

SCHOOL FACILITY PLANNING

- **ENROLLMENT PROJECTIONS**
- **EDUCATIONAL FACILITIES MASTER PLAN**
- **CAPITAL IMPROVEMENT PLAN**



ENROLLMENT PROJECTIONS



PURPOSE OF PROJECTIONS

- **TO DETERMINE NEED FOR CAPACITY PROJECTS**
- **TO DETERMINE STAFFING LEVELS**
- **TO DETERMINE NEED FOR PORTABLES**
- **TO DETERMINE NEED FOR REDISTRICTING**



DEFINITIONS



- **Head Count Enrollment** – Total number of students enrolled
- **Full Time Equivalent (FTE) Enrollment** – Total number of students based on a calculation showing how many students would be enrolled if they were all full time students. (Example: PreK students count as 0.5 FTE because they are AM only)
- **Cohort Survival Ratio** - The ratio of the number of students enrolled in a grade this year to the number of students that were in the earlier grade the previous year. (Example: The 2018 cohort survival ratio for 1st to 2nd grade is the number of 2018 second grade students divided by the number of first grade students in 2017.)

METHODOLOGY



- **Cohort Survival Methodology – typical demographic technique used to do enrollment projections**
- **Utilizes actual enrollments and actual (4 year average) cohort survival ratios to project future enrollments**
- **Three decisions. Everything else is just a calculation.**
 - **What kind of average cohort survival ratio to use? We use a 4 year average**
 - **How many births to project? We are projecting births to increase 20 per year from 2018-2023.**
 - **How many Kindergarteners will attend each school? We use the historic (4 year average) kindergarten distribution to project at the school level.**

Cohort Example

FREEDOM EL

YEAR	K											BUDGET		
		1	2	3	4	5	TOTAL	FTE	DIFF					
15-16A	67	103.5%	88	108.9%	61	106.3%	85	104.1%	77	102.3%	90	468	468	
16-17A	70	116.4%	78	106.8%	94	113.1%	69	107.1%	91	97.4%	75	477	477	9
17-18A	80	122.9%	86	103.8%	81	101.1%	95	107.2%	74	104.4%	95	511	511	34
18-19A	92	113.8%	91	111.6%	96	104.9%	85	102.1%	97	106.8%	79	540	540	29
19-20	77	114.1%	105	107.8%	98	106.4%	102	105.1%	89	102.7%	100	571	571	31
20-21	80	114.1%	88	107.8%	113	106.4%	104	105.1%	107	102.7%	92	585	585	13
21-22	86	114.1%	91	107.8%	95	106.4%	120	105.1%	110	102.7%	110	612	612	28
22-23	78	114.1%	98	107.8%	98	106.4%	101	105.1%	127	102.7%	113	615	615	2
23-24	79	114.1%	89	107.8%	106	106.4%	105	105.1%	106	102.7%	130	614	614	0
24-25	80	114.1%	90	107.8%	96	106.4%	113	105.1%	110	102.7%	109	597	597	-17
25-26	81	114.1%	91	107.8%	97	106.4%	102	105.1%	118	102.7%	113	603	603	5
26-27	82	114.1%	92	107.8%	98	106.4%	103	105.1%	107	102.7%	122	605	605	2
27-28	83	114.1%	94	107.8%	100	106.4%	105	105.1%	109	102.7%	110	600	600	-5
28-29	84	114.1%	95	107.8%	101	106.4%	106	105.1%	110	102.7%	112	607	607	7
5-3-2		1.1702		1.0833		1.0541		1.0464		1.0418				
6-4		1.1739		1.0852		1.0339		1.0416		1.0581				
4 Yr. Avg		1.1413		1.0780		1.0635		1.0513		1.0271				

GROWTH & PROJECTIONS

- The Cohort Survival method captures the effects of changes in population, migration, new housing construction, housing turnover, private school enrollment, home school decisions, etc.
- The reliability of the projections is higher in stable communities that do not have extreme variances in one or more of these variables.
- The average survival rate used can be adjusted for each school if the projected growth is greater than the recent history.

Rate of Growth

SCHOOL	HISTORICAL PERMITS ISSUED					PROJECTED PERMITS					Difference
	FY15	FY16	FY17	FY18	4 Yr. Total	FY19	FY20	FY21	FY22	4 Yr. Total	
Carrolltowne	95	15	6	3	119	9	0	0	0	9	-110
Charles Carroll	5				5					0	-5
Cranberry Station	9	5	9	24	47	80	38	41	40	199	152
Ebb Valley	0	5	11	13	29	42	0	0	0	42	13
Eldersburg	0	2	0	1	3	4	0	0	0	4	1
Elmer Wolfe	3	6	7	6	22	6	93	71	39	209	187
Freedom	27	20	24	26	97	43	39	10	0	92	-5
Friendship Valley	2	6	6	12	26	10	7	0	0	17	-9
Hampstead	2	0	10	22	34	12	0	100	100	212	178
Linton Springs	26	37	32	12	107	12	0	0	0	12	-95
Manchester	4	17	27	15	63	42	0	0	0	42	-21
Mechanicsville	15	21	11	10	57	25	14	14	0	53	-4
Mt. Airy*	16	12	5	3	36	58	23	0	0	81	45
Piney Ridge	17	6	5	8	36	166	0	0	0	166	130
Robert Moton	1	2	4	1	8	6	0	0	0	6	-2
Runnymede	27	11	22	31	91	98	33	0	0	131	40
Sandymount	6	13	21	10	50	93	13	0	0	106	56
Spring Garden	2	2	2	9	15	30	0	0	0	30	15
Taneytown	1	4	6	5	16	70	66	50	19	205	189
Westminster	3	1	0	2	6	42	40	62	0	144	138
William Winchester	35	16	37	53	141	68	56	33	0	157	16
Winfield	12	10	21	17	60	61	7	0	0	68	8
TOTALS	308	211	266	283	1068	977	429	381	198	1985	917

Kindergarten Projections

- **Kindergarten projections (through 2022) are based on historic births and the Birth to Kindergarten cohort survival ratio**
- **Kindergarten projections (after 2022) are based on projected births and the Birth to Kindergarten cohort survival ratio**
- **Projected births are based on historic average birth totals, County population projections, and MDP population and birth projections**

KINDERGARTEN PROJECTIONS

2002*	1921	2007	1949	101.46%	<u>6-4</u>
2003*	1910	2008	1887	98.80%	108.98%
2004*	1984	2009	1884	94.96%	
2005*	1949	2010	1849	94.87%	
2006*	1933	2011	1780	92.08%	<u>4 Year Avg</u>
2007*	1857	2012	1744	93.91%	107.13%
2008*	1767	2013	1755	99.32%	
2009*	1619	2014	1671	103.21%	
2010*	1588	2015	1666	104.91%	<u>10 Year Avg.</u>
2011*	1577	2016	1670	105.90%	100.69%
2012*	1600	2017	1732	108.25%	
2013*	1543	2018	1689	109.46%	
2014*	1577	2019	1689	107.13%	
2015*	1642	2020	1759	107.13%	
2016*	1760	2021	1885	107.13%	
2017*	1594	2022	1708	107.13%	
2018*	1620	2023	1736	107.13%	
2019*	1640	2024	1757	107.13%	
2020*	1660	2025	1778	107.13%	
2021*	1680	2026	1800	107.13%	
2022*	1700	2027	1821	107.13%	
2023*	1720	2028	1843	107.13%	

Births and Enrollments highlighted in gray are projected.

