

**SCHOOL ENROLLMENT TRENDS &
PROJECTIONS THROUGH 2019-20**

***SAD 55 - BALDWIN, CORNISH, HIRAM, PARSONFIELD,
AND PORTER***

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SAD 55

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I. SUMMARY

Using a cohort survival model and based on recent trends in resident birth levels, enrollments, and net migration, PolicyOne Research has projected enrollments for SAD 55 through 2019-20. The results for each grade grouping are summarized in Table 1 and presented within a range of plus or minus 10% for planning purposes.

Table 1

Summary of Projected Enrollment for Planning Purposes									
SAD 55 - Baldwin, Cornish, Hiram, Parsonfield, and Porter									
School Year	K-4			5-8			9-12		
	-10%	Proj.	+10%	-10%	Proj.	+10%	-10%	Proj.	+10%
2010-11	383	425	468	354	393	432	366	406	447
2011-12	396	440	484	341	378	416	369	410	451
2012-13	420	467	513	335	372	409	362	402	443
2013-14	419	465	512	325	361	397	358	398	438
2014-15	407	452	497	325	362	398	357	397	436
2015-16	407	452	497	333	370	407	343	382	420
2016-17	400	445	489	345	384	422	338	375	413
2017-18	380	422	464	379	421	463	327	364	400
2018-19	395	439	482	362	402	443	330	366	403
2019-20	406	451	496	352	391	430	338	376	413

Sources & Notes: Calculated by PolicyOne Research

These enrollment projections reflect recent trends in resident births, net preschool and grade to grade migration. They have also been examined in light of recent residential development trends in the member communities. Changes in any of these factors can impact future enrollments. Additionally, the recent significant economic recession has likely had an impact on migration and birth levels. Therefore, annual enrollment levels and the factors that drive them should be regularly monitored by the district.

II. INTRODUCTION & METHODOLOGY

The following report assesses trends in school enrollments in SAD 55 from the 1999-00 school year through the 2009-10 and presents enrollment projections through 2019-20. School enrollments are driven by three factors: births to residents within the district, existing enrollment levels, and net-migration of preschool and school-aged children. These enrollment projections reflect each of these factors.

In making enrollment projections, PolicyOne utilizes a cohort survival model. This model involves two steps. First, the relationship between first grade enrollment and resident births in the year that is six years prior are examined using statistical correlation coefficients for the last three through ten year historical periods. The period exhibiting the strongest relationship is then used to project future first grade enrollment based on recent resident births. Second, grade to grade survival ratios are analyzed. These ratios represent enrollment in one year at a given grade level and enrollment at the next grade the following year. The average grade to grade survival ratios are then calculated for the past three through ten year periods and the period exhibiting the strongest relationship determined by correlation coefficients are selected as the projected survival ratio at each grade level. These are then applied to existing enrollments at each grade level and projected entering first grade enrollments to project future enrollments at each grade for the next ten years.

In this report for SAD 55 we first present enrollment trends and projections on a district-wide basis for the grade groupings of K-4, 5-8, and 9-12. In the addendum, we further breakout elementary K-4 enrollments projections among the individual schools within the district. It should be noted that individual school enrollment projections are statistically less reliable than the district-wide projections.

III. ENTERING FIRST GRADE ENROLLMENT

A. Historical Entering First Grade Enrollment

Over the last ten years, although there have been year to year fluctuations, first grade enrollments have generally declined in SAD 55. Between 2000-01 and 2009-10, first grade enrollments in SAD 55 have ranged from a high of 104 students in 2000-01 to a low of 73 students in 2007-08. On average during the first five-years of this ten year period first grade enrollments averaged 96 students compared to an average of 82 students over the past five years (see Table 2 and Figure 1).

