REPORT

BOARD OF EDUCATION OF HOWARD COUNTY

Board Agenda Item

TITLE: Evaluation of High School Scheduling Models DATE: March 20, 2001

OVERVIEW:

The attached report contains the results of a study of the schedules used in Howard County's public high schools. In gathering data for this report, survey results were received from 1,160 parents of 11th graders, 551 school-based staff members, and 9,321 students enrolled in Grades 9, 10, 11, and 12. Numerous interviews were conducted with staff members at the schools and the central office in the county as well as with persons knowledgeable about block schedules outside the system.

At the present time, there are four primary types of scheduling models being used in Howard County's ten high schools. Four schools (Atholton, Glenelg, Mt. Hebron, and Oakland Mills) use a year-long, alternating-day rotation model known as the A/B schedule. On a given day, students attend three 90 minute classes and one 50-55 minute class. On the following day, students attend three different 90 minute classes and the same 50-55 minute class. Students earn seven credits in the A/B schedule. Two schools (Howard and Long Reach) use a semester model known as the 4x4. Students attend four 85-90 minute classes daily. River Hill uses a semester model with an embedded A/B schedule for some courses. Students earn eight credits in the semester schedules. This school year, Hammond modified its A/B rotation model to increase the number of daily classes for the students. Centennial uses a 7-credit, 7-day rotation model in which students have five classes per day. Classes meet at a different time each day in a seven-day cycle. Wilde Lake maintained its 6-period day model with a college layer, which has been used since the school opened in 1971. The basic schedule consists of six 55-minute classes which meet daily. Eligible students may earn more than six credits by taking two- and three-day a week classes.

SUMMARY OF FINDINGS:

- All the schedules have positive characteristics. The long periods in the block schedules are best for lab classes. Focusing on only four courses a semester is a plus for the 4x4. Having an extra day to do homework is one of the reasons students like the A/B schedule. Rotating classes over different times during the day is an advantage at Centennial. Seeing students every day all year is valued at Wilde Lake. There are disadvantages also. With the reduced class time in the block schedules, teachers have difficulty covering the curriculum. The schedule at Centennial makes it difficult to place G/T mentor and CWE students. The amount of teacher planning time at Wilde Lake is less than the other high schools.

- Issues and concerns center around equity (instruction and planning time, number of credits, support services), mobility (credit lost when transferring), and flexibility (meeting needs of students in special programs as well as general education students).

- The majority of student and parent respondents indicate the schedule their school is using currently is the best model for them. For most students and parents, the schedule their school is using is the only schedule they know. The opinion of staff members (the group with the most experience with different schedules) are mixed as to which schedule is best for students.

CONCLUSIONS

- There is a need to standardize the schedule that is used by the public high schools in Howard County. Having a mix of semesterized schedules and year-long schedules in the same school district does not serve the needs of all students and staff members throughout the system.

- Except for students in the Tech Magnet program, the needs of students in special programs are not adequately addressed in a school system with so many different schedules.

- There is inequity among the school schedules with regard to amount of student instructional time and teacher planning time as well as the number of credits that can be earned.

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- Having the option to earn seven credits per year is important to students.

- The length of the instructional periods in the block schedules is an issue. While a majority of students like the long periods, a substantial minority do not.

- Increasing the number of credits reduces instructional time. Even with longer periods, less than sixty percent of schools with block schedules are able to cover the curriculum.

RECOMMENDATION/FUTURE DIRECTION:

- Establish a countywide High School Scheduling Committee

Charge the committee to determine which schedule should be used at the high schools. Membership on the committee should include students, staff, and parents who have had experience in a 4x4 schedule, an A/B schedule, and in the models used at Centennial and Wilde Lake. Data from this report, plus other relevant information, should guide the work of the committee.

The following requirements should be used in determining the model. The schedule should:

- Enable a student to earn seven credits
- Enable a teacher to cover the curriculum
- Provide for flexibility of needed instructional time to maximize learning for all students
- Provide for a balance of planning time for teachers
- Meet the needs of students in special programs - Gateway, G/T Mentor, Cooperative Work Experience, Special Education, Tech Magnet
- Recognize that the Tech Magnet program can be implemented in a 7- credit schedule.
- Provide for year-long, daily instruction (September to June) for core courses (Courses to be tested on the high school assessments)
- Provide for year-long instruction (September to June) for mathematics, foreign language and advanced placement courses
- Enable students to transfer between public schools in Howard County without losing credits
- Make it evident that Howard County has a high school system rather a system of high schools

Submitted by: [signature] Approval/Concurrence: [signature]
Superintendent/Designee

Evaluation of the High School Schedules

I. INTRODUCTION

In response to a Maryland State Department of Education increase in graduation requirements beginning with the class of 1997 (students entering Grade 9 in September 1993), several Howard County high schools began to look at alternative scheduling models. During the 1993-94 school year, two of the eight high schools (Atholton and Howard) began using two different 4-period day models - one a semester model known as a 4x4 and the other a rotation model known as the A/B schedule. In the 1994/95 school year, four more high schools (Glenelg, Hammond, Mt. Hebron, and Oakland Mills) began using the A/B schedule. When two new high schools opened in 96/97, both (Long Reach and River Hill) implemented the 4x4 scheduling model. Centennial changed to a seven credit model in 96/97 school year. Wilde Lake maintained its 6-period day model with a college layer which has been used since the school opened in 1971.

At the present time there are four different types of scheduling models being used in Howard County's ten high schools. In some schools the models have been modified. For example, the model used at River Hill is primarily a semester 4x4 model in which a year-long A/B rotation model has been embedded for some courses. In the 00/01 school year, Hammond modified its A/B Rotation Model to have three single periods daily and two 85-90 minute periods every other day.

The purpose of the evaluation is to study the four scheduling models and determine the strengths of each model in meeting the needs of the school communities they serve and to address the impact these models have on maximizing academic performance of all students.

II. EVALUATION DESIGN

A. Overview

The evaluation of the high school scheduling models is organized around the Malcolm Baldrige 2000 Education Criteria for Performance Excellence, the most widely accepted system of organizational self-assessment for high performance. The criteria are a set of nationally-recognized standards against which all organizations can be fairly evaluated. The 2000 Education Criteria for Performance Excellence are organized into seven categories - (1) Leadership, (2) Strategic Planning, (3) Student and Stakeholder Focus, (4) Information and Analysis, (5) Faculty and Staff Focus, (6) Educational and Support Process Management, and (7) School Performance Results.

Each of the four scheduling models were studied within the context of these seven categories.

B. Procedures

The principal data-gathering technique for this report was a survey conducted at all high schools. Prior to administering the survey, focus groups with principals, parents, teachers, and curriculum coordinators were held to ensure that relevant issues

were included in the questionnaires. All administrators, teachers, and guidance counselors; all students in Grades 9, 10, 11, and 12; and parents of all 11th grade students at each high school were included in the survey. Detailed results of the surveys are contained in a separate volume for each group. In this report summaries which indicate the percent of staff, parent, and student respondents who selected Strongly Agree or Agree and response rates are presented on pages 23, 24, 25, and 26.

Achievement data from the Maryland School Performance Program (MSPP) report were reviewed for each high school. An analysis of three schools with similar demographics and different scheduling models and the performance of its students on the SAT was conducted.

For each high school, the average class size by curriculum area was studied, the mean GPA in English by course level was determined, and the number of students who leave high school on non-credit released time was collected.

Additional information was gathered through personal interviews with the Superintendent of Schools, the Associate Superintendent for Planning and Support Services, the Director of High Schools, the Director of Transportation, the Director of Student Services, the Coordinator of Alternative Programs, the Resource Counselor, and with principals and assistant principals at schools with different scheduling models. Comments from the NAACP Community Forum on scheduling were reviewed.

Telephone interviews were conducted with Dr. Eileen Oickle, Branch Chief of the Middle and High School Learning and Cross Department Programs Branch at the Maryland State Department of Education; with Dr. Thomas L. Shortt, Co-author of *The Complete Handbook of Block Scheduling: Success for Students and Teachers Through Efficient Use of Time and Human Resources* and the original implementor of the A/B Rotation Model at Atlee High School in Virginia; with Dr. C. Rodney Clemmons, current principal at Atlee High, and with Dr. Dale Fulton. Director of Curriculum and Instruction for the Montgomery County School System.

Research studies about block scheduling from the United States and Canada were reviewed and the report of the research by the College Board entitled *Block Schedules and Student Performance on AP Examinations* was studied.

Commendations are extended to Mr. Julian Katz, Supervisor of Data Analysis, for his extensive assistance. His help in processing the numerous pages of data from the surveys plus generating additional reports have provided the support that this study required.

NOTE: The survey data presented in this report are the percentages of respondents who selected Strongly Agree or Agree when responding to an item on the questionnaire. The information is presented by school and is organized as follows: The four A/B schools are listed first: Atholton - AHS, Glenelg - GHS, Mt. Hebron - MHHS, and Oakland Mills - OMHS. Next are Centennial - CHS, Hammond - HaHS, and Wilde Lake - WLHS. Finally, data from the 4x4 schools are listed. These include Howard - HoHS, Long Reach - LRHS, and River Hill - RHHS.

An asterisk beside one of the percentages indicates that more than 50 percent of the respondents selected Don't Know/Not Applicable in response to the statement.

III. FINDINGS

A. Leadership

1. Organizational Leadership

How did each school's leadership determine the need for a new scheduling model?

The primary impetus for changing to a different scheduling model was grounded in the increase in graduation requirements by the Maryland State Department of Education with the Class of 1997. With the increase in required courses, the number of electives that students could choose was reduced. A change from the traditional six-credit schedule to one with seven or eight credits increased the number of credit options that students could pursue and increased the number of credits earned per year.

B. Strategic Planning

1. Strategy Development

What are the similarities and differences among the four models?

Howard and Long Reach use a 4x4 schedule. The 4x4 is a semester model where students take four courses a semester. They attend four classes each school day. Each class meets for 85-90 minutes. Students earn eight credits in a school year.

The A/B schedule is year-long rotation model where students take three 85-90 minute classes every other day and one 50-55 minute class daily. Students earn seven credits per year. Atholton, Glenelg, Mt. Hebron, and Oakland Mills use this schedule.

Two schools have modified the 4x4 and A/B schedules. River Hill uses a semester 4x4 schedule embedded with a year-long A/B rotation model and students earn eight credits per year. In 00/01, Hammond modified the A/B schedule they had been using. Students have three 50-55 minute classes daily and two 85-90 minute classes every other day. Students earn seven credits at Hammond.

Centennial uses a model which rotates seven classes in a 7-day cycle. Students attend five classes daily. Four classes are one hour long and one class is 90 minutes long. Classes meet at a different time each day, thus every course has a 90-minute class period in a 7-day cycle. Students earn seven credits per year.

