

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



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 Summary**

School	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	50	141	126	87	46	62	64	104	56
William 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	735	1000	74%
William 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 Summary**

School	General Area	A&SS Score <sup>1</sup>	General Classroom Score	Science	Visual Arts	Music	TAD <sup>2</sup>	Media Center	Phys Ed	FCS&TE <sup>3</sup>	Food Services
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 Summary**

School	General Area	A&SS Score <sup>1</sup>	General Classroom Score	Sci	Visual Arts	Music	TAD <sup>2</sup>	Media Center	Phys Ed	F&C S <sup>3</sup>	Agri. Sci. <sup>4</sup>	Business Ed	Tech Ed	Food Serv.
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.

## APPENDIX A

Guide for School Facility Appraisal, 1998 Edition,  
The Council of Educational Facilities Planners, Int'l.

CEFPI has denied CCPS requests to copy the guide. A copy is available for review upon request.

## APPENDIX B

School Modernization Project, Assessment Report,  
Frederick County Public Schools, 2000

## **Frederick County Public Schools:**

### **School Modernization Study**

During the 1990's, student enrollment in the Frederick County Public School system increased substantially. Between 1990 and 1999, the school system grew from just over 26,000 students to over 36,000 students, an increase of 28%. This rapid increase in enrollment growth required a substantial commitment to design and construction of new schools and building addition projects in Frederick County. During the 1990's, Frederick County opened 10 new schools and constructed 9 major additions to existing schools across the system. These new schools have increased total square footage in the Frederick County building inventory. Even given this substantial construction program, the number of overcrowded schools increased from 11 in 1990 to 23 in 1999.

#### **Introduction**

Enrollment projections for the first decade of the next century indicate continued increases, however, at more moderate levels than that experienced during the 1990's. Anticipating this continued increase in enrollments, and due to past enrollment growth, the county has far to go in reducing the number of overcrowded schools across the system. For this reason, the County Commissioners and Board of Education have prepared an aggressive school construction program over the next five years which, if funded, will result in a reduction in school overcrowding compared to current conditions.

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 setting of the existing schools across the system. Modernization of older schools has, by necessity, taken a back seat during the 1990's to responding to school overcrowding concerns. If current plans for reducing school overcrowding are successful, then the timing is right to address the needs of older schools across the system.

The purpose of this report is to evaluate the current condition of FCPS' older schools and establish one measure for school modernization needs in the future. It will serve as a starting point for further discussion with school communities, county officials, and state funding authorities on this subject.

It is important to point out that the assessments associated with the schools listed in this report are not an assessment of the quality of education being received by students in any of these schools. The quality of education is determined by many factors of which the condition of the physical space is but one consideration. The assessments found in this report are intended primarily to be used as a tool for thinking about long-range needs of the school system with respect to its buildings. It is intended to establish a baseline for consideration of which schools should be included in a future *Educational Facilities Master Plan* for modernization. Priorities may need to be modified in the future based on special circumstances and in coordination with new school construction which is also planned to take place. How many schools are modernized, in what order they are modernized, and the timing of these modernizations will be the subject of the next step in this project.

#### **Frederick County Public School Goals:**

The purpose of this study is required by one of the major goals of the Frederick County Board of Education. Specifically, this goal states, "The FCPS will provide permanent seating capacity for our growing student population and will maintain our facilities in a manner that insures longevity."

In support of this goal the Board of Education has adopted several indicators to measure progress in this area. (See Appendix A: “FCPS Progress Report on Continuous Improvement.”)

The State of Maryland has also adopted policies that establish priorities for state funding of school construction projects. All projects for which state funding has been requested is evaluated on the basis of criteria established by the State Interagency Committee on School Construction (IAC). State priorities are an important consideration since state funds account for up to 65% of the cost of new school construction and renovation. In recent years, the criteria have been modified so that greater emphasis is given toward renovation funding for existing buildings versus construction of new schools. The shift in policy is consistent with state efforts to manage the physical development of the state. These efforts to channel state funds to existing developed areas of the state or planned development areas are known as “smart growth.” (A copy of the State IAC’s most recent list of funding priorities is found in Appendix B.)

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.

### **Definition of Modernization:**

For the purposes of this study, “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.”

Based on the above definition, modernization of an existing school is a process that has not been frequently undertaken by the FCPS. In general, during the 1990’s, improvements to older existing schools took the form of “systemic renovation” projects. That is, the Facilities Services Division maintains an up-to-date inventory of the condition of specific building systems at all schools. These systems include roofs, boilers, flooring, HV AC systems, parking and pavement systems and so on. Individual systems were improved in each building as needed and as funding permitted. In this way, buildings received spot improvements as funding became available from the county and state. Typically, a comprehensive evaluation of an entire building and all the building systems was not undertaken as part of this process.

In addition to systemic renovations, there has been substantial commitment by the FCPS in upgrading high school science labs and technology in the 1990’s. As part of the State’s “Technology in Maryland Schools” program, new computer networks and associated equipment has been installed for both administrative and instructional purposes. This effort has substantially improved instruction, research and information sharing between students, teachers and administrators. In the same way, the FCPS’ efforts to upgrade high school science labs as part of the State’s “Look of the Future” program have successfully improved instructional conditions. To date, all high schools have had most of their science labs upgraded to meet current local and state standards. In the case of technology and science labs, however, improvements have been made without reference to a comprehensive evaluation of total school’s modernization needs.

In the late 1990’s this traditional approach was modified in connection with the Thomas Johnson High School, Catoctin High School and the Thurmont Middle School projects. Both Catoctin HS and Thurmont MS were scheduled for new additions during this time. Since these additions had already been scheduled, the staff, Board of Education, and county commissioners decided to move

ahead with improvements to the older parts of the building as needed. The State of Maryland supported these additional renovations through the allocation of renovation funds. Thomas Johnson High represents a modernization project coordinated with the construction of the new Thomas Johnson Middle School project. Modernization of Thomas Johnson High, Catocin High and Thurmont Middle are examples of projects that need to be undertaken at other schools in the future.

Not all schools will need the same level of modernization. Detailed evaluation of each school is needed prior to moving forward with any particular school project. Such a detailed evaluation is not the purpose of this study. Rather, this study establishes benchmarks which will assist in determining which schools should undergo a detailed evaluation process.

### **Needs for Modernization:**

New buildings are generally constructed anticipating major building systems will operate effectively for only a certain number of years before requiring replacement. Industry standards for building systems vary depending upon the type of system and the specification of their original construction. Typically, boilers, roofs, HV AC systems, and the like are anticipated to have life spans of no more than 25 to 40 years. Careful preventive maintenance may extend the life of these systems; however, eventually the major building systems that serve the basic needs of the building occupants must be replaced. Currently, the FCPS operates 29 buildings that are, in whole or part, 25 or more years old. The oldest school building is the South Frederick Elementary “B” building, originally built in 1921. (An inventory of schools and the years the schools were built is included in Appendix C.)

Even with careful maintenance, outdated building systems can have an impact on the environment which teaching and learning takes place. According to the U.S. Department of Education, a number of studies have shown that the quality of facilities appears to be an important precondition to student learning, provided that other conditions are present that support a strong academic program in the school. A growing body of research has linked student achievement and behavior to the physical conditions of the building. Research cited by the U. S. Department of Education includes the following:

1. Lowe (1998) interviewed state teachers of the year to determine which aspects of the physical environment affected their teaching the most, and these teachers pointed to the availability and quality of classroom equipment and furnishings as well as ambient features such as climate control and acoustics as the most important environment factors. In particular, the teachers emphasized that the ability to control classroom temperature is crucial to the effective performance of both students and teachers.
2. Earthman (1995) in a study of North Dakota high schools, a state selected in part because of its relatively homogeneous rural population, also found a positive relationship between school condition (as measured by principal’s survey responses) and both student achievement and student behavior.
3. Corcoran, et al (1988) found that “where the problems with working conditions are serious enough to impinge on the work of teachers, they result in higher absenteeism, reduced levels of effort, and lower effectiveness in the classroom, low morale, and reduced job satisfaction. Where working conditions were good, they result in enthusiasm, high morale, cooperation, and acceptance of responsibility.”

A growing body of research is clearly demonstrating that working and teaching conditions have direct connections to student performance. While certainly other variables play major roles, up-to date equipment, an attractive setting, and control over environmental conditions must be included as important preconditions to helping students to reach their highest potentials. (References provided in connection with this subject are found in Appendix D.)

### **Study Methodology:**

Two separate assessments of individual schools took place as part of this study. The first was a physical assessment of the building. The second was a functional assessment of the building. The assessments were separately prepared and then combined for a total evaluation. The actual analysis and evaluation of the individual building was a joint effort between the FCPS' Facilities Services Division and the Curriculum and School Instructional staff at the elementary and secondary levels.

The study was initiated by the Facilities Services Division in cooperation with a staff-level committee which reviewed the general approach and evaluation process. Certain general rules applied to both the physical evaluation and instructional evaluation of the buildings which were part of this study. These are as follows:

1. Since the study was an evaluation of FCPS' older buildings which are in need of modernization, it was determined that no building which is less than 12 years old would be evaluated as part of this process. Therefore, schools which have opened since 1988 were not ranked at this time. This is not to suggest that these buildings do not need certain maintenance or other improvements, but it was judged they do not need building wide comprehensive evaluations which older schools may need.

The year 1988 was also selected because it represented the first year in the construction of a new generation of school buildings in Frederick County. 1988 marked the opening of Hillcrest Elementary School. Other than Brunswick Middle School (which opened in 1985) this school was the first school to open subsequent to the opening of Kemp town Elementary in 1981. The design of Hillcrest ES and schools that followed during the 1990's did not utilize the "open space" design of school construction which was very popular in the 1960's and 70's. In effect, Kemptown Elementary School, when it opened in 1981, represented the last of a generation of schools that had an open space concept as part of the design.

2. The project did not include the four "special" schools operated by Frederick County. These include Rock Creek, Heather Ridge, Career and Technology, and the Walkersville "B" building. It was determined not to include these buildings because the need for modernization at these facilities will be required primarily based on program needs specific to these individual schools. If modernization of these buildings is to be considered in the future, then special studies that examine both the program and physical plant needs should be undertaken.
3. The project assumed that modernization projects that are scheduled to begin in Fiscal Year 2000 have been accomplished. Specifically, the planned renovation to Thomas Johnson High School, as well as the planned addition/renovations to Catoctin High School, Thurmont Middle School, and Wolfsville Elementary School are assumed to have already occurred and; therefore, these schools are not included as part of this study.
4. The evaluation factored in the circumstance where some buildings have been built in phases at different years. Some buildings have been built in as many as three or four phases covering a span of 30 years. In the evaluation of the physical plant of these buildings, this difference in

age of different parts of the buildings has been factored into the evaluation process such that the final score represents a composite or weighted average for each building.

- The most recent educational specifications for our most recently designed elementary, middle and high schools were used as a reference point in judging the instructional needs of each school. It was the decision of the staff that in the assessment process, the best approach would be to assess the individual circumstances of all the schools as compared to the most recent specifications prepared for a new school. In connection with this modernization assessment, the educational specifications prepared with Oakdale Elementary School, Oakdale Middle School, and Central County High School were the reference points.

It is understood that both the physical condition of the building as well as the building's functional needs in part rest on the professional judgment of those doing the assessment. For the purposes of this study, a total of twenty-eight individuals either directly participated or coordinated the assessment of some aspect of each school.

### **Physical Assessment Evaluation Criteria:**

Resources did not permit comprehensive engineering and architectural inspections of every individual building over twelve years old as part of this project. However, the Facilities Services Division maintains a variety of data bases in which the current condition and age of individual building systems are tracked. The age of each individual building, along with information available in these data bases, served as the foundation for the physical assessment. Once a building is selected to be modernized, consultant architects and engineers will perform detailed studies of each building system in order to determine what needs to be replaced, what needs to be improved, or what is adequately serving and will continue to serve the physical needs of the structure.

The physical assessment of every building was based on a potential total score of 1000 points. A total often sub-categories were separately assessed. The Facilities Services Division determined the point value of each sub-category. A score of one thousand points represents a school that is "perfect" from a physical standpoint. This a theoretical maximum since.. in practical terms, every building over 12 years old has some need of improvement, even based on the more limited assessment process utilized as part of this study. The criteria evaluated and maximum associated point score is as follows:

- 1. Age of the building** (maximum 450 points) – The age of each building was divided into the total point score such that a building that was 40 or more years old was given "0" points and a building that was brand new was given a score of "450" points. In effect, 11 points were deducted from 450 for every year of the building's age. Thus, a building that is 20 years old had 220 points deducted from the theoretical maximum of 450 points. Where a building had been built in phases, a composite score was prepared based on the square footage of each section of the building and the years they were built. This composite score was then calculated against the theoretical potential score of 450 points. Data in age and square footage was as recorded in the 1999 FCPS *Educational Facilities Master Plan*.
- 2. Roof Systems** (maximum 100 points) – Since every individual school has more than one roof, a composite score was developed based on the square footage of each individual section of roof and its age since it was last replaced or repaired. The composite score was then calculated against the 100 point maximum total to determine a final score. Baseline information was collected from the "FCPS Roof Survey" prepared by Roof Management and Technology, Inc.,

in November 1996. This survey has been updated since that time to reflect roof repairs or replacements completed since that time.

