

Office of the Superintendent of Schools  
MONTGOMERY COUNTY PUBLIC SCHOOLS  
Rockville, Maryland

December 7, 2010

MEMORANDUM

To: Members of the Board of Education

From: Jerry D. Weast, Superintendent of Schools

Subject: Facilities Assessment with Criteria and Testing

All of the Montgomery County Public Schools (MCPS) elementary schools currently in the queue for modernization will be completed by January 2018, and middle schools in the queue will be completed a few years later. Therefore, it is now time to assess the next group of aging schools and add them to the list of schools for future modernization. In order to conduct an up-to-date assessment of these schools, it was necessary to update the Facilities Assessment with Criteria and Testing (FACT) methodology, the tool MCPS uses to assess schools. The FACT methodology had not been updated since its inception in the early 1990s.

A multistakeholder committee, the FACT Review Committee, met in the spring of 2010 and developed general characteristics of schools that should be assessed, termed “assessment parameters.” At its meeting on July 8, 2010, the Board of Education reviewed these assessment parameters and adopted them. In addition, the Board of Education approved a list of 53 facilities to be assessed. Subsequently, the FACT Review Committee reconvened in August and September 2010 to determine the FACT measures, weights, and overall scoring system. The consulting firm of EMG, Inc., which specializes in engineering, asset management, and sustainability services for facilities, was retained to assist in this detailed work. EMG, Inc. also will perform the school assessments with the updated FACT methodology in the coming year.

Attached for your review and discussion is the updated FACT methodology.

JDW:LAB:JS:lm

Attachment

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**MONTGOMERY COUNTY PUBLIC SCHOOLS**

**DEPARTMENT OF FACILITIES MANAGEMENT**

**FACILITIES ASSESSMENT WITH CRITERIA AND TESTING**

**(FACT)**

**METHODOLOGY FOR**

**ASSESSING SCHOOLS FOR MODERNIZATION**

**DECEMBER 7, 2010**

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## ACKNOWLEDGEMENTS

The FACT Review Committee, a multistakeholder work group, developed the FACT methodology presented herein. Committee members included the following:

Mr. James Song	Chair/Director	MCPS Department of Facilities Management
Mr. Steve Augustino	CIP Chair	MCCPTA
Ms. Barbara Bice	Chief	MSDE, School Facilities Branch
Ms. Betsy Brown	Director	MCPS Department of Curriculum and Instruction
Ms. Cheryl Clark	Principal	Lois P. Rockwell Elementary School & Principal Advisory Committee
Mr. Martin Creel	Director	MCPS Department of Enriched and Innovative Programs
Mr. Bruce Crispell	Director	MCPS Division of Long-range Planning
Mr. Blaise DeFazio	Budget Analyst	Montgomery County Executive
Ms. Ginny Gong	Director	Interagency Coordinating Board
Mr. Robert Hellmuth	Director	MCPS Department of School Safety and Security
Mr. Roy Higgins	Director	MCPS Division of Maintenance
Ms. Joyce Jessell	Acting Director	MCPS Division of Construction
Mrs. Dianne Jones	Director	MCPS Division of School Plant Operations
Ms. Adrienne Karamihas	Capital Budget Management	MCPS Department of Facilities Management
Mr. Keith Levchenko	Senior Legislative Analyst	Montgomery County Council
Mr. Joseph Lavorgna	Former Acting Director	MCPS Department of Facilities Management
Ms. Essie McGuire	Legislative Analyst	Montgomery County Council
Mr. Steve Parker	Principal Architect	Grimm & Parker Architects
Mr. Richard Romer	Policy Analyst	Montgomery County Council, Education Committee
Ms. Kay Romero	Former President	MCCPTA
Mr. Gregg Stevens	Analyst	Department of Health and Human Services, Early Childhood
Ms. Deborah Szyfer	Senior Planner	MCPS Division of Long-range Planning
Ms. Kristin Tribble	President	MCCPTA
Mr. Todd Watkins	Director	MCPS Department of Transportation

## **BACKGROUND**

The Montgomery County Public Schools (MCPS) recognizes that even well-maintained schools eventually reach the end of their life span and require modernization. An objective methodology to assess the condition of each school is required to determine which schools to modernize. The primary factor in identifying which schools need to be modernized is the age of the facility. Once a group of schools is selected for assessment based on age, it is necessary to determine the order in which the schools should be modernized. This determination involves an assessment process that objectively measures the condition of each school against a set of criteria and ranks the relative condition of each school that is assessed.