Wilde Lake uses a traditional 6-period day model with a college layer. Eligible students may elect to take more than six credits by taking 2-day a week classes on Monday and Thursday and 3-day a week classes on Tuesday, Wednesday, and Friday.

A more detailed description of the schedules bis presented on pages 27 and 28.

What factors were considered before a specific scheduling model was selected?

Prior to selecting a new schedule at Atholton and Howard in 93/94, scheduling committees discussed the merits of different models which permitted students to take seven or more credits and visited schools where the models were being implemented. Atholton chose to use the A/B schedule and Howard the 4x4 semester model.

The Tech Magnet Program was implemented in the same school year that Long Reach and River Hill opened. At the time, students in the Tech Magnet Program needed to earn eight credits per year in order to meet all course requirements for the program. These two schools were designated Tech Magnet schools and chose to use the 4x4 to ensure that students could earn eight credits per year.

In an effort to address concerns about courses with a natural fit to a year-long schedule such as advanced placement courses, instrumental music (band) and yearbook, etc., River Hill developed a model that embedded the year-long A/B schedule into the semester 4x4 for selected courses.

Before Centennial switched to a new scheduling model, they considered both the 4x4 and the A/B schedule. Staff members at Centennial were concerned about the instructional time lost in these models, plus the impact of the 4x4 schedule on students taking AP classes, since their school has the largest number of AP students in the county. They visited a number of schools including Bel Air High School in Harford County where the 7-day rotation model is used. They ultimately voted to implement this schedule.

Wilde Lake opened in 1971 as a pilot school. The school program has evolved over the past thirty years but a primary component – varied instructional time – has remained. If students are eligible to take more than six credits, the schedule is flexible in that students may select to take a subject in a two or three day a week class rather than a five day a week class. Although less time is spent in class, students in 2 or 3 day classes are responsible for the same curriculum as students in a five day class. Less than eight percent of the students at Wilde Lake take more than six credits per year.

2. Strategy Deployment

What plans were developed for implementing the new scheduling model?

In plan/select schedule	AHS	GHS	MHHS	OMHS	CHS	HaHS	WLHS	HoHS	LRHS	RHHS
Teachers were involved (Staff)	70.2	56	62.6	53.8	90.9	76.9	58.6	33.3	22.7	17.8
(Parent)	33.3*	19.1*	32.7*	30.7*	31.9*	34.9*	27.7*	22.8*	31.2*	27.4*
Staff Dev prepared me (Staff) for the new schedule	31.9	48.0	46.9	26.9	61.4	49.2	15.8*	34.7	48.4	44.3

*Indicates more than 50 percent of the respondents selected Don't Know/Not Applicable

Except for the 4x4 schools, more than 50 percent of staff respondents at all schools indicated that teachers participated in planning and selecting the schedule model that is used at a school. The highest teacher involvement was at Centennial and Hammond.

C. Student & Stakeholder Focus

1. Knowledge of Student Needs and Expectations

What input did students have in selecting the school's scheduling model?

In plan/select schedule		AHS	GHS	MHHS	OMHS	CHS	HaHS	WLHS	HoHS	LRHS	RHHS
Students were involved	(Student)	40.8	35.7	36.7	31.6	25.6	31.3	31.9	44.8	48.5	42.1
	(Staff)	36.2	26.0*	25.1	34.6	54.5	26.2	24.3	19.5	16.6	11.4
	(Parent)	25.9	17.5*	23.9	25.0	27.4	19.7	25.3	22.8	40.6	20.5

Data indicate at all schools that less than 50 percent of student respondents state that students were involved in planning/selecting a new schedule. Except for Centennial, less than 50 percent of the staff and parent respondents indicate that students were involved.

To what degree are students able to schedule the courses they need/want?

		AHS	GHS	MHHS	OMHS	CHS	HaHS	WLHS	HoHS	LRHS	RHHS
Able to schedule courses	(Student)	84.3	81.9	88.3	84.5	87.1	80.0	86.1	86.0	86.5	85.9
	(Staff)	89.4	78.0	96.9	69.2	90.9	89.3	88.6	79.1	87.9	84.8
	(Parent)	87.3	77.8	87.9	82.7	88.9	88.7	83.1	87.3	83.3	87.7
Problem schedule courses	(Student)	20.7	21.0	18.3	20.9	16.7	25.4	25.5	19.8	23.7	23.1
	(Staff)	36.1	28.0	31.2	30.7	13.6	13.8	21.4	25.0	33.4	15.2
	(Parent)	19.5	25.3	16.6	11.8	13.7	18.2	21.7	16.7	15.7	13.7
Earning 6 credits OK	(Student)	51.7	50.1	51.1	50.6	51.4	54.9	71.1	47.2	45.0	47.9
	(Staff)	51.1	52.0	40.7	61.5	31.8	47.7	67.1	44.4	60.6	39.3
	(Parent)	31.4	32.3	42.6	44.2	39.7	44.9	56.6	35.4	41.7	31.9
Important to earn 7 crdts	(Student)	70.5	74.0	76.4	73.3	77.1	73.4	53.9	69.4	70.5	68.3
	(Staff)	44.7	50.0	65.6	53.8	72.7	55.4	44.3	72.3	62.1	58.2
	(Parent)	66.7	73.0	63.4	75.0	69.8	60.6	55.4	58.8	62.5	56.3

Eighty percent or more of students at all schools indicate they are able to schedule the courses they want or need. Approximately one-quarter of the students at HaHS, WLHS, LRHS, and RHHS indicated they had problems scheduling the courses they wanted or needed this school year.

Earning six credits is OK for the majority of students. Except for WLHS, approximately 70-75 percent of the students indicate it is important to have a schedule which allows them to earn at least seven credits per year so they can take more elective courses.

To what degree does each model meet the needs of students at the school?

		AHS	GHS	MHHS	OMHS	CHS	HaHS	WLHS	HoHS	LRHS	RHHS
Schedule meets needs	(Student)	68.7	72.8	72.1	66.1	80.9	61.2	75.1	81.5	76.9	79.5
of students/children	(Staff)	91.5	58.0	65.6	50.0	86.3	72.3	80.0	54.1	50.0	70.9
	(Parent)	79.3	87.3	83.0	82.7	87.2	71.0	73.5	83.2	83.3	79.2

More than 60 percent of students at all schools indicate that the schedule meets their needs. The range goes from 61.2 percent at HaHS to 88.5 percent at HoHS. Perceptions are similar among students, staff, and parents at CHS, WLHS, and RHHS.

To what degree are the scheduling models aligned to the high school assessments?

The scheduling models were already in place when information regarding the high school assessments was disseminated to the schools. High school curricula are based on the High School Core Learning Goals (CLGs) and these curricula are taught in every high school, regardless of the schedule.

There are differences in whether teachers are able to cover the curriculum. The data below show that less than 50 percent of teachers at AHS, OMHS, HoHS, LRHS, and RHHS indicated that they are able to cover the content of the curriculum. More than 65 percent at CHS and WLHS indicate they are able to cover the curriculum in their schedule. Curriculum coverage will be a contributing factor to success on the high school assessments.

		AHS	GHS	MHHS	OMHS	CHS	HaHS	WLHS	HoHS	LRHS	RHHS
Able to cover curric	(Staff)	42.5	58.0	56.3	42.3	65.9	53.8	75.7	36.1	36.4	41.8
	(Parent)	75.6	69.9	70.9	65.4	73.5	55.6	59.0	70.3	68.8	63.0

2. Student and Stakeholder Satisfaction and Relationships

How are parents informed about the scheduling model that is used at his/her child's school?

The data below indicate that parents were involved to varying degrees in helping to plan for/select the schedule used at the school. It is important to keep in mind that except for HaHS, the schedules being used have been in place for four or more years. It is only those individuals (staff and parents) who were at the school when the change was initiated who are knowledgeable about parent involvement in planning/selecting the schedule that is being used.

All schools have new student orientations, Back-To-School nights, newsletters, etc. which provide mechanisms for informing parents about the school and the schedule that is used.

In plan/select schedule	AHS	GHS	MHHS	OMHS	CHS	HaHS	WLHS	HoHS	LRHS	RHHS
Parents were involved (Staff)	40.4	26.0*	25.0*	34.6	65.9	36.9	41.1	22.2	22.7	17.8
(Parents)	25.6	15.9*	23.9	21.1	28.2	19.8	24.4	22.2	36.5	19.2

How do schools determine student and parent satisfaction with the scheduling model?

The results of the survey conducted for this study provide the most up-to-date information as to student and parent satisfaction with the schedule.

D. Information & Analysis

1. Measurement and Analysis of Organizational Performance

What kinds of information are gathered and used by the school to determine that effective performance is being attained?

Student classroom performance is monitored at each school on a regular basis. Progress reports (report cards) are sent home three times a semester at the 4x4 schools for a total of six reports per year. At the other high schools, report cards are sent home four times per year.

Each school collects and maintains data required by the Maryland School Performance Program (MSPP). These data include performance on the Maryland functional tests, enrollment, attendance rates, dropout rates, student mobility, students receiving special services, and high school program completion results.

Other data available to the schools include class grades, CTBS/5 scores for 9th graders, suspension rates, class size, percent of students who complete Algebra I by Grade 10, results of local assessments, and scores on the SAT, the PSAT, and the advanced placement tests.

E. Faculty & Staff Focus

1. Work Systems

What is the average number of students that a teacher instructs during an instructional period (semester or year)?

Countywide, the overall average class size for 2000/01 school year is 24.65 (25 students). The High School Class Size report (November 9, 2000), indicates the variation that exists in the number of students in a class. The percent of capped classes with fewer than 20 students decreased slightly and the percent of capped classes having 31-34 students increased slightly. There is

a substantial difference among the ten high schools with 35 + students in uncapped courses. AHS, HoHs, and LRHS have 26, 32, and 35 uncapped classes respectively with 35 or more students. These compare with 16 or fewer classes at the other schools. A copy of the page from the Class Size report entitled *Number of Classes in Specific Size Categories by High School* is presented on page 29.

The data below show that, except for OMHS, more than 55 percent of staff at all schools indicated that their classes are too large. More then 50 percent of staff and parents across all schools indicate that large class sizes prevent teachers from being as effective as they would like.

		AHS	GHS	MHHS	OMHS	CHS	HaHS	WLHS	HoHS	LRHS	RHHS
Classes too large	(Staff)	68.0	68.0	68.7	34.6	59.1	64.6	55.7	58.4	63.6	60.8
	(Parent)	58.1	65.0	70.4	46.1	59.8	62.0	67.5	41.9	39.6	67.1
Lg class size prevents	(Staff)	72.3	68.0	65.6	53.9	54.6	69.2	52.9	57.0	74.3	51.9
teacher effectiveness	(Parent)	75.9	74.2	78.2	82.7	71.8	76.4	77.1	64.4	67.7	75.3

In general for all subjects to be tested on the high school assessments (HSAs) - English, mathematics, science, and social studies, class sizes are larger than the county average at HoHS and LRHS, which have 4X4 schedules. Detailed data on average class size by curriculum area by high school are presented on page 30.