- 3. Boilers** (maximum 100 point) – The age of each boiler for each school was compared against the industry standard for life expectancy for that type of boiler. Specifically, cast iron boilers have a projected life span of 35 years, hot water fire-tube boilers have an expected life span of 25 years, and rooftop furnaces have an expected life span of 20 years. The age of each unit was then calculated against the theoretical maximum of 100 points. Where a school had multiple and differing boilers, a composite score was developed and calculated against the theoretical maximum. Baseline information associated with this evaluation was taken from the “Asset Management Data Base for Pressure Vessels” prepared by RHL Engineering in 1991. This data base has been kept up to date to reflect boiler improvements or replacements since that time.
- 4. Air Conditioning** (maximum 75 points) – The age of each air conditioning system at a school was calculated against the theoretical maximum based on industry standards for the particular type of air conditioning units. Specifically, centrifugal hermetic units have an industry life span of 28 years, reciprocal-air and water cooled units have a life span of 20 years, and direct expansion rooftop units have a standard of 20 years. Where an individual building had multiple units of different types, a composite score was developed and calculated against the maximum total point score. Baseline information associated with this project was based on the “Chiller Refrigerant Study” prepared by Morrison, Knudson Engineers, Inc., September 1995. The study has been updated to reflect repairs or replacements to air conditioning units since that time.
- 5. Technology** (maximum 75 points) – This evaluation was limited to the “backbone” network and associated hardware as found in each school. It did not include instructional equipment, software or other instructional-related aspects of technology. Schools received a maximum of 25 points for meeting FCPS standards for networking, 25 points for meeting the State specification for telecommunication systems, 15 points if the school had completed renovations associated with the “Technology in Maryland Schools” program (including electrical power upgrades), and 10 points if portables were wired for voice and data. This evaluation was undertaken by Technology Services staff based on data bases available through their offices.
- 6. Utilities** (maximum 50 points) – Evaluation of utilities was limited to whether an individual building was served by public water and/or public sewer. The maximum point score of 50 was given for a building that was served by both public water and sewer. If the building was served by one or the other, and then it received 25 points. If the building operated on a well and septic system, the building received 0 points. The scoring reflected the staffs opinion that while necessary in certain parts of the county, well and septic systems were inherently less desirable than services by a public utility.
- 7. Floor Systems** (maximum 50 points) – Floor systems include several types of surfaces. Within the FCPS, three surfaces predominate: terrazzo concrete, vinyl composition tile, and carpet. Installation of a terrazzo floor results in a basically maintenance-free and permanent surface and is therefore given the highest rating. Vinyl composition tile, while having a longer life span than carpet, nevertheless eventually wears out and needs to be replaced. Carpet generally has the highest costs because of its replacement cycle requirements. For the purposes of this assessment, floor systems were subdivided into two categories, hallways and heavy traffic areas, and classroom and instructional spaces. Each category had a potential maximum of 25 points. Where hallways had more than 75% terrazzo surfaces, a maximum of 25 points was received. Where a hard surface other than terrazzo was in place, a maximum of 12.5 points was given

based on the percentage of these areas which were vinyl composition tile or some other hard surface. In the classroom and other instructional areas, 25 points were given for vinyl composition tile surfaces. Less than 25 points was given for carpeting in classroom areas based on the age of the carpeting as calculated against an 15-year life expectancy. Baseline data for floor systems was taken from the FCPS “custodial data base.” This database is continually updated to reflect annual improvements made to floor systems in each building.

- 8. Paving Surfaces** (maximum 50 points) – This section evaluated the condition of parking lots and travel ways at each school. Its scope was limited to the physical condition of the surface and subsurface as opposed to adequacy of parking, safety and traffic circulation. The evaluation included the main entrances, connecting drives, parking lots, multi-use play areas, and surface courts. Where resurfacing or new parking lots have been constructed, a composite score was developed and calculated against the maximum potential score of 50 points. Baseline data was taken from the “FCPS Paving Survey” as prepared by Fox and Associates, Inc., in April 1998.
- 9. Site Circulation** (maximum 40 points) – This criteria evaluated the school site’s ability to safely serve bus transportation and parent drop-off functions at each school. The evaluation did not include adequacy of parking, but instead focused on separation of school bus and parent drop-off areas, the availability of space to serve the number of buses serving a site, safety conditions associated with access into and out of the site, and other related functions. A composite score was prepared by the FCPS Transportation Department so as not to exceed the 40 point score.
- 10. Playground/playfields** (maximum 10 points) – This criteria evaluated the current condition of playground equipment at elementary schools. At secondary schools, competition fields will be added to the evaluation once this information becomes available. Baseline data associated with the playground equipment evaluation at elementary schools was taken by studies completed by FCPS staff in 1999. Conditions of fields at each secondary school is the subject of a study now ongoing. Stephen A. Parks Associates has been hired to perform this evaluation and the results will be available within the next 60 days. Until this information is available, a placeholder of 5 points for every school was included in the score.

### **Functional Assessment Evaluation Criteria:**

The second half of the evaluation included an assessment of an individual school’s ability to carry out the FCPS instructional program. Clearly, older schools were built at a time when different standards were in place and different priorities given to the design of school buildings. While every school, new or old, is essentially a building divided into various classrooms and other instructional spaces, the quality of that space, and the resources available within each room, can either assist or detract from the instructional program

For the purposes of this evaluation, as an initial step, each school was divided into eleven sub-categories or areas. These are areas where general and special instruction takes place along with administrative and support functions. A staff committee determined a maximum point score for each area listed. The aggregate score of each school could total no more than 1000 points. A school with a theoretical score of 1000 points perfectly met all of the latest educational and administrative specifications associated in each area of the building.

Specific areas of the building evaluated included the following:

- 1. Administrative Spaces** (maximum 120 points) – This area included spaces needed for the principal, secretaries and other administrative staff associated with the school. This assessment took into consideration the number and size of administrative offices, workroom and storage areas, and conference rooms. Further evaluated was the space and its convenience to the public and staff as well as its location with respect to providing adequate security. Building wide systems were also included in this category, including the presence and quality of alarm systems, security gates, and other emergency communication networks. Also included were an assessment of environmental conditions within the administrative spaces associated with light, temperature control, sound isolation, and so forth.
- 2. Instructional Support Services** (maximum 130 points) – This area considered the number and size of offices for instructional support and teachers (i.e., hearing and speech, Renzulli, guidance), conference space, and storage and planning space. It further included an assessment of the adequacy of the health suite and the location and size of special education functions within the school.
- 3. PreK and K** (elementary level only – maximum 100 points) – This area included an evaluation of the number of pre-K and K classrooms, including the adequacy of their size and shape, adequacy of storage for instructional materials, availability of water supply and bathrooms, instructional technology available, and general environmental conditions.
- 4. General Classrooms** (maximum 280 points at elementary level/240 points at secondary level) – This category included an evaluation of general purpose classrooms in the building including the number and size of classrooms available, availability of storage, water supply, chalkboards, marker boards, instructional technology available, and environmental conditions.
- 5. Media Center** (maximum 110 points at elementary level/100 points at secondary level) – This category considered the number and size of media offices, the media center size and shape, availability of storage and adequate shelving, security provisions for media center materials, the location and access to communications distribution rooms, technology available, availability of instructional equipment and resource materials, and environmental conditions.
- 6. Art Rooms** (maximum 50 points at elementary level/60 points at secondary level) – Criteria for this category included the number and size of art rooms, art support rooms and kiln areas, art storage and shelving, the number and quality of sinks and countertops, the quality of student workstations, number and quality of chalkboards and marker boards, instructional technology availability, and general environmental conditions.
- 7. Music** (maximum 50 points at elementary level/60 points at secondary level) – Criteria considered for this category include the number and size of music rooms; storage available for uniforms, instruments and other equipment; sound characteristics of the music room, availability of chalkboards and marker boards; instructional technology availability; the location of the music room relative to the school stage and cafeteria; and general environmental conditions.
- 8. Technology** (elementary school only – maximum 50 points) – Criteria considered for this category included the number and quality of computer classrooms including their size and shape, the quality of the tables and room arrangement to facilitate instruction by the teacher, the quality of chalkboards and marker boards, adequacy of electric power and internet connections, as well as general environmental conditions.

- 9. Physical Education** (maximum 50 points at elementary level/60 points at secondary level)- Criteria considered for this category included an evaluation of the number of teaching spaces, both indoors and outdoors, to accommodate the curriculum; the size of teaching stations; adequacy of locker, shower and dressing rooms; adequacy of indoor and outdoor equipment storage; adequacy of phys ed equipment such as baskets, floor net mounts and the like; availability of technology; and general environmental conditions.
- 10. Food Service** (maximum 30 points) – Criteria considered for this area included the size and quality of the kitchen and dining area for the school. Criteria included the number and size of the kitchen and dining space, size of the food receiving and storage area, quality of food preparation area, quality of refuse disposal areas, and the quality of major food service equipment such as freezers, coolers, stoves, and the like. Also considered was general environmental conditions of this area.
- 11. Custodian/Maintenance** (maximum 30 points) – Criteria considered for this area included an evaluation of the size and quality of custodial and maintenance offices; adequacy of storage, both indoor and outdoor; adequacy of toilet, shower and staff locker rooms; size and adequacy of maintenance and custodial workshop space, and the quality and availability of major equipment items.
- 12. Auditorium, Drama and Theater Arts** (secondary school only – maximum 60 points) – This category evaluated the size of the auditorium, stage and wings; the arrangement and quality of seating; technology available including sound, lighting and rigging and piping systems; the size and adequacy of costume and scenery preparation as well as set storage, adequacy of major equipment, and general environmental conditions.
- 13. Business/Career** (secondary school only – maximum 120 points) – This category included an evaluation of computer business and technology education as well as family and consumer science. Evaluation criteria included the number, size and configuration of classrooms; computer furnishings; technology availability; the size of the business classroom, including chalkboards and marker boards; the size and quality of family consumer science spaces, including child development and associated furnishings; and general environmental conditions for all of the spaces noted above.

### **Findings:**

The outcome of the assessment is the score found on the attached tables. Table 1 presents the ranking by school level (elementary, middle and high). Tables 2 and 3 display the functional and physical assessments by school.

Based on the combined totals, the elementary school with the lowest score, and therefore the school ranked highest, was North Frederick Elementary School. At the middle school level, West Frederick Middle School was ranked highest. At the high school level, Linganore High School was ranked highest. In addition to this outcome, staff would also make the following comments regarding the scoring outcome.

- Overall scores range from a low of 662 to a high of 1353. In general, as was expected, older schools scored lower than more recently built schools. All of the schools ranked in the top 13 had major sections of the buildings constructed prior to 1962.

2. Elementary schools tend to score lower than secondary schools in the scoring. Staff would suggest that this is for two reasons. First there are more elementary schools than secondary schools (as part of the study there were twenty-three elementary schools assessed and eleven secondary schools). The relative number of elementary schools made it more likely that more would be found at the top of the list. Secondly, it was less likely that elementary schools would have had additions recently constructed on their buildings. During the 1990's, many secondary schools had major additions attached to the original sections of the building. These new additions were factored into the scoring and therefore produced higher scores.
  - While the point totals at each level spanned a substantial range, most elementary schools were clustered around a mid-point in the assessment. For instance, at the elementary level, while the span of scores was between 662 to 1349, sixteen of the twenty-three schools evaluated were in the 800 to 900 point range.

At the middle school level, the span of scores was between 851 to 1353. Four of the six schools were clustered between 1199 and 1353.

At the high school level, the span of scores was between 880 and 1228. There was a clear clustering of scores which separated the first three schools from the last two schools assessed. Linganore, Frederick and Brunswick high schools were separated by a significant margin from Walkersville and Middletown high schools.

### **Next Steps:**

Staff considers the assessment as the first step toward establishment of a schedule of future modernization of older buildings in the system. Staff suggests as a first step, the Board of Education should discuss and ask questions concerning the methodology used in the ranking and, if necessary, request more information about how the assessment was completed.

Subject to the board's consideration and discussion of the assessment methodology, staff suggests as a second step estimated budgets be prepared to determine costs associated with modernization of buildings which are candidates to be included in the next update of the *Educational Facilities Master Plan* and six-year Capital Improvements Program. Subject to further discussion with the board, staff suggests that consideration regarding which schools should be included for modernization in the *Educational Facilities Master Plan* and CIP take into account the following factors:

1. The assessment of the school as it appears in this study.
2. The number and type of systemic renovation projects currently scheduled or which need to be accomplished in the near future.
  - The relationship of the school modernization project with new school construction projects which are currently found in the CIP.