When the MCPS modernization program began in the early 1990s, a methodology known as the Facilities Assessment with Criteria and Testing (FACT) was developed. This methodology was applied to three groups of school assessments—the first group in Fiscal Year (FY) 1993, the second in FY 1996, and the third in FY 2000. To date, these assessments have resulted in the modernization of 31 elementary schools, 7 middle schools, and 8 high schools. Another 16 elementary schools, 6 middle schools, and 8 high schools have been assessed and are now under construction or are in the queue for future modernization.

The list of elementary schools in the queue for modernization is nearing an end, with the last three elementary schools now in the queue scheduled for completion in January 2018. As a result, it is necessary to prepare for the assessment of additional schools that are aging and in need of modernization. Therefore, the methodology used to assess schools needed to be updated to reflect current educational program and current school design and code standards.

## **FACT UPDATE PROCESS**

On March 16, 2010, and April 19, 2010, a committee that was comprised of stakeholders from inside and outside MCPS participated in developing an update to the FACT methodology. This committee recommended characteristics of schools, termed “FACT assessment parameters,” that should be assessed in scoring the next round of schools for modernization. Following a public review period and superintendent of schools recommendation in support of the committee report, the Board of Education adopted the FACT assessment parameters on July 8, 2010. The Board also approved a list of fifty-three MCPS facilities to be assessed and one high school to be added at the end of the current list.

The selection of the 53 facilities to be assessed was based primarily on age, with most of the schools built or modernized prior to 1985. Five schools that were built or modernized after 1985 were added due to their condition. The Board of Education also requested the special education learning centers be added to the list, while acknowledging that these may be co-located at other schools when they are modernized. Holding schools also were included on the list due to their age and condition, as was the Blair G. Ewing Center. The assessed facilities will be scheduled for modernization after completion of facilities that previously were assessed and prioritized for modernization. The previously assessed facilities will not be re-prioritized. The list of 53 schools to be assessed is displayed in Appendix A.

Subsequent to Board of Education action on the assessment parameters, the multistakeholder committee was reconvened to further refine the FACT methodology. The committee met weekly seven times, from August 2010 through September 2010, and developed the approach for scoring the condition of schools, including what to measure at each facility and how to weigh the importance of each measure. Consultants from EMG, Inc. provided technical expertise in this refinement of the FACT methodology. In the coming year, the 53 facilities scheduled for assessment will be assessed using the FACT methodology described in this report. These facilities will be prioritized among similar facilities (e.g., elementary schools will be prioritized as a group, and middle schools will be prioritized as a group.) School modernizations ensure a facility's ability to provide for the current educational program and to meet current facility design guidelines and code requirements. Modernizations generally address building conditions that cannot be remedied through replacement of building systems. MCPS has in place capital projects that provide for the routine renewal and replacement of various building systems, including: MCPS Roof Replacement; Heating, Ventilation, and Air Conditioning (HVAC) Replacement; and Planned Life-Cycle Asset Replacement (PLAR) capital projects. These projects operate independent of the modernization queue, and facilities scheduled for future modernization continue to be maintained with funds available in these projects. Therefore, facility deficiencies that can only be addressed through full modernization are the primary focus of the FACT methodology. Further, characteristics that may change over time or may be addressed by other capital programs, such as additions to relieve capacity shortages, also are not included in the FACT methodology.

## **ASSESSMENT PARAMETERS**

The FACT methodology consists of two sets of parameters—the first set of parameters is Educational Program Parameters and the second set is Physical Infrastructure Parameters. The former has to do with the characteristics of schools that directly influence the educational program, while the latter has to do with the physical condition of the buildings. The characteristics that will be reviewed in each parameter area are described below.