How adequate is the staffing to accommodate the type of scheduling model used at a school?

Staffing ratios are the same for each high school regardless of schedule. As the data above show, most staff and parents believe that classes are too large. Some high schools do have additional staff members based on special programs that are in the school. For example, Schools with Alternative Education programs (AHS, HaHs, HoHS, LRHS, MHHS, OMHS, and WLHS) have an additional position. Four high schools (HoHS, LRHS, OMHS, and WLHS) have an additional position to staff their Reading Pilot Program. Three high schools (AHS, HoHS, and OMHS) have two additional positions for their ROTC program.

Adequate staffing has been an issue since AHS and HoHS changed to a seven and eight period schedule in 93/94. At that time, staffing was based on six periods per day. Schedules were changed to increase the number of classes (credits) a student could earn without increasing staff proportionately.

What is the amount of planning time that each teacher is allocated?

The amount of planning time varies among the high schools. The negotiated agreement with the Howard County Teachers Association (HCEA) states on page 28 of the contract "In addition to a thirty-minute duty-free lunch, secondary school teachers will have daily preparation time of at least fifty consecutive minutes during the regular student day."

In general, teachers in the 4x4 and A/B schools have a 85-90-minute period for planning each day. At HaHS, teachers have three planning periods over a 2-day period. For example, on Day 1 a teacher may have two 50-minute planning periods and on Day 2 one 90-minute planning period or a teacher may have two 50-minute periods one day and one 50-minute period

another day. There is no more than one hour difference in the amount of planning time among the faculty at HaHS. At CHS, teachers have about ten 60-minute planning periods over a 7-day cycle. At WLHS, teachers have one 55-minute planning period each day. Instructional leaders (IL) at the schools have approximately twice the amount of planning time that teachers have.

2. Faculty and Staff Education, Training, and Development

How much training did faculty/staff members receive before they transitioned to a new scheduling model?

Except for CHS, less than 50 percent of staff indicated that the staff development that they received adequately prepared them for the shift to the new schedule. Except for HaHS, the schedules being used have been in place for four or more years. Many staff members may have been employed at the school several years after the schedule was implemented.

	AHS	GHS	MHHS	OMHS	CHS	HaHS	WLHS	HoHS	LRHS	RHHS
Staff Dev prepared me (Staff) for the new schedule	31.9	48.0	46.9	26.9	61.4	49.2	15.8*	34.7	48.4	44.3

3. Faculty and Staff Well-Being and Satisfaction

To what degree does the schedule have a positive or negative impact on the work environment?

Data below indicate that 40 percent of staff at HaHS believe the longer class periods have a negative impact on the quality of instruction. Higher percentages of staff members from 4x4 schools indicate that the schedule causes them a lot of stress. The highest is RHHS, followed by LRHS and HoHS.

	AHS	GHS	MHHS	OMHS	CHS	HaHS	WLHS	HoHS	LRHS	RHHS
Longer periods-negative (Staff) impact on instruction	19.2	20.0	9.4	26.9	11.4	40.0	7.2*	27.8	31.8	19.0
Schedule causes me a lot (Staff) of stress	12.8	8.0	15.6	26.9	18.2	38.5	12.9	44.5	51.5	60.7

F. Educational & Support Process Management

1. Education Design and Delivery

To what degree is the essential curriculum covered/presented in the four scheduling models?

In response to the question, "*I am able to cover the content of the curriculum,*" 75.7 percent of WLHS staff indicated Strongly Agree or Agree, followed by 65.9 percent at CHS. A little more than 50 percent are able to cover the curriculum at GHS, MHHS, and HaHS. Less than 50 percent of the remaining five schools agreed with the statement.

	AHS	GHS	MHHS	OMHS	CHS	HaHS	WLHS	HoHS	LRHS	RHHS
Able to cover curric (Staff)	42.5	58.0	56.3	42.3	65.9	53.8	75.7	36.1	36.4	41.8
(Parent)	75.6	69.9	70.9	65.4	73.5	55.6	59.0	70.3	68.8	63.0

How much instructional time is provided in each scheduling model? (Approximate hours per course)

The amount of instructional time provided in each scheduling model varies. In general, the amount of time for each course in a 4x4 model is 129 hours. In an A/B schedule, classes that meet every other day for 90 minutes have about 135 hours per course and classes that meet daily for 55 minutes have 165 hours of instructional time. At CHS, instructional time per course is about 143 hours. At WLHS, the amount of instructional time is 165 hours for daily 55 minute classes, 66 hours for 2-day classes and 99 hours for 3-day classes. The difference in the amount of instructional time per course between a 55 minute daily class for 180 days (165 hours) and a 90 minute daily class for 90 days (129 hours) is 36 hours per course.

Several schools have a regularly scheduled weekly 20-25 minute Advisory/Homeroom period on Tuesday and Thursday (LRHS and RHHS) or on Tuesday, Wednesday, and Friday (WLHS).

How much time is spent in changing classes? (minutes)

The amount of passing time between classes is six minutes at GHS and five minutes at the other nine high schools. Several schools have a break between 1st and 2nd periods that varies from 5-10 minutes.

What courses are being selected by students?

A review of courses being selected by students indicate that, regardless of the schedule, the percent of students taking academic offerings is at approximately the same rate. The following is an example:

# of Academic courses	AHS	GHS	MHHS	OMHS	CHS	HaHS	WLHS	HoHS	LRHS	RHHS
Two	–	–	–	–	–	–	–	36.3	36.2	32.5
Three	–	–	–	–	–	–	–	45.2	42.3	55.1
Four	30.1	32.3	27.7	31.3	32.1	32.1	34.0	–	–	–
Five	51.4	50.4	57.0	48.6	63.7	50.7	41.9	–	–	–

What is the impact of the 85-90 minute class period?

		AHS	GHS	MHHS	OMHS	CHS	HaHS	WLHS	HoHS	LRHS	RHHS
Like 85-90 minute classes	(Student)	50.4	51.1	50.8	30.2	14.8	24.4	13.4	61.7	51.4	55.2
Stdnts like longer pds	(Staff)	44.7	36.0	28.1	26.9	20.4	15.4	4.3*	36.2	28.8	36.7
Tchrs like longer pds	(Staff)	65.9	64.0	71.9	61.5	61.4	46.2	10.0*	69.5	65.2	70.9
Child like longer pds	(Parent)	58.6	62.3	52.5	52.0	41.6	39.6	17.0	78.4	60.5	60.3
Learn more in 85-90 min	(Student)	54.2	57.6	57.8	41.6	26.7	31.4	19.7	68.1	62.4	68.6
	(Staff)	48.9	38.0	59.4	38.4	27.3	20.0	4.3*	36.1	33.3	46.9
	(Parent)	55.2	49.2	53.3	48.1	35.3	32.1	19.2	67.5	62.5	53.4
Difficult to pay attention	(Student)	52.8	57.3	56.4	66.9	73.2	69.8	65.1	41.3	47.6	52.4
	(Staff)	48.9	64.0	68.8	73.1	56.9	80.0	32.9*	63.9	68.2	55.7
	(Parent)	19.5	32.3	42.7	32.7	40.5	52.4	36.2	24.3	27.1	21.9
Time to do homework	(Student)	45.5	39.7	33.8	44.7	30.6	39.6	39.3	47.6	58.8	43.0
in class	(Staff)	34.0	24.0	25.0	26.9	13.6	30.8	14.3*	22.2	31.8	19.0
	(Parent)	46.0	35.5	28.6	42.3	32.7	40.0	22.9	37.9	53.1	42.4

Except for OMHS and HaHS, approximately half of students in schools with block schedules like the 85-90 minute classes. A substantial minority do not. Fifty to 60 percent think they learn more in 85-90 minute classes. Except for HaHS, more than 60 percent of teachers in schools with block schedules like the longer periods. Forty to 70 percent of students indicate that it is difficult to pay attention in a long class.

What is the impact of the scheduling model on student absenteeism?

The data below indicate that students in schools with block schedules have greater difficulty making up work when absent than students at CHS or WLHS.

		AHS	GHS	MHHS	OMHS	CHS	HaHS	WLHS	HoHS	LRHS	RHHS
Difficult for student to	(Student)	39.2	40.8	48.1	43.0	36.2	48.8	32.9	40.8	42.6	56.1
make up work when absent.	(Staff)	44.7	38.0	68.7	61.6	36.3	66.2	20.0	69.4	69.7	72.1
	(Parent)	25.3	32.3	40.9	32.7	32.5	46.0	20.5	37.8	35.4	52.1

What is the impact of the scheduling model on amount of student learning?

Except for AHS, OMHS, and HaHS, the majority of students from all schools agree that students learn as much in the schedule used at their school as they would in another schedule.

		AHS	GHS	MHHS	OMHS	CHS	HaHS	WLHS	HoHS	LRHS	RHHS
Learn as much in this sch as in another schedule	(Student)	47.2	53.8	52.8	44.3	57.1	45.6	57.8	57.8	56.2	56.3
	(Staff)	44.7	40.0	46.9	26.9	59.1	32.3	28.5	30.5	34.9	46.8
	(Parent)	52.8	59.6	48.4	59.7	54.7	39.3	46.3	61.4	55.8	63.0

What is the impact of the sequence of class meetings on student learning?

Seventy percent of students and parents at HoHS and LRHS indicate that students learn better when classes meet every day. The reverse is true in the A/B schools where most classes meet every other day. Less than 36 percent of students and parents in A/B schools think that daily classes make a difference in student learning. More than 60 percent of all respondent groups from WLHS think that students learn better when classes meet every day. One of the reasons HaHS changed its schedule this year was to have more classes meet on a daily basis rather than every other day. This belief is reflected in the 75 percent of HaHS staff respondents who agreed with the statement.

		AHS	GHS	MHHS	OMHS	CHS	HaHS	WLHS	HoHS	LRHS	RHHS
Learn better when class meets every day	(Student)	29.3	28.7	30.4	36.4	20.0	43.9	62.7	75.3	70.5	65.8
	(Staff)	44.6	60.0	56.3	46.2	54.5	75.4	67.1	50.0	65.2	55.7
	(Parent)	21.0	27.9	30.2	32.7	32.5	52.7	65.0	79.9	71.3	43.1

To what degree are 12th grade students leaving school for non-credit released time?

A review of the data presented on page 31 indicates that overall 20 percent of high school seniors leave school for non-credit released time to work. Once these students leave school, they are not monitored or supervised by school personnel.

In school year 00/01, the number of students who have received permission to leave school for non-credit released time for work totals 560 students. This number is larger than any senior class. Without monitoring, there is no way for the school system to assess how many of these students continue to work and make productive use of the released time or how many have ceased to work and thus have shortened their school day with the released time option.