Secondary School Projections

- Middle and High School projections work the same as Elementary School projections except that a feeder pattern percentage must be applied for split feeders.

Cohort Example

OKLAHOMA ROAD MID	CARROLLTOWNE	100.00%
	ELDERSBURG	59.00%
	FREEDOM	100.00%

YEAR	5		6		7		8		TOTAL	DIFF
15-16A	233	97.2%	242	105.6%	245	100.7%	272		759	
16-17A	212	109.1%	254	103.7%	251	100.8%	247		752	-7
17-18A	229	104.7%	222	105.9%	269	102.4%	257		748	-4
18-19A	202	104.6%	240	104.1%	231	100.7%	271		742	-6
19-20	234	103.9%	210	104.8%	252	101.2%	234		695	-47
20-21	206	103.9%	243	104.8%	220	101.2%	254		717	22
21-22	268	103.9%	215	104.8%	255	101.2%	222		692	-26
22-23	246	103.9%	278	104.8%	225	101.2%	258		761	69
23-24	266	103.9%	255	104.8%	292	101.2%	228		774	14
24-25	248	103.9%	277	104.8%	268	101.2%	295		839	65
25-26	258	103.9%	258	104.8%	290	101.2%	271		819	-21
26-27	277	103.9%	268	104.8%	270	101.2%	294		831	13
27-28	251	103.9%	288	104.8%	281	101.2%	273		842	10
28-29	254	103.9%	261	104.8%	302	101.2%	284		847	5
5-3-2		1.0554		1.0454		1.0125				
6-4		1.0465		1.0479		1.0140				
4yr avg		1.0391		1.0482		1.0116				

FEEDER PATTERNS

ELEMENTARY TO MIDDLE		MIDDLE TO HIGH	
	2018-2027		2017-2026
MT. AIRY MIDDLE		CENTURY HIGH	
MT. AIRY ELEMENTARY	100.00%	SYKESVILLE MIDDLE	100.00%
WINFIELD ELEMENTARY	84.00%		
		FRANCIS SCOTT KEY	
NORTH CARROLL MIDDLE		NORTHWEST MIDDLE	100.00%
EBB VALLEY ELEMENTARY	73.00%		
HAMPSTEAD ELEMENTARY	20.00%	LIBERTY HIGH	
MANCHESTER ELEMENTARY	100.00%	OKLAHOMA ROAD MIDDLE	100.00%
NORTHWEST MIDDLE		MANCHESTER VALLEY HIGH	
ELMER WOLFE ELEMENTARY	100.00%	NORTH CARROLL MIDDLE	100.00%
RUNNYMEDE ELEMENTARY	78.00%	SHILOH MIDDLE	65.00%
TANEYTOWN ELEMENTARY	100.00%		
		SOUTH CARROLL HIGH	
OKLAHOMA ROAD MIDDLE		MT. AIRY MIDDLE	100.00%
CARROLLTOWN ELEMENTARY	100.00%		
ELDERSBURG ELEMENTARY	59.00%	WESTMINSTER HIGH	
FREEDOM ELEMENTARY	100.00%	SHILOH MIDDLE	35.00%
		WEST MIDDLE	91.00%
SHILOH MIDDLE			
HAMPSTEAD ELEMENTARY	80.00%	WINTERS MILL HIGH	
SANDYMOUNT ELEMENTARY	100.00%	EAST MIDDLE	100.00%
SPRING GARDEN ELEMENTARY	100.00%	WEST MIDDLE	9.00%
SYKESVILLE MIDDLE			
ELDERSBURG ELEMENTARY	41.00%		
LINTON SPRINGS ELEMENTARY	100.00%		
PINEY RIDGE ELEMENTARY	100.00%		
WINFIELD ELEMENTARY	16.00%		
WESTMINSTER EAST MIDDLE			
CRANBERRY STATION ELEMENTARY	100.00%		
EBB VALLEY ELEMENTARY	27.00%		
ROBERT MOTON ELEMENTARY	63.00%		
RUNNYMEDE ELEMENTARY	22.00%		
WESTMINSTER ELEMENTARY	7.00%		
WM WINCHESTER ELEMENTARY	72.00%		
WESTMINSTER WEST MIDDLE			
FRIENDSHIP VALLEY ELEMENTARY	100.00%		
MECHANICSVILLE ELEMENTARY	100.00%		
ROBERT MOTON ELEMENTARY	37.00%		
WESTMINSTER ELEMENTARY	93.00%		
WILLIAM WINCHESTER ELEMENTARY	28.00%		

