

THE THOMAS JEFFERSON PROGRAM IN PUBLIC POLICY

An Analysis of Advantages and Disadvantages of Several Options for Producing Excellence in Education in Williamsburg City (K-12)



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ABSTRACT

The following report was compiled upon request from the Williamsburg Education Review Committee. It details the costs associated with creating a school system solely for the City of Williamsburg and its approximately 800 students. The report begins by detailing the current state of the system, followed by the projected costs associated with several proposed options to give the city of Williamsburg greater autonomy over its own education system. First, teacher and staffing needs are allocated, in tandem with a discussion on how best to retain current faculty members. Next, the operational, maintenance, and capital costs associated with the creation of a Williamsburg school system are enumerated. Enclosed within this analysis is a discussion of the role The College of William & Mary could play in a Williamsburg system. Educational assets that will either be accrued or sacrificed in the creation of a school system are then listed and discussed. Finally, the report concludes by leaving the Williamsburg Education Review Committee with the option of facing higher costs but using new standards of quality to change the way Williamsburg approaches education.



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INTRODUCTION

This study, commissioned by the Williamsburg Education Review Committee, examines the current contract that Williamsburg has with James City County to maintain a joint school system. As the contract comes up for renewal, it certainly would behoove both parties to determine whether or not it is in their students' best interest to continue operating under a joint system. In tandem with such a review, one must determine if the economies of scale, economies of scope, and diversity associated with a joint system can be outweighed by potentially improved measures of quality in two new distinct school districts.

According to the Department of Education's 2007-2008 Report Card on Williamsburg-James City County Public Schools, the division did not meet the adequate yearly progress standards. Despite this fact, all 14 schools are fully accredited by the State.

Williamsburg students often feel that they are moved about freely based on the whim of James City County, whose representatives hold a commanding five of seven seats on the Williamsburg-James City County School Board. This and many other issues discussed throughout the study have led many parents in the City of Williamsburg to begin questioning if it is in the city's best interest to sever ties with the county as soon as possible.

The Boston Globe notes that "the trend in most communities in this economy is toward regionalizing services in order to save money" (Legere, 2009). Indeed, consolidation has long been viewed as the best way to eliminate unnecessary fixed costs and share resources. Despite this fact, Williamsburg has long been somewhat dissatisfied with its James City County partnership. In the mid 1990's, the City of Williamsburg unofficially approached York County about the idea of creating a partnership with their school system. According to then Superintendent Dr. Steve Staples, discussions were held concerning different models for a

partnership (K-8 separate and a High School together, for example), and logistics (including how to transport Williamsburg students to a York County high school). Clearly, nothing ever came out of these discussions, and York County has since moved to a slightly more enclosed school system, where the prospect of adding students into current York County Schools would likely garner very little support.

If Williamsburg does choose to split with James City County, the City would maintain control over Matthew Whaley Elementary School, James Blair Middle School, and Berkeley Middle School. The system would enroll approximately 800 students. In 2008-2009 for example, the system enrolled 794 students: 401 in Elementary, 175 in Middle, and 209 in High School. This school system would be relatively small compared to other systems in southeastern Virginia, but would by no means be the smallest school system in the country or even in Virginia. Perhaps a smaller system would allow for a more intimate educational experience, and new educational assets could be accrued that would make up for the restricted number of classes offered due to a smaller number of faculty within the system.

[History of the Williamsburg-James City County School System](#)

James City County, initially, was in joint operation with New Kent and Charles City counties. The first school, the Hickory Neck School, operated very much how we imagine school houses of legend. School was held in a one room school house with one teacher teaching several grades. The benches were backless and it was heated by a single fireplace in the back of the room. While this sufficed for a time, eventually James City County school board members and parents were unhappy with the running of the school. While the children were learning reading, writing and arithmetic, there was not a broad enough overview of topics – students were

allowed to focus on the subject they were most interested – and there was no standardized coursework.

There was also the absence of advanced coursework for older students that caused concern among the board members and parents. In 1908 the Toano School was opened and revolutionized schooling in James City County. The school received 95 students on its first day exceeding the expected 40-60 students. The new school boasted a standardized curriculum with five faculty members including a music teacher. The County also purchased horses and wagons to transport students to and from the school. Within a year the County was planning a new addition and the purchase of more horses and wagons.

Williamsburg began loose joint operations with the County early on. Both school systems benefited from the mock school, Matthey school, which was established by the College of William and Mary as part of their education program. Because of segregation the two systems had an agreement that a majority of whites would be distributed between the City and County schools, while all black students would be housed in the Burton Heights School. Eventually however around the 1950s the school systems, as separate entities, were faced with issues. Both systems had schools that were unable to accommodate the amount of students attending. At this time the question of combining operations was seriously considered. The County and City were sharing a courthouse and other buildings for governmental functions, so it made sense in due time for them to consider joint operation of the schools.

Eventually an agreement was reached at the time of a new high school construct, James Blair. The two boards merged into one and assumed 50-50 ownership of the shared schools of Matthew Whaley, Burton Heights and James Blair. After joining the school systems, the School

Board saw an increase in their state ranking. The same problem persisted after the joining, however, in that the schools continued to see an increase in their attendance. The increase in students caused a serious issue for WJCC to cover the cost per pupil. The relative contributions of each locality are spelled out in the Contract which has existed ever since 1953.

The Contract

Williamsburg and James City County sign a joint contract every few years in order to set out legal agreements governing their school system. The contract was last amended on March 27, 2007. The contract sets out specific funding formulas which will govern the amount paid to James City County by the City of Williamsburg for each school year. The document also states the terms through which either James City County or Williamsburg may end their relationship with the joint school system, as well as how assets will be divided if such a split occurs.

The calculation of cost sharing is explained regarding operational costs, which are defined as “all costs of operating the joint school system other than Capital Project Costs”. These costs include, but are not limited to, “administration, operation of school plants . . . instructional costs, F.I.C.A. . . . [and] repair and replacement of furnishing and equipment.” The contract states that “a portion of the operational costs jointly approved by County and City for each fiscal year which portion shall be equivalent to the percentage of City students enrolled in the joint system.” This percentage is determined by the looking at the average school division daily membership as of September 30 of the preceding year. The Premium often cited by Williamsburg residents is derived from these costs, as it spells out an “add-on factor” that varies by year. The factor is 1.15 until fiscal year 2011, at which time it will decrease to 1.14. This funding formula also applies to Capital Project Costs. If either the City or the County wishes to

contest the accuracy of these determinations, they may do so by December 31 of the same year in which the September 30 calculation was made.