Table 2

Historical Relationship of 1st Grade Size to Resident Births					
SAD 55 - Baldwin, Cornish, Hiram, Parsonfield, and Porter					
Oct 15-Oct14 Birth Year	Resident Births	1st Grade Year	1st Grade Enrollments	Ratio 1st/Births	Net Preschool Migration
1993-94	90	Oct-00	104	1.156	14
1994-95	64	Oct-01	91	1.422	27
1995-96	84	Oct-02	90	1.071	6
1996-97	85	Oct-03	92	1.089	8
1997-98	91	Oct-04	102	1.121	11
1998-99	84	Oct-05	90	1.071	6
1999-00	83	Oct-06	90	1.091	8
2000-01	62	Oct-07	73	1.177	11
2001-02	76	Oct-08	84	1.105	8
2002-03	73	Oct-09	74	1.014	1
10yr Avg(94-03)	79	10yrAvg (00-09)	89	1.132	10
5yr Avg(94-98)	83	5yr Avg(00-04)	96	1.172	13
5yr Avg(99-03)	76	5yr Avg(05-09)	82	1.092	7
4yr Avg(00-03)	73	4yr Avg(06-09)	80	1.097	7
3yr Avg(01-03)	70	3yr Avg(07-09)	77	1.099	7
10 yr Min	62		73	1.014	1
10 yr Max	91		104	1.422	27

Sources & Notes: Births from Maine Department of Health & Human Services, Maine Center for Disease Control & Prevention, Office of Data, Research, & Vital Statistics, "Births & Deaths by Month: Maine Towns, Counties, and State Total"; Historical enrollment data is provided by district; all else calculated by PolicyOne Research

B. Factors Influencing Entering First Grade Class Sizes

First grade enrollments are influenced by two factors: the number of births to residents within a district in the year that is six years prior to the enrollment year and net preschool migration (number of preschool-aged children moving into the district minus those moving out) during this period. Each of these factors is examined below.

1. Resident Birth Levels

In analyzing annual resident births, PolicyOne uses births for the twelve month period from October 15 to October 14 which coincides with the eligibility to enroll into first

grade six years later. Although there have been year to year fluctuations which is common with regard to resident birth levels, between 1993-94 and 2002-03 births to residents of the SAD 55 communities combined have declined slightly. In the first five years of this period, annual births averaged 83, while in the last five years of this period they averaged 76. Overall during this ten year period, resident births ranged from a low of 62 to a high of 91 (See Table 2).

2. Net Preschool Migration

The average net preschool migration over the past ten years in SAD 55 equaled 10, meaning on average first grade enrollments were 10 students greater than the number of resident births six years prior. Although the district has experienced preschool in-migration each year during the past ten years, the level of this in-migration has decreased. In the first five years of the period net preschool migration averaged 13 students annually compared to 7 students in the past five years (see Table 2). This was largely driven by a very high level of in-migration in 2001-02 of 27 students, a level not attained since.

Taken together the historical birth and net migration data indicate that the decline in first grade enrollments over the past ten years was driven by a slight decrease in birth levels and a decrease in net preschool migration combined.