The board should include the recommendations associated with the modernization program as part of the normal schedule for the *Educational Facilities Master Plan* update. This would mean staff recommendations would be the subject of a public hearing in September prior to submittal of funding requests in the fall of this year.

Staff is available to answer questions or provide further information as needed.

## Facility Assessment Combined by Level

	<b>ELEMENTARY SCHOOLS</b>	<b>PHYSICAL ASSESSMENT SCORE</b>	<b>FUNCTIONAL ASSESSMENT SCORE</b>	<b>TOTAL SCORE</b>
1		1000	1000	2000
2	<b>NORTH FRED ELEM</b>	310	352	662
3	<b>SOUTH FRED "B"</b>	354	343	697
4	<b>URBANA ELEM.</b>	260	503	763
5	<b>THURMONT ELEM</b>	378	424	802
6	<b>NEW MIDWAY ELEM</b>	285	529	814
7	<b>YELLOW SPRINGS</b>	217	598	815
8	<b>VALLEY ELEM</b>	346	473	819
9	<b>LIBERTY ELEM</b>	328	492	820
10	<b>PARKWAY ELEM</b>	284	547	831
11	<b>WOODSBORO ELEM.</b>	454	436	890
12	<b>BRUNSWICK ELEM</b>	381	512	893
13	<b>SOUTH FRED "A"</b>	499	407	906
14	<b>MIDDLETOWN ELEM</b>	477	446	923
15	<b>LEWISTOWN ELEM</b>	338	595	933
16	<b>WALKERSVILLE "A"</b>	460	486	946
17	<b>NEW MARKET ELEM.</b>	403	547	950
18	<b>EMMITSBURG ELEM.</b>	420	554	974
19	<b>GREEN VALLEY</b>	396	588	984
20	<b>SABILLASVILLE ELEM.</b>	392	595	987
21	<b>WAVERLEY ELEM.</b>	448	587	1035
22	<b>MYERSVILLE ELEM</b>	576	532	1108
23	<b>KEMPTOWN ELEM</b>	648	567	1215
	<b>CARROLL MANOR</b>	500	849	1349

<b>Middle Schools</b>	<b>Physical Assessment Score</b>	<b>Functional Assessment Score</b>	<b>Total Score</b>
	1000	1000	2000
<b>West Frederick Middle</b>	391	460	851
<b>New Market Middle</b>	433	592	1025
<b>Monocacy Middle</b>	561	638	1199
<b>Middletown Middle</b>	544	674	1218
<b>Brunswick Middle</b>	647	680	1327
<b>Walkersville Middle</b>	569	784	1353

<b>High Schools</b>	<b>Physical Assessment Score</b>	<b>Functional Assessment Score</b>	<b>Total Score</b>
	1000	1000	2000
<b>Linganore High</b>	439	441	880
<b>Frederick High</b>	438	549	987
<b>Brunswick High</b>	407	589	996
<b>Walkersville High</b>	514	713	1227
<b>Middletown High</b>	520	708	1228

APPENDIX C

State of Maryland Public School Construction Program,  
Minimum Educational Adequacy, 2003

State of Maryland Public School Construction Program  
Criteria for Evaluating  
Minimum Educational Adequacy of School Facilities\*

HEALTH AND SAFETY

1. Indoor Air Quality

For unit ventilators, the air filter has a minimum average efficiency of 25%-30% using the ASHRAE Standard 52-76. For centralized HV AC systems, the air filtration system for supply air has a minimum average efficiency of 45% or higher using the ASHRAE Standard 52-76. A local exhaust system to the outdoors is provided for fume hoods in science labs, kiln-firing areas, finishing areas in technology education labs, kitchens, laundries and welding areas.

2. Fire Safety

The building has a functional fire alarm system to alert occupants in case of a fire. Both aural and visual devices are provided in sufficient locations. The most recent fire marshal inspection did not identify any building conditions that present an imminent safety hazard or the hazard has been corrected.

3. Building Systems, Materials or Conditions

No building system (mechanical, electrical, plumbing, or structural), building material (e.g., asbestos, lead in paint, deteriorated carpet seams) or building condition (pervasive roof water leaks) presents an imminent health or safety hazard to students or staff

4. Security

There are sufficient building security provisions (e.g., outdoor lighting, number and location of entrances) to provide a relatively safe environment for students and staff

5. Potable Water

Potable water is available to students and staff in adequate locations.

- Lavatories

Lavatories are provided in sufficient locations and with sufficient fixtures to adequately support educational programs and support services.

- Communications System

The building has a functional two-way communications system in sufficient locations to adequately communicate with staff and students especially in the case of a health or safety emergency.

## EDUCATIONAL PROGRAM SUPPORT

### 8. Human Comfort

The American Society of Heating, Refrigerating and Air-Conditioning Engineers Standards for thermal comfort (temperature and humidity), ANSIASHRAE 55a-1995, can be met 90% of the time during student occupancy in spaces, excluding physical education, where learning takes place and in the health suite.

### 9. Acoustics

Sound originating in spaces where learning takes place and sound transmitted from adjacent spaces or outdoor sources typically does not disrupt or hinder educational activities.

### 10. Lighting

The illuminating Engineering Society of North America standards for the quantity of illumination, Lighting for Educational Facilities RP-3-00, can be met in general classrooms and specialized laboratories. A minimum of 50 foot-candles are provided on horizontal work surfaces. Emergency lighting is available when normal lighting systems fail and in locations that permit an orderly egress from the building in an emergency situation.

### 11. Accessibility for Students, Parents/Guardians or Staff with Disabilities

The physical plant and site do not preclude students, parents/guardians or staff with disabilities from having the opportunity to participate with non-disabled individuals in any educational programs or support services.

### 12. Telecommunications Distribution Systems

MSDE Standards for Telecommunications Distribution Systems (February 2002) are met

- Student Capacity

Elementary

There are sufficient permanent classrooms to accommodate at least 95% of the enrollment for the 2002/2003 school year, based on current published local rated capacities. If there are insufficient classrooms to accommodate at least 95% of the student enrollment

for the 2002/2003 school year, but there is available capacity in adjacent schools, based on current published local rated capacities, the student capacity of the school is adequate. There are sufficient permanent classrooms to accommodate at least 95% of the enrollment projected for the 2007/2008 school year and to fully implement pre-k programs for disadvantaged students and full-day kindergarten programs. If there are insufficient classrooms to accommodate at least 95% of the student enrollment for the 2007/2008 school year, but there is available capacity in adjacent schools, based on current published local rated capacities, the student capacity of the school is adequate.

Secondary

There are sufficient permanent instructional spaces to accommodate at least 95% of the enrollment for the 2002/2003 school year, based on current published local rated capacities. If there are insufficient instructional spaces to accommodate at least 95% of the student enrollment for the 2002/2003 school year, but there is available capacity in adjacent schools, based on current published local rated capacities, the student capacity of the school is adequate. There are sufficient permanent instructional spaces to accommodate at least 95% of the enrollment projected for the 2007/2008 school year. If there are insufficient instructional spaces to accommodate at least 95% of the student enrollment for the 2007/2008 school year, but there is available capacity in adjacent schools, based on current published local rated capacities, the student capacity of the school is adequate.

If a redistricting plan has been approved by the Board of Education or a capital project has been funded that will relieve overcrowding, the inadequacy can be considered corrected.

#### 14. Features for Instructional Areas

<u>Space</u>	Feature
Pre-kindergarten! Kindergarten Classroom	A minimum of 950 net square feet including a general storage, adjacent toilet room, one child height sink, and storage for student outer garments and personal items. An outdoor play area is provided in proximity to the classroom with age appropriate equipment.
General Elementary Classroom	90% of classrooms are a minimum of 800 net square feet.

General Secondary Classroom	90% of classrooms are a minimum of 750 net square feet.
Special Education	Resource rooms are provided in a number that reflects the needs of the student population. At least one resource room is provided at a minimum of 250 net square feet. Classrooms and other support spaces (e.g., occupational therapy, physical therapy, home living skills, time out) are provided that meet the program requirements of the student population.
Instructional Resource Rooms	Resource rooms are provided in a number that reflects the needs of the student population (e.g., ESOL, reading, math).
Secondary Science Laboratory	<p><u>Middle schools:</u> A teacher demonstration table with sink, one student sink, and a minimum of 36 net square feet per student.</p> <p><u>High schools:</u> Workstations for no more than a total of 28 students, one sink for every four students, an emergency eye-wash, an emergency shower (only in labs using corrosive chemicals or flammable materials), a minimum of 20 cfm of outdoor air per person for general ventilation, a fume hood in labs that use toxic or other objectionable airborne materials, a minimum of 36 net square feet per student (50 net square feet per student for a lecture/lab space), and a minimum of 2 net square feet per student seat for a separate storage area(s). Volatile, flammable and corrosive materials are housed in secure storage areas specifically designed for that purpose. Preparation rooms are provided for biology, earth science and chemistry laboratories with a minimum of 3 net square feet for each student served in the associated labs.</p>
Library/Media Center	A minimum of 5-6 net square feet per student for a school with a capacity below 600, a minimum of 3,000 net square feet for a school with a capacity between 600 and 1,000, a minimum of 3 net square feet per student for a school with a capacity above 1,000, including space for the collections, a reference area, circulation desk, workroom for the library media staff, a seating/instructional area for a minimum of 30 students (60 students for schools with a capacity above 1,000), and a storage room.

Technology Education	<u>High schools:</u> provide a laboratory at a minimum of 1,800 net square feet including areas for classroom seating, small group meeting, design, research, testing, production fabrication, finishing and storage for materials and projects.
Physical Education	A minimum of 3,000 net square feet in a multipurpose room or separate gymnasium for elementary schools excluding a stage area. For middle schools, a minimum of 5,000 net square feet in a gymnasium excluding a stage area. For high schools, a minimum of 7,300 net square feet in a gymnasium. In elementary, middle and high schools provide, respectively, a storage room(s) of 100, 150 and 250 net square feet. In high schools, sufficient lockers and shower facilities are provided. Adequate playgrounds and play fields are provided to meet local educational program requirements. Playground surfacing and equipment meet the guidelines of the U.S. Consumer Product Safety Commission.
Fine Arts	<p><u>Visual Arts:</u> For an elementary school staffed with a &gt; 0.5 art teacher, provide one dedicated visual arts classroom at a minimum of 900 net square feet. In a middle school provide a minimum of one dedicated visual arts classroom at a minimum of 1,000 net square feet. In high schools provide dedicated classrooms for two-dimensional art, and three-dimensional art at a minimum, respectively, of 1,100 and 1,200 net square feet. In elementary and middle school art classrooms, provide a minimum of one large work sink with hot and cold water. In high school two-dimensional and three dimensional art classrooms, provide a minimum of two large work sinks with hot and cold water. In elementary, middle and high school art classrooms provide, respectively, a storage room at a minimum of 50, 75 and 100 net square feet.</p> <p><u>Music:</u> In an elementary school staffed with a &gt; 0.5 music teacher, provide one dedicated music classroom at a minimum of 800 net square feet. In a middle school provide one dedicated music classroom at a minimum of 1,000 net square feet. In high schools provide dedicated classrooms for instrumental music and choral music at a minimum, respectively, of 1,100 and 875 net square feet. In high schools provide dedicated space for practice rooms. In elementary, middle and high school music classrooms provide, respectively, a storage room(s) at a minimum of 50, 100 and 250 net square feet.</p>

Dance: In a high school staffed with a > 0.5 dance teacher, provide a dedicated or shared instructional space with appropriate flooring and a minimum of 1,000 net square feet. Provide a storage room at a minimum of 50 net square feet. .

Theatre: In a high school staffed with a > 0.5 theatre teacher, provide a dedicated or shared classroom with a minimum of 750 net square feet. Provide a storage room at a minimum of 50 net square feet.