The Contract is quite clear on the terms by which either City may choose to terminate the joint system agreement. Indeed, either Williamsburg's City Council or James City County's Board of Supervisors may "elect to terminate this contract at any time by giving written notice to the other." Unless specific arrangements are made to the contrary, the contract would then become effective at the close of the school year "next following the school year during which notice was given." If a termination does occur, Williamsburg will retain "one hundred percent equity in all school facilities located within the City's corporate limits;" these schools include Matthew Whaley Elementary, James Blair Middle, and Berkeley Middle. Even though the city of Williamsburg contributed to the building of Matoaka Elementary and the as-of-yet unnamed fourth middle school and ninth elementary school, the contract states that Williamsburg agreed to relinquish all equity interests in the properties as of 2006. The value of real property, school buses, and other personal acquisition costs would also be determined when dividing the assets of the school system.

Even though either party may begin the cessation of the joint school system at any time, the contract will come up for review prior to the fiscal year beginning July 1, 2012 and "every fifth year thereafter." The parties may provide amendments to the contract, and if any are approved they will become effective "on the July 1 following the fiscal year in which the parties reach written agreement to such amendment."

A Modern Day Look: Promises and Problems

Currently, there are three High schools, three Middle schools, and eight Elementary schools in the Williamsburg-James City County School System. All 14 of the WJCC Schools

are fully accredited by the state of Virginia. During the 2008-2009 school year, the system hosted 10,248 students, 794 of which hail from the City of Williamsburg. The system employs 871 teachers. In addition, the superintendent's report boasts that 85% of graduates from the WJCC System go on to enroll in some form of college/higher education.

The 2008-2009 school system budget was \$115,169,610. When broken down to a cost-per-pupil ratio, the system spent approximately \$10,748 per student. This number is in line with neighboring localities, as York County spends \$9,368 on operations per pupil and the state average is \$11,037. For a more detailed graph on per pupil operations costs in Hampton Roads, please see Appendix A (Superintendent's Annual Report, 2008).

Of the \$115 million, the City of Williamsburg paid approximately \$7 million. Despite this seemingly low percentage of the overall budget, Williamsburg pays a premium of 1.15/student, meaning that they pay 15 cents more on the dollar than James City County does for the same education. The state considers the City of Williamsburg to be wealthier than James City County. The state uses a formula known as the local composite index when determining how much aid to give to a locality. The index takes into account a locality's true value of property, adjusted gross income, taxable retail sales, ADM, and total population. Current calculations indicate that Williamsburg, if separated from James City County, would be asked to pay 80% of the cost for its educational operations; James City County, on the other hand, would only be required to pay 53%. Dr. Steve Staples, former Superintendent of York County Public Schools and current Education Professor at the College of William & Mary, notes that the local composite index is a somewhat misleading estimator of a city or county's true well being. He cites Surry as a prime example of a County with a relatively poor population but a 66% calculated composite index due to the inflated property values surrounding the Surry Nuclear

power plant. Even if the index does not represent accurately the relative wealth of a population, it still represents a reality that must be faced when examining any potential school system split.

Despite the success of the school system with accreditation and college attendance rate, this system has been plagued with more than a few growing pains. The Daily Press notes that the community grew “44 percent” between the mid 1990s and 2006, when a redistricting plan sought to change the composition of local schools (Boyd, 2006). This redistricting brought racial tensions to the forefront, with a national NAACP spokesman chiding the system for its apparent “resegregation” (Boyd, 2006). The School Board noted that lessons learned from chaotic rezoning in 1996 and 1999 were supposed to help the 2006 rezoning work smoothly, but it was not to be. The concept of a neighborhood school arose, as efforts to increase diversity gave way to proximity of a school to one’s home.

This troubling scenario leads us into a closer examination of diversity in the WJCC system, an issue which has been referred to as perhaps the greatest problem facing the system. The dropout rate among African Americans has also been touted as extremely problematic for this system, and will also be examined in greater detail below.

Diversity

When splitting approximately 800 students from a school system with 10,000, there is the possibility that educational quality could be sacrificed through a loss of diversity. In 2008-2009, the breakdown of Williamsburg-only students was 51.3% white, 33.6% African American, and 15.1% other ethnicities. While diversity is surely not solely defined by race, the loss in ethnic diversity is surely a factor in deciding whether or not changing the school system will affect a student’s educational experience. (VDOE Report Card, 2008). However, the current school system was 68.6% white, 20.3% black, and 11.1% other ethnicity in 2007-2008; this means that

the percentage breakdown of ethnic diversity would actually increase in a Williamsburg-only school system (07-08 Annual Report, 2008).

Another means of examining diversity is through a socioeconomic lens. Prior to the 2006 rezoning, more than 40% of Matthew Whaley Elementary school attendees used the free-and-reduced lunch program for impoverished youth; today that number is still high at approximately 28%. A large differential exists between schools with regard to free-and-reduced lunch attendees, which has been noted as a serious concern because “such schools have lower test scores and cost more money to manage” (Boyd, 2006). It has been argued that schools with higher numbers of impoverished students assist a locality in the local composite index. While the free-and-reduced lunch is certainly an accurate measure of the relative wealth of children in a school system, it does not appear to play any significant role in determining a locality’s ability to pay. Thus, grants may need to be sought in order to offset the increased costs of a school system with a large number of impoverished students.

Additionally, there is reason to be concerned about the performance of minority students in the current school system. The system boasts a narrowing gap of scores between black and white students on the Standards of Learning test, a more accurate look at student achievement may be the from the Virginia Assessment Program. This Program uses the SOLS but also includes “other statewide assessments” in the fields of history, mathematics, and science (VDOE Report Card, 2008). When examining the 2008-2009 school year, we find that elementary school students are somewhat above or on trend with state averages in reading and mathematics, but behind on writing and science. Below you can see the percentage of African Americans in 5th grade who “passed” the Virginia Assessment ratings on specific subjects:

Grade 5 Virginia Assessment Results

African Americans	Reading	Writing	Mathematics	Science	History (2007-2008)
Division	88	75	88	68	N/A
State	86	80	84	79	N/A

*Source: VDOE WJCC Report Card, 2008-2009

When examining institutions responsible for secondary education, however, African American scores fall further behind state averages in more subjects and by greater percentages. African American Students in 8th grade are a full 8 points behind state averages in Science, Reading, and History Measurements.

Grade 8 Virginia Assessment Results

African Americans	Reading	Writing	Mathematics	Science	History (2007-2008)
Division	70	79	80	76	65
State	78	83	77	82	73

*Source: VDOE WJCC Report Card 2008-2009

High school measurements provide even more troubling details. Indeed, in four of the five core subjects noted in the table below, African American students in WJCC are behind state averages. Due to the fact that High School Measurements are divided into multiple categories within each discipline, the table displays the most basic category that all students are required to take in order to graduate.

