

# APPENDIX

## A



Report on Physical and Functional Assessment  
of Schools Constructed Prior to 1980

“Building the Future”

March 2008

School Facilities

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## **Introduction**

The desire to develop a process for prioritization of modernization projects has been a topic of discussion for some years with the Board of Education of Carroll County Public Schools. In March 2006, funds were made available to perform a physical assessment of all schools and utilize the data in a web based software application that, in addition to numerous other functions, provides a method of comparing and ranking modernization needs.

In March, 2007 the Board of Education indicated a desire to understand how the functional aspects of the facilities could be combined with the physical assessment to provide a comprehensive picture of a building's condition. The intended outcome is to provide as complete a picture of the condition of a building and compare that condition with the other buildings in the system inventory.

## **Definition**

An appropriate definition of modernization is “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.”

It must be understood that building condition is dynamic in nature and reflect many years of renovations, additions, space creation and alteration, equipment and systems replacement upgrades and maintenance projects. Both Physical and functional assessments must take this into account as data is gathered.

## **Study Methodology**

### **Physical Assessment**

As part of a strategic planning initiative, in June 2006, a contract to perform a physical assessment of forty one CCPS facilities was awarded to EMG of Hunt Valley. The scope provided to EMG included the following as it pertains to modernization prioritization:

- Identify the extent and severity of the deferred maintenance liability.
- Develop correction methods and estimated costs for deficient conditions.
- Prioritize and schedule projects to efficiently and economically dispatch corrections of singular or multiple requirements.
- Obtain a Facility Condition Index (FCI) that will illustrate the relative condition of facilities and infrastructure in the portfolio.

- Identify what is necessary to adapt the selected facilities and infrastructure to meet the planned future requirements of the institution, the requirements of today's standards and codes, and the needs of changing technology as it impacts space (i.e., plant adaptation).

The facility conditions survey included the following property elements:

- Exterior Systems – roofs, walls, window systems, doors, canopies
- Interior Construction – walls, doors, flooring, visible structural components
- Interior Finishes: Flooring, ceiling, wall finishes
- Health/Fire/Life Safety systems
- Accessibility issues
- Heating, Ventilation and Air Conditioning
- Plumbing
- Electrical and Service Distribution
- Fire Suppression
- Special Electrical Systems, Emergency Power, Telecommunications
- Security and Surveillance Systems
- Lighting Systems
- Special Construction
- Vertical Transportation
- Infrastructure/site utilities – chilled water, electric distribution systems, sewer, storm drainage, sidewalks, roads, plazas, landscaping
- Site amenities – site access from public thoroughfares, traffic patterns and signage, playfields, playgrounds

Calculation of the Facilities Condition Index (FCI) is defined as the value of the identified deficient items in the school divided by the replacement cost of the school; the larger the FCI, the greater the need for modernization. For the purposes of this report the inverse of the fractional FCI is multiplied by 1000 maximum points for each school to provide the physical assessment points to be combined with the functional points.

#### Functional Assessment – Instructional and Administrative Staff

In March 2007 the Board of Education directed that a functional assessment of the school system be conducted. The purpose was to combine the physical assessment with the results of the functional assessment to obtain a clearer picture of the overall condition of the system facilities. The criteria utilized for the functional assessment was developed after reviewing the criteria utilized in the *Guide for School Facility Appraisal, 1998 Edition, The Council of Educational Facilities Planners, Int'l*, a similar assessment conducted by Frederick County Public Schools in 2000 and the criteria the State of Maryland Public School Construction Program used to conduct a Minimum Educational Adequacy survey in 2003. These documents may be referenced in appendix A, B & C respectively.

The criteria utilized for this study is attached as Appendix D. Each school type was assigned a theoretical maximum value of 1000 points distributed over the assessed areas. Weighted values were provided after discussion with the instructional leaders.