C. Projected First Grade Enrollment

Table 3

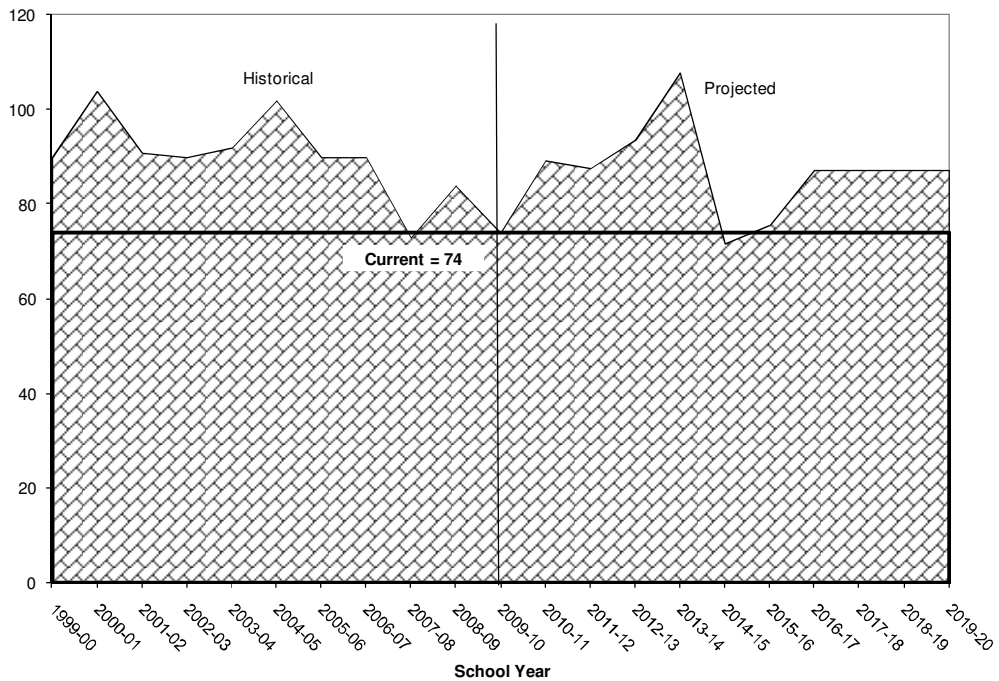
Projected First Grade Enrollment					
SAD 55 - Baldwin, Cornish, Hiram, Parsonfield, and Porter					
Oct 15-Oct14 Birth Year	Resident Births	1st Grade Year	1st Grade Enrollments	Ratio 1st/Births	Net Preschool Migration
2003-04	82	Oct-10	89	1.095	8
2004-05	80	Oct-11	88	1.095	8
2005-06	86	Oct-12	94	1.095	8
2006-07	99	Oct-13	108	1.095	9
2007-08	66	Oct-14	72	1.095	6
2008-09	69	Oct-15	76	1.095	7
2009-10 est.	80	Oct-16	87	1.095	8
2010-11 est.	80	Oct-17	87	1.095	8
2011-12 est.	80	Oct-18	87	1.095	8
2012-13 est.	80	Oct-19	87	1.095	8
Avg 05-09	80				
10yr Avg	80		88	1.095	8
10 yr Min	66		72	1.095	6
10 yr Max	99		108	1.095	9
Sources & Notes: 2002-03 through 2007-08 births from Maine Department of Health & Human Services, Maine Center for Disease Control & Prevention, Office of Data, Research, & Vital Statistics, "Births & Deaths by Month: Maine Towns, Counties, and State Total", 2009-10 through 2012-13 are estimated by PolicyOne based on average births over the last five years; all else calculated by PolicyOne Research.					

Since 2002-03, resident birth levels in the SAD 55 communities combined have increased through 2006-07 and then experienced decreases through 2008-09. Between 2004-05 and 2008-09 resident births have averaged 80 annually, compared to 76 on average annually in the five years previous. Thus, overall since 2002-03 resident births have increased slightly.

Examining the correlation coefficients regarding the relationship between births and first grade enrollments revealed that the most recent seven-year period is the best fit for projecting enrollments. Applying the past seven year preschool net migration levels to recent birth levels in SAD 55 results in projections of first grade enrollments that range from a low of 72 students to a high of 108 students with overall levels increasing through 2013-14 then declining (see Table 3 and Figure 1).

Figure 1

1st Grade Enrollment Trends & Projections - SAD 55 - Baldwin, Cornish, Hiram, Parsonfield, and Porter



