

IV. Enrollment Projections and Facility Needs Analysis

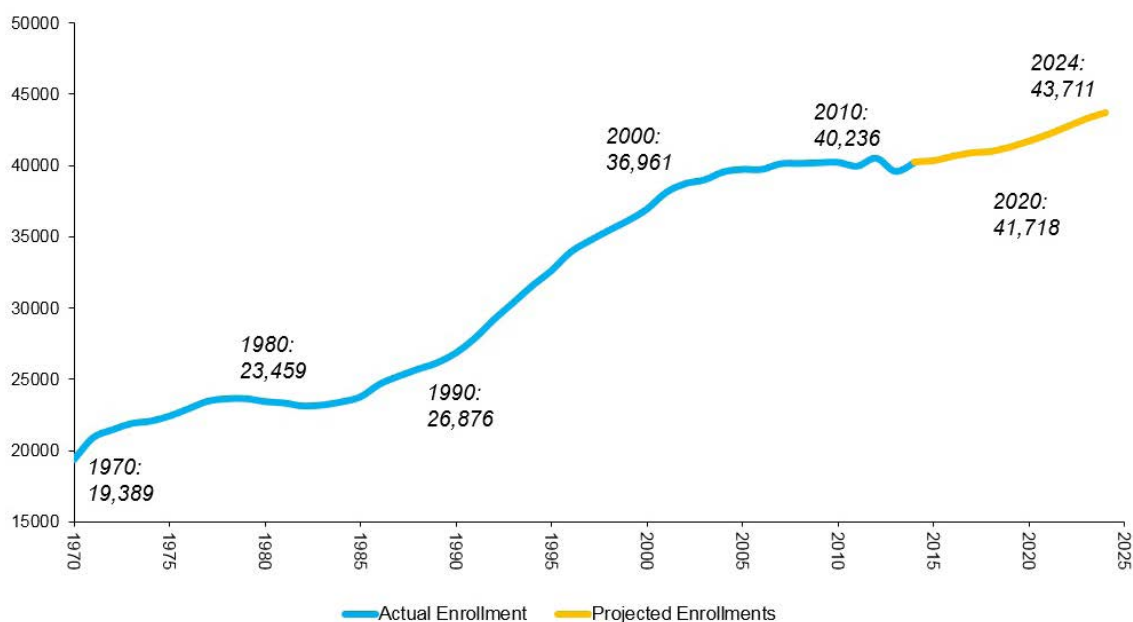
FCPS anticipates future facility needs by reviewing projected enrollment growth and the need for scheduled major maintenance or renovation and repair of existing buildings. Facility needs are also affected by changes in the instructional program. These changes can be initiated locally or mandated by the state. Identifying future facility needs is a central purpose of this Master Plan.

SYSTEM-WIDE ENROLLMENT PROJECTIONS

Historic Enrollments

FCPS experienced the greatest rate of enrollment growth in the 1990's; enrollment increased by 10,086 students, as shown in [Figure 4A](#) below. In the next decade, enrollment increased by 3,275 students. A much smaller increase of almost 1,500 students is anticipated between 2010 and 2020.

Figure 4A: Total Equated Enrollments 1970-2024



Projected Enrollments

FCPS enrollments are expected to increase as the county's general population increases. System-wide enrollment projections, developed with information provided by the Maryland Department of Planning, were approved in April 2015. These projections anticipate a total increase (including pre-K students) of approximately 3,500 students between September 2014 and September 2024.