The survey was conducted by the instructional area supervisors except for areas it was determined input from the administrative staff was more appropriate. A survey tool called CheckBox was assembled by Technology Services staff and the survey results were assigned values ranging from zero as the lowest score and five the highest. The results from each criteria group were averaged and that average determined the actual points assigned an area. The total points were then combined with the physical assessment points to achieve the modernization prioritization.

It was determined that schools constructed or modernized after 1980 would not be assessed as a part of this evaluation so the schools under consideration could receive the appropriate amount of attention to provide as accurate an assessment as possible. Since the Career & Technology Center recently had a complete facilities assessment performed in 2006 it was determined that it would not be a part of this study.

The schools assessed are noted in Table 1.

Table 1 – Schools Assessed

Name	Type	Year of Original Construction or Modernization	Size
Charles Carroll	Elem	1929	43,700
Freedom	Elem	1955	51,232
Westminster West	Middle	1958	135,733
Mt. Airy	Middle	1958	75,800
William Winchester	Elem	1962	54,947
South Carroll	High	1967	269,870
Westminster	High	1970	337,050
Eldersburg	Elem	1970	72,313
Westminster East	Middle	M1975	120,400
Westminster	Elem	1976	74,637
Robert Moton	Elem	1976	75,200
Northwest	Middle	1976	113,600
North Carroll	High	1976	233,400
Carrolltowne	Elem	1976	87,654

## Findings

The results of the assessments are shown in the attached tables. Table 2 provides the total scores by school for the physical and functional assessments as well as the combined score. Tables 3, 4 & 5 provide the area functional assessment scores by building type. The Replacement Reserve Reports that detail the deficient items at each school that make up the FCI are located in Appendix E.

Based on the total scores, Charles Carroll Elementary School is the school most in need of modernization. This is not a surprise in that Charles Carroll is the oldest school in the county and has many deficiencies associated with resource space and site conditions.

William Winchester Elementary received the second lowest behind Charles Carroll. The low functional assessment score for William Winchester is due primarily to the fact that it was originally constructed as an annex and not designed to operate as a stand alone facility.

The close scoring of the physical assessment was not a surprise as the overall condition of CCPS facilities has received consistently high ranking and praise whenever evaluations have been conducted.

Table 2 – Physical, Functional and Total Assessment Scores

School	Physical Assessment Score Max. 1000	Functional Assessment Score Max. 1000	Total Score Max. 2000
Charles Carroll	958	462	1420
William Winchester	964	495	1459
Mt. Airy MS	906	569	1475
Westminster East	952	579	1531
Westminster West	979	578	1557
Freedom	975	597	1572
Westminster HS	940	654	1594
South Carroll	980	630	1610
Robert Moton	995	634	1629
Northwest	969	694	1663
Eldersburg	974	699	1673
Westminster ES	971	735	1706
Carrolltowne	987	738	1725
North Carroll	988	739	1727

Table 3 – Elementary Assessment Scores by Area

School	<b>School Summary</b>								
	General Area Score	A&SS Score <sup>1</sup>	General Classroom Score	PreK/K	Visual Arts	Music	Media Center	Phys Ed	Food Services
Carrolltowne	64	122	135	73	57	50	81	100	56
Robert Moton	48	84	120	59	57	57	64	104	42
Westminster William	50	141	126	87	46	62	64	104	56
Winchester	42	34	132	71	32	41	43	71	28
Freedom	48	38	129	59	37	43	110	78	56
Charles Carroll	39	38	111	60	57	2	52	74	28
Eldersburg	53	103	120	100	50	53	95	97	28
Average	49	80	125	73	48	44	73	90	42
Maximum Score	70	190	150	100	80	80	130	130	70
Avg %	70%	42%	83%	73%	60%	55%	56%	69%	60%

**Overall Scores**

School	Overall Score	Total Possible	% of possible
Carrolltowne	738	1000	74%
Robert Moton	634	1000	63%
Westminster William	735	1000	74%
Winchester	495	1000	49%
Freedom	597	1000	60%
Charles Carroll	462	1000	46%
Eldersburg	699	1000	70%