IV. ELEMENTARY SCHOOL ENROLLMENT (K-4)

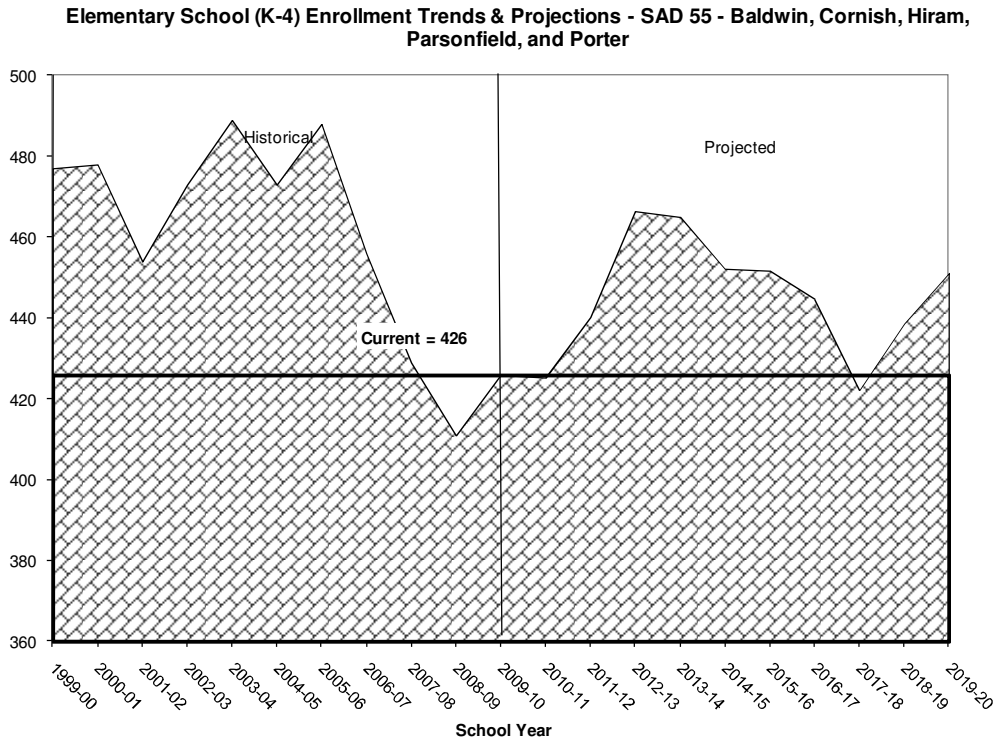
A. Historical Elementary School Enrollment

Since 1999-00, elementary school enrollments (Grades K-4) in SAD 55 experienced increases through 2005-06 followed by decreases over the past four years. In 1999-00 elementary enrollments were at a level of 477 students. By 2006-07 they had risen to 488 students. In 2009-10 there were 426 students (see Table 4 and Figure 2).

B. Projected Elementary School Enrollment

Based on resident birth levels since 2003-04, current elementary enrollments, and preschool in-migration levels similar to that over the past seven years, PolicyOne projects that elementary enrollments in SAD 55 will increase from current levels then remain relatively stable through 2019-20. The projected range for the elementary grades is between 422 and 467 students in the next ten years (see Table 4 and Figure 2).

Figure 2



V. MIDDLE SCHOOL ENROLLMENT (5-8)

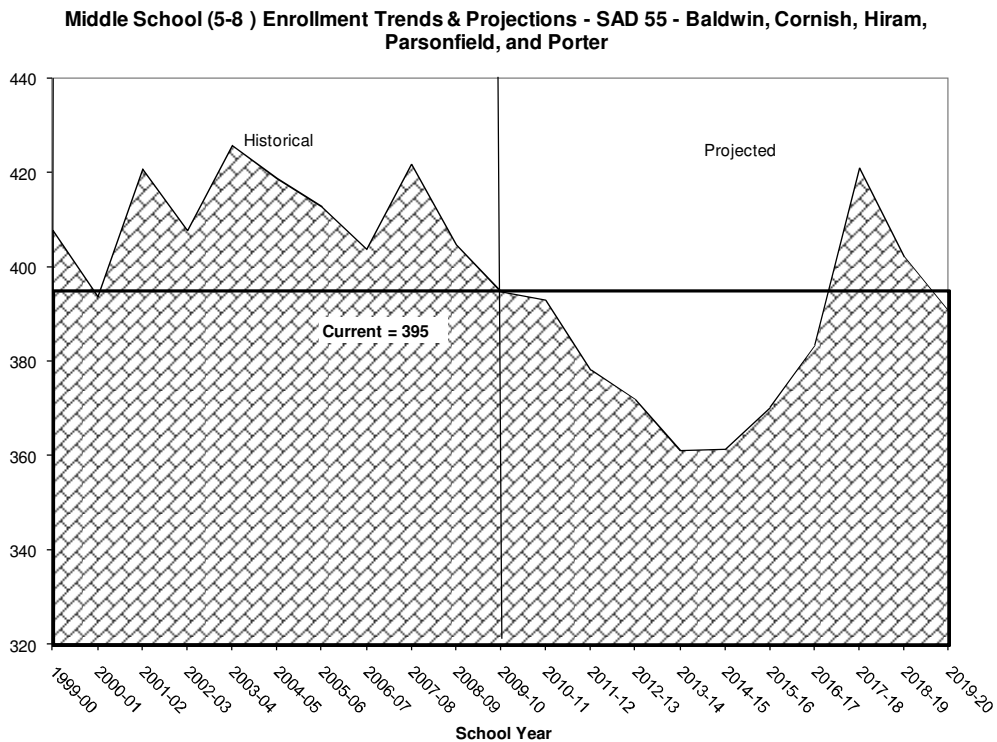
A. Historical Middle School Enrollment

Between 1999-00 and 2009-10 middle school enrollments fell within a fairly steady range between 394 and 426 students (see Table 4 and Figure 3).