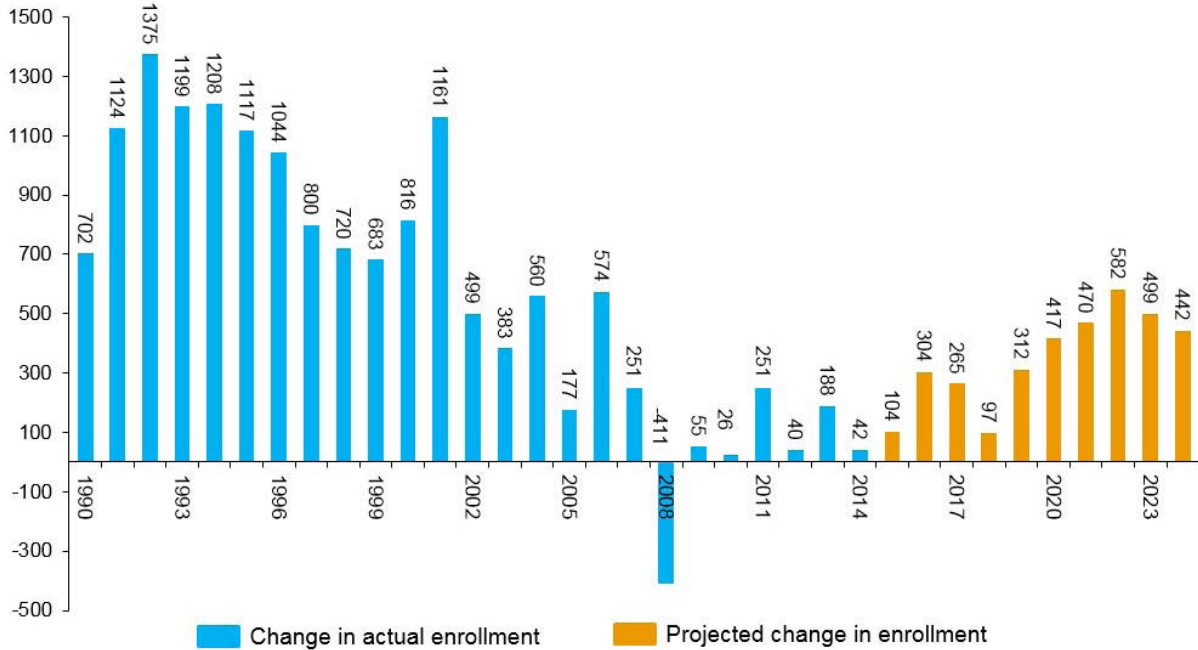
These 10-year projections utilize a "cohort survival method" (a cohort is the total number of students in a particular grade level). This method has three components:

1. Analyze the historical cohort progression from grade to grade. Future cohort progression is then determined based upon historical trends, land development/housing patterns, and pupil-yield trends.

2. Base kindergarten projections on ratios of kindergarten to births 5 years prior based on data supplied by the Maryland Department of Planning.
3. Determine the countywide preK-12 total projected enrollment for any year by totaling each grade's projected enrollment for all schools.

During the next ten years, enrollment rates are projected to fluctuate as shown in [Figure 4B](#) below. During the first half of this period, enrollment increases are anticipated to average about 216 students annually; average annual increases during the second half are expected to be approximately 482 students.

Figure 4B: Annual Enrollment Increase - 1990 to 2024



The projected increase in the rate of enrollment growth after 2016 is primarily a consequence of an increase in births in the late 1980s. People born then are now forming families and having children. Consequently, elementary school enrollment is expected to be impacted first. Of the projected 3,491 student increase between 2014 and 2024, 1807 students will be at the elementary level, as shown in [Figure 4C](#) below.

Figure 4C: Enrollment Growth by School Level - 2014 to 2024

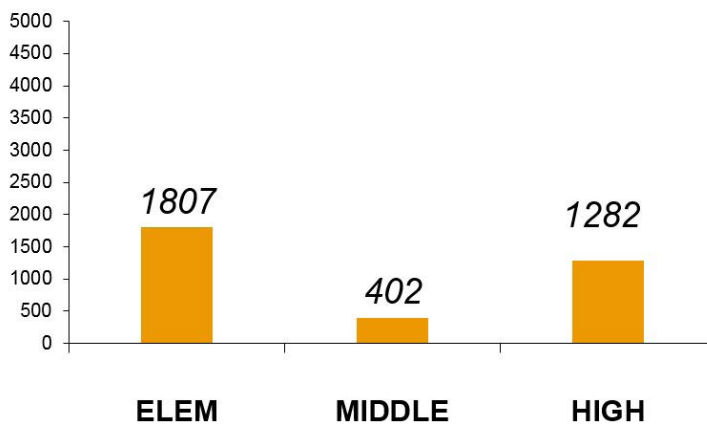


Table 4A: FCPS Equated Enrollment Projections
(Includes projects with construction funding approved)