## 15. Features for Support Areas

<u>Space</u>	<u>Feature</u>
Health Services	<p>Maryland School Health Services Standards – Health Facilities (COMAR 13A.05.05.10) are met. Spaces for waiting, examination and treatment, resting, storage, an accessible toilet room, a separate room for private consultation and for use as the health services professional’s office, lockable cabinets for storing medical records and medications, and one sink other than the sink in the toilet room. An elementary school with a capacity of &lt; 300, 300 to &lt; 600, or ≥ 600 requires, respectively, a minimum of 500, 555, and 710 net square feet. A middle/high school with a capacity of &lt; 600, 600 to &lt; 1,200, or ≥ 1,200 requires, respectively, a minimum of 610, 715, and 840 net square feet.</p> <p>A room is provided for hearing screening tests that is acoustically adequate and sufficient in size.</p>
Food Services	<p>There is sufficient dining space to allow for the number of students, equal to the local rated capacity, to participate in the school lunch program within the timeframe required by the U.S. Department of Agriculture. The kitchen and serving areas are adequate to serve the number of students, equal to the local rated capacity, to participate in the school lunch program within the timeframe required by the U.S. Department of Agriculture.</p>
Auditorium/ Theatre Arts	<p><u>High schools:</u> An auditorium is provided that has adequate seating, lighting and sound system to support the size of the student population and the intended educational programs. Space is provided for adequate set construction, dressing, toilet rooms and storage.</p>

Administration	Adequate work and meeting space is provided for administrative staff.
Guidance	Adequate work and meeting space is provided that allows for confidential telephone and face-to-face conversations.
Itinerant Services	Adequate workspace is provided for itinerant services staff.
Site Layout	The layout of student drop-off, bus loading/unloading areas, parking and pedestrian routes allows students to safely enter and exit the school grounds and school building.
Teacher Planning	Adequate space is provided for teachers to plan.

\*Evaluating the adequacy of instructional areas (pages 3-6) and support areas (pages 6-7) should be based on the current published local ranked capacity of the building. Inadequacies resulting from over enrollment at a school should be addressed under criteria # 13, Student Capacity.

\*Instructional or instructional support spaces may have a deficiency of up to 5% and still meet adequacy.

- If improvements are funded in the current fiscal year to correct an inadequacy, but have not been completed, the inadequacy can be considered corrected. This does not apply to capital improvements budgeted in future fiscal years.

## APPENDIX D

### Carroll County Public Schools Functional Assessment Criteria

**Carroll County Public Schools  
School Facility Assessment Criteria  
Elementary**

**AREA ASSESSED: General**

1. There are sufficient building security provisions (e.g., outdoor lighting, number and location of entrances) to provide a relatively safe environment.
2. The building has a functional two-way communications system in sufficient locations to adequately communicate with staff and students especially in the case of a health or safety emergency.
3. The physical plant and site do not preclude students, parents or staff with disabilities from having the opportunity to participate with non-disabled individuals in any educational programs or support services.
4. Telecommunications Distribution Systems meet Maryland State Department of Education (MSDE) standards dated February 2002.
5. The layout of student drop-off, bus loading/unloading areas, parking and pedestrian routes allows students to safely enter and exit the school grounds and school building.

**Area Assessed: Administrative, Support and Intervention Services**

Adequate number and size of administrative office.

1. Adequate offices for support teachers, guidance, and intervention specialists.
2. Adequate office and private meeting space for pupil personnel workers, behavior.
3. Adequate health suite.

Spaces for waiting, examination, and treatment, resting, storage, an accessible toilet room, a separate private office/consultation room, lockable cabinets, one sink other than the toilet room sink and a hearing screening room.

Minimum size for capacities of <300 = 500 sqft, 300 to 600 = 555 sqft & >600 = 710 sqft.

5. Adequate teacher workrooms and planning areas.
6. Adequate conference space.
7. Office location in school allows supervision, security, convenience.

## **Carroll County Public Schools**

8. Adequate storage space.
9. Adequate technology provisions (voice, video, data, PA).
10. Adequate number of classrooms/spaces for the delivery of intervention services and instruction.
11. Check all the intervention services that apply and indicate the number of staff providing the services.

Prekindergarten

Title I

ESOL – English for Speakers of other Languages

Reading Resource

Math Resource

CLC – Community Learning Center

FLT - Families Learning Together

GT Resource - Gifted and Talented

AEL Tutors – Advanced Early Literacy

Special Ed Resource

Other

### **Area Assessed: Pre-K and Kindergarten Classrooms**

1. Pre-K and K classrooms a minimum of 950 sqft.
2. General storage and shelving for books, teacher materials, student materials.
3. Storage for student outer garments and personal items.
4. Adequate chalkboards, marker boards, display provisions.
5. Outdoor play area in proximity to the classroom with age appropriate equipment.
6. One child height sink.
7. Adjacent toilet room.

### **Area Assessed: General Classrooms**

1. General classrooms a minimum of 800 sqft.

## **Carroll County Public Schools**

2. Adequate storage and shelving for books, teacher materials, student materials.
3. Adequate chalkboards, marker boards, display provisions.
4. A minimum of 50 foot-candles are provided on horizontal work surfaces. Foot-candles are a measurement of light at an illuminated object.
5. Emergency lighting is available.

### **Area Assessed: Visual Art**

1. Size of art rooms a minimum of 900 sqft.
2. Adequate size of kiln areas with appropriate safety provisions.
3. Size of art rooms a minimum of 900 sqft.
4. Adequate size of kiln areas with appropriate safety provisions.
5. Size of storage room a minimum of 50 sqft with shelving for supplies and student work/projects.
6. Adequate number, size, and location of sinks and attached countertops.
7. Adequate student workstations, in size, features and number.
8. Adequate display areas for student work/projects in the classroom and around the school.
9. Adequate instructional area chalkboards and/or marker boards.

### **Area Assessed: Music Spaces**

1. Size of music rooms a minimum of 800 sqft.
2. Size of music support rooms such as storage, uniform storage, instrument storage a minimum of 50 sqft.
3. Adequate chalkboards, marker boards, display provisions.
4. Adequate performance space: adequate stage with adequate sound and lighting capabilities: adequate stage floor (size and material), adequate wing size, adequate curtain and backdrop area, adequate storage for grand piano.
5. Adequate sound characteristics in the class room and sound isolation of music rooms.

## **Carroll County Public Schools**

6. Adequate environmental conditions: air quality with minimal sound from air handling equipment.
7. Instructional area located near enough to school stage.

### **Area Assessed: Media Center**

1. Instructional areas for multiple classes (2-3) and small groups.
2. Shelving for print, non-print materials, and picture books.
3. Office space for staff with work and storage spaces.
4. Adequate wiring for data and electrical power.
5. Circulation desk and area to accommodate clerical tasks connected to this function.
6. Story and puppet area with appropriate seating for casual independent reading.
7. Media production area with broadcasting capabilities.
8. Storage area and storage shelving.
9. Appropriate sound control and design that allows for taping and production activities without noise interferences.

### **Area Assessed: Physical Education**

1. Number of teaching spaces, indoors and outdoors, for number of classes to be accommodated.
2. Gym a minimum of 3,000 sqft.
3. Adequate staff locker rooms, shower room, dressing room, offices.
4. Adequate chalkboards, marker boards, display provisions.
5. Adequate equipment storage, indoor and outdoor.
6. Adequate floor and wall materials and coverings.
7. Adequate baskets, floor net mounts, and similar, in terms of number and operating condition.

**Carroll County Public Schools  
School Facility Assessment Criteria  
Middle**

**AREA ASSESSED: General**

1. There are sufficient building security provisions (e.g., outdoor lighting, number and location of entrances) to provide a relatively safe environment.
2. The building has a functional two-way communications system in sufficient locations to adequately communicate with staff and students especially in the case of a health or safety emergency.
3. The physical plant and site do not preclude students, parents or staff with disabilities from having the opportunity to participate with non-disabled individuals in any educational programs or support services.
4. Telecommunications Distribution Systems meet Maryland State Department of Education (MSDE) standards dated February 2002.
5. The layout of student drop-off, bus loading/unloading areas, parking and pedestrian routes allows students to safely enter and exit the school grounds and school building.

**Area Assessed: Administrative, Support and Intervention Services**

1. Number and size of administrative offices.
2. Adequate offices for support teachers, guidance, and intervention specialists.
3. Adequate office and private meeting space for pupil personnel workers, behavior support specialists, school psychologists, and other itinerate staff members.
4. Adequate health suite.

Spaces for waiting, examination, and treatment, resting, storage, an accessible toilet room, a separate private office/consultation room, lockable cabinets, one sink other than the toilet room sink and a hearing screening room.

Minimum size for capacities of <600 = 610 sqft, 600 to 1200 = 715 sqft & >1200 = 840 sqft.

5. Adequate teacher workrooms and planning areas.
6. Adequate conference space.

7. Office location in school allows supervision, security, convenience.

### **Carroll County Public Schools**

8. Adequate storage space.
9. Adequate technology provisions (voice, video, data, PA).
10. Adequate number of classrooms/spaces for the delivery of intervention services and instruction.
11. Check all the intervention services that apply and indicate the number of staff providing the services.

ESOL - English for Speakers of other Languages

READING RESOURCE

MATH RESOURCE

CLC – Community Learning Center

FLT – Families Learning Together

SPECIAL ED RESOURCE

GT – Gifted and Talented

OTHER

### **Area Assessed: General Classrooms**

1. General classrooms a minimum of 750 sqft.
2. Adequate storage and shelving for books, teacher materials, student materials.
3. Adequate chalkboards, marker boards, display provisions.
4. A minimum of 50 foot-candles are provided on horizontal work surfaces. Foot-candles are a measurement of light at an illuminated object.
5. Emergency lighting is available.

### **Area Assessed: Science**

1. Minimum of 36 sqft/student.
2. Adequate storage.
3. Adequate size and configuration of science labs.

## **Carroll County Public Schools**

4. Adequate size of storage rooms.
5. Adequate chalkboards, marker boards, and display provisions.
6. Teacher demonstration table.
7. One student sink.
8. Adequate technology provisions.

### **Area Assessed: Visual Art**

1. Adequate number and size of kiln areas with appropriate safety provisions.
2. Adequate storage room and shelving for supplies and student work/projects. At 75 sqft.
3. Adequate number, size, and location of sinks and attached countertops.
4. Adequate student workstations, in size, features and number.
5. Adequate display areas for student work/projects in the classroom and around the school.
6. Adequate instructional area chalkboards and/or marker boards.

### **Area Assessed: Music Space**

1. Size of music rooms a minimum of 1000 sqft.
2. Size of music support rooms such as storage, uniform storage, instrument storage a minimum of 100 sqft.
3. Adequate chalkboards, marker boards, display provisions.
4. Adequate performance space: adequate stage with adequate sound and lighting capabilities: adequate stage floor (size and material), adequate wing size, adequate curtain and backdrop area, adequate storage for grand piano.
5. Adequate sound characteristics in the class room and sound isolation of music rooms.
6. Adequate environmental conditions: air quality with minimal sound from air handling equipment.
7. Instructional area located near enough to school stage.

## **Carroll County Public Schools**

### **Area Assessed: Theater Arts and Dance**

1. Size of dedicated or shared dance space a minimum of 1,000 sqft.
2. Size of dedicated or shared theater space at 750 sqft.
3. Size of dance storage room a minimum of 50 sqft.
4. Size of theater storage room a minimum of 50 sqft.
5. Adequate chalkboards, marker boards, display provisions.
6. Adequate instructional flooring and lighting.
7. Adequate performance space: adequate space for costume preparation, scenery preparation; adequate stage with adequate sound and lighting capabilities; adequate stage floor (size and material), adequate wing size, adequate curtain and backdrop area, adequate set storage.
8. Adequate dressing facilities for classroom instruction.
9. Instructional area located near enough to school stage and changing area.
10. Ballet barres and mirrors.

### **Area Assessed: Media Center**

1. Instructional spaces for multiple classes and small groups.
2. Shelving for media materials.
3. Adequate wiring for data and electrical power.
4. Appropriate sound control and design that allows for taping and production activities without noise interferences.
5. Office space for staff with work area and storage.
6. Circulation desk and area to accommodate clerical tasks connected to this function.
7. Seating for independent reading located near the periodical shelving.
8. Media production area with broadcasting capabilities.

## **Carroll County Public Schools**

9. Storage areas and storage shelving.
10. Reference area that includes computers for electronic research.
11. Small conference / planning room.

### **Area Assessed: Physical Education**

1. Number of teaching spaces, indoors and outdoors, for number of classes to be accommodated.
2. Gym a minimum of 5,000 sqft.
3. Adequate staff locker rooms, shower room, dressing room, and offices.
4. Adequate chalkboards, marker boards, and display provisions.
5. Adequate equipment storage, indoor and outdoor.
6. Adequate floor and wall materials and coverings.
7. Adequate baskets, floor net mounts, and similar, in terms of number and operating condition.

### **Area Assessed: Middle School Family & Consumer Sciences and Technology Education**

1. Classroom(s) are adequate in size and have separate configuration for both general classroom instruction and laboratory work.
2. Adequate data connections to support instruction (1 for every 2 students) exist.
3. Spaces have adequate infrastructure.
4. Spaces include adequate storage for materials and supplies and student projects.
5. Spaces include marker boards and display provisions.

### **Area Assessed: Food Services**

1. Sufficient dining space exists for students to participate in the school lunch program within the timeframe required by the U.S. Department of Agriculture.