High School Virginia Assessment Results

African Americans	Reading	Writing	Mathematics (Algebra I)	Science (Biology)	History (Virginia & US History)
Division	86	84	95	66	84
State	91	86	90	78	90

*Source: VDOE WJCC Report Card 2008-2009

Several students and Administrators formed what became known as the “Affirmative Action Advisory Committee” in order to craft a report detailing ways in which the school system could improve the experience of minority students. The Committee, which shares several members with the Williamsburg Education Review Committee, adopted the goal to “seek, attract, and retain a highly qualified diversified workforce to better serve our student population.” They recommended recruiting a more diversified workforce, ensuring that current screening processes are fair to all ethnicities, and monitoring work conditions. They also approved of the idea to “mix classes to include all levels of students,” no doubt in the hope of raising the standards set in every classroom. Finally, the committee also recommended diversity programs for all WJCC staff to ensure that they are culturally aware and approaching all students with the appropriate amount of respect. Indeed, it is their hope that efforts like these will improve not only the test scores of minority students in the school system, but their experiences as well (Affirmative Action, 2009).

Dropout Rate

One concern raised by the Williamsburg Education Review Committee about the WJCC school system is the relatively high dropout rate. During the 2007-2008 school year, 101 students dropped out of a Williamsburg James City County school. Of those students, 43 were African American and 44 were Caucasian (Dropout Report, 2008). The total population of WJCC schools during 2007-2008 was 10,539, of whom 2,143 were African American and 7,241 were white (Fall Enrollment, 2008). The dropout rate is most striking at both Jamestown and Lafayette High Schools. A breakdown of the dropout rate by school can be seen in the following table:

Total Dropout Rates

School Name	GR7	GR8	GR9	GR10	GR11	GR12	Total Dropouts
Berkeley Middle	1	2	0	0	0	0	3
James Blair Middle	3	0	0	0	0	0	3
Jamestown High	0	0	5	6	9	17	37
Lafayette High	0	0	8	6	15	18	47
Toano Middle	0	0	0	0	0	0	0
Warhill High	0	0	2	3	6	0	11

**Source: Virginia Department of Education, 2008*

The state dropout rate for all students in 2007-2008 was 1.89%; the state dropout rate for African Americans was slightly higher at 2.86% (VDOE Report Card, 2008). The WJCC school system falls roughly in line with the overall dropout rate, with a 2.03% percentage dropout rate. 4.25% of African Americans enrolled in the school system dropped out during 2007-2008, however, a percentage almost double that of the state (VDOE Report Card, 2008). At first glance this appears very troubling, and indeed it may be, but it is more likely that this statistic is somewhat misleading. Given the fact that there are very few African Americans relative to the entire school system population, the statistic is skewed. Because there are so few African Americans in the system, a dropout rate of 43 students makes the statistic large. In most cities and counties,

however, far more than 43 students of African American ethnicity drop out, but their populations are large enough to drive the statistic back down. Any number of dropouts is clearly an issue, but the issue is not quite as dramatic as these statistics may lead one to believe.

STAFFING COST ANALYSIS AND TEACHER RETENTION

This section of the report examines the cost of running a school system in Williamsburg.

The analysis is broken into six sub-sections. The first section examines the instructional costs of operating a scaled-down version of the WJC school system in the City of Williamsburg. The instructional costs for operating separate elementary, middle, and high schools are calculated and serve as the baseline cost models in this section of the analysis. The second section calculates the costs for non-instructional and central office staff. These estimated costs are based on what WJC has budgeted for these positions and are scaled-down for what a Williamsburg school system would need. The third section looks at the cost of different school configurations, and examines where potential cost savings might exist. The fourth section examines the cost of reducing class sizes, and compares the targeted student teacher ratios in WJC to the proposed student teacher ratios in Williamsburg. The fifth section looks at how fluctuations in the city's student population affect school staffing needs from year to year, and examines how higher and lower student teacher ratios increase or decrease the number of staff changes each year. The sixth section examines the cost of retaining teachers in a Williamsburg school system, and compares this cost to a system that hires and fires its teachers on an as-needed basis to maintain target student teacher ratios.

Baseline Instructional Costs

The methodology and calculations for the instructional baseline costs are presented on pages I to XV.¹ Instructional costs are based on the staffing allocations, salaries, and benefits budgeted for the WJC school system. More detail on the methodology used to determine baseline costs can be found on pages II, V, and VIII. As demonstrated in the methodology, staffing allocations for teaching positions are determined by minimum requirements and are not based on student to staff ratios. Once the minimum teacher staffing requirements are met, additional positions are more often added based on student needs than ratios. Administrative allocations are different. Once the minimum requirement is met, additional administrative positions are determined by student to staff ratios (Burckbuckler, November 10, 2009).

Pages III, VI, and IX present the baseline allocations for instructional and school administrative staff. As explained in the methodology, high and low estimates are used to calculate the cost of employee benefits. As a result, this yields a high and low total instructional cost for operating an elementary school, a middle school, and a high school. Page xv presents the estimated costs for each school level, with the total ranging from \$6.2 million to \$6.6 million.

Baseline Non-Instructional and Central Office Staff Costs

The methodology for determining non-instructional and central office allocations, salaries, and benefits is similar to how the instructional methodology, with two modifications. Instead of using the Superintendents Report, staff salaries are calculated on page xxiv and based on FY 2008-09 total costs and FTEs reported on pages 95 to 229 of the FY 2009-10 budget. The second difference is that non-instructional staffing allocations are based on student to staff ratios, and central office allocations are based on the assumption that only one staff member is needed

¹ The Excel spread sheets for this analysis were too large to be formatted in Word. Hence, roman numerals are used to maintain the order of the Excel spread sheets and Word documents in the Appendix.

for each position. It is important to note that not all WJC central office staff is accounted for due to the difficulty of matching each position with the appropriate object number in the FY 2009-10 budget. Page XXV presents the total estimated non-instructional and central office costs. Total non-instructional costs range from \$1.2 to \$1.4 million, and total central office costs come to about \$1.5 million.

School Simulations

Pages XXVI to XXXI examine the cost of different school configurations. Three school models are generated. The first is an elementary school that serves students in Kindergarten through grade 5 (page XXVII). The second combines the baseline elementary and middle school models together to serve students in Kindergarten through grade 8 (page XXVIII). The third combines the baseline middle school and high school models together to serve students in grade 6 through grade 12 (XXIX).

Page XXX shows how staff allocations are determined for the grades K-8 school model and the grades 6-12 school model. Columns 1 and 3 indicate the number of teaching staff (core, resource, specialized, SS/At-risk, Math, Reading, ESL, Special Education, and Guidance Counselor) allocated in the baseline for each particular school level. Column 5 is the sum total of columns 1 and 3, and presents the number of staff needed for each position in a K-8 or 6-12 school. For example, 34.85 core and resource teachers are needed in a K-8 model because 24.5 and 10.35 teachers are needed at the elementary and middle school levels, respectively.

Assuming that teachers have full schedules and a planning period, is very likely that combining school levels together will not reduce the total number of teachers needed.