B. Projected Middle School Enrollment

Based on existing enrollments, projected elementary enrollments, and net migration levels similar to those over the past ten years, PolicyOne projects that SAD 55 middle school enrollments will decline to levels between 361 and 421 through 2019-20 (see Table 4 and Figure 3). This decline is projected to be the result of the advancement of the smaller elementary grade sizes over the past four years onto the middle school level.

Figure 3



VI. HIGH SCHOOL ENROLLMENT (9-12)

A. Historical High School Enrollment

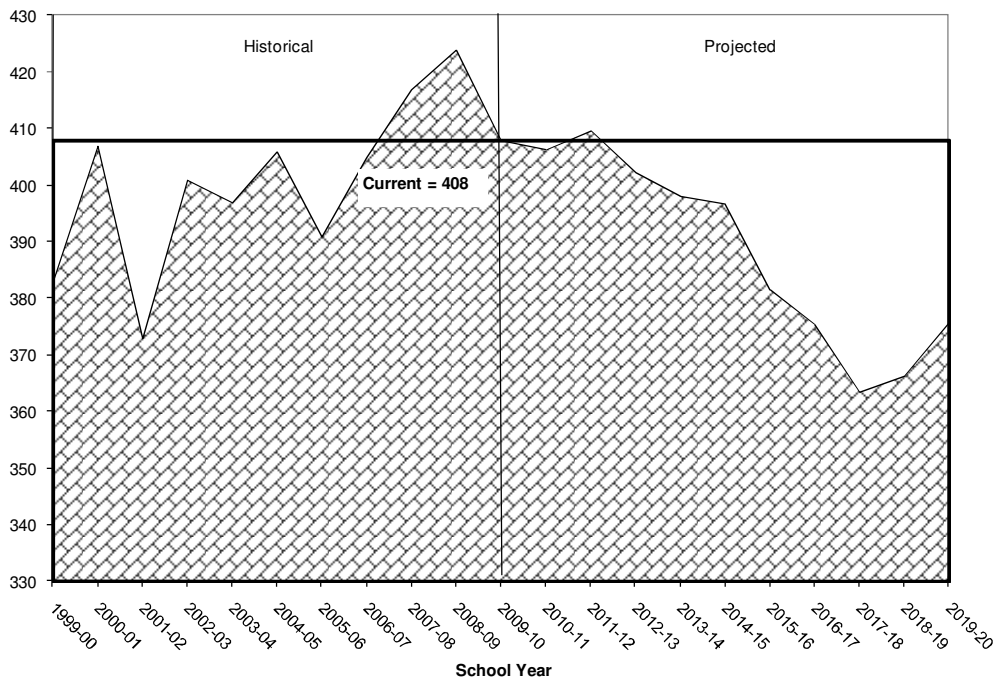
Between 1999-00 and 2008-09 high school enrollments increased from a low of 373 students to a high of 424 students. In 2009-10 high school enrollments fell to 408 students (see Table 4 and Figure 4).

B. Projected High School Enrollment

Based on existing enrollments, projected enrollments at the K-8 grades and net migration levels similar to those over the past ten years, PolicyOne projects high school enrollments will continue to decrease reaching a low of 364 students through 2019-20 (see Table 4 and Figure 4). This decrease will be driven by current smaller class sizes at the elementary level and projected decreases in the middle school grades passing through the system.

Figure 4

High School (9-12) Enrollment Trends & Projections - SAD 55 - Baldwin, Cornish, Hiram, Parsonfield, and Porter



VII. TOTAL SCHOOL ENROLLMENT (K-12)

A. Historical Total Enrollment

Total enrollments in SAD 55 for all grades reached a high of 1,312 in 2003-04 and then experienced gradual decreases through 2009-10 to a level of 1,229 (see Table 4 and Figure 5). Table 5 presents historical net migration levels over the past ten years.