Elementary School	State Rated Capacity	Actual		Projected									
		2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	
1 Ballenger Creek Elementary	663	647	655	670	677	680	676	686	694	709	727	745	
2 Brunswick Elementary	611	609	623	607	618	595	600	611	601	620	635	653	
3 Carroll Creek Montessori (1)	210	184	194	210	210	210	210	210	210	210	210	210	
4 Carroll Manor Elementary	618	554	544	535	537	532	530	536	543	553	566	588	
5 Centerville Elementary	675	993	1,023	1,055	1,015	1,010	1,019	999	1,012	1,025	1,046	1,088	
6 Deer Crossing Elementary	587	709	730	751	764	740	735	729	735	744	763	790	
7 Emmitsburg Elementary	316	290	291	303	313	317	312	314	319	318	325	339	
8 Frederick Classical (2)	255	240	240	255	255	255	255	255	255	255	255	255	
9 Glade Elementary	638	606	611	602	589	570	557	565	580	591	613	628	
10 Green Valley Elementary	504	383	379	380	388	395	400	407	415	418	435	441	
11 Hillcrest Elementary	670	920	968	1,001	1,015	988	1,001	1,005	1,021	1,036	1,060	1,118	
12 Kemptown Elementary	435	358	332	330	315	298	318	320	325	337	362	376	
13 Lewistown Elementary	242	178	168	155	147	146	150	158	162	165	170	179	
14 Liberty Elementary	364	294	293	299	296	288	282	295	301	307	317	328	
15 Lincoln Elementary	633	510	516	529	530	526	528	530	542	554	571	595	
16 Middletown Elementary	526	445	412	405	417	424	429	409	408	410	425	435	
17 Middletown Primary	482	422	433	434	408	408	409	421	433	452	459	461	
18 Monocacy Elementary	567	571	592	594	590	575	567	574	580	590	611	642	
19 Monocacy Valley Montessori	200	205	204	200	198	199	199	213	200	193	193	200	
20 Myersville Elementary	458	358	342	340	339	338	339	345	352	365	368	370	
21 New Market Elementary	659	698	656	647	605	579	572	582	601	613	630	652	
22 New Midway/Woodsboro Elementary	340	313	303	297	292	294	290	306	309	316	320	329	
23 North Frederick Elementary	679	566	565	567	555	545	544	543	550	560	579	590	
24 Oakdale Elementary	692	586	576	563	546	545	544	557	580	592	616	628	
25 Orchard Grove Elementary	639	590	583	569	564	567	560	564	580	598	617	626	
26 Parkway Elementary	248	226	207	209	203	182	180	199	206	212	216	223	
27 Sabillasville Elementary	160	114	106	102	101	100	96	112	116	116	117	122	
28 Spring Ridge Elementary	577	437	455	470	481	479	467	478	484	498	510	528	
29 Thurmont Elementary	483	302	322	304	317	312	310	313	315	328	329	340	
30 Thurmont Primary	528	351	337	345	340	338	335	353	360	370	389	404	
31 Tuscarora Elementary	662	784	786	775	759	739	729	745	760	777	803	826	
32 Twin Ridge Elementary	674	494	499	463	462	457	451	452	463	476	483	501	
33 Urbana Elementary	511	685	707	715	725	721	728	730	748	760	785	811	
34 Valley Elementary	504	386	379	370	361	365	368	376	383	400	415	430	
35 Walkersville Elementary	662	678	666	655	638	640	638	643	659	674	694	714	
36 Waverley Elementary	416	575	621	660	684	690	682	690	701	722	740	760	
37 Whittier Elementary	671	741	724	743	741	732	725	738	748	773	793	814	
38 Wolfsville Elementary	226	166	158	163	167	172	169	170	172	176	190	193	
39 Yellow Springs Elementary	456	468	465	461	462	450	448	458	469	482	491	511	
ELEMENTARY SCHOOL TOTAL	19,441	18,636	18,665	18,733	18,624	18,401	18,352	18,591	18,892	19,295	19,828	20,443	
TOTAL PERCENT OF CAPACITY		96%	96%	96%	96%	95%	94%	96%	97%	99%	102%	105%	

Elementary enrollments are equated for half day Pre-K programs

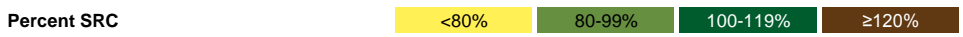
(1) Carroll Creek Montessori Public Charter School opened in August 2012 with grades preK through 4. Additional classes added each year until full enrollment in 2018.