As noted before, it is possible to allocate administrative staff using ratios after the minimum allocation has been met. Columns 2 and 4 on page XXX represent the student ratios

for administrative positions at different school levels. Column 6 is the sum of columns 2 and 4 and represents the estimated number of administrators needed in the K-8 and 6-12 school models. For example, the student ratio for the number of principals needed in the K-8 model is 0.86, or 1 principal. So instead of having to budget for two principals which would be the case if the elementary and middle school operated separately, the K-8 school would only need one principal.

Page XXXI presents the estimated costs for operating schools serving grades K-5, grades K-8, and grades 6-12. An elementary school serving grades K-5 will still cost as much as baseline elementary model, with its costs ranging from \$2.8 to \$3.1 million. A K-8 school costs between \$4.1 and \$4.4 million, and a 6-12 school costs between \$3.1 and \$3.2 million.

Smaller Class Sizes

Pages XXXII to XXXVI examine the cost of reducing class sizes. Table 1 on page xxxiii compares the targeted student teacher ratios in WJC to proposed student teacher ratios in Williamsburg.² The proposed Williamsburg ratios are 40% lower at the elementary level and 20% lower at the middle and high school level than the student teacher ratios followed by WJC. The Williamsburg ratios are applied to elementary, middle, and high school baseline models. Note that these ratios only affect the number of core teachers needed at the elementary level and the number of core and resource teachers needed at the middle and high school levels.

Page XXXVII presents the total estimated cost for the elementary, middle, and high school levels when the lower student teacher ratios are applied. Elementary school costs range between \$3.62 and \$3.88 million, middle school costs range between \$1.71 and \$1.81 million, and high school costs range between \$1.92 and \$2.02 million.

² Clyde Haulman proposed the student ratios for a Williamsburg school system.

Population Changes and Teacher Needs

The limitation of the baseline model is that it assumes that the student population does not change. Beginning on page XXXIX, Tables 2, 3, and 4 show how the student population for students living in the City of Williamsburg has changed from the 2002-03 school year to the 2008-09 school year. The population has not remained constant. During this period of time, there were 15, 7, and 12 double-digit grade-level changes in student population at the elementary, middle, and high school levels, respectively. To better understand school instructional costs, it is important to determine the number of teachers needed as populations increased or decreased and how lower student teacher ratios, like the one proposed for Williamsburg, affects teacher needs.

Figure 1 on page XLI presents the number of Kindergarten Teachers needed each year when the 20 to 1 WJC student teacher ratio is followed. Each bar represents the kindergarten population for each year, and the number above each bar represents how many teachers are needed for each year. Figure 1 shows three or four Kindergarten teachers are needed to meet the WJC target ratio. There are also three changes in the number of teachers needed, with one additional teacher in 2005-06, one less teacher in 2006-07, and one additional teacher in 2008-09. Table 5 on page XLII shows that when following the WJC student teacher ratios, the number of changes in teacher needs is pervasive across all grade levels with 3 to 6 changes made annually. When the lower Williamsburg student teacher ratios are applied, the changes in the number of teachers needed increases to 6 to 10 changes per year. This is shown in Table 6 on page XLIII.

The change in the number of teachers needed each year will require decisions to be made about how low student teacher ratios should be in a Williamsburg school system, and how

closely these ratios should be followed. Although the literature suggests that smaller class sizes improve student achievement, especially in the younger grades, lower student ratios coupled with student population changes increases the variation in the number of teachers needed each year. The WJC school system is well equipped for absorbing population changes since it can move teachers around amongst its 14 schools. Population shocks will be more difficult for Williamsburg to handle since it will have fewer options for where to place its teachers. Furthermore, most teachers cannot be placed in grade levels or subjects they have never taught before and be expected to perform well (Burckbuckler, November 10, 2009). The No Child Left Behind Act also limits the ability to move teachers around since the law requires that teachers be certified in different subjects. For example, a middle school or high school teacher cannot teach English one year and biology the next unless they are certified to teach both of these subjects. Consequently, a Williamsburg school system must decide whether to fire its excess teachers or retain them. Firing excess teachers would be a poor policy to follow since it would lead other teachers to believe that their own job security is at risk. As a result, the school system would gain a poor reputation for not treating its teachers well, reducing its ability to attract and retain quality teachers. Although retaining teachers will create an environment that attracts quality teachers, it will come at an additional cost. The next section examines how much extra a Williamsburg would need to pay in order to maintain a school system that supports quality instruction.

Cost of Retaining Teachers

Pages XLIV to LI examine the cost of retaining teachers when the Williamsburg proposed ratios are strictly followed. Figure 2 on page XLV shows that four to seven Kindergarten teachers are needed in a given year. Figure 3 presents the same scenario except

that the teachers that are hired are retained by the school system. For example, although 4 Kindergarten teachers are needed in 2003-04 to meet the Williamsburg target ratio, the school system would employ 5 Kindergarten teachers since it would need 5 teachers to meet the target ratio during the previous school year. The tables of page XLVII show the number of teachers needed by grade level and year if teachers are retained in the system. Corresponding student teacher ratios are also provided, as well as the number of elementary, middle, and high school teacher needed each year.

Pages XLVIII through L present the total estimated costs for the elementary, middle and high school levels for the 2008-09 school year when teachers are retained in the school system. The estimated total costs are presented on page LI. Elementary costs range from \$3.96 to \$4.24 million, middle school costs range from \$1.95 to \$2.07 million, and high school costs range from \$2.06 to \$2.17 million.

Finally, page LII compares the cost of the different student teacher ratios for the elementary, middle and high school levels based on September 20, 2008 enrollment numbers. Row 1 presents the cost and number of teachers needed if the WJC student teacher ratios are followed, row 2 presents the cost and number of teachers needed if the proposed Williamsburg student ratios are followed, row 3 presents the cost and number of teachers needed if the Williamsburg student ratios are applied and teachers are retained in the system, and row 4 is the difference in costs between rows 3 and 1. These cost differences range from \$1.07 to \$1.14 million at the elementary school level, \$445,000 to \$473,000 at the middle school level, and \$207,000 to \$218,000 at the high school level.

These cost differences can cautiously be interpreted as how much more Williamsburg would have to pay for a system that supports high instructional quality (row 3) than a system that supports low instructional quality (row 1). Row 3 represents a school system that supports high quality instruction because it maintains low student teacher ratios without threatening teachers' job security. Row 1 is more likely to provide a lower level of instructional quality due to its higher student teacher ratios and the need to make non-teacher friendly decisions to maintain its student teacher ratios.

Cost Saving Measures

There are at least three ways a Williamsburg school system can reduce its costs. One cost saving measure that has already been discussed is reducing the number school administrative staff by combining different grade levels together. Another way to reduce costs would be to loan excess teachers to WJC or York County. Williamsburg could pay a portion of the salaries of the teachers it loans in exchange for retaining the right to reclaim those teachers when they are needed at a later date. Such a system would prevent the Williamsburg school system from paying the full salary of a teacher that it does not need. Operating a small central office is another way to reduce costs. The WJC central office has at least 40 positions (FY 2009-10 Budget, page 41). In contrast, the high achieving Millis Public School System has 9 positions, and the Unity School District in New Hampshire which serves grades K-8 has only four central office staff. By making an effort to reduce costs in these areas, a Williamsburg school system would be able to save money that could be spent more effectively in other areas.

