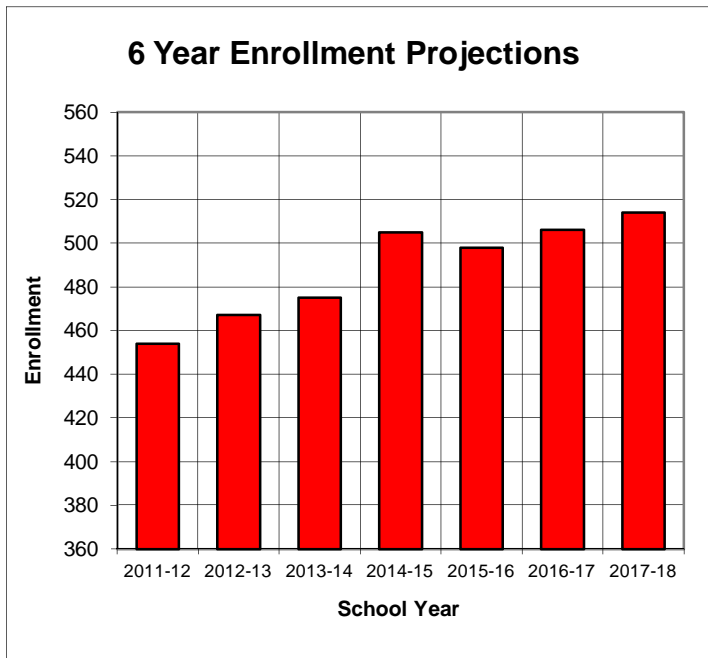
Smith has adequate space

Magnet admissions average 8 per year at Kindergarten. There is space for more students



# Space Needs Analysis November 2011 Projections

## Webster Hill School



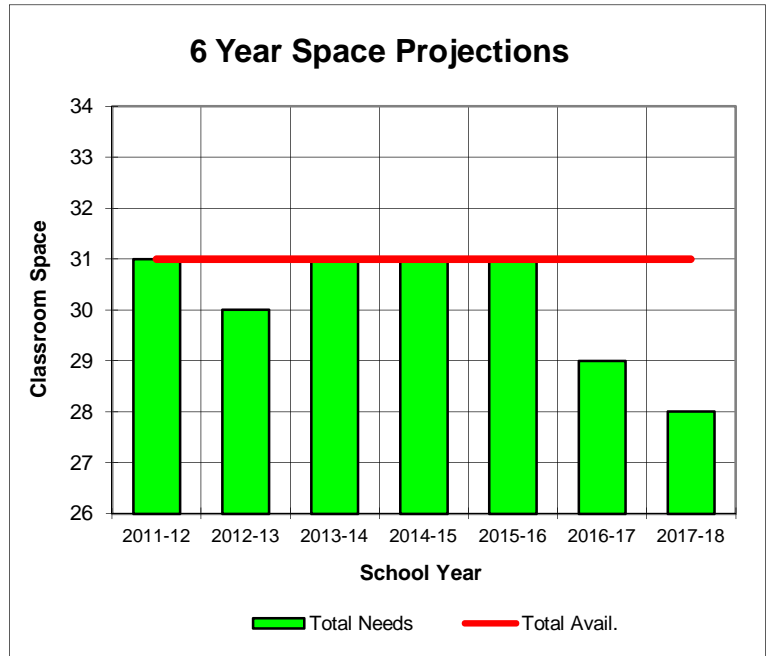
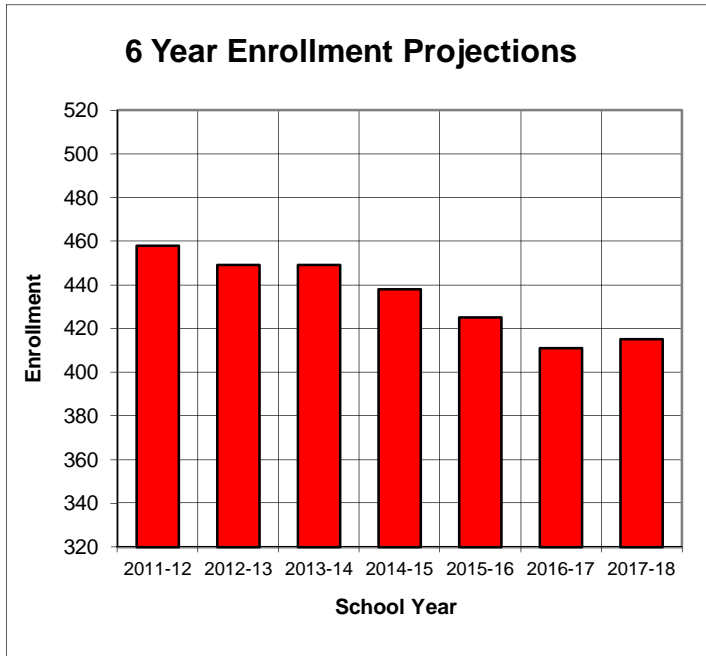
### Comments:

Webster Hill shows an increasing population trend.

Webster Hill space is tight in the near term and then inadequate in the long term  
Actual space requirements will depend on future K enrollments which are speculative at this point

# Space Needs Analysis November 2011 Projections

## Whiting Lane School



### Comments:

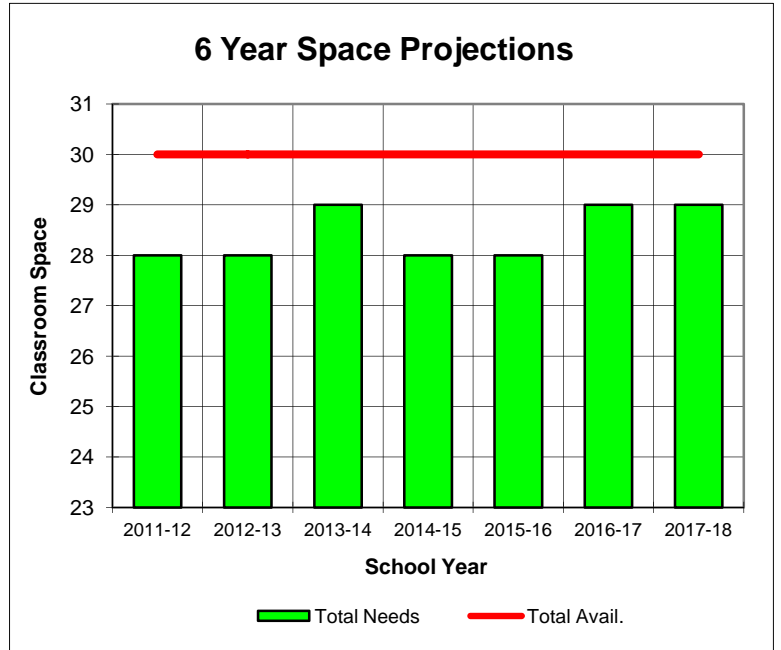
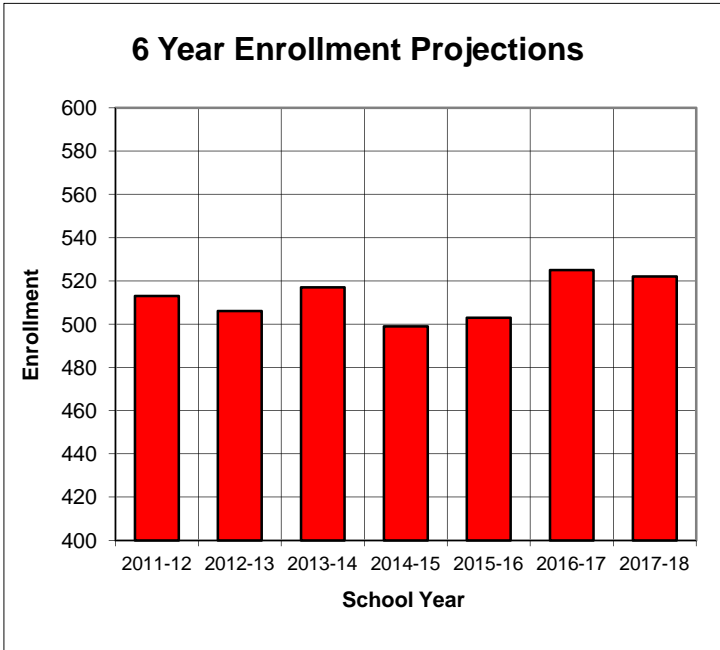
Whiting Lane shows an stable/slightly decreasing population trend.