### **Educational Program Parameters**

- **Educational Specifications**—include space-related requirements, room adjacencies, and other amenities required to support the program. These parameters were developed based on the county's educational specifications for new construction.
- **Controlled Access**—includes the administrative security features, such as the ability to control visitor access into the building.
- **Open Plan Schools**—consist of schools that were originally designed as open plan, then retrofitted, but still include non-full-height walls, windowless classrooms, and indirect access to common spaces.

#### **Educational Specifications**

- **Core**—includes multipurpose room, gymnasium, and instructional media center.
- **Classrooms**—include prekindergarten (pre-K), kindergarten, and standard classrooms.

- **Specialized Instruction**—includes science, music, art, technology education, computer laboratory, and special education.
- **Educational Support**—includes instructional support rooms, English for Speakers of Other Languages (ESOL), resource rooms, and testing areas.
- **Administrative**—includes administrative suite, health services suite, staff development area, staff lounge, building service facilities, and Parent Teacher Association (PTA) storage rooms.

## **Physical Infrastructure Parameters**

- **Facility Design Guidelines**—include the building components and systems installed at the school that impact the ability to meet current codes and standards.
- **Utility and Energy Efficiency**—compares the school’s energy use index to state and MCPS benchmarks.
- **Maintenance Costs**—compares the individual school’s maintenance costs relative to other MCPS schools.
- **Community Use of Public Facilities**—compares the hours of community use associated with each school building, such as after-school programs, gymnasium use, PTA activities, day care, and summer school.

### **Facility Design Guidelines**

- **Site**—the FACT assessment of the site is limited to physical infrastructure criteria, and, as such, contains many site aspects in parking, playfields, and site amenities. An evaluation of the parking areas will address whether each school has adequate spaces based on standard requirements for elementary and middle school levels. The assessment also will evaluate adequate traffic lanes, separate bus lanes, and access for deliveries. Safe and separate paths and drop-offs for students also are scored. Other items included in site are accessibility and stormwater management compliance.
- **Building Envelope**—systems evaluated under the building envelope category include exterior walls, roofs, and overall building structure. Assessors will identify areas of air or water penetration at insulated or uninsulated areas. When scoring roofs, open web steel joist issues, such as deterioration and visible rust will be assessed. The structure will be assessed and code issues, condition, and the presence of wooden load-bearing systems will be noted.
- **Security**—an evaluation of the school’s security system includes an evaluation of the public address system; telephone access, closed-circuit television (CCTV); data, voice and modem receptacles; and interior isolation doors. For example, the assessment will determine if there is a video surveillance system providing general surveillance of the site, common areas, and building entry and exit points. A Code Blue and Code Red Adaptability screening will verify the presence of an automated system to notify the staff to lock down the building envelope at all exits.