Teacher Quality and Retention

About 50% of the new teachers leave the profession within the first five years of teaching (Ingersoll, 2003). When teachers leave the profession, students lose the value of learning from

experienced teachers and school districts must recruit and train their replacements. Poor working conditions and the pursuit of another job are the most common reasons for why teachers quit teaching or transfer to another school. Among teachers that transferred to another school, 38.1 percent moved to receive a better teaching assignment, 32.7 percent were dissatisfied with the working conditions, and 37.2 percent felt they received inadequate support from school administrators (Ingersoll, 2003).

Other research finds that new teachers with strong academic qualifications are more likely to move to districts with more attractive schools or to leave the profession altogether. However, those who have invested time and money in credentials specific to teaching are most likely to stay. For example, women who obtained their National Board certification are 90 percent less likely to leave the school system and 18 percent less inclined to transfer within the district (Goldhaber, Gross and Player, 2007).

However, the critical question is whether schools are losing their best teachers. Two studies suggest that teachers who work in schools with low free and reduced-price lunch population and do not raise student achievement are more likely to leave the profession than teachers that do increase student achievement (Aaronson, Barrow and Sander 2007; Goldhaber, Gross and Player, 2007). However, effective teachers that work in high poverty schools are more likely to move to schools with lower poverty levels and higher academic performance (Goldhaber, Gross and Player, 2007).

Several factors such as increased teacher pay, better working conditions, and increased autonomy lead to increased teacher retention. However, research suggests that teacher mentoring programs are the most effective retention strategy. Not only do mentoring programs provide teachers with guidance and support, but they have also help improve teachers'

instruction which positively benefits students' academic achievement (Serpell and Bozeman, 2000). Mentoring programs are especially important for new teachers since they are usually assigned to the most difficult classrooms. Studies find that first-year teachers that receive comprehensive mentoring are 20 percentage points more than teachers who are not mentored (Smith and Ingersoll 2004).

Mentoring programs also improve the satisfaction, skills and autonomy of veteran teachers. By observing new teachers in the classroom and providing them with feedback, veteran teachers can learn new teaching methods, and gain new responsibilities outside of their own classrooms. These new responsibilities also provide veteran teachers with new opportunities to increase their salaries. The collaboration between teachers in mentoring programs also enhances the sense of community within the school and subsequently improves working conditions (Sargent, 2003). By improving teacher instruction and increasing teaching retention, teacher mentoring programs help schools create the learning environments that students need to succeed.

NON-STAFFING OPERATIONAL COST ANALYSIS

The Operating Budget includes six basic functions, namely instruction, administration, health, transportation, operations and maintenance, and technology. See Appendix C for line-item projections for a Williamsburg-only K-12 system. Due to differing projection methodologies, staffing needs have been calculated separately from all other operational needs and are not included in Appendix C calculations.

The Methodology

Four basic formulas were used to approximate how much it would cost to implement the WJCC model in a Williamsburg-only system. These formulas are referred to as the “per

student”, “per Full-Time Employee (FTE)”, “per building”, and “per bus” formulas. Each of these formulas rely on taking the WJCC amount, finding the average cost per X students, FTEs, buildings, or buses respectively, and then multiplying by the number of students who both currently live in the City limits and attend WJCC schools. In Appendix C, notice Column 5 denotes which of the four formulas is utilized for any given line-item.

The Results

In the following table, observe the non-staffing totals for a projected operating budget.

The WJCC totals also exclude staffing costs for an apples-to-apples comparison.

Function	WJCC 2010 Proposed Budget	Williamsburg-Only Projections
Instruction	4,458,003	362,869.17
Administration	535,270	88,630.09
Health	85,865	7,613.00
Transportation	1,806,331	136,521.00
Technology	2,612,499	290,775.00
OPS and Maintenance	5,395,693	770,348.45
TOTAL	14,893,661	1,656,756.71

CASE STUDIES: LESSONS FROM OTHER SCHOOL SYSTEMS

Perhaps the best way to decide how the City of Williamsburg should proceed is to determine how other school systems have handled similar situations. Indeed, Williamsburg is

not the first City in a joint school system that feels it is not always justly treated, nor is it the only city that lives in close proximity to a major University. The following examines several case studies on how other school districts have dealt with several issues currently facing Williamsburg, as well as descriptions of several school systems similar in size to Williamsburg and how they look at education through a creative lens.

Small School Systems

Given the fact that a Williamsburg only school system would only enroll approximately 800 students, it is certainly worth examining whether or not other small school systems are effective in providing their students with a quality education. We looked across Virginia to find examples of school systems with less than 1000 students, and found two worthy of mention here. Norton City Public Schools have done an excellent job keeping quality high with a low number of students; Covington Public Schools struggles to keep up with the demands of educational needs for today's students, and is thus an example of a system possibly plagued by its small size.

Norton City is a great example of a thriving small public school system, enrolling 856 students during the last school year. Running two schools, Norton Elementary and Middle school along with John I Burton High School, the central administration has been able to ensure Annual Yearly Progress in both math and language arts. The central administration is fairly small with only five full time positions. The Superintendent is the chief executive managing the rest of the central office staff and the principals of both the schools. They are aided by a Director of Administration and Federal Programs who's main role is to foster federal grant money into the district. There is also a Finance Director who works with the budget and a Payroll and Accounts Payable Director. In addition, there is also an Administrative Assistant to the Superintendent who runs the office. The office is able to function with such a small staff because the Principals

wear many hats. Both Principals take on dual roles as curriculum directors for their perspective schools (almost all curriculums are run through the schools themselves). In addition, one serves as technology director for the district, while the other serves as transportation director.

As was said before, for the school year of 2008-09 the Norton City School District made Annual Yearly Progress. They have zero teachers who do not meet the federal definition of highly qualified and well over half have master's degrees. According to their central office, in order to compensate for the limited resource problems that many small school systems face, they have partnered with local colleges to expand their course curriculum. Partnering with their local community college and University of Virginia's College at Wise allows them to have 6.3% of their students involved in dual enrollment courses. Also, their public office had positive things to say about their special education and other programs designed for struggling students. However, their AP course enrollment is negligible which is significant considering that most other school districts have enrollment over 10% ("Norton city public," 2009).