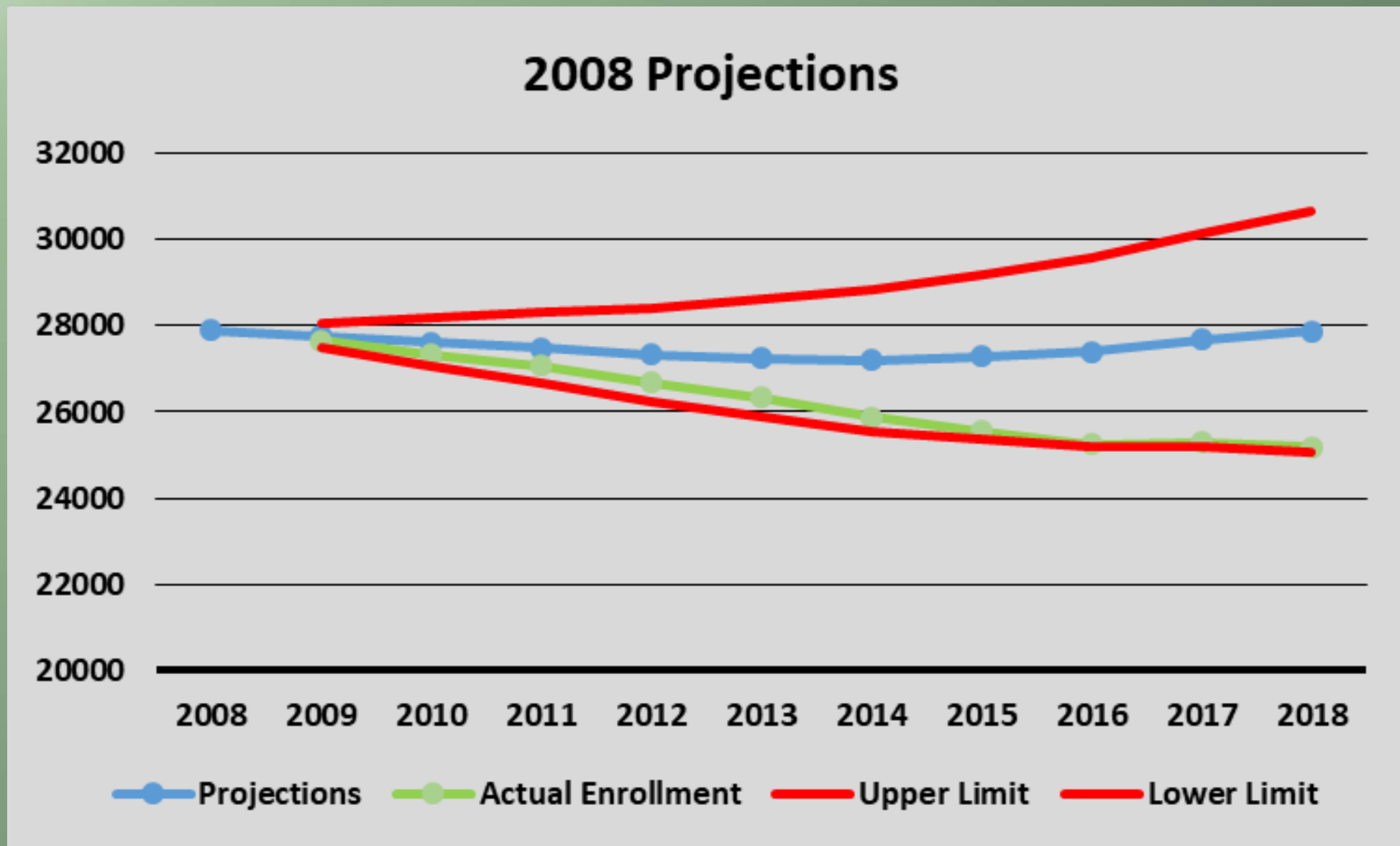
ACCURACY



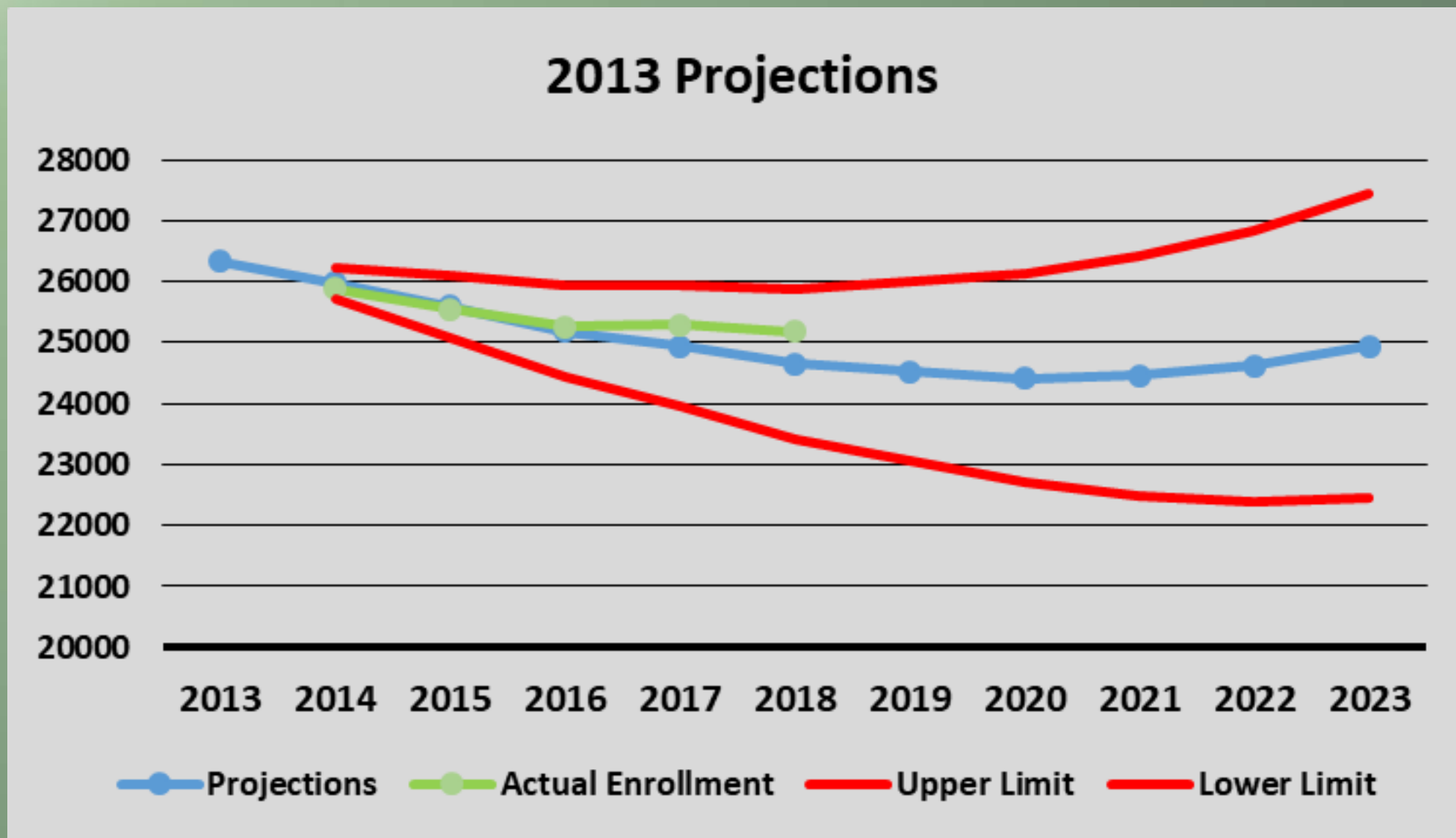
Historic Accuracy

- **One Year Projections (27 year average) = 0.31%**
- **Five Year Projections (23 year average) = 2.34%**
- **Ten Year Projections (18 year average) = 9.36%**
 - **Ten Year Projections (2001-2012) = 5.67%**