Space is tight but adequate over the forecast period

Whiting Lane has 2 modular classrooms

# Space Needs Analysis November 2011 Projections

## Wolcott School



#### Comments:

Wolcott shows a stable population trend.

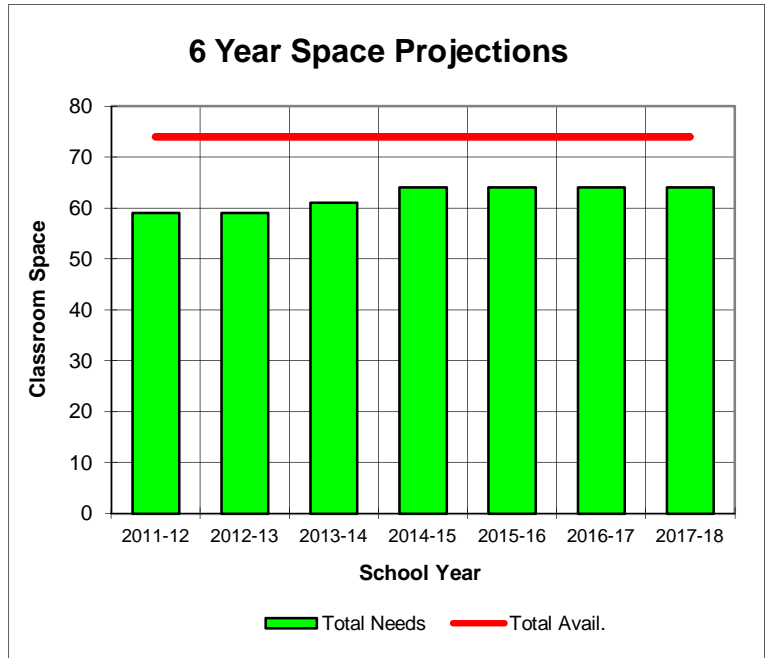
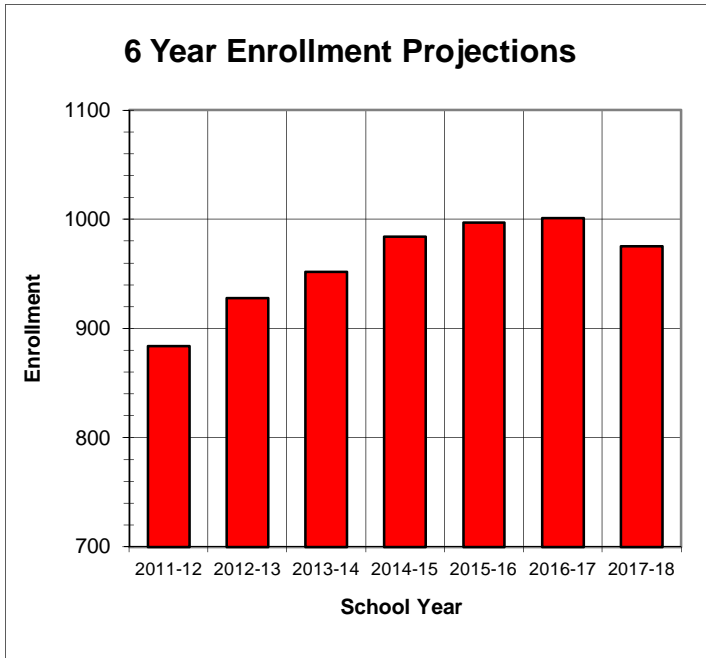
Space is adequate

Wolcott has 4 modular classrooms



# Space Needs Analysis November 2011 Projections

## King Philip Middle School



**Comments:**

    KP's population is growing steadily to near 1,000 students at the end of forecast period