The extent to which the various high school scheduling models have contributed to greater numbers of students selecting the non-credit released time option is unclear. It was assumed that students needed more class periods so they would have opportunities to elect more course options beyond the number of courses required for graduation. It is apparent that once some students have taken the required number of credits, they are electing to take non-credit released time for work rather than enrolling in a credit cooperative work experience program or other courses which will assist them in broadening their in-

school educational experiences. In a preliminary report published in January 2001 by the National Commission on the High School Senior Year, the Commission states "The senior year is often a lost opportunity, during which many students let one-quarter of their high school learning slip through their fingers."

What is the effect of the scheduling models on selected course areas such as Advanced Placement, Mathematics, Foreign Language, Instrumental Music, etc.?

The type of schedule that a school uses can be problematic for advanced placement, mathematics, and foreign language courses.

In a 4x4 semester schedule, students may enroll and complete an AP class first semester; yet, the AP test is not administered by the College Board until May - a full four months after the course was completed. In a national study conducted in 1997 by the College Board, the organization that administers the AP program, it was found that "students, on average, obtain better AP grades when instruction is given over an entire year rather than in a semesterized block schedule format." "For courses on compressed schedules (fall or spring), there is some evidence that higher AP examination grades may be obtained when testing immediately follows instruction. Finally, there is also some supporting evidence that students obtain higher AP grades when more time is devoted to instruction." AP data for all schools are presented on page 32.

Another issue in the 4x4 schedule is the impact of the schedule on mathematics and foreign language courses. These courses require continuity and repeated exposure and practice to ensure that knowledge and skills are acquired and maintained. For example, it is possible that a student could take one level of a foreign language course in the fall of one school year and not take the next level until the spring of the following school year. Or students may complete the required three credits of mathematics by the end of 10th grade and not elect to take another course in mathematics. Thus students may not study some subjects, theoretically, for as much as two years prior to entering college. This may effect their SAT results due to the time lapse between the study of content and testing. With careful planning, it may be possible to avoid such conflicts; yet, the reality is that these conflicts do exist.

Other courses that need a year-long schedule include instrumental music (band), yearbook, madrigals, etc. One of the reasons that RHHS elected to embed a year-long A/B Rotation Model into its 4x4 schedule was to address some of these concerns.

2. Education Support Processes

How are support services such as counseling impacted by the scheduling models?

Data below indicate that 50 percent or more of the parent respondents stated help had been received by a guidance counselor.

	AHS	GHS	MHHS	OMHS	CHS	HaHS	WLHS	HoHS	LRHS	RHHS
Help from guidance counselor (Parent)	62.8	61.9	66.4	50.0	65.0	51.9	59.0	58.4	66.7	69.8

The amount of work for guidance counselors is greater in schools with 4x4 semester schedules. Everything (course placement, scheduling, Back-To-School Nights, etc.) must be done twice. Semester schedules are also more difficult because teachers cannot establish the same level of relationships with students in a semester that they can in a full year and there is less time for counseling to take place.

Another area of support is facilitating the transition of students from Gateway back to their home school. The most effective method for accomplishing a smooth transition is to use a phase-in strategy with part of the day spent at Gateway and part at the home school. Transitioning is very difficult at 4x4 schools and CHS because of the semester schedule and the rotation of classes over seven days. In addition, ninety-minute classes require an adjustment since classes at Gateway are 50 minutes.

Supporting the needs of students with disabilities is another area where different schedules create unnecessary difficulty. From paying attention in a 90-minute class to dealing with a schedule that is different each day for seven days, students with disabilities are put into situations which add more complexity to their environments.

Finding placements for G/T mentor students and cooperative work experience (CWE) students can also be made more difficult by the type of schedule that a school uses. For example, placing mentor students and CWE students is more involved at CHS because the classes meet at a different time each day. One must find mentors who are able and willing to adjust their schedules to a different time in a 7-day cycle or make accommodations at the school if classes are missed.

3. Partnering Processes

What is the impact of having four different scheduling models in ten high schools when students transfer to a high school with a different scheduling model within The Howard County Public School System?

		AHS	GHS	MHHS	OMHS	CHS	HaHS	WLHS	HoHS	LRHS	RHHS
Lost credit when transfer bet HC schools	(Student)	10.1*	9.3*	8.8*	7.4*	7.4*	11.7	9.2*	10.1*	14.5	11.9*
	(Staff)	17.0*	30.0*	34.4*	23.0*	29.5*	40.0*	44.3*	47.2*	53.0*	26.6*
	(Parent)	3.4*	1.6*	4.0*	1.9*	4.3*	9.1*	9.8*	4.2*	13.6*	0.0*

Although the percentages are small, the number of students who indicated that they have lost credits because they transferred between Howard County public high schools with different schedules is substantial. Across all schools and grades, the number who responded Strongly Agree totaled 495 students. It is evident that having different scheduling models in the same school system has a negative impact when students transfer from one school to another.

What is the impact of having four different scheduling models when students move from middle school to high school?

When students are going to high schools with different scheduling models, the task of the guidance counselors is more involved since they must be familiar with the different models in order to assist students in planning a high school program and selecting appropriate courses.

The data below indicate that approximately 70 percent of student respondents were able to adjust to the schedule with ease and parents were also positive about their child's adjustment. Teachers perceptions were less positive.

		AHS	GHS	MHHS	OMHS	CHS	HaHS	WLHS	HoHS	LRHS	RHHS
Easy to adjust to schedule	(Student)	73.7	77.1	71.3	68.0	81.5	63.9	76.8	78.2	76.8	75.2
in 9th grade	(Staff)	44.7	42.0	28.2	26.9	70.5	35.4	14.3*	33.4	36.4	31.7
	(Parent)	83.9	77.4	69.7	75.0	81.1	62.4	61.4	79.0	81.2	84.9

G. Organizational Performance Results

1. Student Performance Results

What is the impact of the scheduling models on student achievement?

MSPP Report Card 2000	AHS	GHS	MHHS	OMHS	CHS	HaHS	WLHS	HoHS	LRHS	RHHS
MD Functional Tests										
Gr. 11 Status-% Passed all tests	95.8	100.0	96.3	95.9	99.6	96.7*	98.2	98.6	97.2	99.4
S - Satisfactory	S	E	E	S	E	E	E	E	E	E
E - Excellent										

All high schools achieved Satisfactory or Excellent status on the Maryland functional tests.

* Performance prior to changing to a modified A/B schedule in 00/01.

Rigorous Program Indicators*	AHS	GHS	MHHS	OMHS	CHS	HaHS	WLHS	HoHS	LRHS	RHHS
% of students who completed	35.6	36.9	43.7	29.9	39.0	31.9	52.9	26.1	26.4	42.1
4 of 6 performance indicators										

The percent of graduates who completed four of the six rigorous indicators is highest at WLHS (52.9).

* Rigorous program indicators include (a) Two or more credits in foreign language with a grade of B or better, (b) Two or more credits of approved advanced technology with a grade of B or better, (c) Mathematics courses beyond algebra II and geometry with a grade of B or better, (d) Four credits of science with a grade of B or better, (e) Score of 1,000 or higher on SAT-1 or 20 or higher on ACT, or both, and (f) A cumulative grade point average of 3.0 or higher on a 4.0 scale.

	AHS	GHS	MHHS	OMHS	CHS	HaHS	WLHS	HoHS	LRHS	RHHS
Attendance Rate (Yearly)	95.3	95.3	95.6	94.2	96.5	94.9	95.3	95.2	95.2	95.5
	S	S	S	S	E	S	S	S	S	S
Dropout Rate (Yearly)	1.06	0.38	1.88	4.68	0.49	2.03	1.03	2.41	2.55	0.31
	E	E	S	N	E	S	E	S	S	E

		AHS	GHS	MHHS	OMHS	CHS	HaHS	WLHS	HoHS	LRHS	RHHS
Student Mobility	(Entrants)	3.9	1.6	7.1	6.3	1.6	5.3	7.9	5.7	5.8	1.6
	(Withdrawals)	6.9	4.0	6.0	10.1	1.7	7.2	7.3	7.4	6.7	3.1

A review of the mean English GPA by course level (Review, Regular, Honors, and G/T) was conducted to determine if one schedule type was better than another for students working at different instructional levels. No patterns were found. The data are presented on page 33.

Also, an analysis of three schools with similar demographics and different scheduling models and the performance of their students on the SAT was conducted. When we compared the verbal and mathematics SAT scores for the Class of 2000 across the three schools by like racial groups, no observed statistical differences in performance were found.

2. Student & Stakeholder Focused Results

What is the level of satisfaction with the scheduling model among the students & parents?

	AHS	GHS	MHHS	OMHS	CHS	HaHS	WLHS	HoHS	LRHS	RHHS
Like the schedule (Student)	76.0	88.0	86.0	71.0	87.0	61.0	81.0	87.0	86.0	82.0
(Parent)	92.0	88.0	80.0	77.0	87.0	61.0	80.0	85.0	83.0	74.0

Very high percentages of students and parents at all schools like the scheduling model that is used at their school. Responses to the question, "Overall, do you like or dislike the schedule at your school? Why?" are presented in the volume which contains all the results of the survey.

Common themes in the student comments include: LIKE - focus on only four or five courses, having less homework each night, having extra day to do homework (A/B), DISLIKE - 90 minute periods-boring, difficult to pay attention.

Which scheduling model do you think would work BEST for you / for your child?

		AHS	GHS	MHHS	OMHS	CHS	HaHS	WLHS	HoHS	LRHS	RHHS
Student	4x4 /Semester	11.6	7.2	10.8	15.3	6.2	14.7	7.7	65.6	59.5	12.4
	4x4 with A/B	9.0	13.4	9.3	7.6	5.7	8.6	6.2	6.5	8.5	55.5
	A/B Rotation	49.6	49.9	48.7	44.3	6.8	33.3	5.5	6.3	6.2	7.3
	5 Pd Rotation	5.5	4.6	7.5	7.8	60.6	9.6	5.8	4.2	4.7	5.2
	6 Period Day	10.9	10.3	11.0	15.0	9.0	13.3	59.7	6.2	9.3	6.5

More than 55 percent of students at Centennial, Wilde Lake, Howard, Long Reach, and River Hill think the schedule that their

school is using currently is the model that works best for them. Nearly 50 percent of students at Atholton, Glenelg, Mt. Hebron, and Oakland Mills (A/B schools) feel the same about their schedule. Students at Hammond are less positive. It is important to note that the 00/01 school year is the first year for the implementation of the modified A/B schedule at Hammond. According to parents, except for Hammond, more than 79 percent of students had not experienced a different type of scheduling model.