## **Carroll County Public Schools**

2. The kitchen and serving areas are adequate to serve the number of students participating in the school lunch program within the timeframe required by the U.S. Department of Agriculture.

### **School Facility Assessment Criteria**

#### **High**

##### **AREA ASSESSED: General**

1. There are sufficient building security provisions (e.g., outdoor lighting, number and location of entrances) to provide a relatively safe environment.
2. The building has a functional two-way communications system in sufficient locations to adequately communicate with staff and students especially in the case of a health or safety emergency.
3. The physical plant and site do not preclude students, parents or staff with disabilities from having the opportunity to participate with non-disabled individuals in any educational programs or support services.
4. Telecommunications Distribution Systems meet Maryland State Department of Education (Maryland State Department of Education) standards dated February 2002.
5. The layout of student drop-off, bus loading/unloading areas, parking and pedestrian routes allows students to safely enter and exit the school grounds and school building.

##### **Area Assessed: Administrative, Support and Intervention Services**

1. Number and size of administrative offices.
2. Adequate offices for support teachers, guidance, and intervention specialists.
3. Adequate office and private meeting space for pupil personnel workers, behavior support specialists, school psychologists, and other itinerate staff members.

4. Adequate health suite.

Spaces for waiting, examination, and treatment, resting, storage, an accessible toilet room, a separate private office/consultation room, lockable cabinets, one sink other than the toilet room sink and a hearing screening room.

Minimum size for capacities of <600 = 610 sqft, 600 to 1200 = 715 sqft & >1200 = 840 sqft.

5. Adequate teacher workrooms and planning areas.

## **Carroll County Public Schools**

6. Adequate conference space.
7. Office location in school allows supervision, security, convenience.
8. Adequate storage space.
9. Adequate technology provisions (voice, video, data, PA).
10. Adequate number of classrooms/spaces for the delivery of intervention services and instruction.
11. Check all the intervention services that apply and indicate the number of staff providing the services.

ESOL – English for Speakers of other Languages

Reading Resource

Math Resource

CLC – Community Learning Center

FLT - Families Learning Together

Special Ed Resource

Other

### **Area Assessed: General Classrooms**

1. General classrooms a minimum of 750 sqft.
2. Adequate storage and shelving for books, teacher materials, student materials.
3. Adequate chalkboards, marker boards, and display provisions.
4. A minimum of 50 foot-candles are provided on horizontal work surfaces. Foot-candles are a measurement of light at an illuminated object.
5. Emergency lighting is available.

### **Area Assessed: Science**

1. Adequate number of science labs, preparation rooms, and offices.
2. Adequate number of storage and small group rooms.
3. Adequate technology provisions.

## **Carroll County Public Schools**

4. Adequate chalkboards, marker boards, display provisions.
5. 28 student work station per lab.
6. One sink for every four students.
7. Emergency eyewash station.
8. Emergency shower in labs with corrosive chemicals or flammable materials.
9. Fume hood for toxic or objectionable airborne materials.
10. 36 sqft per student in lab.
11. Secure flammable storage.
12. Prep rooms for biology, earth science and chemistry.
13. Adequate size and configuration of preparation rooms and storage rooms.

### **Area Assessed: Visual Art**

1. Size of 2-dimensional art room a minimum of 1,100 sqft.
2. Size of 3-dimensional art room a minimum of 1,200 sqft.
3. Adequate number and size of kiln areas with appropriate safety provisions.
4. Storage room a minimum of 100 sqft and shelving for supplies and student work/projects.
5. Adequate number, size, and location of sinks and attached countertops.
6. Adequate student workstations, in size, features and number.
7. Adequate display areas for student work/projects in the classroom and around the school.
8. Adequate instructional area chalkboards and/or marker boards.

### **Area Assessed: Music Spaces**

1. Size of music support rooms such as storage, uniform storage, instrument storage a minimum 250 sqft.

## **Carroll County Public Schools**

2. Adequate chalkboards, marker boards, display provisions.
3. Size of instrumental music a minimum of 1,100 sqft.
4. Adequate performance space: adequate stage with adequate sound and lighting capabilities: adequate stage floor (size and material), adequate wing size, adequate curtain and backdrop area, adequate storage for grand piano.
5. Adequate sound characteristics in the class room and sound isolation of music rooms.
6. Adequate environmental conditions: air quality with minimal sound from air handling equipment.
7. Instructional area located near enough to school stage.
8. Size of Choral Music - minimum of 875 sqft.
9. Adequate number of practice rooms.

### **Area Assessed: Theater Arts and Dance**

1. Size of dedicated or shared dance space a minimum of 1,000 sqft.
2. Size of dedicated or shared theater space at 750 sqft.
3. Size of dance storage room a minimum of 50 sqft.
4. Size of theater storage room a minimum of 50 sqft.
5. Adequate chalkboards, marker boards, and display provisions.
6. Adequate instructional flooring and lighting.
7. Adequate performance space: adequate space for costume preparation, scenery preparation; adequate stage with adequate sound and lighting capabilities: adequate stage floor (size and material), adequate wing size, adequate curtain and backdrop area, adequate set storage.
8. Adequate dressing facilities for classroom instruction.
9. Instructional area located near enough to school stage and changing area.
10. Ballet barres and mirrors.

## **Carroll County Public Schools**

### **Area Assessed: Media Center**

1. Instructional spaces for multiple classes and small groups.
2. Shelving for media materials.
3. Adequate wiring for data and electrical power.
4. Appropriate sound control and design that allows for taping and production activities without noise interferences.
5. Office space for staff with work area and storage.
6. Circulation desk and area to accommodate clerical tasks connected to this function.
7. Seating for independent reading located near the periodical shelving.
8. Media production area with broadcasting capabilities.
9. Storage areas and storage shelving.
10. Reference area that includes computers for electronic research.
11. Small conference / planning room.

### **Area Assessed: Physical Education**

1. Number of teaching spaces, indoors and outdoors, for number of classes to be accommodated.
2. Size of gym a minimum of 7,300 sqft.
3. Adequate locker rooms, shower room, dressing room, and offices.
4. Adequate chalkboards, marker boards, and display provisions.
5. Adequate equipment storage, indoor and outdoor.
6. Adequate floor and wall materials and coverings.
7. Adequate baskets, floor net mounts, and similar, in terms of number and operating condition.

## **Carroll County Public Schools**

### **Area Assessed: High School Family & Consumer Sciences**

1. Classroom(s) are differentiated and furnished for specific programmatic uses, i.e. child development, general classroom, skills-based classroom, foods and food science laboratory.
2. Spaces include adequate storage for materials and supplies and student projects.
3. Spaces include marker boards and display provisions.

### **Area Assessed: High School Agriscience**

1. Classroom(s) and greenhouse are adequate in size and have separate configuration for both general classroom instruction and laboratory work.
2. Spaces have adequate infrastructure.
3. Spaces have adequate environmental conditions: air quality, temperature control, natural and artificial lighting.
4. Spaces include adequate storage for materials and supplies and student projects.
5. Spaces include marker boards and display provisions.

### **Area Assessed: High School Business Education**

1. Classroom(s) are adequate in size and have separate configuration for both general classroom instruction and laboratory work.
2. Adequate computer workstations to support instruction (1 for every student) exist, including peripherals and adequate connections.
3. Spaces have adequate furnishings, equipment and infrastructure for the teacher to provide instruction that promotes student learning.
4. Classroom(s) are differentiated and furnished for specific programmatic uses, i.e. general classroom and skills-based classroom.
5. Spaces include adequate technology provisions (voice, video, data, PA).
6. Spaces include adequate storage for materials and supplies and student projects.
7. Spaces include marker boards and display provisions.

## **Carroll County Public Schools**

### **Area Assessed: High School Technology Education**

1. Classroom(s) are a minimum of 1,800 sqft and have separate configuration for both general classroom instruction and laboratory work.
2. Spaces have adequate furnishings, equipment and infrastructure for the teacher to provide instruction that promotes student learning.
3. Spaces include adequate storage for materials and supplies and student projects.
4. Spaces include marker boards and display provisions.

### **Area Assessed: Food Services**

1. Sufficient dining space exists for students to participate in the school lunch program within the timeframe required by the U.S. Department of Agriculture.
2. The kitchen and serving areas are adequate to serve the number of students participating in the school lunch program within the timeframe required by the U.S. Department of Agriculture.

APPENDIX E

Replacement Reserve Reports by School

## Carrolltowne Elementary Replacement Reserve Report

Section	Elements Description	EUL	EFF Age	RUL	Quantity	Unit	Unit Cost	Total Deficiency Repair Estimate	2008
									<b>0</b>
5.3	Repoint masonry	40	41	0	6500	sf	\$3.25	\$21,125.00	\$21,125.00
5.5	Coat standing seam metal roof panels	10	10	0	6600	sf	\$1.65	\$10,890.00	\$10,890.00
5.8	Replace / install whiteboard w/alum. frame	20	22	0	3300	sf	\$14.62	\$48,246.00	\$48,246.00
6.3	Replace boiler, gas/oil >1,000 MBH	30	32	0	4984	mbh	\$12.00	\$59,808.00	\$59,808.00
7.2	Install / Replace Classroom DLP Projector with ceiling mount	10	12	0	27	ea	\$2,000.00	\$54,000.00	\$54,000.00
7.2	Install / Replace projection screens	15	17	0	10	ea	\$372.00	\$3,720.00	\$3,720.00
7.2	Replace stage curtains, velour, medium wght.	12	14	0	200	sf	\$8.98	\$1,796.00	\$1,796.00
8.1	Cut & Patch asphalt	25	27	0	5500	sf	\$3.00	\$16,500.00	\$16,500.00
8.1	Replace damaged concrete sidewalk	30	32	0	4500	sf	\$3.80	\$17,100.00	\$17,100.00
8.1	Restripe paving	5	6	0	124	ea	\$9.00	\$1,116.00	\$1,116.00
	<b>Replacement Reserve Totals, unescalated</b>							<b>\$234,301.00</b>	<b>\$234,301.00</b>
	<b>Replacement Reserve Totals, escalated</b>							<b>\$234,301.00</b>	<b>\$234,301.00</b>

Charles Carroll Elementary Replacement Reserve Report

Section	Elements Description	EUL	EFF Age	RUL	Quantity	Unit	Unit Cost	Total Deficiency Repair Estimate	2008 0
3.1	Replace / install whiteboard w/alum. frame	20	20	0	3024	sf	\$14.62	\$44,210.88	\$44,210.88
5.10	Replace carpet	10	6	0	900	sy	\$28.00	\$25,200.00	\$25,200.00
6.1	Install new hydraulic elevator, 2 floors	25	27	0	1	ea	\$125,000.00	\$125,000.00	\$125,000.00
6.2	Replace oil-fired water heater, commercial, 100 gal.	10	10	0	1	ea	\$2,725.00	\$2,725.00	\$2,725.00
6.2	Replace vit. china wall-hung lavatory and trim	20	20	0	17	ea	\$1,390.00	\$23,630.00	\$23,630.00
6.4	Install wet-pipe sprinkler system-up to 50,000 sf	30	32	0	43700	sf	\$3.29	\$143,773.00	\$143,773.00
6.5	Replace central fire alarm control panel	15	17	0	1	ea	\$7,500.00	\$7,500.00	\$7,500.00
7.2	Install / Replace Classroom DLP Projector with ceiling mount	10	12	0	24	ea	\$2,000.00	\$48,000.00	\$48,000.00
7.5	Replace wd basketball backboard, suspended, elec'y operated	20	22	0	2	ea	\$5,625.00	\$11,250.00	\$11,250.00
8.1	Install new parking spaces, 4" paving, 6" gravel base	25	25	0	12	car	\$944.00	\$11,328.00	\$11,328.00
	<b>Replacement Reserve Totals, unescalated</b>							<b>\$442,616.88</b>	<b>\$442,616.88</b>
	<b>Replacement Reserve Totals, escalated</b>							<b>\$442,616.88</b>	<b>\$442,616.88</b>