(2) Frederick Classical School opened in August 2013 with grades K-5. Additional classes added each year until full enrollment in August 2019.

Percent SRC



	Current SRC	Actual					Projected					
		2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Middle School												
40 Ballenger Creek Middle	870	726	730	780	824	840	795	795	792	788	776	800
41 Brunswick Middle	884	553	552	595	590	620	591	593	578	589	587	567
42 Carroll Creek Montessori (1)	90	0	30	40	70	80	90	90	90	90	90	90
43 Crestwood Middle	600	539	528	540	566	587	609	593	581	569	572	575
44 Frederick Classical (2)	120	75	120	120	120	120	120	120	120	120	120	120
45 Gov. Thomas Johnson Middle	900	549	521	523	490	502	520	510	507	512	516	496
46 Middletown Middle	914	786	800	811	794	734	728	730	745	763	734	721
47 Monocacy Middle	860	779	754	789	815	892	940	955	954	931	938	916
48 Monocacy Valley Montessori	70	81	80	76	76	76	72	70	69	69	69	69
49 New Market Middle	881	507	502	510	512	521	523	489	460	459	446	444
50 Oakdale Middle	600	643	649	661	696	726	765	770	771	752	754	738
51 Thurmont Middle	900	583	545	537	509	520	504	507	506	504	519	514
52 Urbana Middle	900	798	799	820	900	948	975	966	969	974	975	959
53 Walkersville Middle	1051	771	803	815	845	851	847	800	783	765	775	769
54 West Frederick Middle	955	858	894	865	904	1,000	1,074	1,073	1,025	1,013	1,025	1,002
55 Windsor Knolls Middle	924	770	758	750	720	698	684	663	660	649	649	640
MIDDLE SCHOOL TOTAL	11,519	9,018	9,065	9,232	9,431	9,715	9,837	9,724	9,610	9,547	9,545	9,420
TOTAL PERCENT OF CAPACITY		80%	79%	80%	82%	84%	85%	84%	83%	83%	83%	82%



	Current SRC	Actual					Projected					
		2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
High School												
56 Brunswick High	893	701	727	731	782	783	831	850	886	895	870	873
57 Catocin High	1135	911	870	839	817	765	780	760	756	750	751	733
58 Frederick High	1603	1,393	1,375	1,475	1,511	1,496	1,533	1,572	1,705	1,771	1,811	1,806
59 Gov Thomas Johnson High	2091	1,436	1,439	1,429	1,466	1,477	1,493	1,524	1,586	1,630	1,654	1,666
60 Linganore High	1635	1,438	1,427	1,375	1,362	1,352	1,322	1,354	1,323	1,285	1,253	1,207
61 Middletown High	1169	1,159	1,130	1,083	1,096	1,078	1,077	1,088	1,054	1,030	1,022	1,003
62 Oakdale High	1531	1,201	1,223	1,288	1,328	1,390	1,431	1,461	1,491	1,528	1,571	1,596
63 Tuscarora High	1606	1,474	1,512	1,506	1,539	1,569	1,614	1,666	1,712	1,779	1,751	1,730
64 Urbana High	1636	1,578	1,628	1,679	1,705	1,722	1,755	1,780	1,834	1,910	1,934	1,979
65 Walkersville High	1197	1,070	1,057	1,052	1,026	1,036	1,071	1,143	1,134	1,145	1,074	1,050
HIGH SCHOOL TOTAL	14,496	12,361	12,388	12,457	12,632	12,668	12,907	13,198	13,481	13,723	13,691	13,643
TOTAL PERCENT OF CAPACITY		85%	85%	86%	86%	86%	88%	90%	92%	93%	93%	93%



Other:

(Rock Creek, Heather Ridge, Virtual School, SUCCESS)	390	204	205	205	205	205	205	205	205	205	205	205
TOTAL EQUATED	45,846	40,219	40,323	40,627	40,892	40,989	41,301	41,718	42,188	42,770	43,269	43,711
TOTAL PERCENT OF CAPACITY		88%	88%	89%	89%	89%	90%	91%	92%	93%	94%	95%