		AHS	GHS	MHHS	OMHS	CHS	HaHS	WLHS	HoHS	LRHS	RHHS
Parent	4x4 /Semester	5.7	3.2	5.6	13.2	3.4	10.6	6.0	67.8	68.8	6.8
	4x4 with A/B	2.3	6.3	9.3	3.8	10.1	6.4	-	8.1	6.3	63.0
	A/B Rotation	61.4	54.0	53.6	50.9	4.2	40.4	6.0	5.4	4.2	15.1
	5 Pd Rotation	4.5	6.3	9.3	7.5	63.9	9.6	6.0	6.0	4.2	6.8
	6 Period Day	15.9	19.0	14.1	15.1	6.7	21.3	72.3	8.7	10.4	4.1

The patterns that were evident in student responses are also evident in the responses of parents. The majority indicated that the best schedule for their child is the one that the school is using at the present time.

3. Budgetary & Financial Results

What is the cost of maintaining four different scheduling models? How does cost compare across the four models?

The little budget fund provided to each school is based on per student allocation and not on the type of schedule a school uses. However, the amount of support needed varies depending on the type of schedule. For example, guidance counselors are involved in assisting with course selection and registration twice a year in 4x4 schools as opposed to once in year-long schools. Assistance from the resource teachers/curriculum coordinators can be greater in schools where teachers need assistance in compacting the curriculum. The time required to collect and analyze data centrally is greater for 4x4 schools because any processing of school data must be done twice a year. The need for students in the Tech Magnet program to earn eight credits per year is one of the reasons that LRHS and RHHS uses a 4x4 schedule. The transportation costs for the Tech Magnet program is comparable to the level of service provided for Special Needs students.

4. Faculty & Staff Results

What is the level of satisfaction with the scheduling model among the faculty ?

	AHS	GHS	MHHS	OMHS	CHS	HaHS	WLHS	HoHS	LRHS	RHHS
Like the schedule (Staff)	83.0	75.0	95.0	58.0	92.0	65.0	88.0	58.0	54.0	69.0

High percentages (75 percentage or higher) of staff members at AHS, GHS, MHHS, CHS, and WLHS are very positive about the scheduling model that is used at their school. Responses to the question, "Overall, do you like or dislike the schedule at your school? Why?" are presented in the volume which contains all the results of the survey.

Which scheduling model do you think would work BEST for students in your school?

		AHS	GHS	MHHS	OMHS	CHS	HaHS	WLHS	HoHS	LRHS	RHHS
Staff	4x4 /Semester	6.4	8.0	6.3	-	4.5	12.3	2.9	25.0	21.2	11.4
	4x4 with A/B	2.1	-	-	-	-	4.6	2.9	15.3	6.1	17.7
	A/B Rotation	57.4	46.0	37.5	34.6	6.8	27.7	11.4	18.1	18.2	27.8
	5 Pd Rotation	4.3	6.0	21.9	3.8	68.2	4.6	4.3	20.8	19.7	10.1
	6 Period Day	27.7	40.0	31.3	61.5	20.5	50.8	78.6	20.8	34.8	31.6

The patterns that existed in the student/parent responses to the above question are not repeated with staff. Higher percentages of staff members at Oakland Mills, Long Reach, and River Hill indicated that the 6-period day would be better for students than the schedule that their school is using. Staff members at AHS and GHS like the A/B Rotation first followed by the 6-period day. The reverse is true at HaHS. At HoHS, responses are mixed across all schedule types. MHHS staff is mixed across the Rotation model and the 6-period day. CHS and WLHS are the only two schools where large percentages think the schedule they are using currently is best for students.

The data below indicate the percent of staff who responded "Yes" when asked if they had taught in a high school with a different schedule. Except for Wilde Lake, more than 60 percent of the teachers have had teaching experience in a schedule other than the one that is being used currently at their school.

	AHS	GHS	MHHS	OMHS	CHS	HaHS	WLHS	HoHS	LRHS	RHHS
Have taught in high school with different scheduling model	66.0	70.0	87.5	61.5	77.3	70.8	48.6	72.2	65.2	65.8

5. Organizational Effectiveness Results

What is the impact of different scheduling models in the same school system on redistricting?

Redistricting occurs between school years; thus, students do not lose credits as a result. However redistricting does impact students' planned programs of study when they are transferred from a school where eight credits can be earned to one with a seven-credit year.

IV. CONCLUSIONS

- There is a need to standardize the schedule that is used by the public high schools in Howard County.

  Having a mix of semesterized schedules and year-long schedules in the same school district does not serve the needs of all the students and staff members throughout the system. There is no justification for having so many schedules that students lose course credit, when they transfer from one high school to another in the same county,. because of a different schedule.

- There are advantages and disadvantages in all the schedules.

  Block schedules are not a panacea. The modified block schedules at RHHS and HaHS are evidence of the efforts being made to improve the schedules (4x4 and A/B) to better meet the needs of students.

- Semester schedules require more support than year-long models.

  Services must be provided twice. This has an impact on school-based staff members as well as on central office support staff. The school system calendar is a year-long calendar; yet, 4x4 schools operate on a semester calendar. Marking periods, dates of interim program reports, etc. are different from the rest of the county. Semester schools complete the first semester one day and begin a completely new second semester the next day. Stress is substantially higher on staff at 4x4 schools.

- Except for students in the Tech Magnet program, needs of students in special programs are not adequately addressed in a school system with so many different high school schedules.

- There is inequity among the schools with regard to amount of student instructional time and teacher planning time as well as the number of credits that can be earned.

- Having the option to earn seven credits per year is important to students.

  This would allow them to take ten electives beyond the current graduation requirements. It would also provide a cushion in the event that the State Department of Education adds another graduation requirement in the future.

- The 85-90 minute instructional period is an issue for students and teachers.

  While a majority of students and staff in the schools with block schedules indicated they like the long periods, a substantial minority do not. Forty percent of students and 20-25 percent of staff disagreed with the statement regarding liking long class periods.

  When staff members were asked how the schedule could be improved, a common theme in the comments was shorten the class periods. Research, published in *How the Brain Learns* by Dr. David A. Sousa, indicates "that

there is a higher probability of effective learning taking place if we can keep the learning episodes short and, of course, meaningful. Thus, teaching two 20-minute lessons provides more prime time (approximately 36 minutes) than one 40-minute lesson (approximately 30 minutes). "When one extends the instructional time to 85-90 minutes, it would require four 20-minute lessons to maximize learning.

- Increasing number of credits reduces instructional time.

  With less instructional time, the ability to cover the curriculum is reduced. Even with longer instructional periods, less than sixty percent of schools with block schedules are able to cover the curriculum. The impact of less curriculum coverage on student success on the upcoming high school assessments is not clear.

  Of the schedules used currently at the ten high schools, the schedule at Wilde Lake offers the most flexibility. The 6-period day with a college layer seems to be the most student friendly in meeting the needs of all students, regardless of the course level (G/T, Honors, Regular, Review) or program (Special Education, ESOL, Cooperative Work Experience, Mentor, etc.). Students who are motivated and academically successful are able to register for more than six credits. Seventy-six percent of teacher respondents indicated they are able to cover the curriculum in this schedule.

V. RECOMMENDATION

- Establish a countywide high school scheduling committee to determine which schedule should be used at the high schools.

  Membership on the committee should consist of students, staff, and parents who have had experience in a 4x4 schedule, an A/B schedule, and in the models used at CHS and WLHS. Data from this report plus other relevant information should guide the work of the committee.

The following requirements should be used by the committee in determining the scheduling model. The schedule should:

- Enable a student to earn 7 credits
- Enable a teacher to cover the curriculum
- Provide for flexibility of needed instructional time to maximize learning for all students
- Provide for a balance of planning time for teachers
- Meet the needs of all students in special programs - Gateway, G/T Mentor, Cooperative Work Experience, Special Education, Tech Magnet
- Recognize that the Tech Magnet program can work in a seven-credit schedule

- Provide for year-long, daily instruction (September to June) for core courses (Courses to be tested on the high school assessments)
- Provide for year-long instruction (September to June) for mathematics, foreign language, and advanced placement courses
- Enable students to transfer between public high schools in Howard County without losing credits
- Make it evident that Howard County has a high school system rather a system of high schools

- Establish a time line for the committee's work to ensure that a system schedule is selected by the time Reservoir High School opens in 02/03.

Study of High School Schedules
Student Data - 2/23/01

	A/B-7	A/B-7	A/B-7	A/B-7	5pd-7	A/B/m	6 pd +	4x4-8	4x4-8	4x4+
Percent responding Strongly Agree and Agree	**AHS**	**GHS**	**MHHS**	**OMHS**	**CHS**	**HaHS**	**WLHS**	**HoHS**	**LRHS**	**RHHS**
Students involved in planning/selecting schedule	40.8	35.7	36.7	31.6	25.6	31.3	31.9	44.8	48.5	42.1
Able to schedule needed/wanted courses	84.3	81.9	88.3	84.5	87.1	80	86.1	86	86.5	85.9
Had problems scheduling needed/wanted courses	20.7	21	18.3	20.9	16.7	25.4	25.5	19.8	23.7	23.1
Earning 6 credits/ year would meet needs	51.7	50.1	51.1	50.6	51.4	54.9	71.1	47.2	45	47.9
Important to earn 7 credits/year to take more electives.	70.5	74	76.4	73.3	77.1	73.4	53.9	69.4	70.5	68.3
Size of classes is OK	65.1	70.3	68	75.1	77.1	73.6	69.9	82.8	72.7	76.2
Schedule causes me a lot of stress	30.5	25.4	33.3	32.1	23.8	40.2	24.9	21.3	28.3	37.1
Schedule meets my needs	68.7	72.8	72.1	66.1	80.9	61.2	75.1	81.5	76.9	79.5
Like 85-90 minute classes	50.4	51.1	50.8	30.2	14.8	24.4	13.4	61.7	51.4	55.2
Easy to adjust to schedule in 9th grade	73.7	77.1	71.3	68	81.5	63.9	76.8	78.2	76.8	75.2
Learn more in 85-90 minute classes	54.2	57.6	57.8	41.6	26.7	31.4	19.7	68.1	62.4	68.6
Difficult to pay attention in 85-90 minute classes	52.8	57.3	56.4	66.9	73.2	69.8	65.1	41.3	47.6	52.4
Difficult to make up work when absent	39.2	40.8	48.1	43	36.2	48.8	32.9	40.8	42.6	56.1
Longer periods provide time to do homework in class	45.5	39.7	33.8	44.7	30.6	39.6	39.3	47.6	58.8	43
Learn as much in this schedule as in another schedule	47.2	53.8	52.8	44.3	57.1	45.6	57.8	57.8	56.2	56.3
Learn better when class meets every day	29.3	28.7	30.4	36.4	20	43.9	62.7	75.3	70.5	65.8
Have lost credits when transferring between HC schools	10.1*	9.3*	8.8*	7.4*	7.4*	11.7*	9.2*	10.1*	14.5	11.9*
Best model for me										
4x4 or Semester Model	11.6	7.2	10.8	15.3	6.2	14.7	7.7	65.6	59.5	12.4
4x4 or Semester Model with embedded A/B Rotation	9	13.4	9.3	7	5.7	8.6	6.2	6.5	8.5	55.5
A/B Rotation Model	49.6	49.9	48.7	44.3	6.8	33.3	5.5	6.3	6.2	7.3
5 Period Day Rotation Model-earn 7 credits per year	5.5	4.6	7.5	7.8	60.6	9.6	5.8	4.2	4.7	5.2
6 Period Day -eligible students can earn > 6 credits	10.9	10.3	11	15	9	13.3	59.7	6.2	9.3	6.5