Covington City Public Schools, on the other hand, is an interesting example of a struggling small public school system. Last year they enrolled 910 students. They run three schools, Covington High School, Edgemont Primary School, and Jeter-Watson Intermediate. Though small, their central administration does contain 9 employees and is relatively larger than other districts their size. The district is run by a Superintendent who has the help of two secretaries, the Secretary to the Superintendent who is also the Deputy Clerk and the Administrative Secretary who is also the Supervisor of Transportation and Child Nutrition. There is also a director of instruction and technology who works with an Administrative Secretary who is also the Textbook Agent, and another Secretary who is the Title I-Secretary/Aide. There is also a Director of Student Services who has an Administrative

Secretary. And finally there is a Director of Business and Finance who acts as the Clerk of the Board (“Central Office Staff,” 2009).

In their Report Card from the Virginia Department of Education Covington City Public Schools did not make Annual Yearly Progress. Their problems seem to be in math where they only had a 77% passing rate and in the NCLB Graduation Indicators, where they only had a 69% for the 2007-08 school year. In addition, their small size seems to be hurting them when it comes to curriculum options and teacher quality. All AP classes or Dual Enrollment numbers are negligible and 3 teachers do not meet the federal requirements for highly qualified as well as 11 teachers who are only provisionally licensed. Finally, only 27% of their graduating class in 2008-09 received an advanced diploma (“Covington city public,” 2009).

School Systems That Split/Considered Splitting

Most Joint Systems pair a relatively small municipality with a larger one, often to fix the problem of economies of scale. While fixing one issue, however, the issue of inequity between the two partners in education is often brought to the surface.

The first example of a joint school system on the brink of a split comes from Massachusetts. The Bridgewater-Raynham Regional School District is a venture that began in 1960 with the sharing of a high school between Bridgewater, a town of approximately 25,000, and Raynham, a town of approximately 12,000. In 1994, the localities saw consolidation as the more financially sustainable vehicle moving forward and opted to regionalize elementary and middle schools as well. 2007 saw a measure brought before the town of Bridgewater regarding whether or not to pull their elementary and middle school students from the joint system. The town felt “pushed to spend more than it could afford” by Raynham, which has a much larger commercial tax base (Wallgren, 2007). A citizen’s group, entitled “Citizens for a Better

Bridgewater,” fought against the measure, however, stating that no evidence existed that Bridgewater could improve its student’s education in a split system (Wallgren, 2007). They argued that the district was originally consolidated in order to cut down on administrative needs, better coordinate course work, and receive additional state funding for transportation costs. Despite this controversy, plans to split never came to fruition. In 2009, however, Raynham called for a district split. They came to the decision that sharing only a high school and top regional administrators might be best for their students. They thus proposed a “superintendency union” which would keep costs down on the administrative end and allow one body to handle administrative matters (Legere, 2009). Raynham Selectman Donald McKinnon said that a superintendency union would allow each locality to spend only an extra \$300,000 annually, rather than \$1 million if the system engaged in a total split (Legere, 2009). Raynham, like Williamsburg, pays more per student each year for the same level of education; in the case of Raynham, \$600 more annually (Legere, 2009). While no definitive decisions have yet been made (studies are currently underway), many parents are leery of the additional costs that each district would acquire should the region split. Still, the district continues to lag behind in test scores and innovation, and many believe that a shake-up of this nature is the only way to put their schools back on track.

Another pertinent example of a school district’s proposed split comes from the Jordan School District in Utah. This system, which covers a large portion of land south of Salt Lake City, actually split into two school districts in July of this year. The eastern half of the District felt that they were unfairly subsidizing the other half of the district, and voted to split. Many in the western half called this move “unfair” and would affect the children and the local schools (Jordan, 2009). Assets were divided up, with schools being given to the region that houses them,

liabilities split 58% for the East side to 42%, for the west, and provided the East side with a larger share of the approximately \$1 billion in school district assets (Jordan, 2009). A deep level of anxiety remains regarding the split, as several municipalities voted no yet saw a split occur anyway. One is reminded of the Williamsburg-James City County contract when examining this issue, because either party in that contract may also choose to secede without taking a popular vote of all residents of the school district. The west side of Jordan is home to a small town called Midvale, which could see a dramatic loss in funding due to the split. Indeed, Midvale schools will lose approximately \$400,000, or 10% of its Title I Funding; this is due to the fact that Title I Funding is based on head counts and the West Side will now have fewer students. While this is a large negative, Midvale will gain a representative on the west side school board and “access to a rich, stable commercial tax base,” stated Mayor JoAnn Seghini. This system is only at the beginning of its decentralization, however, but will serve Williamsburg well as a case study in years to come.

Wisconsin provides us with a third case study regarding the potential of splitting a school district. The Middleton-Cross Plains School District joins two municipalities: Middleton, which is home to approximately 16,000 residents and Cross Plains, home to approximately 3,000 residents. The smaller locality, Cross Plains, has made attempts to establish its own school district after raising concerns about “plans to expand the current high school in Middleton to hold 1,200 students” (Session, 2009). A local parent’s interest group, Community Schools for Kids, asserted that “kids get a better education in smaller schools” (Session, 2009). The group actually gained widespread support, collecting 3,000 signatures on a petition and signing up 60 active members. Despite their efforts, the local school board voted unanimously against a split. The Board noted that a split “proved too costly for the district’s 13,000 households” (Davis-

Humphrey, 2009). They noted that there would be an adverse effect on “educational programs, financing and families in the district,” but did not cite specific examples in their official statement (Davis-Humphrey, 2009). Still, this district performed an extensive study and found that the economies of scale proved too large an issue to favor splitting the school system and reducing school size.

School Systems with a College Partner

Many school systems are fortunate like Williamsburg in their proximity to an institute of higher learning. Several stand out, however, for their extraordinary relationship with a college. Indeed, these school systems allow for a true, mutually beneficial partnership between K-12 and college, and even allow the highly trained Professors at the school to assist the local district in organizing their school systems.

Perhaps the greatest example of a district-collegiate partnership resides in the relationship between the localities of Cambridge, Massachusetts, Boston, Massachusetts, and Harvard University. Harvard interacts with the local community in a variety of ways that either directly or indirectly affect Cambridge’s primary and secondary educational institutions. Harvard sponsors an event several times a year called the “Askwith Education Forum,” where different aspects of the educational system are discussed and debated by experts (Harvard, 2009). Cambridge officials are asked to participate and often attend these events to get new ideas. Harvard also presents a series of seminars under the heading “The Cambridge Public Schools Leaders’ Network” in which School of Education Faculty examine trends in educational leadership and new, innovative ideas of school systems (Harvard, 2009). This Network allows Cambridge officials to interact throughout the year with Harvard Faculty and discuss the needs of the system, which can then be researched and discussed in future seminars. In addition,

Harvard's Cambridge Partnership for Public Education is a more comprehensive way for school administrators to work with outside entities in the community, as described below:

“The Cambridge Partnership for Public Education is a collaborative effort of higher education, business and industry, community leaders, teachers and parents working to improve Cambridge Public Schools. Working with the Cambridge School Department, the Partnership sets priorities for improving professional development for teachers and administrators, curriculum development, early childhood education, youth employment, and post-secondary opportunities.”
(Harvard, 2009)