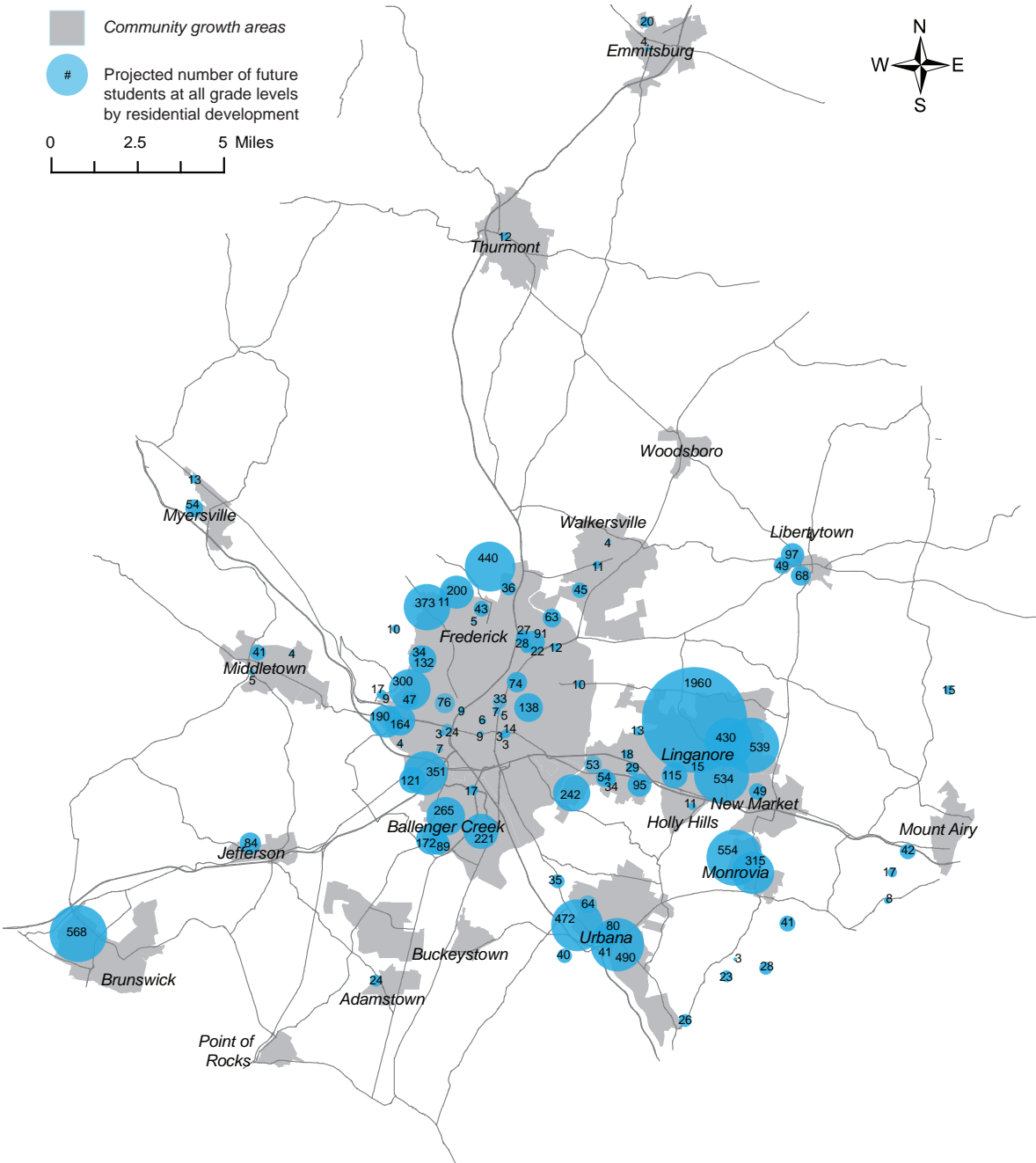
Source: Frederick County Public Schools, Facilities Services Division; July 2015

GEOGRAPHIC LOCATIONS OF ENROLLMENT GROWTH

Although enrollment growth is expected to increase system-wide in the next decade, this growth will be widely distributed. Enrollment growth will be influenced by the location of major residential development activity. In order to determine where such development may occur, FCPS continually monitors county and municipal plans.