* More than 50% indicated Don't Know/Not Applicable

Study of High School Schedules
Staff Data - 2/06/01

Percent responding Strongly Agree and Agree	A/B-7 AHS	A/B-7 GHS	A/B-7 MHHS	A/B-7 OMHS	5 pd-7 CHS	A/B/m HaHS	6 pd + WLHS	4x4-8 HoHS	4x4-8 LRHS	4x4+ RHHS
Teachers involved in planning/selecting schedule	70.2	56	62.6	53.8	90.9	76.9	58.6	33.3	22.7	17.8
Students involved in planning/selecting schedule	36.2	26*	25.1*	34.6	54.5	26.2	24.3	19.5	16.6	11.4
Parents involved in planning/selecting schedule	40.4	26*	25*	34.6	65.9	36.9	41.1	22.2	22.7	17.8
Students- able to select courses wanted/needed	89.4	78	96.9	69.2	90.9	89.3	88.6	79.1	87.9	84.8
Students-problems getting courses they want/need	36.1	28	31.2	30.7	13.6	13.8	21.4	25	33.4	15.2
Earning 6 credits would meet needs of students	51.1	52	40.7	61.5	31.8	47.7	67.1	44.4	60.6	39.3
Important to earn 7 credits/year to take more electives	44.7	50	65.6	53.8	72.7	55.4	44.3	72.3	62.1	58.2
Schedule causes me a lot of stress	12.8	8	15.6	26.9	18.2	38.5	12.9	44.5	51.5	60.7
Schedule meets the needs of students	91.5	58	65.6	50	86.3	72.3	80	54.1	50	70.9
Staff development prepared me for new schedule	31.9	48	46.9	26.9	61.4	49.2	15.8*	34.7	48.4	44.3
My classes are too large	68	68	68.7	34.6	59.1	64.6	55.7	58.4	63.6	60.8
Curric Supers helped me plan for longer class periods	27.6	28	46.9	15.4	13.6	30.8	4.3*	23.6	31.8	32.9
Curric Super helped me compact curriculum	21.3	20	21.9	19.2	11.4	20	4.3*	18.1	22.8	26.6
Am able to cover the content of the curriculum	42.5	58	56.3	42.3	65.9	53.8	75.7	36.1	36.4	41.8
Feel competent in using 85/90 min pds appropriately	87.2	82	84.4	69.3	77.3	75.4	7.2*	83.4	84.8	81
Lg class size prevents me from being effective	72.3	68	65.6	53.9	54.6	69.2	52.9	57	74.3	51.9
Longer class periods have neg. impact on instruction	19.2	20	9.4	26.9	11.4	40	7.2*	27.8	31.8	19
IL provides more support for me	34.1	40	40.6	26.9	38.6	29.2	11.5*	40.3	34.9	46.8
Longer periods allow use of variety of activities	78.8	84	90.7	76.9	77.3	60	8.5*	80.5	71.2	81
Like the longer instructional periods	65.9	64	71.9	61.5	61.4	46.2	10.0*	69.5	65.2	70.9
Get more accomplished with longer periods	57.4	60	59.4	42.3	47.7	26.1	8.6*	58.3	57.6	62
Students learn more in classes that are 85/90 min.	48.9	38	59.4	38.4	27.3	20	4.3*	36.1	33.3	46.9
More behavior problems in classes that are 85/90 min.	40.4	34	40.7	50	50	73.8	21.4*	43	54.6	36.7
Students like longer instructional periods	44.7	36	28.1	26.9	20.4	15.4	4.3*	36.2	28.8	36.7
Easy for students to adjust to schedule in 9th grade	44.7	42	28.2	26.9	70.5	35.4	14.3*	33.4	36.4	31.7
Diffic for students to pay attention in 85/90 min class	48.9	64	68.8	73.1	56.9	80	32.9*	63.9	68.2	55.7
Diffic for students to make up work when absent	44.7	38	68.7	61.6	36.3	66.2	20	69.4	69.7	72.1
Longer periods provide time to do homework in class	34	24	25	26.9	13.6	30.8	14.3*	22.2	31.8	19
Students learn as much in this schedule as in another	44.7	40	46.9	26.9	59.1	32.3	28.5	30.5	34.9	46.8
Students learn better when class meets every day	44.6	60	56.3	46.2	54.5	75.4	67.1	50	65.2	55.7
Students lose credits when transfer bet HC schools	17*	30*	34.4*	23*	29.5*	40*	44.3	47.2	53	26.6*
Schedule helps prepare students for college	70.2	64	68.8	61.6	77.3	53.9	45.7	58.3	57.6	58.3
Best model for students in this school										
4x4 or Semester Model	6.4	8	6.3	-	4.5	12.3	2.9	25	21.2	11.4
4x4 or Semester Model with embedded A/B Rotation	2.1	-	-	-	-	4.6	2.9	15.3	6.1	17.7
A/B Rotation Model	57.4	46	37.5	34.6	6.8	27.7	11.4	18.1	18.2	27.8
5 Period Day Rotation Model-earn 7 credits per year	4.3	6	21.9	3.8	68.2	4.6	4.3	20.8	19.7	10.1
6 Period Day -eligible students can earn > 6 credits	27.7	40	31.3	61.5	20.5	50.8	78.6	20.8	34.8	31.6

* More than 50% indicated Don't Know/Not Applicable

Study of High School Schedules
Parent Data - 2/02/01

Percent responding Strongly Agree and Agree	A/B-7 AHS	A/B-7 GHS	A/B-7 MHHS	A/B-7 OMHS	5 pd-7 CHS	A/B/m HaHS	6 pd + WLHS	4x4-8 HoHS	4x4-8 LRHS	4x4+ RHHS
Parents involved in planning/selecting schedule	25.6	15.9*	23.9	21.1	28.2	19.8	24.4	22.2	36.5	19.2
Students involved in planning/selecting schedule	25.9	17.5*	23.9	25	27.4	19.7	25.3	22.8	40.6	20.5
Child had help from guidance counselor	62.8	61.9	66.4	50	65	51.9	59	58.4	66.7	69.8
Child - able to select courses wanted/needed	87.3	77.8	87.9	82.7	88.9	88.7	83.1	87.3	83.3	87.7
Child-problems getting courses wanted/needed	19.5	25.3	16.6	11.8	13.7	18.2	21.7	16.7	15.7	13.7
Earning 6 credits would meet needs of my child	31.4	32.3	42.6	44.2	39.7	44.9	56.6	35.4	41.7	31.9
Important to earn 7 credits/year to take more electives	66.7	73	63.4	75	69.8	60.6	55.4	58.8	62.5	56.3
Child's classes are too large	58.1	65	70.4	46.1	59.8	62	67.5	41.9	39.6	67.1
Schedule causes my child a lot of stress	18.4	11.3	28.3	23.1	18.8	40.1	30.1	16.8	13.7	26
Schedule meets the needs of my child	79.3	87.3	83	82.7	87.2	71	73.5	83.2	83.3	79.2
Teachers involved in planning/selecting schedule	33.3*	19.1*	32.7*	30.7*	31.9*	34.9*	27.7*	22.8*	31.2*	27.4*
Teachers received adequate staff development	16.3*	12.7*	14.6*	11.5*	15.4*	15.1*	7.2*	11.4*	17.7*	17.8*
Teachers skilled at using 85-90 minute period	75.8	66.6	65.8	65.4	56.4	45.2	20.5*	71.1	68.7	69.8
Teachers able to cover the content of the curriculum	75.6	69.9	70.9	65.4	73.5	55.6	59	70.3	68.8	63
Lg class sizes prevent teachers from being effective	75.9	74.2	78.2	82.7	71.8	76.4	77.1	64.4	67.7	75.3
Longer class periods have neg. impact on instruction	19.5	16.4	21.3	32.7	20.6	34.9	28.9	18.1	29.5	17.8
Child likes the longer instructional periods	58.6	62.3	52.5	52	41.6	39.6	17	78.4	60.5	60.3
Easy for child to adjust to schedule in 9th grade	83.9	77.4	69.7	75	81.1	62.4	61.4	79	81.2	84.9
Child learns more in classes that are 85/90 min.	55.2	49.2	53.3	48.1	35.3	32.1	19.2	67.5	62.5	53.4
Diffic for child to pay attention in 85/90 min class	19.5	32.3	42.7	32.7	40.5	52.4	36.2	24.3	27.1	21.9
Diffic for child to make up work when absent	25.3	32.3	40.9	32.7	32.5	46	20.5	37.8	35.4	52.1
Longer periods provide time to do homework in class	46	35.5	28.6	42.3	32.7	40	22.9	37.9	53.1	42.4
Child learns as much in this schedule as in another	52.8	59.6	48.4	59.7	54.7	39.3	46.3	61.4	55.8	63
Child learns better when class meets every day	21	27.9	30.2	32.7	32.5	52.7	65	79.9	71.3	43.1
Child has lost credits when transfer bet HC schools	3.4*	1.6*	4*	1.9*	4.3*	9.1*	9.8*	4.2*	13.6*	0*
Schedule helps prepare students for college	77	79.1	74.7	73.1	73.5	63.4	75.9	79.7	79.1	72.6
Best scheduling model for my child										
4x4 or Semester Model	5.7	3.2	5.6	13.2	3.4	10.6	6	67.8	68.8	6.8
4x4 or Semester Model with embedded A/B Rotation	2.3	6.3	9.3	3.8	10.1	6.4	0	8.1	6.3	63
A/B Rotation Model	61.4	54	53.6	50.9	4.2	40.4	6	5.4	4	15.1
5 Period Day Rotation Model-earn 7 credits per year	4.5	6.3	9.3	7.5	63.9	9.6	6	6	4.2	6.8
6 Period Day -eligible students can earn > 6 credits	15.9	19	14.1	15.1	6.7	21.3	72.3	8.7	10.4	4.1

* More than 50% indicated Don't Know/Not Applicable

Study of High School Schedules
Survey Response Rates

	Parent			Staff			Student*		
	Sent	# Returned	% Returned	Sent	# Returned	% Returned	Sent	# Returned	% Returned
Atholton	278	88	31.7	81	47	58.0	1158	988	85.3
Centennial	298	119	39.9	76	44	57.9	1212	943	77.8
Glenelg	248	63	25.4	69	50	72.5	1021	778	76.2
Hammond	304	188	61.8	87	65	74.7	1257	864	68.7
Howard	306	149	48.7	85	72	84.7	1253	1009	80.5
Long Reach	327	96	29.4	102	66	64.7	1415	907	64.1
Mt. Hebron	341	248	72.7	92	32	34.8	1468	885	60.3
Oakland Mills	218	53	24.3	77	26	33.8	977	747	76.5
River Hill	346	73	21.1	104	79	76.0	1570	1316	83.8
Wilde Lake	348	83	23.9	94	70	74.5	1471	884	60.1
TOTALS	**3014**	**1160**	**38.5**	**867**	**551**	**63.5**	**12802**	**9321**	**73.0**

* Based on October 30, 2000 Enrollment

THE MODELS

A/B Day Rotation Model

All students register for seven credits. Six of these credits are earned by attending 90 minute classes on an alternating-day basis and the seventh credit is earned by attending one 55-minute class every day of the year. The alternating-day schedule works as follows: On a given day, students attend three 90-minute classes and one 55-minute class. On the following day, students attend a different set of three 90-minute classes and the same 55-minute period. Each student attends four classes per day and earns seven credits per year.