2008 – 2018 Projections vs. Actuals



2013 – 2023 Projections vs. Actuals



CURRENT ENROLLMENT AND DEMOGRAPHICS



Total Enrollment

- **September 30, 2018 Enrollment was 25,179 students.**
 - An decrease of 111 students from 2017.
- **Decrease was not as great as the projected loss of 191 students.**
- **Projections indicate total enrollment will be remain between 25,000 – 26,000 students for the next ten years.**

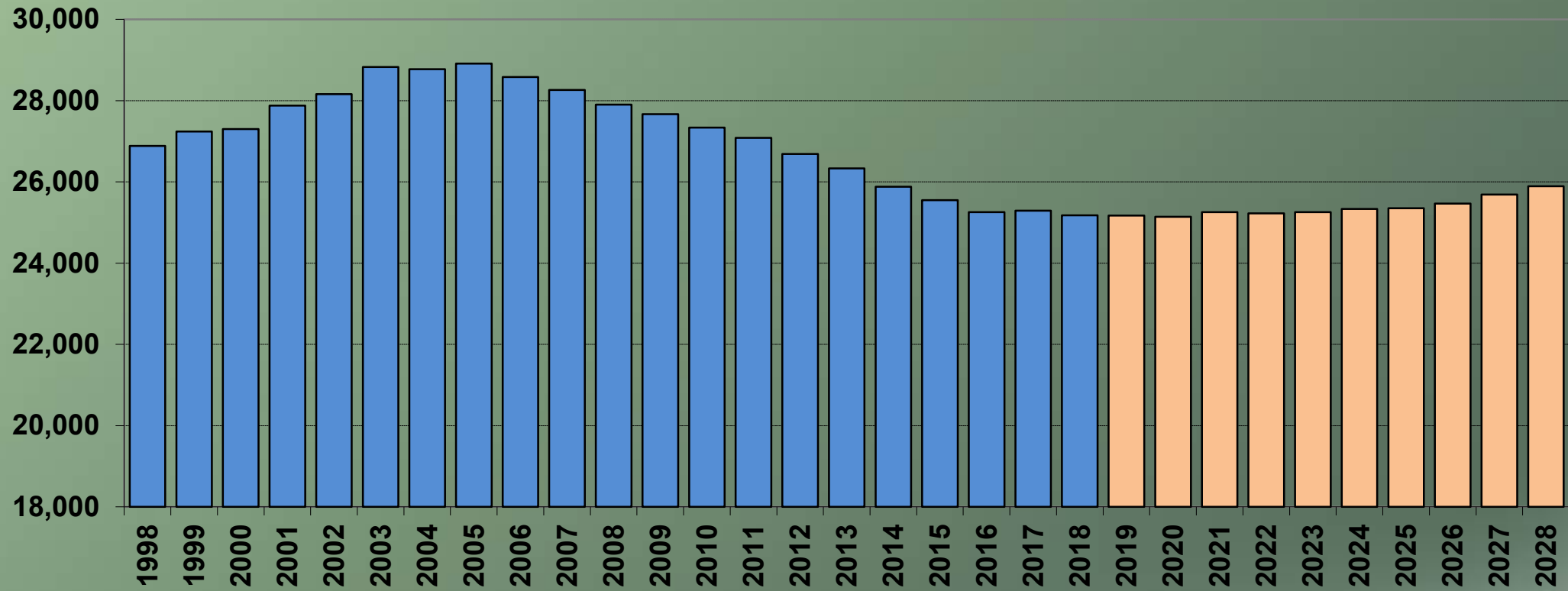
2017 & 2018 Actual Enrollments

		ACTUAL ENROLLMENTS		DIFF.
2017	2018	2017	2018	
PREK	PREK	321	336	15
K	1	1732	1801	69
1	2	1718	1773	55
2	3	1748	1789	41
3	4	1742	1750	8
4	5	1867	1890	23
5	6	1908	1960	52
6	7	1877	1937	60
7	8	1962	1957	-5
8	9	2012	2102	90
9	10	2104	2034	-70
10	11	2065	2171	106
11	12	2133	1800	-333
12	K	1892	1689	-203
TOTAL		25081	24989	-92

Does not include students enrolled at following: PRIDE, Carroll Springs, Gateway, Post Secondary, and Flexible Student Support

Actual and Projected Enrollment 1998 - 2028

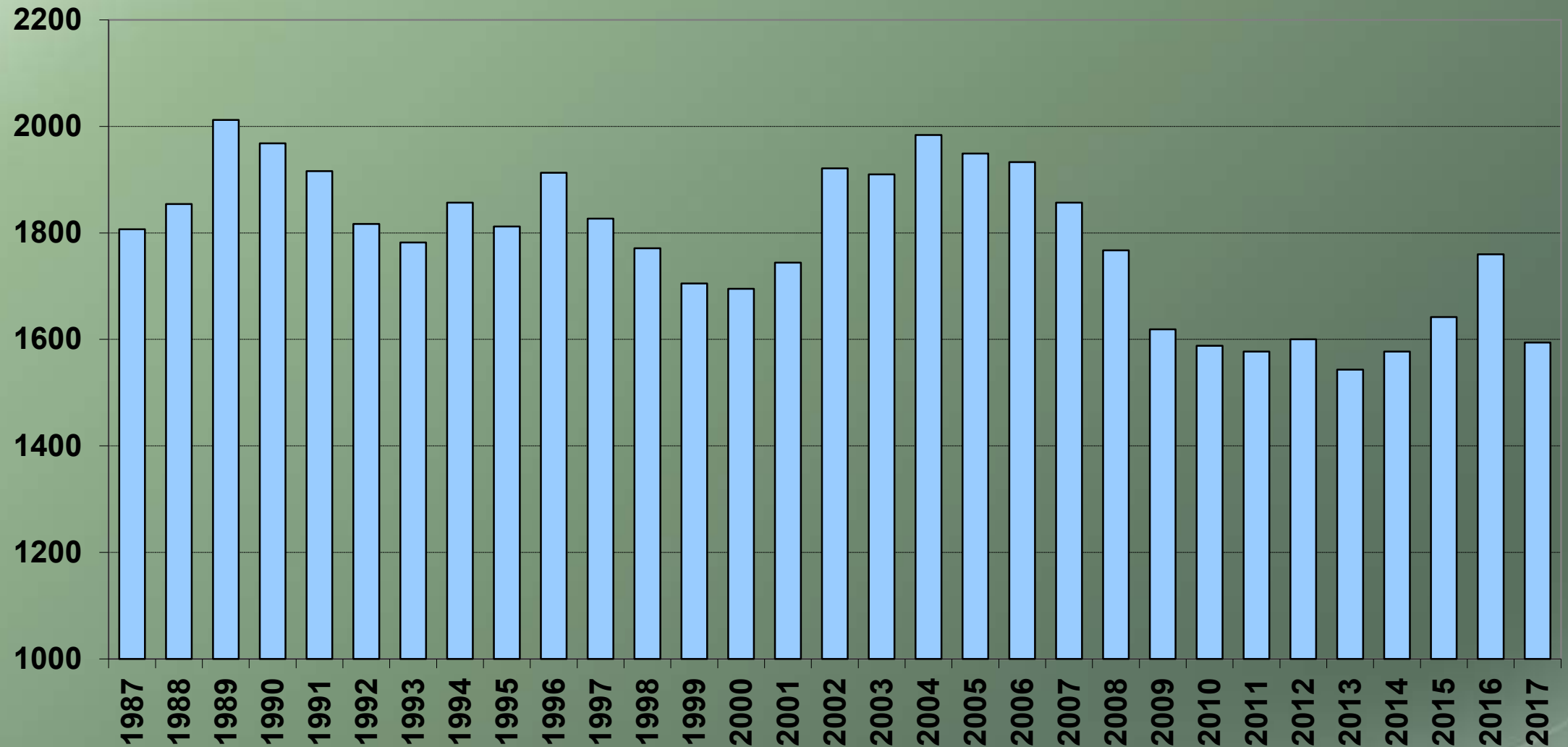
1998 - 2018 Historic and 2019 - 2028 Projected
Total Enrollment