Eldersburg Elementary Replacement Reserve Report

Section	Elements Description	EUL	EFF Age	RUL	Quantity	Unit	Unit Cost	Total Deficiency Repair Estimate	2008
									<b>0</b>
5.3	Repoint masonry	40	41	0	3500	sf	\$3.25	\$11,375.00	\$11,375.00
5.3	Waterproof	20	21	0	5000	sf	\$1.00	\$5,000.00	\$5,000.00
5.4	Replace flush h. mtl. door panel only	20	21	0	2	ea	\$1,125.00	\$2,250.00	\$2,250.00
5.5	Coat standing seam metal roof panels	10	12	0	4600	sf	\$1.65	\$7,590.00	\$7,590.00
5.6	Replace folding partitions in instructional space(s)	20	21	0	1200	sf	\$37.00	\$44,400.00	\$44,400.00
5.8	Replace / install whiteboard w/alum. frame	20	22	0	2350	sf	\$14.62	\$34,357.00	\$34,357.00
5.9	Provide ADA ramp access to stage	20	21	0	18	lf	\$550.00	\$9,900.00	\$9,900.00
6.4	Install wet-pipe sprinkler system-up to 100,000 sf	30	31	0	62000	sf	\$3.09	\$191,580.00	\$191,580.00
6.4	Replace audible alarms w/audible & strobe equipped units	10	10	0	10	ls	\$250.00	\$2,500.00	\$2,500.00
6.5	Test all electrical connections using Infra Red tests	10	10	0	1	ls	\$2,500.00	\$2,500.00	\$2,500.00
7.2	Install / Replace Classroom DLP Projector with ceiling mount	10	12	0	21	ea	\$2,000.00	\$42,000.00	\$42,000.00
7.5	Replace wd basketball backboard, suspended, elec'ly operated	20	22	0	2	ea	\$5,625.00	\$11,250.00	\$11,250.00
8.1	Cut & Patch asphalt	25	27	0	5000	sf	\$3.00	\$15,000.00	\$15,000.00
8.1	Replace damaged concrete sidewalk	30	32	0	1200	sf	\$3.80	\$4,560.00	\$4,560.00
8.1	Restripe paving	5	6	0	161	ea	\$9.00	\$1,449.00	\$1,449.00
8.2	Overlay asphalt	25	27	0	2500	sf	\$1.25	\$3,125.00	\$3,125.00
	<b>Replacement Reserve Totals, unescalated</b>							<b>\$388,836.00</b>	<b>\$388,836.00</b>
	<b>Replacement Reserve Totals, escalated</b>							<b>\$388,836.00</b>	<b>\$388,836.00</b>

Freedom Elementary Replacement Reserve Report

Section	Elements Description	EUL	EFF Age	RUL	Quantity	Unit	Unit Cost	Total Deficiency Repair Estimate	2008 0
3.1	ADA - install car and/or van accessible signage	10	11	0	7	ea	\$220.00	\$1,540.00	\$1,540.00
3.1	Install concrete ramp	50	51	0	12	lf	\$325.00	\$3,900.00	\$3,900.00
6.2	Replace elec. water heater, 5 gal.	10	10	0	1	ea	\$1,825.00	\$1,825.00	\$1,825.00
6.2	Replace elec. water heater, commercial, 80 gal	10	10	0	1	ea	\$4,200.00	\$4,200.00	\$4,200.00
6.3	Change steam heat to hot water system	20	20	0	1	ls	\$25,000.00	\$25,000.00	\$25,000.00
6.3	Johnson Controls energy management system	20	20	0	1	ls	\$27,500.00	\$27,500.00	\$27,500.00
6.4	Install wet-pipe sprinkler system-up to 100,000 sf	30	30	0	51232	sf	\$3.09	\$158,306.88	\$158,306.88
6.5	Install Diesel Emergency Generator	30	31	0	100	kw	\$322.00	\$32,200.00	\$32,200.00
7.2	Install / Replace Classroom DLP Projector with ceiling mount	10	11	0	24	ea	\$2,000.00	\$48,000.00	\$48,000.00
8.1	Restripe paving	5	5	0	138	ea	\$9.00	\$1,242.00	\$1,242.00
	<b>Replacement Reserve Totals, unescalated</b>							<b>\$303,713.88</b>	<b>\$303,713.88</b>
	<b>Replacement Reserve Totals, escalated</b>							<b>\$303,713.88</b>	<b>\$303,713.88</b>

Robert Moton Elementary Replacement Reserve Report

Section	Elements Description	EUL	EFF Age	RUL	Quantity	Unit	Unit Cost	Total Deficiency Repair Estimate	2008 0
3.1	ADA: Add HC parking stalls and signage	30	31	0	2	ea	\$165.00	\$330.00	\$330.00
5.5	Remove skylight and cover opening	25	26	0	3	ea	\$325.00	\$975.00	\$975.00
5.5	Repair active roof leaks	100	101	0	1	ls	\$20,000.00	\$20,000.00	\$20,000.00
5.8	Replace / install whiteboard w/alum. frame	20	21	0	2400	sf	\$14.62	\$35,088.00	\$35,088.00
5.8	Replace /install tackboards	15	17	0	960	sf	\$14.00	\$13,440.00	\$13,440.00
6.2	ADA-insulate piping under lavatories	25	26	0	4	ea	\$50.00	\$200.00	\$200.00
6.2	Replace water heater, commercial up to 50 gal	10	10	0	2	ea	\$2,755.00	\$5,510.00	\$5,510.00
6.5	Replace central fire alarm control panel	15	15	0	1	ea	\$7,500.00	\$7,500.00	\$7,500.00
7.2	Install / Replace Classroom DLP Projector with ceiling mount	10	11	0	1	ea	\$2,000.00	\$2,000.00	\$2,000.00
	<b>Replacement Reserve Totals, unescalated</b>							<b>\$85,043.00</b>	<b>\$85,043.00</b>
	<b>Replacement Reserve Totals, escalated</b>							<b>\$85,043.00</b>	<b>\$85,043.00</b>

## Westminster Elementary Replacement Reserve Report

Section	Elements Description	EUL	EFF Age	RUL	Quantity	Unit	Unit Cost	Total Deficiency Repair Estimate	2008 0
5.5	Repair active roof leaks	100	101	0	1	ls	\$20,000.00	\$20,000.00	\$20,000.00
5.5	Replace standing seam metal roof	25	26	0	1250	sf	\$12.00	\$15,000.00	\$15,000.00
5.8	Replace / install whiteboard w/alum. frame	20	22	0	1332	sf	\$14.62	\$19,473.84	\$19,473.84
5.8	Replace /install tackboards	15	17	0	80	sf	\$14.00	\$1,120.00	\$1,120.00
6.2	Replace / install s. stl. sink w/trim- 2 bowl	25	27	0	1	ea	\$1,145.00	\$1,145.00	\$1,145.00
6.4	Install wet-pipe sprinkler system-up to 50,000 sf	30	31	0	64800	sf	\$3.29	\$213,192.00	\$213,192.00
6.5	Exterior building mounted fixtures	20	21	0	5	ea	\$250.00	\$1,250.00	\$1,250.00
7.2	Install / Replace Classroom DLP Projector with ceiling mount	10	12	0	23	ea	\$2,000.00	\$46,000.00	\$46,000.00
7.2	Replace / Install sound system, 100 outlets	15	15	0	1	ttl	\$107,700.00	\$107,700.00	\$107,700.00
7.5	Install/Replace climbing wall, 128 sf, plywood (does not include mats, ropes, harnesses, belay equip	20	22	0	1	ea	\$1,721.00	\$1,721.00	\$1,721.00
7.5	Replace wd basketball backboard, suspended, elec'ly operated	20	22	0	2	ea	\$5,625.00	\$11,250.00	\$11,250.00
8.1	Replace damaged concrete sidewalk	30	30	0	487	sf	\$3.80	\$1,850.60	\$1,850.60
8.2	Replace chain link fence, 5' high	25	25	0	480	lf	\$16.04	\$7,699.20	\$7,699.20
8.3	Backfill and compact topsoil by hand, per cubic yard (= ea)	50	51	0	27	ea	\$49.00	\$1,323.00	\$1,323.00
	<b>Replacement Reserve Totals, unescalated</b>							<b>\$448,724.64</b>	<b>\$448,724.64</b>
	<b>Replacement Reserve Totals, escalated</b>							<b>\$448,724.64</b>	<b>\$448,724.64</b>

William Winchester Replacement Reserve Report

Section	Elements Description	EUL	EFF Age	RUL	Quantity	Unit	Unit Cost	Total Deficiency Repair Estimate	2008
									<b>0</b>
3.1	ADA: Add HC van stall and signage	30	31	0	1	ea	\$220.00	\$220.00	\$220.00
3.1	Install concrete ramp	50	51	0	150	lf	\$23.00	\$3,450.00	\$3,450.00
3.1	Install new hydraulic elevator, 2 floors	25	26	0	1	ea	\$125,000.00	\$125,000.00	\$125,000.00
3.1	Replace / install whiteboard w/alum. frame	20	20	0	5184	sf	\$14.62	\$75,790.08	\$75,790.08
5.5	Repair active roof leaks	100	101	0	1	ls	\$20,000.00	\$20,000.00	\$20,000.00
6.3	Replace unit ventilator	20	20	0	30	ea	\$1,500.00	\$45,000.00	\$45,000.00
6.4	Install wet-pipe sprinkler system-up to 50,000 sf	30	31	0	54850	sf	\$3.29	\$180,457.00	\$180,457.00
6.5	Replace circuit breaker panel	20	20	0	5	ea	\$1,250.00	\$6,250.00	\$6,250.00
7.2	Install / Replace Classroom DLP Projector with ceiling mount	10	11	0	1	ea	\$2,000.00	\$2,000.00	\$2,000.00
8.1	Install new parking spaces, 4" paving, 6" gravel base	25	25	0	13	car	\$944.00	\$12,272.00	\$12,272.00
8.1	Restripe paving	5	5	0	75	ea	\$9.00	\$675.00	\$675.00
	<b>Replacement Reserve Totals, unescalated</b>							<b>\$471,114.08</b>	<b>\$471,114.08</b>
	<b>Replacement Reserve Totals, escalated</b>							<b>\$471,114.08</b>	<b>\$471,114.08</b>

Mt. Airy Middle Replacement Reserve Report

Section	Elements Description	EUL	EFF Age	RUL	Quantity	Unit	Unit Cost	Total Deficiency Repair Estimate	2008
									<b>0</b>
3.1	ADA - install car and/or van accessible signage	30	32	0	1	ea	\$220.00	\$220.00	\$220.00
3.1	ADA-Elevator Signage	30	32	0	3	ea	\$350.00	\$1,050.00	\$1,050.00
3.1	ADA-insulate piping under lavatories	25	27	0	10	ea	\$50.00	\$500.00	\$500.00
3.1	Elevator Communication Equipment	30	32	0	1	ea	\$2,600.00	\$2,600.00	\$2,600.00
3.1	Replace / install whiteboard w/alum. frame	20	20	0	4320	sf	\$14.62	\$63,158.40	\$63,158.40
5.4	Replace aluminum-framed window (fixed)	30	30	0	1600	sf	\$36.00	\$57,600.00	\$57,600.00
5.5	Replace exist'g 3-ply built-up membrane	20	20	0	710	sq	\$1,370.00	\$972,700.00	\$972,700.00
5.5	Replace metal flashing	25	25	0	1200	sf	\$5.40	\$6,480.00	\$6,480.00
5.5	Replace rigid insulation (3" thk)	20	21	0	710	sq	\$137.00	\$97,270.00	\$97,270.00
5.10	Replace carpet	10	6	0	533	sy	\$28.00	\$14,924.00	\$14,924.00
6.1	Replace hydraulic elevator machinery and controls	15	15	0	1	ea	\$78,500.00	\$78,500.00	\$78,500.00
6.2	Replace water heater, commercial from 50 to 120 gal	10	10	0	1	ea	\$3,400.00	\$3,400.00	\$3,400.00
6.3	Replace condensing unit/heat pumps	15	17	0	1	ea	\$23,000.00	\$23,000.00	\$23,000.00
6.3	Replace roof top units	15	18	0	1	ea	\$4,200.00	\$4,200.00	\$4,200.00
6.4	Install dry-pipe sprinkler system, up to 50,000 sf	30	32	0	75800	sf	\$2.22	\$168,276.00	\$168,276.00
6.5	Replace existing fire alarm system	30	30	0	1	ls	\$12,000.00	\$12,000.00	\$12,000.00
7.2	Install / Replace Classroom DLP Projector with ceiling mount	10	11	0	1	ea	\$2,000.00	\$2,000.00	\$2,000.00
7.4	Replace dishwasher, 50/racks/hr	10	10	0	1	ea	\$8,335.00	\$8,335.00	\$8,335.00
7.4	Replace ice maker, 1000#/day w/bin	10	10	0	1	ea	\$8,200.00	\$8,200.00	\$8,200.00
7.5	Replace wd basketball backboard, suspended, elec'lly operated	20	22	0	2	ea	\$5,625.00	\$11,250.00	\$11,250.00
8.1	Install new parking spaces, 4" paving, 6" gravel base	25	25	0	113	car	\$944.00	\$106,672.00	\$106,672.00
8.1	Overlay asphalt	25	26	0	52500	sf	\$1.25	\$65,625.00	\$65,625.00
	<b>Replacement Reserve Totals, unescalated</b>							<b>\$1,707,960.40</b>	<b>\$1,707,960.40</b>
	<b>Replacement Reserve Totals, escalated</b>							<b>\$1,707,960.40</b>	<b>\$1,707,960.40</b>