The data and maps indicate that most major residential developments now planned or under construction are located either in the Frederick City area, the Urbana/Monrovia area along the I-270 corridor, or in the I-70 corridor east of Frederick City. [Figure 4D](#) shows the number of additional students projected to enroll in FCPS by the time approved developments are built out (up to 25 years in some cases). [Appendix J](#) contains a list of ongoing residential developments by feeder pattern.

Figure 4D: Projected Enrollment Growth by Residential Development



Outside the major growth areas, smaller (but not insignificant) areas of residential development can be found within several incorporated municipalities. For example, the Brunswick Crossing development located in Brunswick will include over 1,400 single family, townhouse, and multifamily units. The rate of new housing construction growth will be a function of sales and municipal policies.

School facilities in the Urbana area are at or near capacity, as are several other facilities in the Frederick City and I-70 corridor, especially elementary schools. FCPS has identified the need for new facilities and additions to existing facilities to address these areas. We will continue to monitor the rate and location of future development.

The question of when approved new developments will begin construction is a subject of speculation. This is a particularly speculative question in the current economic climate. The enrollment projections included in this plan anticipate that housing development over the next 5 years will continue at the slow to moderate pace of the last several years. Development is then expected to increase during the latter half of the ten year period.

SYSTEM-WIDE NEW SCHOOL CAPACITY NEEDS

Based on projected enrollment increases, FCPS will need to continue to pursue a program of school construction especially at the elementary level, either by building new schools or adding to existing schools. This choice is discussed more in Chapter V.

This Educational Facilities Master Plan includes recommendations to reduce the number of overcrowded schools in Frederick County. For the 2014-15 school year, 18 schools were at or over 100% of capacity. This is unacceptable. Overcrowded schools impact students, teachers, and administrators in the following ways:

- Limit time available for specials classrooms, including computer labs, art rooms, and physical education facilities.
- Provide inadequate space for special programs (reading, hearing, speech, etc.) and inadequate space for administrative offices (guidance offices, health facilities, special education, etc.).
- Require too many lunch shifts in overcrowded cafeterias throughout the day.
- Result in inadequate media center facilities and limit the time available for media center instruction (at the elementary level) and research (at all levels).

Congested hallways, cafeterias, and restrooms, and competition for instructional program space and student activities also create stress for students and teachers. Moreover, overcrowded schools lack the flexibility to respond to new instructional program initiatives that would benefit students. Due to their level of use, overcrowded buildings are also more difficult to maintain.

Finally, overcrowded schools create a dependency on portable classrooms to provide adequate instructional space. While portables are effective in the short term, they are not comparable to appropriate space within the school building. During the 2014-15 school year, 183 portable classrooms were in use at 28 schools to address capacity issues. In 2015-2016, these accommodations will be 175 portables at 28 schools.

INSTRUCTIONAL PROGRAM NEEDS ANALYSIS

In addition to growth in enrollments generally, schools must continue to respond to changes in instructional programs offered by FCPS. These changes in instruction are the result of state requirements or of local initiatives. In either case, schools exist to serve students. Therefore, they must be designed or retrofitted for new instructional purposes. There have been several recent changes in instructional programming that affect facilities:

Pre-Kindergarten Program: FCPS’ pre-kindergarten program serves 4-year-old children. Currently, pre-K enrollment is based on criteria including eligibility for free or reduced-price meals or factors that increase a child’s risk of not being successful in school. Twenty-six elementary schools (including charter schools) have pre-K programs (including special education pre-kindergarten). While the pre-K program is half-day, it impacts school facilities by reducing K-5 capacity. Over the last 5 years, the number of pre-K students increased by 21%. FCPS must evaluate the need for pre-K services as we prepare the educational specifications for new schools.

Special Education: Special Education has gone through a transition over the years. Today, special education students can attend either the local community school or a specialized facility such as Rock Creek. Elementary, middle, and high schools need to adapt by providing appropriate staff and improving facilities to serve children with various physical and other disabilities. To meet this need, FCPS offers a variety of programs ranging from occasional assistance to fulltime intensive programs. [Appendix W](#) provides a more detailed description of FCPS special education programs. As special education programs are located within schools, other capacity is reduced.