Population Trends

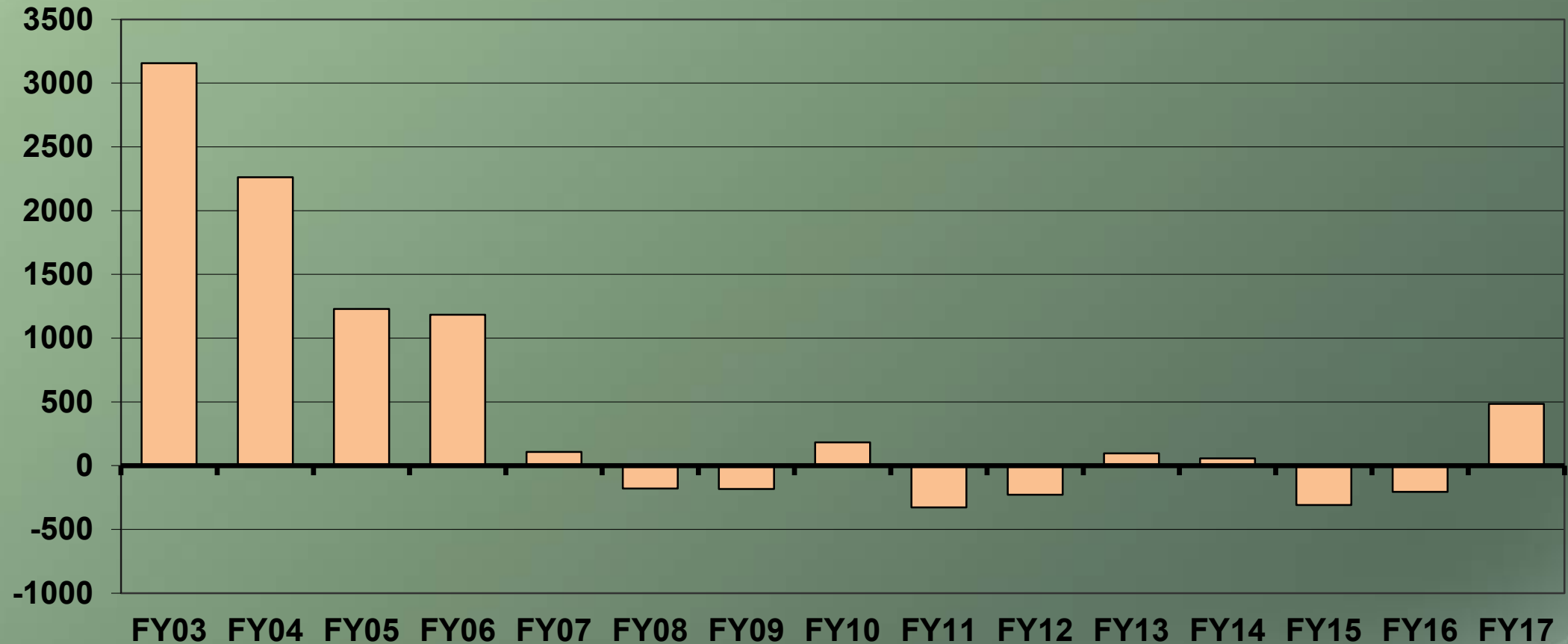
- Births have increased three of the past four years
- Net Migration has been negative five of the past nine years
- The County has averaged 278 permits per year over the past ten years.
- Housing units sold have increased six of the past seven years, and are equal to the numbers seen in 2003.