B. Projected Total Enrollment

Based on existing enrollments and projected entering class sizes, and projected grade to grade net migration levels experienced over the past ten years, PolicyOne projects total enrollments will decline slightly then level off between levels of 1,204 and 1,241 through 2019-20 (see Table 4 and Figure 5).

Figure 5

Total K-12 Enrollment Trends & Projections - SAD 55 - Baldwin, Cornish, Hiram, Parsonfield, and Porter

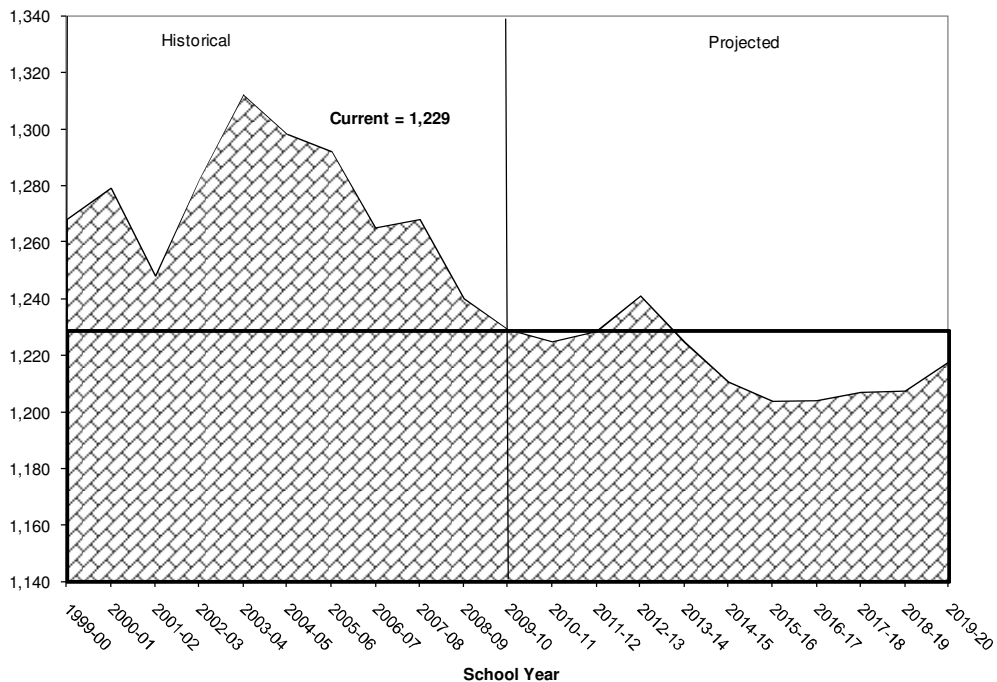


Table 4


Historical and Projected Enrollment Summary																				
SAD 55 - Baldwin, Cornish, Hiram, Parsonfield, and Porter																				
School Year	Grades													Grade Group Totals				Special Ed.		Total
	K	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	K-4	5-8	9-12	K-12	K-8	9-12	K-12
Historical																				
1999-00	98	90	82	112	95	93	103	95	117	119	98	89	77	477	408	383	1,268	0	0	1,268
2000-01	83	104	92	88	111	102	94	102	96	124	104	90	89	478	394	407	1,279	0	0	1,279
2001-02	87	91	98	88	90	111	102	93	115	109	101	83	80	454	421	373	1,248	0	0	1,248
2002-03	89	90	96	102	96	92	112	112	92	118	94	100	89	473	408	401	1,282	0	0	1,282
2003-04	99	92	103	92	103	97	100	117	112	103	112	90	92	489	426	397	1,312	0	0	1,312
2004-05	89	102	88	101	93	102	106	98	113	119	97	111	79	473	419	406	1,298	0	0	1,298
2005-06	99	90	105	94	100	101	107	110	95	122	94	78	97	488	413	391	1,292	0	0	1,292
2006-07	80	90	85	102	99	100	85	120	99	105	115	108	77	456	404	405	1,265	0	0	1,265
2007-08	83	73	89	86	98	100	99	105	118	110	97	111	99	429	422	417	1,268	0	0	1,268
2008-09	71	84	81	89	86	98	102	102	103	120	105	99	100	411	405	424	1,240	0	0	1,240
2009-10	89	74	85	83	95	91	95	106	103	106	108	99	95	426	395	408	1,229	0	0	1,229
Projected																				
2010-11	89	89	77	86	85	97	90	101	105	111	99	105	92	425	393	406	1,225	0	0	1,225
2011-12	95	88	93	78	88	86	96	96	100	113	103	96	98	440	378	410	1,228	0	0	1,228
2012-13	109	94	91	94	79	89	85	102	95	108	105	101	89	467	372	402	1,241	0	0	1,241
2013-14	73	108	97	92	96	81	89	91	101	102	100	103	93	465	361	398	1,225	0	0	1,225