    KP has adequate space across the forecast period

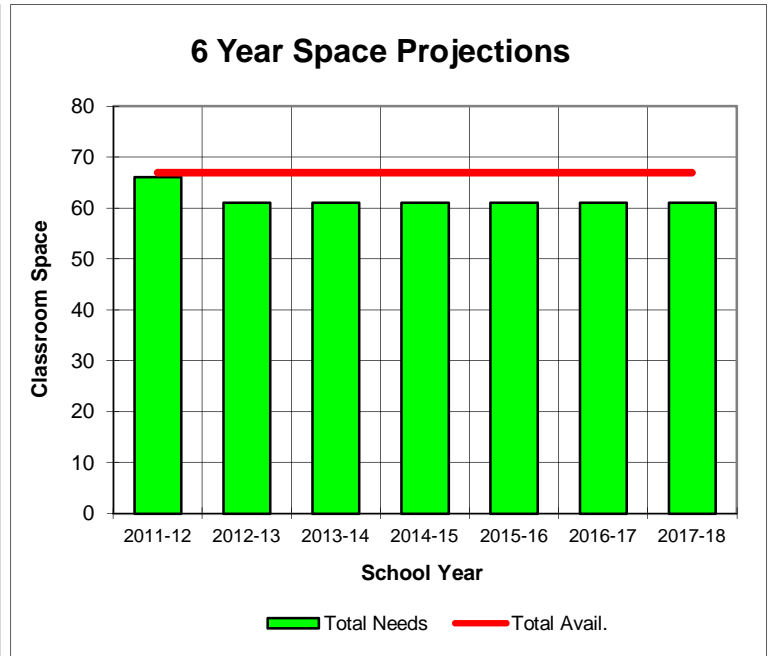
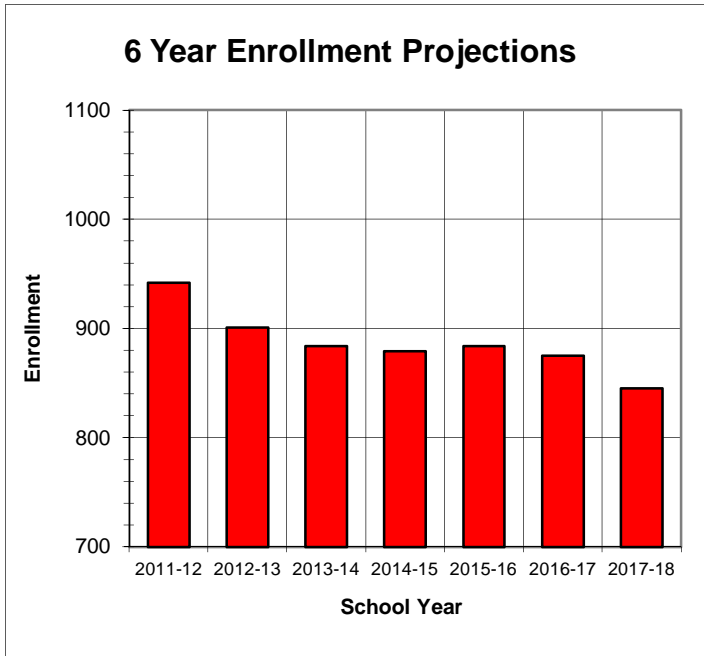
    KP has 5 modular classrooms

**Enrollment by grade level**

Grade 6	Grade 7	Grade 8	Total
296	289	299	884
343	295	290	928
314	341	297	952
330	312	342	984
355	328	314	997
318	353	330	1001
304	316	355	975

# Space Needs Analysis November 2011 Projections

## Sedgwick Middle School



**Comments:**

Sedgwick's enrollment drops to below 900 next year and then stays near 880 for the next 6 years