Carroll County Births, 1987 - 2017



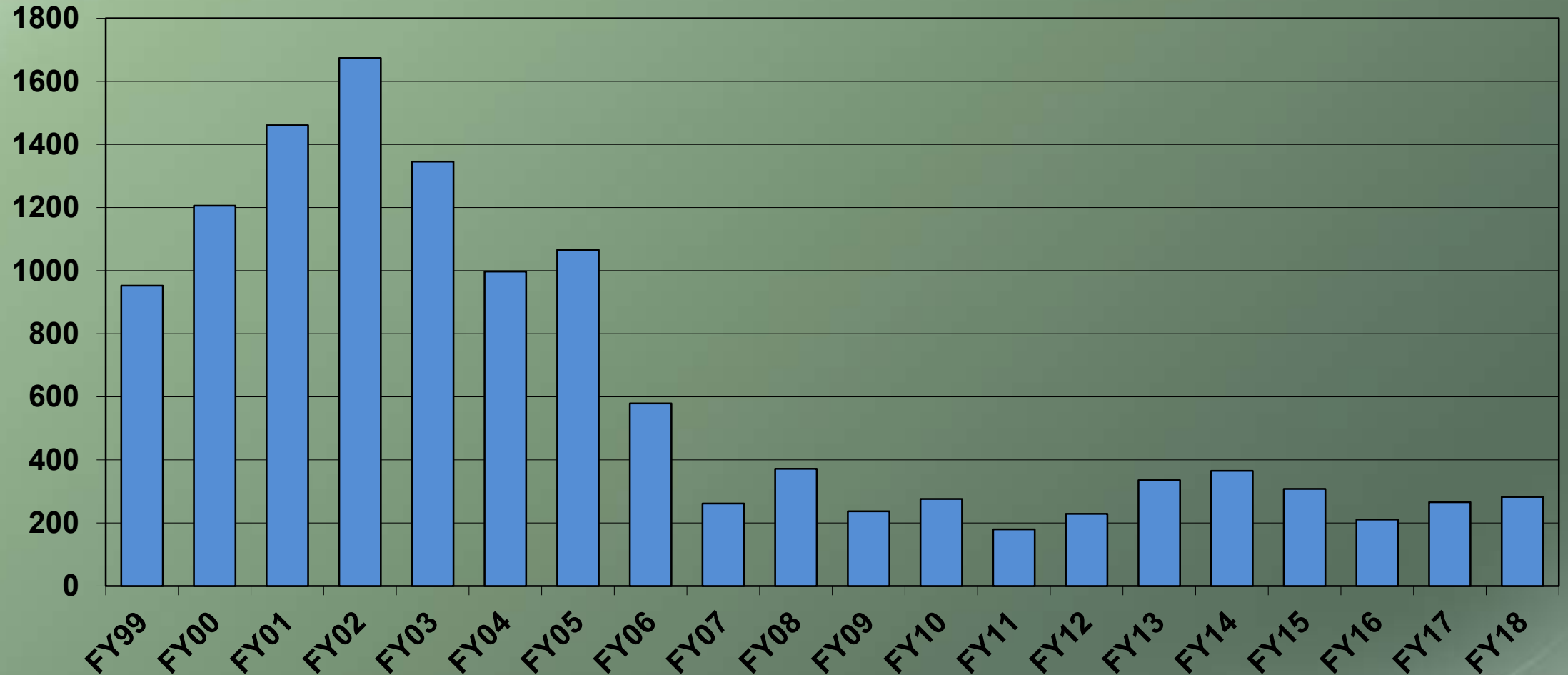
Source: Maryland Department of Health & Mental Hygiene

Total Migration for Carroll County for Fiscal Years 2003 - 2017



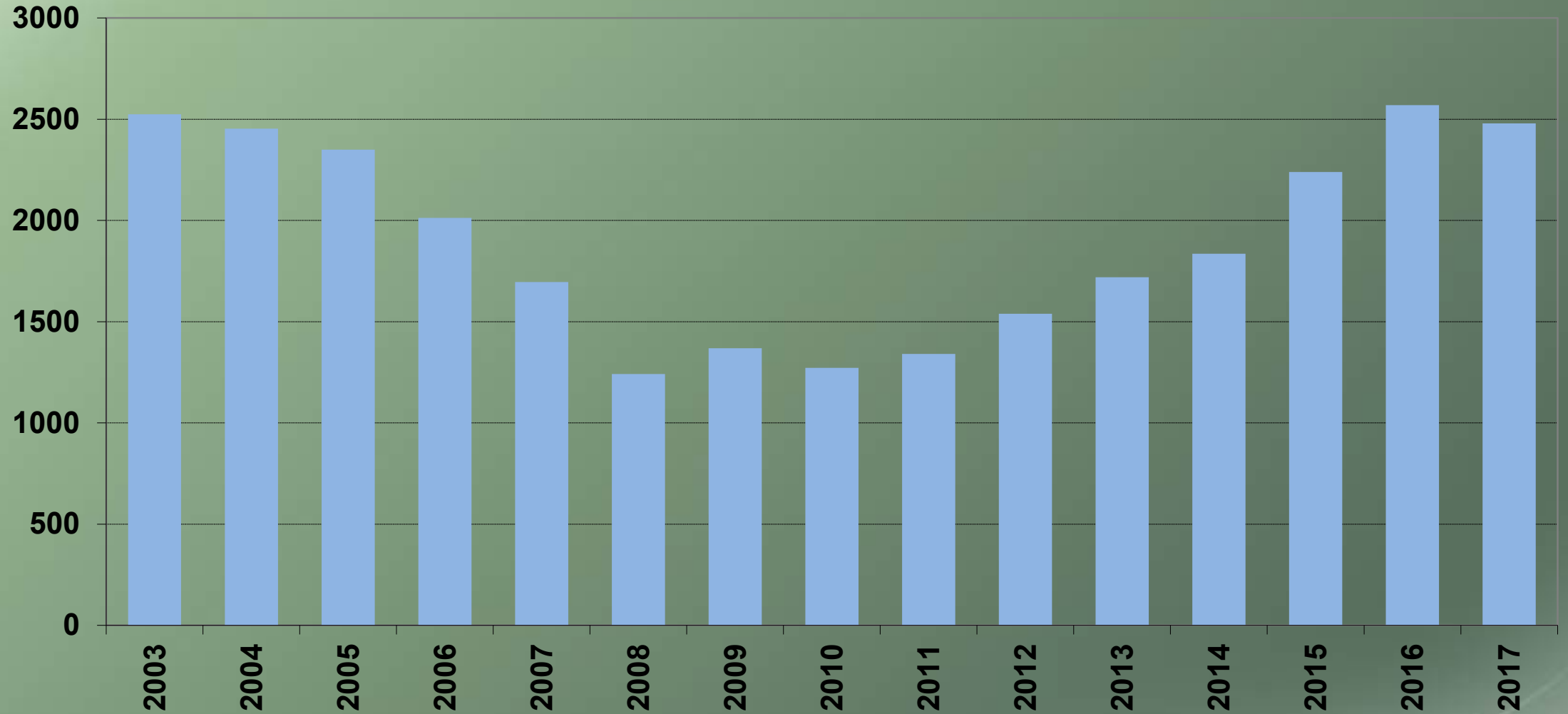
Source: Maryland Department of Planning

Carroll County Residential Permits Fiscal Years 1999 to 2018



Source: Carroll County Bureau of Permits

Housing Units Sold (2003-2017)