- Administrative and Support Services

Table 4 – Middle School Scores by Area

School	General Area	A&SS Score <sup>1</sup>	General Classroom Score	School Summary				Media Center	Phys Ed	FCS&TE <sup>3</sup>	Food Services
				Science	Visual Arts	Music	TAD <sup>2</sup>				
East Middle	39	122	99	56	38	21	0	26	93	44	42
Mount Airy Middle	50	95	86	44	39	34	2	69	93	43	14
Northwest Middle	56	144	99	50	36	33	2	61	104	54	56
West Middle	48	49	107	36	41	31	2	104	100	18	42
Average	48	103	98	46	39	30	1	65	98	40	39
Maximum Score	70	190	130	60	60	60	40	130	130	60	70
Avg %	69%	54%	75%	77%	64%	49%	4%	50%	75%	67%	55%

**Overall Scores**

School	Overall Score	Total Possible	% of possible
East Middle	579	1000	58%
Mount Airy Middle	569	1000	57%
Northwest Middle	694	1000	69%
West Middle	578	1000	58%

1. Administrative and Support Services
2. Theater and Dance
3. Family and Consumer Sciences and Technology Education

Table 5 – High School Scores by Area

School	General Area	A&SS Score <sup>1</sup>	General Classroom Score	School Summary							Phys Ed	F&C S <sup>3</sup>	Agri. Sci. <sup>4</sup>	Business Ed	Tech Ed	Food Serv.
				Sci	Visual Arts	Music	TAD <sup>2</sup>	Media Center								
North Carroll High	53	141	88	38	42	52	9	106	97	13	14	18	13	56		
South Carroll High	56	103	70	50	36	27	2	97	93	8	7	15	11	56		
Westminster High	50	144	79	48	44	37	14	38	97	11	11	15	10	56		
Average	53	129	79	45	41	39	8	80	95	11	11	16	11	56		
Maximum Score	70	190	110	60	60	60	40	130	130	20	20	20	20	70		
Avg %	76%	68%	72%	75%	68%	64%	20%	62%	73%	53%	53%	80%	57%	80%		

**Overall Scores**

School	Overall Score	Total Possible	% of possible
North Carroll High	739	1000	74%
South Carroll High	630	1000	63%
Westminster High	654	1000	65%

1. Administrative and Support Services
2. Theater and Dance
3. Family and Consumer Sciences
4. Agriscience

## Next Steps

This study represents the first time that Carroll County Public School has taken on the task of evaluating the physical and functional aspects of schools. In the past, the age and physical aspects of each school dictated when a building was scheduled to be modernized. This study represents a large step forward in evaluating facilities in a comprehensive manner with the goal of attaining a more objective way of assessing older school facilities. In order to continue to improve this process, input is sought from the Board of Education, staff and the public.

As this study represents the first step in the evaluation and prioritization of modernization projects, it is recommended that this study begin by the Board of Education to consider what part capacity should play in modernization priority and how modernizations are to be prioritized with capacity projects. Based on projected lower enrollments over the next few years, an opportunity exists to address the highest priority modernization projects as represented by this study.

The assessment results will be utilized by the Facilities Department when developing the *2008-2017 Educational facilities Master Plan* and the *FY 2010-2016 Capital Improvement Plan*. Input from the Board of Education, staff and the public will be taken into consideration as the plans are developed.

Lastly, discussion needs to occur as to how this initial study is to be utilized in the development of future *Educational Facilities Master Plans*. For example the Facilities Condition Index (FCI) is expected to change each year as maintenance projects are deferred or completed. The functional scores could also change as programs are added or removed from schools. Depending on the evaluation schedule, these changes could result in changes to the modernization schedule potentially resulting in considerable public concern being expressed.