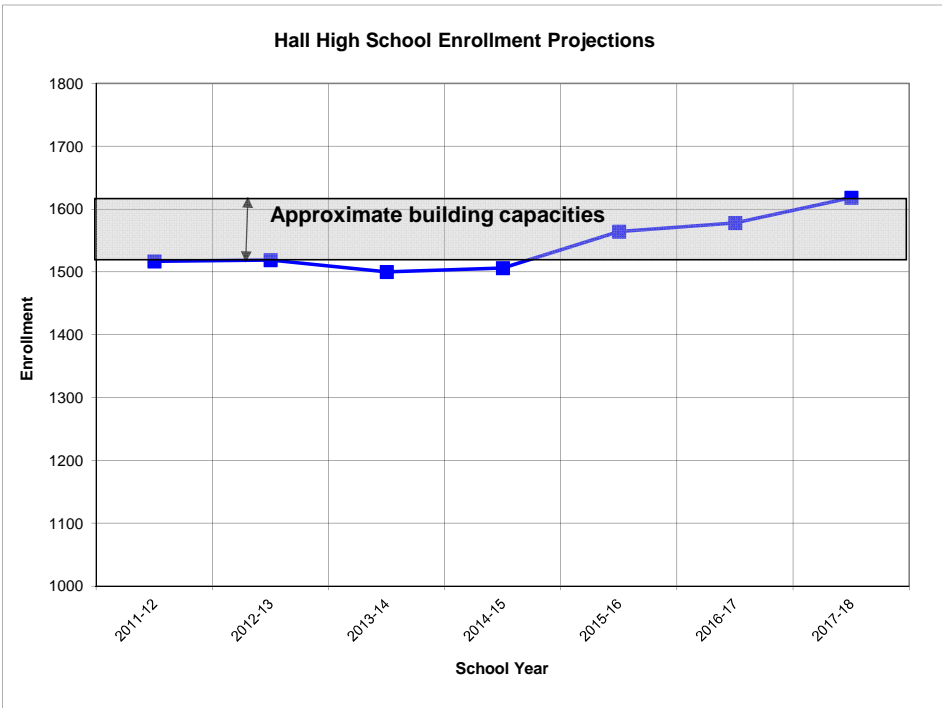
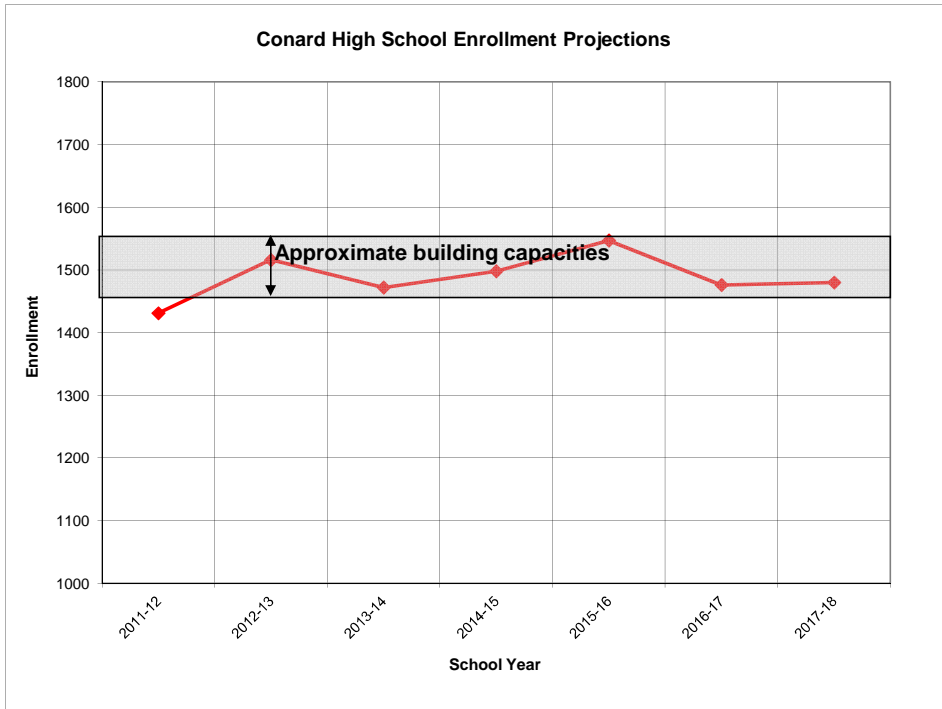
Sedgwick has adequate (though tight) space throughout the forecast period.

**Enrollment by grade level**

Grade 6	Grade 7	Grade 8	Total
296	295	351	942
299	302	300	901
272	304	308	884
294	276	309	879
305	298	281	884
261	310	304	875
264	265	316	845

**Space Needs Analysis  
November 2011 Projections**

**Conard & Hall High Schools**



**Comments:**

Conard's enrollment is projected to range between 1,470 and 1,550 students for the rest of the forecast period. Conard has adequate space but may face shortfalls in specialty classrooms

Hall's enrollment is projected to range between 1,500 and 1,620 students for the rest of the forecast period. With the completion of Project 21 and the addition of the ten modular classrooms, Hall should be able to handle the projected enrollments. Some space issues may crop up at the end of the forecast period