Recreation: Use of schools as Community Recreation Centers is part of our culture in Frederick County, supported by Board of Education policy. There are 10 schools with Community Recreation Centers. Growth in county population has, however, bolstered the need to better coordinate school system program needs and the needs of county and municipal recreation providers. Joint use agreements have been approved recently; the use of these agreements will continue to be considered.

FACILITY NEEDS ANALYSIS

Modernization

Reducing the number of overcrowded schools is a key goal of the Board of Education. Another goal, however, is the improvement of the physical plant and instructional settings of existing schools across the system. Given that we operate 41 buildings that are, in whole or part, 25 or more years old, we must balance the need for renovations with the need to add capacity. Modernization of older schools was a lower priority during the 1990s when FCPS was working to respond to significant school overcrowding. If enrollment growth remains manageable over the next several years, FCPS can focus more heavily on addressing the needs of older schools.

The establishment of a modernization program for older Frederick County schools is consistent with both county and state goals for improving the physical condition of older buildings and thereby improving the instructional setting for our students.



“Modernization” refers to “the design, construction and equipping process through which an aging school facility is brought up to current educational standards and through which its systems are renewed and updated to meet school system, county, state and federal codes and requirements. Modernizations may be accompanied by additions or redesign of existing spaces to meet educational program requirements.”

In the past, FCPS did not have the opportunity to modernize existing schools as resources were spent on meeting capacity needs. In general, during the growth years of the 1990s, improvements to older schools took the form of “systemic renovation” projects. That is, buildings received spot improvements as state and county funding became available. FCPS maintains an up-to-date inventory of the condition of specific building systems at all schools. These systems include roofs, boilers, flooring, HVAC systems, parking and pavement systems, etc. Individual systems were improved in each building as needed and as funding permitted. Typically, FCPS did not comprehensively evaluate an entire building or its systems as part of this process.

In the late 1990s, FCPS changed its traditional approach for projects at Catoclin High, Governor Thomas Johnson High, Thurmont Middle, and Wolfsville Elementary. Catoclin, Thurmont, and Wolfsville were scheduled for additions during this time. Since these additions had already been scheduled, FCPS, the Board of Education, and County Commissioners decided to move ahead with improvements to the older parts of the buildings as well. The state supported these additional renovations by allocating renovation funds.

In 1999-2000, FCPS undertook two assessments of individual schools as part of the School Modernization Project. First, we assessed the schools’ physical condition. We then did a functional assessment of the instructional quality of the building. The assessments were separately prepared and combined for a total evaluation. The analysis and evaluation of the individual buildings was a joint effort between the FCPS Operations Division and the Curriculum and School Instructional staff.

We updated the assessment study for secondary schools in May 2011 and for elementary schools in August 2012. This update examined schools that were older than 20 years.

The scores of the assessments are found in [Table 4B](#). The two elementary schools with the lowest scores (and, therefore, the schools ranked highest in need of renovation), were North Frederick and Urbana elementary schools. The North Frederick ES replacement opened in the fall of 2014. A feasibility study for the renovation of Urbana ES concluded in Fall 2014 with the recommendation that the school building be replaced. FCPS will proceed with design and construction contingent on funding, with the new building expected to open in August 2020. The next elementary school in need of renovation is Liberty Elementary. A feasibility study for the renovation of Liberty is scheduled for Fiscal Year (FY) 2017.

At the secondary level, Frederick High School and Middletown Middle School are identified as the next schools most in need of a renovation. Construction of the new Frederick High began in the spring of 2015 and the building will open in August 2017. A feasibility study for the modernization of Middletown Middle is scheduled for FY 2018 with design to begin in FY 2020.