2014-15	76	72	112	98	94	97	80	94	90	109	95	98	95	452	362	397	1,211	0	0	1,211
2015-16	88	76	74	113	100	95	96	85	93	97	101	93	91	452	370	382	1,204	0	0	1,204
2016-17	88	87	78	75	115	102	95	103	84	100	90	99	86	445	384	375	1,204	0	0	1,204
2017-18	88	87	91	79	77	117	101	101	102	91	93	88	91	422	421	364	1,207	0	0	1,207
2018-19	88	87	91	92	81	78	117	108	100	109	84	91	81	439	402	366	1,207	0	0	1,207
2019-20	88	87	91	92	93	82	78	124	107	107	102	82	84	451	391	376	1,218	0	0	1,218
Proj. Min	73	72	74	75	77	78	78	85	84	91	84	82	81	422	361	364	1,204	0	0	1,204
Proj. Max	109	108	112	113	115	117	117	124	107	113	105	105	98	467	421	410	1,241	0	0	1,241
Sources & Notes: Historical enrollments provided by district; All else calculated by PolicyOne Research																				

Table 5

Net Migration Grades 1-6 & K-8		
SAD 55 - Baldwin, Cornish, Hiram, Parsonfield, and Porter		
School Years	Net Migration	
	1-6	K-8
1999/00-2000/01	15	21
2000/01-2001/02	-8	12
2001/02-2002/03	20	32
2002/03-2003/04	19	27
2003/04-2004/05	3	0
2004/05-2005/06	21	23
2005/06-2006/07	-19	-26
2006/07-2007/08	-4	7
2007/08-2008/09	10	12
2008/09-2009/10	11	19
10yr Avg	7	13
9yr Avg	6	12
8yr Avg	8	12
7yr Avg	6	9
6yr Avg	4	6
5yr Avg	4	7
4yr Avg	-1	3
3yr Avg	6	13
1st 5yr Avg	10	18
Projected	7	11
Sources & Notes: Calculated by PolicyOne Research based on enrollments provided by district		

VIII. RESIDENTIAL DEVELOPMENT TRENDS

Since 1995 the communities within SAD 55 combined experienced an increase in residential development followed by a period of decreases. Between 1995 and 2000, permits for new residential units averaged 35 annually. Between 2001 and 2006 this increased to an average annual level of 65 permits. Since 2007 annual residential permit levels dropped to an average of 26 (see Table 6 and Figure 6).

PolicyOne’s enrollment projections are based on net-migration levels at the K-8 grades experienced over the past ten years which is reasonable given recent housing trends. However, if the recession ends sooner than expected and new housing starts begin to increase significantly, then the district should re-examine enrolment trends.