All teachers teach three classes each day. For all teachers who are not department chairs, two of these classes are 90 minutes and one is 55 minutes. Each teacher has 90 minutes of planning time each day. The four 90-minute periods over the two alternating days are different groups of students and the 55-minute class each day is the same group of students.

Department chairs follow a similar schedule; however each day they teach two 90-minute classes and have a 90-minute period and a 55-minute period for planning.

A/B Day Rotation Model (Hammond High)

All students register for seven credits. Four of these credits are earned by attending 90 minute classes on an alternating-day basis and three credits are earned by attending three 55- minute classes every day of the year. The alternating-day schedule works as follows: On a given day, students attend two 90-minute classes and three 55-minute classes. On the following day, students attend a different set of two 90-minute classes and the same three 55-minute periods. Each student attends five classes per day and earns seven credits per year.

All teachers teach three classes each day. For all teachers who are not department chairs, two of these classes are 90 minutes and one is 55 minutes. Each teacher has 90 minutes of planning time each day. The four 90-minute periods over the two alternating days are different groups of students and the 55-minute class each day is the same group of students.

Department chairs follow a similar schedule; however, each day they teach two 90-minute classes and have a 90-minute period and a 55-minute period for planning.

4x4 or Semester Model

All students register for eight credits each year - four courses each semester. For both semesters, students attend four 85-90-minute classes each day.

Teachers teach three classes and have one planning period each day per semester. They teach a total of six courses per year.

4x4 or Semester Model with embedded A/B Rotation Model

All students register for eight credits each year. In a true 4x4 schedule, students take four courses each semester. If students elect to take courses that are embedded in an A/B rotation, they take these classes on an alternating-day basis all year. For both semesters, students attend four 85-90-minute classes each day.

Teachers teach three classes and have one planning period each day per semester. They teach a total of six courses per year.

Seven-Day Rotation Model

All students register for seven courses. There are five classes each day. Four classes are one hour in length. The other one is a two-hour block in which there is a 30 minute lunch and a 90 minute class, thus giving each course a 90 minute class once in every seven-day cycle. Teachers teach five courses per year.

The model rotates as follows:

Day 1 - Classes - 1, 2, 3, 4, 5; Day 2 - Classes - 6, 7, 1, 2, 3; Day 3 - Classes - 4, 5, 6, 7, 1; Day 4 - Classes - 2, 3, 4, 5, 6; Day 5 - Classes - 7, 1, 2, 3, 4; Day 6 - Classes - 5, 6, 7, 1, 2; and Day 7 - Classes - 3, 4, 5, 6, 7. This cycle repeats every seven days.

In a seven-day cycle, typically teachers teach four classes and have one planning period for four days and teach three classes and have two planning periods for three days.

Six-Period Day with College-style Schedule Model

This schedule is a traditional six-period day with a college-style schedule layered on top. The basic schedule consists of six 55-minute periods with a 25-minute advisory between first and second periods two days a week. Passing time is five minutes. Lunch occurs during the fourth period. There are three lunch shifts, each thirty minutes in length. All students, except seniors, must take at least six classes. Each teacher has one planning period each day.

In addition, this scheduling model allows upper level (Honors and GT) students to take two-day a week classes on Monday and Thursday and three-day a week classes on Tuesday, Wednesday, and Friday. Class lecture and regular activities are held in five-day classes. Students in the two-or three-day a week classes are responsible for work that is missed in a five-day class.

ATTACHMENT A

CHART 1

Number of Classes in Specific Size Categories by High School 2000-2001

SCHOOL		Fewer than 20 Students		20-30 Students		31-34 Students		35+ Students		Total Classes	
Atholton	(1) Capped Classes	57		104		56		2		219	
(1163)	(2) Other	49		36		14		26		125	
Centennial	Capped Classes	47		146		43		1		237	
(1015)	Other	23		44		25		10		102	
Glenelg	Capped Classes	42		109		36		0		187	
(931)	Other	35		49		10		3		105	
Hammond	Capped Classes	69		123		50		0		242	
(1332)	Other	27		55		16		14		112	
**Howard	Capped Classes	57		124		47		0		231	
(1163)	Other	20		42		13		32		107	
**Long Reach	Capped Classes	60		127		66		2		255	
(1332)	Other	64		35		11		35		145	
Mt. Hebron	Capped Classes	57		131		80		0		268	
(1332)	Other	24		44		43		16		127	
Oakland Mills	Capped Classes	65		108		25		0		198	
(1057)	Other	35		38		10		12		95	
**River Hill	Capped Classes	40		107		30		0		177	
(1332)	Other	58		55		12		4		129	
Wilde Lake	Capped Classes	65		131		63		0		259	
(1332)	Other	59		46		22		8		135	
Totals	Capped Classes	559	24.6%	1,210	53.3%	496	21.9%	5	.2%	2,270	65%
(11989)	Other	394	33.3%	444	37.6%	184	15.6%	160	13.5%	1,182	35%
		953	27.6%	1,654	47.9%	680	19.7%	165	4.8%	3,452	

(1) Includes all classes in English, foreign language, mathematics, science, and social studies.
(2) Excludes capped classes, instrumental music sectionals and special education classes.
* Enrollment does not include Intensity 4 and 5 students.
** First semester only classes.

CHART 4

Average Class Size by Curriculum Area and by High School

2000 - 2001

CURRICULUM AREA	Atholton	Centennial	Glenelg	Hammond	*Howard	*Long Reach	Mt. Hebron	Oakland Mills	*River Hill	Wilde Lake	Averages
English	22.84	23.59	23.07	24.10	26.93	25.67	23.65	22.71	22.11	23.9	23.92
Fine Arts	24.00	31.72	29.12	28.13	32.09	30.79	24.71	22.84	28.30	19.27	26.60
Foreign Lang.	24.28	24.57	26.65	25.52	22.45	25.95	25.62	22.72	24.50	22.57	24.27
Mathematics	22.54	23.98	23.12	21.28	24.17	23.59	24.17	20.50	23.43	24.21	23.14
Tech Ed.**	19.27	21.49	19.39	25.61	33.23	30.25	25.26	22.14	21.32	22.67	24.19
Physical Ed.	33.17	31.67	27.81	24.47	35.33	41.53	31.33	27.93	25.30	25.31	30.14
Science	24.27	27.07	24.44	24.75	27.37	28.33	27.48	23.18	24.52	25.06	25.76
Social Studies	28.17	26.02	27.82	23.44	27.73	30.85	26.72	22.60	25.33	26.42	26.47
SAT Prep	0	0	0	22.25	22.00	25.50	0	0	31.33	0	25.33
Magnet Courses ***	0	0	0	0	0	8.57	0	0	6.57	0	7.80
SCHOOL AVERAGES											
2000-2001	24.05	25.50	23.04	23.99	27.74	26.51	25.77	22.67	22.05	23.39	
1999-00	22.18	23.83	21.60	22.73	20.13	21.30	23.24	21.65	21.81	21.83	
1998-99	21.14	27.26	22.33	24.25	25.61	21.17	22.75	20.64	19.91	23.21	
1997-98	27.77	27.36	23.30	26.25	26.66	24.94	27.61	24.94	23.36	27.76	
1996-97	26.36	24.51	23.22	22.42	26.87	24.63	27.33	24.25	24.82	27.85	
1995-96	24.88	24.79	25.07	28.17	28.40	--	27.83	24.77	--	24.09	
1994-95	27.69	25.32	28.30	23.72	26.04	--	27.83	24.77	--	24.09	
1993-94	27.60	25.60	24.62	23.14	26.50	--	23.87	23.28	--	23.39	

County Average - 2000-01 24.65
County Average - 1999-00 22.59
County Average - 1998-99 22.74

County Average - 1997-98 26.20
County Average - 1996-97 25.23
County Average - 1995-96 26.00

County Average - 1994-95 26.62
County Average - 1993-94 24.80
County Average - 1992-93 24.07

* Includes first semester only enrollment number of classes and average class sizes for Howard, Long Reach, and River Hill High Schools. Previously listed as CHIVES.

** Business Education, Computer Science, Home Economics, Intern/Mentor Program, Independent Research, Technology Education, Journalism and Yearbook and JROTC.