- **Fire Protection**—the fire protection analysis is primarily an evaluation of sprinklers and fire panels. Scoring will make provision for schools that have been partially retrofitted. The following are the components included in the evaluation: pull stations in the auditoriums, all-purpose rooms, gymnasium, boiler room, and main entrance or the lack of an addressable fire alarm panel that rings at the fire department. The *Americans with Disabilities Act of 1990 (ADA)* compliant components, such as strobes, will be evaluated with other code and guideline compliance issues, such as annunciators located near the main entrance and hood fire suppression systems installed in the kitchens.
- **Building Interior**—this evaluation area will contain several observable system components, including means of egress, classroom walls, and evidence of pest infestation. Partitions will be assessed to determine whether they extend above ceiling tile to create a better sound barrier. There also will be an analysis to identify classrooms without direct access to corridors. These classrooms are of particular importance in open plan schools. Doors and doorways will be assessed for their accessibility and compliance with codes. Also included is a study of reports and Operation and Maintenance (O&M) plans for the presence of hazardous materials (lead, asbestos, etc.) and the confirmation of their location, if any.
- **Mechanical Systems**—an analysis of the school’s mechanical systems consists of an evaluation of the control systems, including a discussion regarding the extent and capabilities of an energy management system where a deficiency will elevate the need for modernization. Additional criteria in this category will identify compliance with the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) 62.1 indoor air quality standard and outside air intake requirements for the existing HVAC systems.
- **Electrical Systems**—the FACT methodology measures the electrical system along several dimensions. The first component of the assessment is the adequacy of power delivered to the school and classrooms. Lighting (intensity as well as efficiency) is a major consideration in the electrical category. All other energy-using equipment also is evaluated. The assessment also considers the availability of emergency and back-up electrical systems, such as generators.
- **Plumbing Systems**—the approach to assessing plumbing systems is to address the adequacy of the existing piping, as well as the domestic water heating and distribution systems. The adequacy of bathroom fixtures is based on facility guidelines. Any deficiency in these quantities will increase the need for modernization.
- **Ability to Upgrade without Modernization**—this category is intended to recognize the relative potential to upgrade and modernize outdated or obsolete systems without full modernization. For example, a school with a unit ventilation system for heating needs to have an updated HVAC system to meet current standards. The solution is to install a ducted forced air system above the suspended ceiling. However, a school with low ceilings (floor to deck) will present a barrier to this approach when

compared to a building with a higher floor-to-deck height. The constrained case may require extensive building interior reconstruction compared to the case with adequate ceiling clearance where a single system upgrade may improve the HVAC system. Additional items that are evaluated in this category include the following: site constraints, electrical capacity, building orientation, expandability of building systems (mechanical, electrical and plumbing), and structural aspects, such as floor-to-ceiling heights.

## **SCORING SYSTEM**

The old FACT methodology used a scoring system that had a 2,000-point scale. Schools in worse condition scored lower on this scale. In updating the FACT methodology, it was considered important to develop a different scoring scale so that the results of schools assessed under the old methodology could not be confused with the scores of schools that will be assessed with the updated methodology. Consequently, the updated FACT methodology has a 600-point scale and schools that score higher on the scale are in worse condition than schools that score lower on the scale.

The updated FACT methodology scoring system weighs the two sets of parameters equally in the overall scoring of a school—providing for a maximum of 300 points for the Educational Program Parameters and 300 points for the Physical Infrastructure Parameters. When combined, the maximum possible score for each facility is 600 points. A score of 600 would indicate a school in the worst possible condition, while a score of zero would indicate a school in the best possible condition.

Each parameter will be assessed using one or more measures that will be based on standards, regulatory requirements, or best practices. Where criteria are not met at the facility, points will be added, resulting in a higher overall score. Facilities that score higher under the methodology are judged to be more in need of modernization than facilities that score lower on the 600-point scale. MCPS will schedule modernizations according to the relative scores of each facility.

The scoring scheme was developed in order to keep evaluation criteria standard and to allow for consistent scoring across all schools analyzed. A check list approach will be used by evaluators. Each item on the check list may be addressed in one of two ways. For some items, the presence or absence of a particular item can be noted through a simple “yes” or “no,” with point values assigned accordingly. For other items being assessed, the relative condition of the item will be assessed on a three-point scale, with point values associated with each level of condition

The table on the following page shows the point values associated with the two ways that items will be scored.



Question (Scoring)	Scoring
Presence or Absence (Yes/No)	Yes: 0 Points
	No: 1 Point
Ranking ( 0, 1, or 2)	Meets/Exceeds Standard: 0
	Partially Meets Standard: 1
	Does Not Meet Standard: 2

## WEIGHTING

Not all characteristics of schools being assessed are equally important to determine the overall condition of a school and the subsequent timing of its modernization. Therefore, characteristics have weights established to correspond to their importance in the overall score. The weights for the various characteristics to be assessed were assigned by the FACT committee who worked with consultants from EMG, Inc. in updating the FACT methodology. This committee included the Montgomery County Council of Parent Teacher Associations' (MCCPTA) president and Capital Improvements Program chair. The diagram on the following page shows the scoring and weighting scheme. A total score of 300 points is possible in each of the two broad assessment parameter areas—Educational Program Parameters and Physical Infrastructure Parameters. The diagram branches out to show what categories of characteristics will be reviewed in each of these two broad areas. For some categories, additional areas of assessment are shown in the branches. Following is a description of how to interpret the diagram and understand the weights assigned to various characteristics.