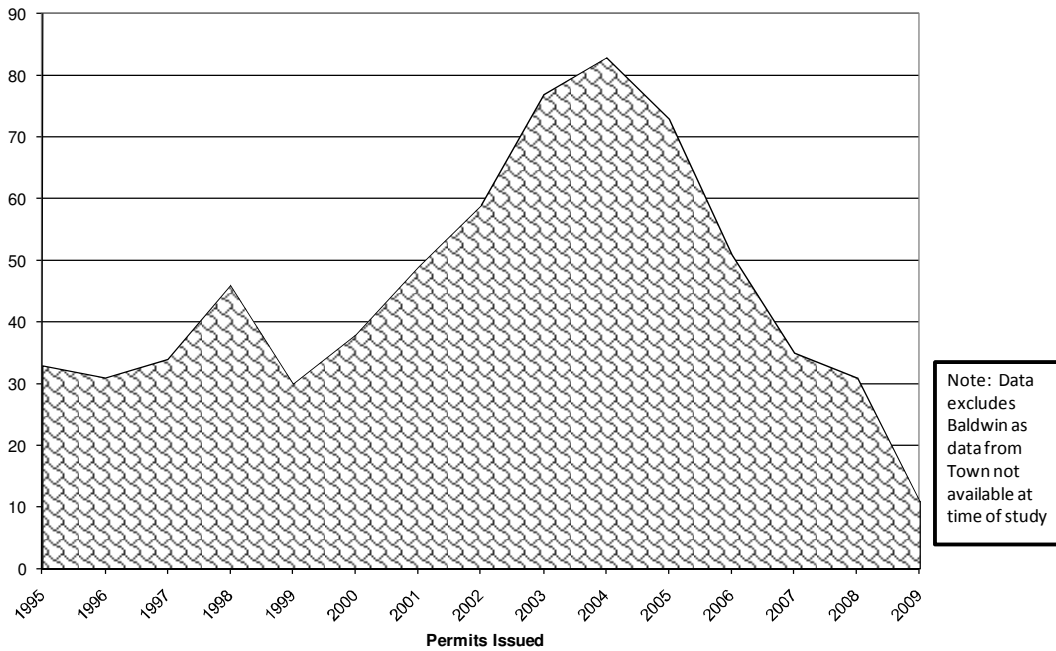
Table 6

Trends in Residential Building Permits						
SAD 55 - Baldwin, Cornish, Hiram, Parsonfield, and Porter						
Year	Baldwin	Cornish	Hiram	Parsonfield	Porter	Total Excluding Baldwin
1995		5	8	11	9	33
1996		7	8	10	6	31
1997		8	7	15	4	34
1998		9	7	25	5	46
1999		1	10	16	3	30
2000	7	7	2	26	3	38
2001	8	4	16	26	3	49
2002	13	18	7	32	2	59
2003	13	16	23	28	10	77
2004	20	15	27	24	17	83
2005	22	12	19	26	16	73
2006	10	7	11	21	12	51
2007		8	9	13	5	35
2008		4	8	14	5	31
2009		4	4	2	1	11
Avg 95-00		6	7	17	5	35
Avg 01-06		12	17	26	10	65
Avg 07-09		5	7	10	4	26

Sources & Notes: Permit data except for Baldwin gathered by PolicyOne from annual municipal reports; Baldwin data is from Southern Maine Regional Planning Commission; Baldwin is excluded from total as data is incomplete.

Figure 6

Residential Building Permit Trends - 1995-2009 SAD 55 - Cornish, Hiram, Parsonfield, and Porter



ADDENDUM – PROJECTED ELEMENTARY ENROLLMENTS BY SCHOOL

Based on projected district-wide enrollments and the distribution of elementary enrollments among the individual schools in the past two years, PolicyOne projected enrollments for each of the elementary schools and the results are presented in Table 7. It should be noted that individual school enrollment projections are statistically less reliable than the district-wide projections.

Table 7

Historical & Projected K-4 Enrollments by School - SAD 55 - Baldwin, Cornish, Hiram, Parsonfield, and Porter					
Year	Total K-4	Baldwin	Cornish	Fred Morrill	South Hiram
Historical					
2004-05	473	93	91	45	244
2005-06	488	93	98	42	255
2006-07	456	92	85	46	233
2007-08	429	83	84	44	218
2008-09	411	79	71	53	208
2009-10	426	92	68	44	222
Projected					
2010-11	425	87	71	49	218
2011-12	440	90	73	51	226
2012-13	467	95	78	54	240
2013-14	465	95	77	54	239
2014-15	452	92	75	53	232
2015-16	452	92	75	52	232
2016-17	445	91	74	52	228
2017-18	422	86	70	49	217
2018-19	439	90	73	51	225
2019-20	451	92	75	52	232

Source: Calculated by PolicyOne based on enrollment data provided by SAD 55 Business Office; projections are based on district-wide enrollment projections apportioned among the schools based on the average apportionment in the past two years