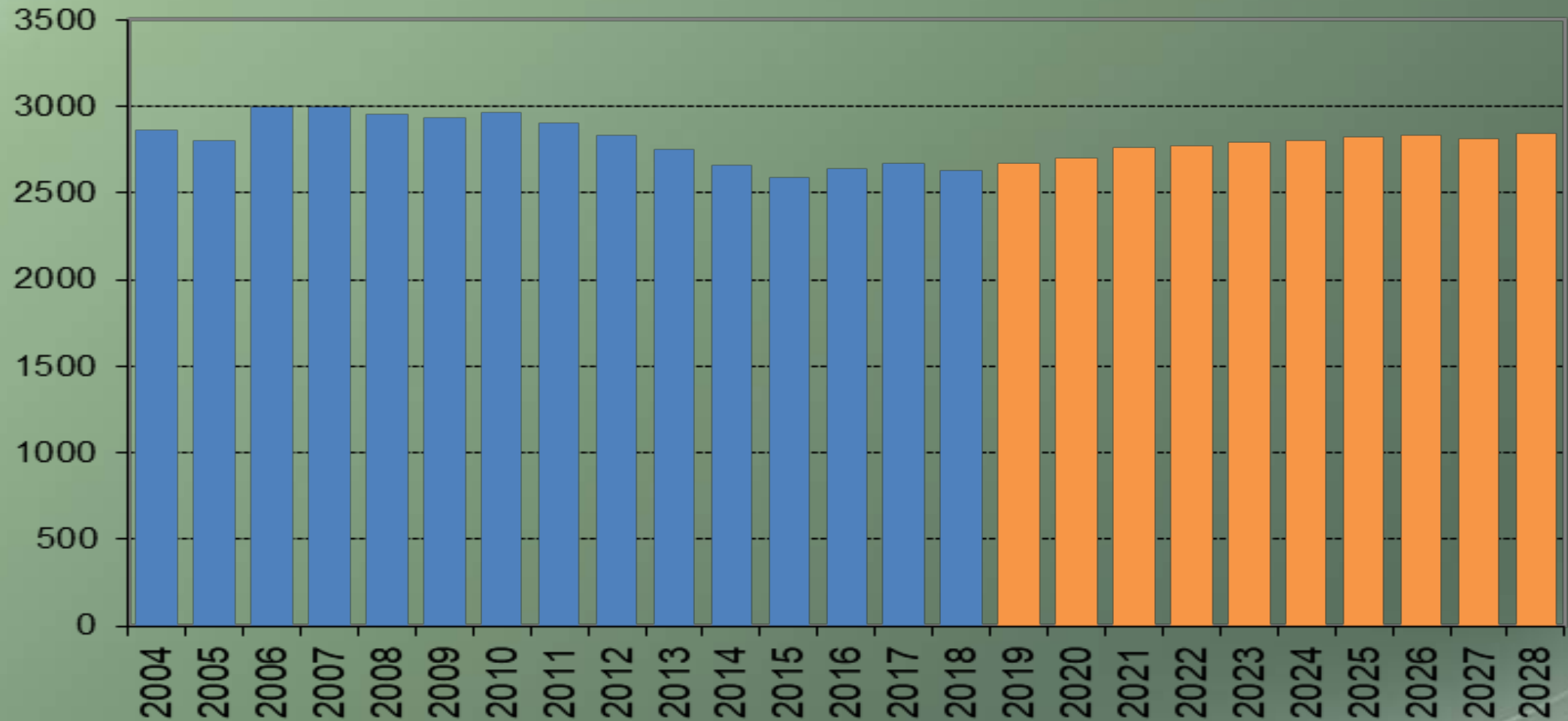


Source: Metropolitan Regional Information Systems

Southeast Elementary School Enrollment

- **September 30, 2018 Southeast Elementary Enrollment was 2,629**
 - A decrease of 39 students
- **Projections indicate enrollment will increase to approximately 2,800 students in ten years.**

1998 - 2018 Historic and 2019 - 2028 Projected Southeast Elementary School Enrollment



UTILIZATION



School Utilization

- Utilization percentage is calculated by dividing the enrollment of a school by the capacity of a school
- Elementary and High schools only use State Rated Capacity for this calculation
- Middle schools have a State Rated Capacity and a Functional Capacity calculation

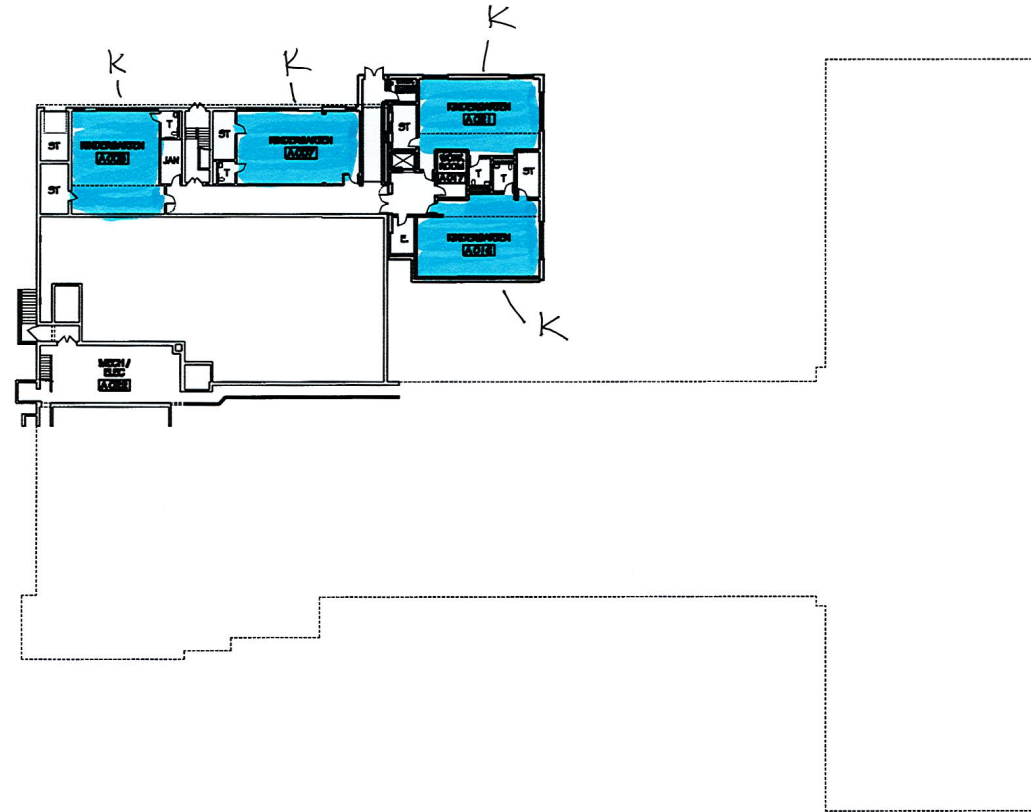
Elementary State Rated Capacity

- Number of classrooms (1st-5th) x 23 students
- Number of classrooms (K) x 22 students
- Number of classrooms (PreK) x 20 students
- Number of classrooms (Special Education) x 10 students