Northwest Middle Replacement Reserve Report

Section	Elements Description	EUL	EFF Age	RUL	Quantity	Unit	Unit Cost	Total Deficiency Repair Estimate	2008 0
3.1	ADA - install car and/or van accessible signage	10	11	0	2	ea	\$220.00	\$440.00	\$440.00
3.1	Visual Alarm To Augment Audible Alarm(s)	30	32	0	20	ea	\$250.00	\$5,000.00	\$5,000.00
5.8	Replace / install whiteboard w/alum. frame	20	22	0	1152	sf	\$14.62	\$16,842.24	\$16,842.24
5.10	Refinish hardwood gym flooring	8	9	0	9000	sf	\$2.00	\$18,000.00	\$18,000.00
6.3	Replace air handler unit(s)	30	32	0	1	ea	\$2,700.00	\$2,700.00	\$2,700.00
6.3	Replace air handler unit(s)	30	32	0	1	ea	\$10,000.00	\$10,000.00	\$10,000.00
6.3	Replace air handler unit(s)	30	32	0	1	ea	\$10,200.00	\$10,200.00	\$10,200.00
6.3	Replace air handler unit(s)	30	32	0	1	ea	\$12,500.00	\$12,500.00	\$12,500.00
6.3	Replace air handler unit(s)	30	32	0	1	ea	\$14,400.00	\$14,400.00	\$14,400.00
6.3	Replace air handler unit(s)	30	32	0	1	ea	\$15,600.00	\$15,600.00	\$15,600.00
6.3	Replace air handler unit(s)	30	32	0	1	ea	\$16,000.00	\$16,000.00	\$16,000.00
6.3	Replace air handler unit(s)	30	32	0	1	ea	\$16,250.00	\$16,250.00	\$16,250.00
6.3	Replace air handler unit(s)	30	32	0	4	ea	\$16,750.00	\$67,000.00	\$67,000.00
6.3	Replace air handler unit(s)	30	32	0	1	ea	\$17,500.00	\$17,500.00	\$17,500.00
6.3	Replace air handler unit(s)	30	32	0	1	ea	\$19,250.00	\$19,250.00	\$19,250.00
6.3	Replace air handler unit(s)	30	32	0	4	ea	\$25,500.00	\$102,000.00	\$102,000.00
6.3	Replace air handler unit(s)	30	32	0	1	ea	\$30,000.00	\$30,000.00	\$30,000.00
6.4	Install dry-pipe sprinkler system, up to 50,000 sf	30	32	0	110000	sf	\$2.22	\$244,200.00	\$244,200.00
6.4	Replace range hood w/Ansul system - deluxe	15	16	0	1	ea	\$28,825.00	\$28,825.00	\$28,825.00
7.2	Install / Replace Classroom DLP Projector with ceiling mount	10	11	0	32	ea	\$2,000.00	\$64,000.00	\$64,000.00
7.2	Install / Replace projection screens	15	15	0	48	ea	\$372.00	\$17,856.00	\$17,856.00
7.4	Replace dishwasher, 275/racks/hr	10	12	0	1	ea	\$24,950.00	\$24,950.00	\$24,950.00
7.4	Replace ice maker, 1000#/day w/bin	10	12	0	1	ea	\$8,200.00	\$8,200.00	\$8,200.00
7.5	Replace wd basketball backboard, suspended, elec'ly operated	20	22	0	2	ea	\$5,625.00	\$11,250.00	\$11,250.00
7.5	Replace wd basketball backboard, wall-mtnd, fixed	20	22	0	2	ea	\$1,945.00	\$3,890.00	\$3,890.00

8.1	Install new parking spaces, 4" paving, 6" gravel base	25	25	0	60	car	\$944.00	\$56,640.00	\$56,640.00
8.1	Restripe paving	5	5	0	200	ea	\$9.00	\$1,800.00	\$1,800.00
	<b>Replacement Reserve Totals, unescalated</b>							<b>\$835,293.24</b>	<b>\$835,293.24</b>
	<b>Replacement Reserve Totals, escalated</b>							<b>\$835,293.24</b>	<b>\$835,293.24</b>

## Westminster East Middle Replacement Reserve Report

Section	Elements Description	EUL	EFF Age	RUL	Quantity	Unit	Unit Cost	Total Deficiency Repair Estimate	2008 0
3.1	ADA - install car and/or van accessible signage	10	11	0	1	ea	\$220.00	\$220.00	\$220.00
3.1	ADA: Add HC parking stalls and signage	30	31	0	4	ea	\$165.00	\$660.00	\$660.00
3.1	ADA: Add HC signage for restrooms	20	21	0	18	ea	\$60.00	\$1,080.00	\$1,080.00
3.1	ADA: Add HC van stall and signage	30	31	0	1	ea	\$220.00	\$220.00	\$220.00
3.1	Add accessible building entrance signage	10	11	0	3	ea	\$120.00	\$360.00	\$360.00
3.1	Install concrete ramp	50	51	0	600	lf	\$23.00	\$13,800.00	\$13,800.00
3.1	Install grab bar	15	16	0	18	ea	\$325.00	\$5,850.00	\$5,850.00
3.1	Replace lavatory faucet with ADA faucet	20	21	0	10	ea	\$269.00	\$2,690.00	\$2,690.00
3.1	Replace wheelchair lift	15	16	0	4	ea	\$10,900.00	\$43,600.00	\$43,600.00
3.1	Visual Alarm To Augment Audible Alarm(s)	20	21	0	18	ea	\$250.00	\$4,500.00	\$4,500.00
3.1	Wrap drain pipes below with insulation for ADA	20	21	0	10	ea	\$50.00	\$500.00	\$500.00
5.8	Replace / install whiteboard w/alum. frame	20	21	0	4800	sf	\$14.62	\$70,176.00	\$70,176.00
5.8	Replace projection screens	15	16	0	40	ea	\$165.00	\$6,600.00	\$6,600.00
5.10	Repaint walls	10	7	0	108360	sf	\$0.65	\$70,434.00	\$70,434.00
6.3	Replace air handler unit(s)	30	30	0	5	ea	\$12,500.00	\$62,500.00	\$62,500.00
6.3	Replace boiler, gas/oil >1,000 MBH	30	30	0	13422	mbh	\$12.00	\$161,064.00	\$161,064.00
6.3	Replace circulating pump	25	25	0	5	ea	\$750.00	\$3,750.00	\$3,750.00
6.3	Replace condensing unit	15	15	0	2	ea	\$3,680.00	\$7,360.00	\$7,360.00
6.3	Replace galvanized steel cooling tower-up to 162 tons	20	20	0	1	ea	\$11,880.00	\$11,880.00	\$11,880.00
6.3	Replace unit ventilator(s)	30	30	0	65	ea	\$1,250.00	\$81,250.00	\$81,250.00
6.3	Replace water cooled chillers	20	20	0	1	ea	\$126,000.00	\$126,000.00	\$126,000.00
6.4	Install wet-pipe sprinkler system-up to 50,000 sf	30	31	0	120400	sf	\$3.29	\$396,116.00	\$396,116.00
6.5	Replace central fire alarm control panel	15	15	0	1	ea	\$7,500.00	\$7,500.00	\$7,500.00
6.5	Replace circuit breaker panel	20	20	0	15	ea	\$1,250.00	\$18,750.00	\$18,750.00
7.2	Install / Replace Classroom DLP Projector with ceiling mount	10	11	0	1	ea	\$2,000.00	\$2,000.00	\$2,000.00
7.2	Laboratory countertop, acid-proof	25	25	0	1200	sf	\$39.80	\$47,760.00	\$47,760.00

7.2	Replace / Install sound system, 100 outlets	15	15	0	1	tfl	\$107,700.00	\$107,700.00	\$107,700.00
8.1	Install new parking spaces, 4" paving, 6" gravel base	25	25	0	95	car	\$944.00	\$89,680.00	\$89,680.00
8.1	Replace wood deck and ramp, exterior.	10	10	0	1600	sf	\$30.00	\$48,000.00	\$48,000.00
8.1	Restripe paving	5	5	0	200	ea	\$9.00	\$1,800.00	\$1,800.00
	<b>Replacement Reserve Totals, unescalated</b>							<b>\$1,393,800.00</b>	<b>\$1,393,800.00</b>
	<b>Replacement Reserve Totals, escalated</b>							<b>\$1,393,800.00</b>	<b>\$1,393,800.00</b>

Westminster West Middle Replacement Reserve Report

Section	Elements Description	EUL	EFF Age	RUL	Quantity	Unit	Unit Cost	Total Deficiency Repair Estimate	2008 0
3.1	ADA: Wrap under-sink pipes	20	20	0	10	ea	\$50.00	\$500.00	\$500.00
5.4	Replace panic hardware	15	16	0	27	ea	\$740.00	\$19,980.00	\$19,980.00
5.5	Repair active roof leaks	100	101	0	1	ls	\$20,000.00	\$20,000.00	\$20,000.00
5.8	Replace / install whiteboard w/alum. frame	20	22	0	4000	sf	\$14.62	\$58,480.00	\$58,480.00
5.10	Replace carpet	10	5	0	710	sy	\$28.00	\$19,880.00	\$19,880.00
6.4	Install wet-pipe sprinkler system-up to 50,000 sf	30	31	0	135633	sf	\$3.29	\$446,233.00	\$446,233.00
7.2	Install / Replace Classroom DLP Projector with ceiling mount	10	11	0	1	ea	\$2,000.00	\$2,000.00	\$2,000.00
7.2	Replace stage curtains, fireproof	10	10	0	2400	sf	\$32.15	\$77,160.00	\$77,160.00
7.4	Replace gas range	15	16	0	1	ea	\$7,500.00	\$7,500.00	\$7,500.00
8.1	Install new parking spaces, 4" paving, 6" gravel base	25	25	0	17	car	\$944.00	\$16,048.00	\$16,048.00
8.1	Restripe paving	5	6	0	200	ea	\$9.00	\$1,800.00	\$1,800.00
	<b>Replacement Reserve Totals, unescalated</b>							<b>\$669,581.00</b>	<b>\$669,581.00</b>
	<b>Replacement Reserve Totals, escalated</b>							<b>\$669,581.00</b>	<b>\$669,581.00</b>

## North Carroll High Replacement Reserve Report

Section	Elements Description	EUL	EFF Age	RUL	Quantity	Unit	Unit Cost	Total Deficiency Repair Estimate	2008 0
3.1	ADA - install car and/or van accessible signage	30	32	0	1	ea	\$220.00	\$220.00	\$220.00
3.1	Visual Alarm To Augment Audible Alarm(s)	20	22	0	40	ea	\$250.00	\$10,000.00	\$10,000.00
5.8	Replace / install whiteboard w/alum. frame	20	22	0	1920	sf	\$14.62	\$28,070.40	\$28,070.40
5.10	Refinish hardwood stage flooring	3	3	0	2160	sf	\$2.00	\$4,320.00	\$4,320.00
5.10	Replace carpet	10	5	0	5250	sy	\$28.00	\$147,000.00	\$147,000.00
5.10	Replace carpet with vinyl tile	12	14	0	35000	sf	\$2.50	\$87,500.00	\$87,500.00
6.1	Replace cab finishes	15	15	0	2	ea	\$3,500.00	\$7,000.00	\$7,000.00
6.3	Replace air handler unit(s)	30	30	0	1	ea	\$6,750.00	\$6,750.00	\$6,750.00
6.3	Replace air handler unit(s)	30	30	0	1	ea	\$11,000.00	\$11,000.00	\$11,000.00
6.3	Replace air handler unit(s)	30	30	0	1	ea	\$15,500.00	\$15,500.00	\$15,500.00
6.3	Replace air handler unit(s)	30	30	0	1	ea	\$21,313.00	\$21,313.00	\$21,313.00
6.3	Replace air handler unit(s)	30	30	0	1	ea	\$25,000.00	\$25,000.00	\$25,000.00
6.3	Replace air handler unit(s)	30	30	0	1	ea	\$32,500.00	\$32,500.00	\$32,500.00
6.3	Replace air handler unit(s)	30	30	0	1	ea	\$37,500.00	\$37,500.00	\$37,500.00
6.3	Replace air handler unit(s)	30	30	0	1	ea	\$57,500.00	\$57,500.00	\$57,500.00
7.2	Install / Replace Classroom DLP Projector with ceiling mount	10	11	0	1	ea	\$2,000.00	\$2,000.00	\$2,000.00
7.2	Install / Replace Classroom DLP Projector with ceiling mount	100	101	0	60	ea	\$2,000.00	\$120,000.00	\$120,000.00
7.2	Install / Replace projection screens	100	101	0	60	ea	\$372.00	\$22,320.00	\$22,320.00
7.4	Replace bake oven, single deck	12	12	0	4	ea	\$5,266.00	\$21,064.00	\$21,064.00
7.4	Replace dishwasher, 275/racks/hr	10	10	0	1	ea	\$24,950.00	\$24,950.00	\$24,950.00
7.4	Replace ice maker, 1000#/day w/bin	10	10	0	2	ea	\$8,200.00	\$16,400.00	\$16,400.00
8.1	Cut & Patch asphalt	25	27	0	1500	sf	\$3.00	\$4,500.00	\$4,500.00
	<b>Replacement Reserve Totals, unescalated</b>							<b>\$702,407.40</b>	<b>\$702,407.40</b>
	<b>Replacement Reserve Totals, escalated</b>							<b>\$702,407.40</b>	<b>\$702,407.40</b>