The University even offers specific learning seminars for AP Biology Teachers, where they can learn the most up to date information on the study of Biology from faculty members in the Harvard Department of Biology. The school also offers workshops for local art teachers, where they instruct these individuals on the different resources available at Harvard's museum and indicate how they can fit these resources into their own curriculums. The University also partners with Boston to create an effort entitled the “Boston Public School Leadership Development Network,” in which Boston Public School Administrators meet with School of Education officials and attend professional development sessions (Harvard, 2009). Finally, Harvard also designed a program for Boston entitled “Three to Third,” which aims at closing the achievement gap among young students. Given the achievement gap that exists in the WJCC school system, this idea could prove very useful in a template for a William & Mary/Williamsburg Partnership. The program description reads as follows:

“The Harvard Graduate School of Education, in collaboration with the Boston Public Schools and the Mayor's office, proposes a multi-dimensional initiative designed to close the achievement gap by powerfully enhancing the learning experiences and emotional and physical well-being of children from 3 years old through third grade -- Three to Third. In recent years, policymakers, practitioners and researchers have become increasingly alarmed about large, persistent gaps in achievement between poor and non-poor and black or Latino and white children. In Boston, Mayor Menino has made closing these gaps a prime goal of his administration and has challenged both city departments and area universities to generate innovative interventions (Harvard, 2009).”

Trinity College also displays a strong relationship with its local school district. Trinity is a much smaller school than Harvard, and obviously has fewer resources. Despite this obstacle, however, Trinity offers a variety of ways in which Hartford, Connecticut School administrators can benefit from their proximity to the College. Their Community Learning Initiative, run under the auspice of the Trinity Center for Urban and Global Studies, attempts to “find ways to share knowledge, develop academic collaborations among students and faculty, and community partners outside the college” (Community Learning, 2009). The College also developed a Neighborhood Service Opportunities Program. This Program, created in 1995, involves programs like “Campus Care,” which is a before and after school program for Elementary School students to learn even outside of the classroom. They also offer a summer camp, entitled the “Fox Den” at a local elementary school, and a parental workshop aimed at effective childrearing and guidance of student’s needs (Community Service, 2009). Perhaps most impressive, the Learning Corridor, described as “an extended community of learning stretching from the College to the neighborhood and involving nearly 1,500 students from Hartford and the region” (Learning Corridor, 2009). The Corridor is a 16-acre campus adjacent to Trinity College and comprises four public magnet schools that serve grades K-12. The campus also houses “support programs for youth – a Boys and Girls Club, The Aetna Center for Families, and the CT Valley Girl Scouts Council;” Trinity notes that this makes Hartford the home of the only public school campus in the country to house such organizations (Learning Corridor, 2009). Indeed, this campus allows students to essentially obtain college-quality learning from Kindergarten on, as Trinity is heavily involved with the curriculum and style of teaching at these magnet schools. For individuals not attending these institutions, other local schools often borrow and learn from the Learning Corridor, bringing sample lessons and teaching methods to their local school.

A PARTNERSHIP WITH THE COLLEGE OF WILLIAM & MARY

[A Conversation with the School of Education's Dr. Steve Staples](#)

One of the greatest advantages that Williamsburg students have is their proximity to the best small public school in the United States: The College of William & Mary. While costs may not necessarily be lowered through a College partnership, the quality of education can certainly be improved. Our research team had the opportunity to discuss the issue of a school partnership with Dr. Steve Staples, a Professor in the School of Education and former Superintendent of York County Public Schools. Dr. Staples enthusiastically informed our team that the William & Mary School of Education would no doubt be interested in playing an enhanced role in a new, Williamsburg-only system or even in the current WJCC system. He also noted that the School of Education has often desired to play a larger role in the WJCC system but has been somewhat rebuffed; in fact, many of their student teachers have been forced to drive out of the district to school systems like Hampton, as Williamsburg-James City did not reach out a hand to William & Mary.

One of the things that excited Dr. Staples most about the possibility of a greater partnership between a local school system and the College is the opportunity to research and study. He claims that a curriculum focused lab would be an extremely helpful component to a Williamsburg only school system, and mutually beneficial as Professors and Students alike could gain practical experience. Students could enter into classrooms as well and bring with them new innovations and technology that they will not only teach Williamsburg students, but pass on to local teachers. If Williamsburg were to employ Clinical Faculty members in each school who

know how to effectively deal with student teachers, a great relationship could be built where the William & Mary student can practice interacting in a classroom without taking the quality of education in that classroom as collateral damage. Indeed, they can teach Williamsburg faculty members and enhance the quality of education within schools simultaneously.

Indeed, Dr. Staples expressed a great deal of excitement regarding the idea of creating an entirely new school district from scratch. He recounted meetings with other school superintendants where these leaders in education discussed the serious lack of innovation in American high schools. To support this notion he cited Senator Warner, who has long pushed for reform of American High Schools and stated “we must make high school more rigorous and relevant to the high-skills work students will have to do” (Warner, 2004). Indeed, Warner notes that high schools have not undergone a major reform in over 100 years, despite the tremendous changes in technology and society at large. Dr. Staples notes that community based learning is the new trend in education, where individuals are immersed in real-life community problems and exposed to things like art outside of a classroom. William & Mary could play a crucial role here, doing everything from allowing students access to the Muscarelle Museum of Art to getting Drama Clubs and other extracurricular activities involved with William & Mary Activities. Dr. Staples believes that a new approach to education, and high school in particular, would not only be a good selling point to the College of William & Mary, but to individuals who live in Williamsburg but currently seek educational opportunities in home or private schooling.

[Project Civic Engagement 360](#)

Even before the School of Education’s representative expressed interest in becoming more involved with the local community, William & Mary has already committed itself to sharing its resources. This effort has culminated in what’s known as *Civic Engagement 360*:

William & Mary's Comprehensive Engagement Initiative. The expressed goal of the initiative is to “place the academic resources of the College at the service of civic entrepreneurs and public officials, while in return our students and faculty receive practical experience from these seasoned practitioners” (Civic, n/a). This goal certainly coincides with the information Dr. Staples shared regarding a mutually beneficial agreement, and falls in line with the Committee’s desire to have a Williamsburg School System both receive from and give to the college.

The Program combines the efforts of the College’s Office of Volunteer Services with the Sharpe Scholars, who are students actively engaged in community service initiatives. Indeed, the initiative promises to instill “engaged citizenship” in both William & Mary students and the members of the community with whom they work; any projects undertaken will be designed to “augment the autonomy and resiliency of individuals and their communities” (Civic, n/a). A new Williamsburg school system would likely be a prime candidate for adoption by this program, and can expand upon a relationship with the School of Education, even reaching into the realm of community service and student mentoring possibilities for Williamsburg.