Table 4B: Facility Assessment Combined by Level

ELEMENTARY SCHOOLS August 2012 (updated 2015)		PHYSICAL ASSESSMENT SCORE 1000	FUNCTIONAL ASSESSMENT SCORE 1000	TOTAL SCORE 2000
1	NORTH FRED ELEM	Completed August 2014		
2	URBANA ELEM	Feasibility Study Complete		
3	LIBERTY ELEM	307	396	703
4	VALLEY ELEM	302	438	740
5	WAVERLEY ELEM	345	420	765
6	NEW MIDWAY ELEM	436	412	848
7	YELLOW SPRINGS ELEM	317	556	873
8	LEWISTOWN ELEM	397	501	898
9	SABILLASVILLE ELEM	550	477	1027
10	THURMONT ELEM	464	570	1034
11	BRUNSWICK ELEM	426	636	1062
12	EMMITSBURG ELEM	451	631	1082
13	WOODSBORO ELEM	517	601	1118
14	PARKWAY ELEM	591	556	1147
15	GREEN VALLEY ELEM	472	679	1151
16	MIDDLETOWN ELEM	424	736	1160
17	MYERSVILLE ELEM	463	698	1161
18	KEMPTOWN ELEM	464	781	1245
19	WOLFVILLE ELEM	651	612	1263
20	NEW MARKET ELEM	651	734	1385
21	HILLCREST ELEM	535	876	1411
22	MONOCACY ELEM	507	942	1449
23	CARROLL MANOR ELEM	825	803	1628
24	WALKERSVILLE ELEM	776	870	1646

MIDDLE SCHOOLS May 2011		PHYSICAL ASSESSMENT SCORE 1000	FUNCTIONAL ASSESSMENT SCORE 1000	TOTAL SCORE 2000
1	MIDDLETOWN MIDDLE	462	535	997
2	WALKERSVILLE MIDDLE	490	602	1092
3	MONOCACY MIDDLE	602	537	1139
4	NEW MARKET MIDDLE	567	638	1205
5	BALLENGER CR MIDDLE	533	682	1215
6	BRUNSWICK MIDDLE	697	710	1407

HIGH SCHOOLS May 2011		PHYSICAL ASSESSMENT SCORE 1000	FUNCTIONAL ASSESSMENT SCORE 1000	TOTAL SCORE 2000
1	FREDERICK HIGH	Under Construction		
2	MIDDLETOWN HIGH	401	536	937
3	BRUNSWICK HIGH	541	473	1014
4	WALKERSVILLE HIGH	610	492	1102

MAINTENANCE

When not scheduled for modernization, older buildings require ongoing care to maintain major building systems (HVAC, roofs, plumbing, floor and wall finishes, etc.). Ongoing maintenance was the subject of the Frederick County Maintenance Management System adopted in 1990 by the Board of Education. FCPS has since implemented this plan.

Ongoing maintenance does not, however, eliminate the need for upgrading or renovating major systems in older buildings. While ongoing maintenance may extend the life of building systems, boilers, roofs, flooring, doors and windows eventually need replacement and parking areas, tracks, and tennis courts eventually need resurfacing. FCPS must factor these projects into future school system capital budgets.

In 2012, FCPS completed an overview of the systemic renovation needs of all FCPS facilities. We undertook this study to determine the annual funding needed in the capital budget to keep up with ongoing building systems replacement and repair needs. We considered three approaches to estimating needs:

1. The percentage of the current replacement value of the entire facilities portfolio.
2. A sustainment model, such as that used by government agencies to track backlog maintenance and repair projects (BMAR)
3. The total cost of deferred maintenance and repair projects.

The study showed that FCPS has \$26 million in deferred maintenance projects (backlog of maintenance and repair, BMAR). In order to start to reduce the projects on this list and keep up with current and future projects, FCPS would ideally allocate an average of \$7 million annually in the capital budget (from a combination of state and local funding). Prior to FY 2013, approximately \$2.8 million had been allocated annually from these sources. Since FY 2013, approximately \$5 million has been allocated annually.

SUMMARY OF FUTURE FACILITY NEEDS

According to projections, FCPS must accommodate approximately 3,500 new students between 2014 and 2024. Since many schools are at or near capacity, accommodating growth will require additional facilities. With completion of recent middle and high school projects, combined with projected demographic changes, the greatest need will be at the elementary level. The areas in most need of new capacity will be Frederick City, Urbana, and the I-70 corridor in and around New Market and Lake Linganore. The next chapter discusses our criteria for selecting and prioritizing new projects.

There will continue to be more (and more expensive) ongoing maintenance and building renovation projects in the future. We operate 41 buildings that are, in whole or part, 25 or more years old. The major building systems at these schools are approaching or exceeding their normal life expectancies. Therefore, FCPS must factor the upgrading or renovation of these buildings into future capital budgets. Deferral of maintenance and renovation will only result in more costly projects in the future.