### South Carroll High Replacement Reserve Report

Section	Elements Description	EUL	EFF Age	RUL	Quantity	Unit	Unit Cost	Total Deficiency Repair Estimate	2008 0
5.5	Correct water ponding on roof	20	21	0	1	ls	\$20,000.00	\$20,000.00	\$20,000.00
5.5	Replace single-ply membrane	20	21	0	6	sq	\$400.00	\$2,400.00	\$2,400.00
5.6	Install/replace wall mirror, 1/4" plate glass, polished edge	30	31	0	240	sf	\$11.34	\$2,721.60	\$2,721.60
5.8	Replace / Install wd. base cabinet w/plas. laminate c'top	30	31	0	18	lf	\$270.00	\$4,860.00	\$4,860.00
5.8	Replace / install whiteboard w/alum. frame	20	21	0	2736	sf	\$14.62	\$40,000.32	\$40,000.32
5.8	Replace /install tackboards	15	16	0	864	sf	\$14.00	\$12,096.00	\$12,096.00
5.9	Install handrails	25	26	0	6	lf	\$40.00	\$240.00	\$240.00
5.9	Replace cast-in-place concrete stairs, includes demo	50	50	0	20	sf	\$31.13	\$622.60	\$622.60
5.10	Replace carpet	10	8	0	662	sy	\$28.00	\$18,536.00	\$18,536.00
5.10	Replace vinyl flooring	12	13	0	1387	sf	\$2.50	\$3,467.50	\$3,467.50
6.2	Replace / install s. stl. sink w/trim- 1 bowl	25	26	0	3	ea	\$520.00	\$1,560.00	\$1,560.00
6.4	Install wet-pipe sprinkler system-up to 250,000 sf	30	30	0	269870	sf	\$2.89	\$779,924.30	\$779,924.30
6.4	Professional engineering services	50	51	0	1	ls	\$5,000.00	\$5,000.00	\$5,000.00
6.4	Replace audible alarms w/audible & strobe equipped units	10	11	0	200	ls	\$250.00	\$50,000.00	\$50,000.00
6.5	Replace central fire alarm control panel	15	15	0	1	ea	\$7,500.00	\$7,500.00	\$7,500.00
6.5	Retain engineer to analyze capacity of existing generators	100	101	0	1	ls	\$2,500.00	\$2,500.00	\$2,500.00
7.2	Install / Replace Classroom DLP Projector with ceiling mount	10	11	0	62	ea	\$2,000.00	\$124,000.00	\$124,000.00
7.2	Install / Replace projection screens	15	16	0	2	ea	\$372.00	\$744.00	\$744.00
7.2	Replace / Install sound system, 100 outlets	15	15	0	1	ttl	\$107,700.00	\$107,700.00	\$107,700.00
7.5	Install/replace gym divider curtain, mesh top, vinyl bottom, electric roll up	20	21	0	3960	sf	\$14.50	\$57,420.00	\$57,420.00
7.5	Replace scoreboard, basketball, 1-side, economy	15	16	0	1	ea	\$2,930.00	\$2,930.00	\$2,930.00
8.1	Install new parking spaces, 4" paving, 6" gravel base	25	26	0	74	car	\$944.00	\$69,856.00	\$69,856.00
8.1	Replace damaged concrete sidewalk	30	30	0	168	sf	\$3.80	\$638.40	\$638.40
	<b>Replacement Reserve Totals, unescalated</b>							<b>\$1,314,716.72</b>	<b>\$1,314,716.72</b>
	<b>Replacement Reserve Totals, escalated</b>							<b>\$1,314,716.72</b>	<b>\$1,314,716.72</b>

## Westminster High Replacement Reserve Report

Section	Elements Description	EU L	EFF Age	RU L	Quantity	Unit	Unit Cost	Total Deficiency Repair Estimate	2008
1.2	Internal inspection, television camera with film, 500 linear feet	30	31	0	3	ls	\$1,230.00	\$3,690.00	\$3,690.00
1.2	Professional engineering services	25	26	0	1	ls	\$5,000.00	\$5,000.00	\$5,000.00
3.1	Add accessible building entrance signage	10	12	0	6	ea	\$120.00	\$720.00	\$720.00
5.3	Install 8 lf x 6" diameter structural steel column, concrete filled, with welding	50	52	0	4	ea	\$695.00	\$2,780.00	\$2,780.00
5.3	Paint exterior walls	10	11	0	655	sf	\$1.00	\$655.00	\$655.00
5.3	Repoint masonry	40	40	0	4670	sf	\$3.25	\$15,177.50	\$15,177.50
5.4	Replace aluminum storefront door w/glazing & panic hardware, monumental grade	20	22	0	168	sf	\$41.50	\$6,972.00	\$6,972.00
5.4	Replace glazing	25	26	0	1168	sf	\$11.00	\$12,848.00	\$12,848.00
5.7	Replace fire-rated s.c. wd. dbl door, flush panel, w/frame & panic hardware	15	16	0	1	ea	\$3,247.00	\$3,247.00	\$3,247.00
5.7	Replace fire-rated s.c. wd. door w/flush panel & panic hardware	15	17	0	36	ea	\$1,737.00	\$62,532.00	\$62,532.00
5.8	Install/replace wall mirror, 1/4" plate glass, polished edge	30	32	0	232	sf	\$11.34	\$2,630.88	\$2,630.88
5.8	Replace / install whiteboard w/alum. frame	20	20	0	5820	sf	\$14.62	\$85,088.40	\$85,088.40
5.8	Replace /install tackboards	15	17	0	2760	sf	\$14.00	\$38,640.00	\$38,640.00
5.8	Replace metal blinds, 1" slat, aluminum, blackout provisions	20	22	0	276	sf	\$8.20	\$2,263.20	\$2,263.20
5.10	Replace hardwood flooring	15	15	0	320	sf	\$6.80	\$2,176.00	\$2,176.00
5.10	Replace painted gypsum plaster on walls, 3 coats plaster and 2 coats paint, no lath	20	22	0	480	sf	\$3.18	\$1,526.40	\$1,526.40
5.10	Replace quarry tile	50	52	0	4000	sf	\$11.00	\$44,000.00	\$44,000.00
6.1	Replace cab finishes	15	15	0	2	ea	\$3,500.00	\$7,000.00	\$7,000.00
6.2	Replace / install s. stl. sink w/trim- 2 bowl	25	27	0	6	ea	\$1,145.00	\$6,870.00	\$6,870.00
6.2	Replace elec. water heater, commercial, 110 gal	10	11	0	1	ea	\$7,975.00	\$7,975.00	\$7,975.00
6.2	Replace supply and drainage piping (High School)	30	30	0	337050	sf	\$3.21	\$1,081,930.50	\$1,081,930.50
6.3	Install/replace shop dust collection system, 1500 cfm, 10" inlet, 5 hp, 10 - 4" connections.	21	22	0	1	ea	\$13,951.00	\$13,951.00	\$13,951.00
6.5	Upgrade lighting and branch wiring (High School)	30	30	0	337050	sf	\$8.72	\$2,939,076.00	\$2,939,076.00

7.2	Install / Replace Classroom DLP Projector with ceiling mount	10	11	0	95	ea	\$2,000.00	\$190,000.00	\$190,000.00
7.2	Install / Replace projection screens	15	17	0	23	ea	\$372.00	\$8,556.00	\$8,556.00
7.2	Replace / Install sound system, 100 outlets	15	15	0	1	ttl	\$107,700.00	\$107,700.00	\$107,700.00
7.5	Install/replace gym divider curtain, mesh top, vinyl bottom, electric roll up	15	17	0	6480	sf	\$14.50	\$93,960.00	\$93,960.00
7.5	Replace scoreboard, basketball, 4-sided, deluxe	15	16	0	1	ea	\$2,930.00	\$2,930.00	\$2,930.00
8.1	Overlay asphalt	20	21	0	24000	sf	\$1.25	\$30,000.00	\$30,000.00
8.1	Overlay asphalt	20	21	0	56952	sf	\$1.25	\$71,190.00	\$71,190.00
8.1	Overlay asphalt	25	26	0	3600	sf	\$1.25	\$4,500.00	\$4,500.00
8.1	Replace cast-in-place concrete curbs	30	31	0	708	lf	\$7.00	\$4,956.00	\$4,956.00
8.1	Replace concrete retaining wall	20	22	0	100	sf	\$35.00	\$3,500.00	\$3,500.00
8.2	Replace damaged concrete sidewalk	30	31	0	3630	sf	\$3.80	\$13,794.00	\$13,794.00
	<b>Replacement Reserve Totals, unescalated</b>							<b>\$4,877,834.88</b>	<b>\$4,877,834.88</b>
	<b>Replacement Reserve Totals, escalated</b>							<b>\$4,877,834.88</b>	<b>\$4,877,834.88</b>

APPENDIX F  
Facilities Inventory

FACILITIES INVENTORY SPREADSHEET

2001 to 2010

Name	Type	YEAR CONSTRUCTED	Total	Sq. Ft.
North Carroll	Middle	1956, A1962, A1991, M2005		106,400
Parr's Ridge	Elem	2005		73,271
Gateway Alternative	Spec. Prog.	2003		27,048
Winters Mill	High	2002		213,650
Century	High	2001		217,945

1991 to 2000

Name	Type	YEAR CONSTRUCTED	Total	Sq. Ft.
Shiloh	Middle	2000		108,000
Cranberry Station	Elem	1999		61,346
Francis Scott Key	High	1958, A1970, A1980, M&A1999		192,269
Elmer Wolfe	Elem	1998		65,273
Linton Springs	Elem	1998, A2006		80,888
Oklahoma Road	Middle	1997		108,000
New Windsor	Middle	1995		83,235
Taneytown	Elem	1950, A1962, A1982, M1995		63,250
Runnymede	Elem	1994, A2007		71,704
Mechanicsville	Elem	1948, A1967, A1974, M1994, A2007		74,526
Winfield	Elem	1934, A1950, A1966, A1980, M1993		69,200
Sandymount	Elem	1936, A1950, A1963, A1969, A1974, M1992		61,521
Friendship Valley	Elem	1992		57,200
Piney Ridge	Elem	1991, A2006		68,329
Spring Garden	Elem	1991, A2006		67,658

1981 to 1990

Name	Type	YEAR CONSTRUCTED	Total	Sq. Ft.
Manchester	Elem	1932, A1949, A1953, M1989, A2007		75,407
Mt. Airy	Elem	1935, A1949, A1969, M1987		58,674
Hampstead	Elem	1986, A2007		59,201
Sykesville	Middle	1932, A1949, A1957, M1984, A2000		105,000
Carroll Springs	Special Ed	1981, A1986		31,420
Liberty	High	1980		156,000

FACILITIES INVENTORY SPREADSHEET

1971 to 1980

Name	Type	YEAR CONSTRUCTED	Total	Sq. Ft.
Carrolltowne	Elem	1976, A2006		87,654
North Carroll	High	1976, A1986		233,400
Northwest	Middle	1976		113,600
Robert Moton	Elem	1976		75,200
Westminster	Elem	1976, A2006		74,637
Westminster East	Middle	1936, A1950, A1964, M1975		120,400

1961 to 1970

Name	Type	YEAR CONSTRUCTED	Total	Sq. Ft.
Career & Technology Center	Spec. Program.	1970 A1987		112,190
Eldersburg	Elem	1970, A2006		72,313
Westminster	High	1970, A1985		337,050
South Carroll	High	1967, A1972, A1986		269,870
William Winchester	Elem	1962, A1980, A1986, A1991		54,947

1951 to 1960

Name	Type	YEAR CONSTRUCTED	Total	Sq. Ft.
Mt. Airy	Middle	1958, A1981		75,800
Westminster West	Middle	1958, A1964, A1996		135,733
Freedom	Elem	1955, A1963, A1964, A1975, A1995		51,232

Prior to 1950

Name	Type	YEAR CONSTRUCTED	Total	Sq. Ft.
Charles Carroll	Elem	1929, A1950, A1974		43,700

**TOTALS** 4,214,141

LEGEND

Facility Name in

Red Font = Elementary School  
Green Font = Middle School

Black Font = Special Program School  
Blue Font = High School

A = Addition  
M = Modernization