The characteristics of schools that will be assessed in the Educational Program Parameters area include the following: comparison of schools to current Educational Specifications (with 76% of the 300 points to be derived from items measured in this category), whether the school has an open space plan (with 14% of the 300 points to be derived from items measured in this category), and the degree of controlled access at the school (with 10% of the 300 points to be derived from items measured in this category). In addition to these weights, the Educational Specifications category is broken out to show relative weights for aspects of the facility that are to be measured against the current Educational Specifications. These are assigned relative weights as follows—the school core (29%), specialized instruction spaces (29%), classrooms (21%), educational support spaces (14%), and administrative spaces (7%). The same approach is used in the allocation of the 300 points for the Physical Infrastructure Parameters area, and the percentage weights are shown on the diagram.

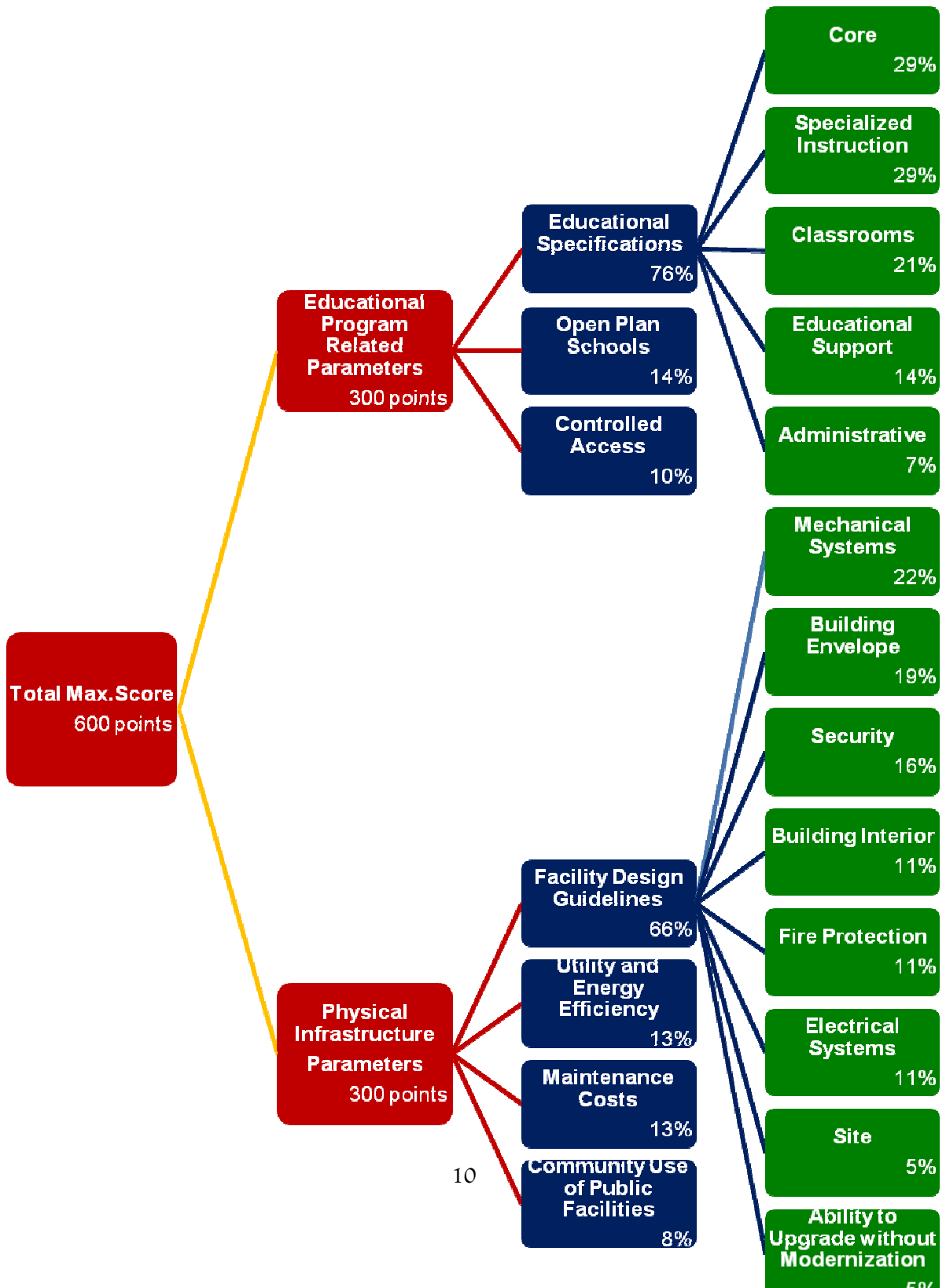
The scoring system is calibrated so that a school that has more of one item being assessed does not receive additional scores for that item. For example, in a case in which the presence of sprinklers in classrooms is being assessed, the scoring will not be derived from the number of classrooms with or without sprinklers. If this methodology was followed, a school with more classrooms could be scored more times on this measure than a school with fewer classrooms. To ensure that variability in school size does not skew the assessment scores, for this case, the percentage of classrooms in the school with or without sprinklers would be used to derive the score. This approach will normalize the scoring across schools of all sizes.