***Previously listed as Tech Magnet Prerequisites.

Students on Non-Credit Released Time

	Total	Work		College	
	12th Grade	#	%	#	%
Atholton High	239	85	36%	8	3%
Centennial High	289	15	5%	0	0%
Glenelg High	226	60	27%	13	6%
Hammond High	278	74	27%	6	2%
Howard High	318	65	20%	10	3%
Long Reach High	282	78	28%	4	1%
Mt. Hebron High	290	40	14%	11	4%
Oakland Mills High	235	32	14%	2	1%
River Hill High	344	42	12%	8	2%
Wilde Lake High	343	69	20%	12	3%
Total	**2844**	**560**	**20%**	**74**	**3%**

September 30, 2000 Enrollment

ADVANCED PLACEMENT - CLASS of 2000

PERCENT RECEIVING 3 OR ABOVE

	96 %	97 %	98 %	99 %	00 %
Atholton High	81.4	90.5	79.7	80.0	86.3
Centennial High	91.5	86.2	87.1	84.9	87.7
Glenelg High	67.0	74.1	82.6	70.4	71.6
Hammond High	78.8	74.6	84.8	75.0	80.3
Howard High	68.4	74.5	72.6	64.8	72.3
Long Reach High*	0	**	56.7	76.7	64.7
Mt. Hebron High	75.2	86.1	89.0	90.1	90.1
Oakland Mills High	68.7	73.2	62.2	68.7	67.6
River Hill High*	0	73.2	80.3	74.7	83.3
Wilde Lake High	95.2	78.8	84.2	88.6	90.8

*OPENED 96/97

**Percentage not reported when number (N) is equal to or fewer than six.

Study of High School Schedules
Final Grade Distribution 99/00
Mean English GPA by Course Level

Grade	Course Level	A/B-7 AHS	A/B-7 GHS	A/B-7 MHHS	A/B-7 OMHS	7cr/5pd CHS	A/B Mod HaHS	6 pd + WLHS	4x4-8 HoHS	4x4-8 LRHS	4x4-A/B RHHS
9											
	Review	1.55	2.64	2.96	1.8	0	1.21	1.5	2	1.89	1.07
	Regular	2.14	2.34	2.05	2.11	2	1.45	2.24	2.55	2.66	1.93
	Honors	3.12	3.17	3.07	2.89	2.84	2.56	3.02	3.02	3.19	3.24
	G/T	3.54	2.9	3.66	2.88	3.35	3.19	3.7	0	3.29	3.59
10											
	Review	3.09	2.29	1.03	1.91	0	1.21	1.53	0	2.29	2.13
	Regular	2.31	2.52	2.14	2.05	1.63	1.97	1.15	1.64	2.43	2
	Honors	2.93	3.8	2.92	2.4	3.32	2.11	2.72	3.22	2.37	3.09
	G/T	3.07	3.54	3.84	3.33	3.05	3.26	2.76	3.24	3.73	3.73
11											
	Review	0	1.38	1.77	2.37	0	1.5	2.16	0	1.96	2.35
	Regular	1.61	2.47	2.46	1.3	2.35	2.26	2.03	2.42	1.84	2.87
	Honors	3.22	2.67	3	2.17	3.05	3.02	2.93	3.29	3.02	3.58
	G/T	2.92	3.26	3.65	3.59	3.38	2.87	3.53	3.79	3.47	3.57
12											
	Review	0	0	2	2.07	0	1.88	1.69	0	2.5	2.69
	Regular	1.8	2.49	2.53	2.02	2.71	2.21	2.14	2.46	1.96	2.04
	Honors	3.34	3.11	2.97	2.28	2.95	2.69	2.89	2.85	2.94	3.25
	G/T	2.65	3.54	3.55	3	2.74	2.98	3.19	3.44	0	3.74

High School Schedules

	A/B Rotation	4x4	7-day Rotation	6-Period Plus
	Year long	Semester	Year long	Year long
	AHS, GHS, MHHS,OMHS	HoHS & LRHS	CHS	WLHS
	HaHS - A/B Modified	RHHS - Embedded A/B		
	Four classes daily - three 85-90 min classes every other day, one 50-55 min. daily **HaHS** - 3 single classes daily & 2 long classes every other day	Four courses each semester four 85-90 minute classes daily **RHHS** - A/B embedded in 4x4 for selected courses	Seven courses: Five classes daily - four 60 min. & one 90 min. Classes meet at different time each day in 7-day rotation.	Six classes daily Each class 55 minutes. Option for eligible students to take more credits in 2 or 3 day/week classes.
Credits per year	Seven	Eight	Seven	Six +
Four-Year Total	28	32	28	24+
Needed for graduation	21	21	21	21
Number of electives	10	14	10	3+
Issues				
Instructional Time	135 hours / 90 min classes 165 hours / 55 min classes	129 hrs / 86 min classes 135 hrs / 90 min classes	143 hours / 60 min classes	165 hours / 55 min classes 66 hrs / 2-day classes 99 hours / 3-day classes

High School Schedules

	A/B Rotation	4x4	7-day Rotation	6-Period Plus
Class Length - Like 85-90 minute period % *S A/Agree vs. S D/Disagree*	AHS - 50.4 vs. 44.6 GHS - 51.1 vs. 44.4 MHHS - 50.8 vs. 45.4 OMHS - 30.2 vs. 66.0 HaHS 24.4 vs. 70.2	HoHS - 61.7 vs. 33.5 LRHS - 51.4 vs. 42.8 RHHS - 55.2 vs. 39.0	CHS - 14.9 vs. 80.9	
	Daily class ahead of every other day classes.			
Special Education			Following schedule is confusing because classes meet at different times	
G/T Mentor & CWE			Difficult to place students because classes meet at different time each day.	
Gateway	Difficult to transition to 85-90 minute classes	Very difficult - Gateway has year-long schedule	Very difficult - classes meet at different time each day	
Non-credit Released Time - Work (12th Grade)	AHS - 36% GHS - 27% MMHHS -14% OMHS - 14% HaHS - 27%	HoHS - 20% LRHS - 28% RHHS -12%	CHS - 5%	WLHS - 20%
Non-credit Released Time - College (12th Grade)	AHS - 3% GHS - 6% MHHS - 4% OMHS - 1% HaHs - 2%	HoHS - 3% LRHS - 1% RHHS - 2%	CHS - 0%	WLHS - 3%
Have lost credits when transferring between HC schools (# of students) - *Strongly Agree*	AHS - 60 GHS - 35 MHHS - 39 OMHS - 31 HaHS - 49	HoHS - 61 LRHS - 60 RHHS - 77	CHS - 29	WLHS - 54

High School Schedules

	A/B Rotation	4x4	7-day Rotation	6-Period Plus
Can cover the curriculum *Strongly Agree/Agree*	AHS - 42.5% GHS - 58.0% MHHS - 56.3% OMHS - 42.3% HaHS - 53.8%	HoHS - 36.1% LRHS - 36.4% RHHS - 41.8%	CHS - 65.9%	WLHS- 75.7%
Foreign Language, Mathematics		Can be gaps in the sequence of courses. Fall semester one year & spring semester the next year.		
AP Classes Study by College Board found that students obtain higher AP grades when instruction is given over an entire year rather than in semesterized block	AP courses are full year.	AP tests are given in May. If AP class is taken 1st sem. retention of info is issue; if taken in 2nd, less time to cover content.	AP courses are full year.	AP courses are full year.
Average class size For the subjects to be tested on HSAs,(E, M, Sc,SS), average size is larger than county average	AHS & GHS - Soc.St. MHHS - Math, Science, Social Studies HaHS - English OMHS - no class larger than county average	RHHS - math only HoHS & LRHS - English,math, science, social studies.	CHS - math & science	WHHS - math only
# marking periods (annual)	Four	Six	Four	Four
Teacher Planning Time - (In general)	One - 85/90 minutes daily	One - 85/90 minutes daily	In seven-day cycle, teachers have one 60-minute period for 4 days and two -60-minute periods for 3 days.	One 55-minute period daily
Guid Counselor schedule	once a year	twice a year	once a year	once a year

High School Schedules

	A/B Rotation	4x4	7-day Rotation	6-Period Plus
Achievement				
MSPP Report 2000 Maryland Functional Tests (Passed all tests) S - Satisfactory E - Excellent	Atholton - 95.8% - S Glenelg - 100.0% - E Hammond - 96.7% - E Mt. Hebron - 96.3% - E Oakland Mills - 95.9% - S	Howard - 98.6% - E Long Reach - 97.2% - E River Hill - 99.4% - E	Centennial - 99.6% - E	Wilde Lake - 98.2% - E
MSPP Report 2000 Rigorous Courses Percentage of students who completed 4 of 6 performance indicators	Atholton - 35.6% Glenelg - 36.9% Hammond - 31.9% Mt. Hebron - 43.7% Oakland Mills - 29.9%	Howard - 26.1% Long Reach - 26.4% River Hill - 42.1%	Centennial - 39.0%	Wilde Lake - 52.9%
MSPP Report 2000 Attendance Rate (Yearly) S - Satisfactory E - Excellent	Atholton - 95.3% - S Glenelg - 95.3% - S Hammond - 94.9% - S Mt. Hebron - 95.6% - S Oakland Mills - 94.2% - S	Howard - 95.2% - S Long Reach - 95.2% - S River Hill - 95.5% - E	Centennial - 96.5% - E	Wilde Lake - 95.3% - S
MSPP Report 2000 Dropout Rate (Yearly) S - Satisfactory E - Excellent	Atholton - 1.06% - E Glenelg - 0.38% - E Hammond - 2.03% - S Mt. Hebron -1.88% - S Oakland Mills - 4.68% - N	Howard - 2.41% - S Long Reach - 2.55% - S River Hill - 0.31% - E	Centennial - 0.49% - E	Wilde Lake - 1.03% - E

High School Schedules

	A/B Rotation	4x4	7-day Rotation	6-Period Plus
MSPP Report 2000 Student Mobility Entrants	Atholton - 3.9% Glenelg - 1.6% Hammond - 5.3% Mt. Hebron - 7.1% Oakland Mills - 6.3%	Howard - 5.7% Long Reach - 5.8% River Hill - 1.6%	Centennial - 1.6%	Wilde Lake - 7.9%
MSPP Report 2000 Student Mobility Withdrawals	Atholton - 6.9% Glenelg - 4.0% Hammond - 7.2% Mt. Hebron - 6.0% Oakland Mills - 10.1%	Howard - 7.4% Long Reach -6.7% River Hill - 3.1%	Centennial - 1.7%	Wilde Lake - 7.3%
System Calendar	180 day school calendar	Sys calendar is yr long. 4x4 schedule is semester. 1st sem.ends on Friday, 2nd sem. begins on Mon. Transition is very difficult. Cty closing for inclement weather 1st sem is added to 2nd sem.	180 day school calendar	180 school calendar

CONCLUSIONS

- There is a need to standardize the schedule that is used by the public high schools in Howard County. Having a mix of semesterized schedules and year long schedules in the same school district does not serve the needs of all students and staff members throughout the system.

- Except for students in the Tech Magnet program, the needs of students in special programs are not adequately addressed in a school system with so many different high school schedules.

- There is inequity among the schools with regard to amount of student instructional time and teacher planning time as well as the number of credits that can be earned.

- Having the option to earn 7 credits per year is important to students.

- The length of the instructional periods in the block schedules is an issue. While a majority of students like the long periods, a substantial minority do not.

- Increasing the number of credits reduces instructional time.
  Even with longer periods, less than 60% of schools with block schedules are able to cover the curriculum.

RECOMMENDATIONS

- Establish a countywide high school scheduling committee to determine which schedule should be used at the high schools.

  Membership on the committee should consist of students, staff, and parents who have had experience with different schedules. Data from this report, other relevant information, and the following requirements should guide the work of the committee.

  The schedule should :
  - Enable a student to earn 7 credits
  - Enable a teacher to cover the curriculum
  - Provide for flexibility of needed instructional time to maximize learning for all students
  - Provide for a balance of planning time for teachers
  - Meet the needs of all students in special programs
  - Recognize that requirements for the Tech Magnet program can be met in a 7- credit schedule
  - Provide for year long daily instruction for core courses
  - Provide for year long instruction for mathematics, foreign language and Advanced Placement courses
  - Enable students to transfer without losing credits

- Establish a time line for the committee's work to ensure that a system schedule is selected by the time Reservoir High opens.