PREK/K
1ST - 5TH
SPECIALS
RESOURCE

FREEDOM ELEMENTARY SCHOOL
FIRST FLOOR PLAN



FREEDOM ELEMENTARY SCHOOL
LOWER LEVEL FLOOR PLAN

Board of Education Policy FB – Adequate Facilities

– Approaching Inadequate

- Elementary: 101% – 105% of Capacity**
- Secondary: 101% - 110% of Capacity**

– Inadequate

- Elementary: Greater than 105% of Capacity**
- Secondary: Greater than 110% of Capacity**

Approaching Inadequate

Carrolltowne ES:	2025-2028
Runnymede ES:	2025, 2026, & 2028
Westminster ES:	2025, 2026, & 2028
Mt. Airy MS:	2023 – 2025, 2027, & 2028
Oklahoma Road MS	2024 – 2028
Sykesville MS	2018 – 2023, 2025 – 2028
Manchester Valley HS	2021, & 2022

Inadequate

Freedom ES: 2018-2028

County Adequate Public Facilities Ordinance (APFO)

– Approaching Inadequate

- Elementary: 110% – 120% of State Rated Capacity**
- Middle: 110%-120% of Functional Capacity**
- Secondary: 110% - 120% of State Rated Capacity**

– Inadequate

- Elementary: Greater than 120% of State Rated Capacity**
- Middle: Greater than 120% of Functional Capacity**
- Secondary: Greater than 120% of State Rated Capacity**

Approaching Inadequate

Freedom ES: 2019, 2020, 2024

Inadequate

Freedom ES: 2021-2023

Southeast Area Utilization

School	State Rated Capacity				Enrollment	Enrollment										Enrollment
	K-5	PreK	Spec. Ed.	Total	Actual 2018	Projected 2019	2020	2021	2022	2023	2024	2025	2026	2027	Projected 2028	
Carrolltowne	548	20	20	588	530	549	557	593	583	585	588	593	595	591	598	
	Over (Under) State Rated Capacity				(58)	(39)	(31)	5	(5)	(3)	-	5	7	3	10	
	Percent of STATE Capacity				90.1%	93.4%	94.7%	100.9%	99.1%	99.5%	100.0%	100.9%	101.2%	100.5%	101.7%	
Eldersburg	548	20	0	568	431	431	433	440	430	442	451	454	456	453	458	
	Over (Under) State Rated Capacity				(137)	(137)	(135)	(128)	(138)	(126)	(117)	(114)	(112)	(115)	(110)	
	Percent of STATE Capacity				75.9%	75.9%	76.2%	77.5%	75.7%	77.8%	79.4%	79.9%	80.3%	79.8%	80.6%	
Freedom	502	0	0	502	540	571	585	612	615	614	597	603	605	600	607	
	Over (Under) State Rated Capacity				38	69	83	110	113	112	95	101	103	98	105	
	Percent of STATE Capacity				107.6%	113.7%	116.5%	121.9%	122.5%	122.3%	118.9%	120.1%	120.5%	119.5%	120.9%	
Linton Springs	685	20	0	705	613	621	645	638	663	662	666	672	674	668	677	
	Over (Under) State Rated Capacity				(92)	(84)	(60)	(67)	(42)	(43)	(39)	(33)	(31)	(37)	(28)	
	Percent of STATE Capacity				87.0%	88.1%	91.5%	90.5%	94.0%	93.9%	94.5%	95.3%	95.6%	94.8%	96.0%	
Piney Ridge	548	0	0	548	515	496	483	475	485	493	496	500	502	499	506	
	Over (Under) State Rated Capacity				\$ (33)	(52)	(65)	(73)	(63)	(55)	(52)	(48)	(46)	(49)	(42)	
	Percent of STATE Capacity				94.0%	90.5%	88.1%	86.7%	88.5%	90.0%	90.5%	91.2%	91.6%	91.1%	92.3%	
TOTALS	2831	60	20	2911	2629	2668	2703	2758	2776	2796	2798	2822	2832	2811	2846	
	Over (Under) State Rated Capacity				(282)	(243)	(208)	(153)	(135)	(115)	(113)	(89)	(79)	(100)	(65)	
	Percent of STATE Capacity				90.3%	91.7%	92.9%	94.7%	95.4%	96.0%	96.1%	96.9%	97.3%	96.6%	97.8%	

Mechanicsville ES Utilization

School	State Rated Capacity				Enrollment										
	K-5	PreK	Spec. Ed.	Total	Actual	Projected	2020	2021	2022	2023	2024	2025	2026	2027	2028
					2018	2019									
Cranberry Station	550	20	0	570	507	493	499	503	509	515	519	523	525	522	529
	Over (Under) State Rated Capacity				(63)	(77)	(71)	(67)	(61)	(55)	(51)	(47)	(45)	(48)	(41)
	Percent of STATE Capacity				88.9%	86.5%	87.5%	88.2%	89.3%	90.4%	91.1%	91.8%	92.1%	91.6%	92.8%
Friendship Valley	527	0	0	527	493	483	483	500	509	510	504	508	510	507	513
	Over (Under) State Rated Capacity				(34)	(44)	(44)	(27)	(18)	(17)	(23)	(19)	(17)	(20)	(14)
	Percent of STATE Capacity				93.5%	91.7%	91.7%	94.9%	96.6%	96.8%	95.6%	96.4%	96.8%	96.2%	97.3%
Mechanicsville	571	20	0	591	487	482	492	508	503	490	491	495	497	494	500
	Over (Under) State Rated Capacity				(104)	(109)	(99)	(83)	(88)	(101)	(100)	(96)	(94)	(97)	(91)
	Percent of STATE Capacity				82.4%	81.6%	83.2%	86.0%	85.1%	82.9%	83.1%	83.8%	84.1%	83.6%	84.6%

EDUCATIONAL FACILITIES MASTER PLAN (EFMP)



Purpose of the Plan

The EFMP is a planning document that identifies the present and future facility needs of the school system. The Plan addresses the need to provide capacity for student enrollments, the need to maintain and repair existing school buildings, and the need to provide an adequate learning environment that meets the needs of the instructional program.

REDISTRICTING RECOMMENDATIONS

- **Form a Redistricting Committee to explore redistricting options in the Southeast Area to alleviate overcrowding at Freedom Elementary.**
- **Continue to monitor middle school enrollments in the Southern Area to determine if future capacity relief options should be evaluated.**

CAPITAL IMPROVEMENT PROGRAM (CIP) REQUEST



PURPOSE OF CIP

- **The school system's capital budget funds the construction of new school facilities, the construction of additions, the renovation of existing schools, and the replacement of major building systems. The funding is provided by the State and County governments.**