## **ASSESSMENT CHECK LISTS**

A total of 109 discrete items will be reviewed for the Educational Program Parameters, and a total of 103 discrete items will be reviewed for the Physical Infrastructure Parameters. To view the listing of every characteristic that will be assessed, please go to the following website. There, you will find the check lists that evaluators in the field will use as they assess each school.

[www.montgomeryschoolsmd.org/departments/planning/CommunityInfo\\_Modernizations.shtml](http://www.montgomeryschoolsmd.org/departments/planning/CommunityInfo_Modernizations.shtml)

# Scoring and Weighting of FACT Parameters



# Appendix A

## 53 Facilities to be Assessed for Modernization in FY 2011

Elementary Schools (34)	Middle Schools (11)	Other Facilities
Belmont ES Bradley Hills ES Broad Acres ES Burnt Mills ES Cedar Grove ES Cloverly ES Cold Spring ES Damascus ES Darnestown ES Diamond ES Dufief ES East Silver Spring ES Fallsmead ES Fields Road ES Fox Chapel ES Gaithersburg ES Germantown ES Greenwood ES Piney Branch ES Poolesville ES Rosemary Hills ES Sherwood ES South Lake ES Stedwick ES Stonegate ES Strathmore ES Summit Hall ES Takoma Park ES Twinbrook ES Washington Grove ES Watkins Mill ES Whetstone ES Woodfield ES Woodlin ES	Argyle MS John T. Baker MS Benjamin Banneker MS Robert Frost MS A. Mario Loiederman MS Neelsville MS Newport Mill MS North Bethesda MS Redland MS Ridgeview MS Silver Spring International MS	<u>Special Schools and Program Centers (4)</u> Blair G. Ewing Center Carl Sandburg Learning Center* Rock Terrace School* Stephen Knolls School*  <u>Elementary Holding Centers (4)</u> Fairland Grosvenor North Lake Radnor

\*The special education program centers—Stephen Knolls, Rock Terrace, and Carl Sandburg—will be assessed but may be considered for collocation with general education schools in the future.

Other Facilities: Because Northwood High School is the only high school to be assessed, it will be placed at the end of the current queue of high schools to be modernized. The former Charles W. Woodward High School on Old Georgetown Road, that now

houses Tilden Middle School, will be used as a holding center once Tilden Middle School is modernized at the Tilden Lane location. The Charles W. Woodward High School facility does not need to be assessed since it will be renovated with funding from the Rehabilitation/Renovation of Closed Schools Program, after the Tilden Middle School modernization is completed.