NEW STANDARDS OF QUALITY

In all likelihood, creating a Williamsburg-only school system would allow both parents and administrators to focus on new ways to improve the quality of the educational experience. Inevitably a system that is half a century old allows many of its educational traditions to become engrained. The creation of a new system could remove areas of concern and employ more modern literature which focuses on a 21st century style education. The following are just a few of the new standards of quality which scholars believe may help students perform better throughout their educational careers.

Smaller Class Sizes

The issue which arguably has the greatest consensus regarding positive outcomes for school children is reducing the number of students in each classroom. This is an easy issue to pinpoint in the field of education, and is almost universally hailed as a solution to educational inferiority. Teachers find it easier to work with a smaller number of students, parents feel that their child receives more attention, and Administrators feel that it will automatically garner praise and support. Indeed, small class sizes are argued to allow for less disruption and the creation of a greater sense of community for students. According to a 1999 study from the U.S. Department of Education, “class size reduction in the early grades leads to higher achievement;” researchers are more cautious to place a link between class size and achievement once a student enters 4th grade, however (Reducing Class Size, 1999). The study notes that the most significant effects of class size reduction on student achievement surface “when class size is reduced to a point somewhere between 15 and 20 students, and continue to increase as class size approaches the situation of a 1-to-1 tutorial” (Reducing Class Size, 1999). This finding is consistent with other research in the conclusion that classes should attempt to house approximately 15 students, and avoid reaching the 20 student mark if at all possible.

Indeed, the vast majority of educational literature concludes that smaller class sizes are better for students. Perhaps the best example of literature on class size comes from a study out of Tennessee. The Tennessee State Legislature authorized a study, entitled the S.T.A.R. Report (Student/Teacher Achievement Ratio), which ultimately concluded that small class sizes in grades K-3 had the most impact on student achievement. This four year longitudinal study randomly placed over 7,000 students into one of three class sizes: “small class (13 to 17 students per teacher), regular class (22 to 25 students per teacher), and regular-with-aide class (22 to 25

students with a full-time teacher's aide)” (Tennessee, 1995). Teachers were also randomly assigned to a classroom. Their analysis consistently and significantly found “that small classes have an advantage over larger classes in reading and math in early primary grades” (Tennessee, 1995). This result was especially true among the socioeconomically disadvantaged, as those students on free/reduced lunch experienced an even greater improvement due to smaller class size. While this study’s conclusions are generally representative of the literature on the subject, it is important to note that most studies on class size are quasi-experimental. Due to this fact, definitive conclusions cannot necessarily be reached because we cannot tell with absolute certainty whether extraneous factors were at work during the study.

The 2008-2009 Williamsburg-James City County Student/Teacher Ratios are as follows:

Grade	Student/Teacher Ratio
K-2	20:1
3-5	25:1
6-8	23.25:1
9-12	22.25:1

*Source: 2008-2009 WJCC Annual Report

While these numbers are not terribly far from the so-called “ideal” class size, and in fact better than many school systems around the country, they still miss the mark. Especially given the fact that student achievement is linked most significantly to smaller class sizes in lower grades, K-5 should be reduced to student/teacher ratios of below 15. While K-2 is closest, at 20:1, 3-5 is actually the farthest away of all grades, at a student/teacher ratio at 25:1. A Williamsburg only school system would be wise to work on lowering class sizes in elementary school rather than

worrying about all grades, as student achievement has only been correlated with class sizes in younger years.

Green City, Green Schools

Perhaps the greatest push in 21st century educational reforms revolves around the idea of sustainability. As issues of environmental protection take center stage in both the political and social realms, schools are stepping up and retrofitting their operations to become “green.” The City of Williamsburg has taken major steps towards greening their municipal building, and a Williamsburg School System would no doubt follow suit. Besides helping the environment, *Building Operations Management Magazine* notes that schools may also be able to “save \$100,000 per year — enough to hire two new teachers, buy 200 new computers or purchase 5,000 new textbooks” by going green (Carels, 2008). There are many different ways to go about becoming green, and varying costs and levels of sustainability have been attempted by schools throughout the United States.

A green school is defined as a school that is “designed and operated to be environmentally sustainable and to provide a healthier indoor environment for students, teachers, and others” (Daly, 2009). Edutopia, an Educational Foundation founded by Famed Director George Lucas, notes that going green can be achieved in a variety of ways:

“Depending on the size and scope of the eco-friendly retrofit, individual project costs can run anywhere from a few hundred dollars -- say, for a year's supply of citrus-based cleaners and a pair of oversized recycling bins -- to \$1,000 for two dozen new trees in a courtyard or a composting setup. For \$150,000, a school can pay for a rooftop solar photovoltaic system and its installation. Typically, a phased approach is the only practical way to pull off an extreme green makeover on a public school budget” (Daly, 2009).

Sustainability is changing the way we go about building communities but also the quality of life within. Where in the past school construction buildings were essentially large brick boxes

with little ventilation or light, today the focus is on using a building's structure as another way to enhance the quality of learning that takes place. Windows are enlarged in order to maximize daylight, which has been shown to "improve student performance and student and faculty comfort levels" (Carels, 2008). Wireless internet is also expanded to outdoor spaces in order to easily bring learning beyond a school's four walls and into a natural setting. In addition, many school systems are replacing chalk boards with "interactive white boards . . . that can digitally capture what is written and send it electronically to the student's computer" (Carels, 2008). A measure like this not only eliminates paper waste and chalk pollutant, but also serves as another way for student's to interact with today's modern technologies.

Indeed, going green is not purely about reducing a carbon footprint; it can save a school district money. Glenn Carels of Facilities Net calls this notion "value through sustainability" (Carels, 2008). He notes that many green facilities will save money in the long run "due to reduced energy consumption and operating costs" and will pay itself off faster than a traditional school building (Carels, 2008). Natural ventilation alone is said to save a building's operators "10 to 30 percent in monthly operating costs" (Carels, 2008).

The first elementary school in the Commonwealth of Virginia to receive a LEED (Leadership in Energy and Environmental Design) certification was Virginia Beach's Hermitage Elementary School. LEED certification "recognizes achievements and promotes expertise in green building through a comprehensive system offering project certification, professional accreditation, training and practical resources" (Virginia Beach, 2009). Hermitage, which was constructed in 2005, incorporated a variety of green building techniques into its core design, as described below:

“[Hermitage Elementary school was constructed using] special filters installed in the heating and cooling system; building materials that contain a percentage of recyclable elements; higher insulation values; structural design that promotes an abundant flow of sunlight; sinks and toilets with low-water usage; and the use of low VOC paints and floor adhesives with minimal odor (Virginia Beach, 2009).”

Even before receiving this honor, Virginia Beach engaged in a variety of green school initiatives. The system replaced plastic milk jugs in its cafeterias with biodegradable hot and cold cups, are considering putting in carpet tiles (in which only small pieces need be replaced if damaged rather than the entire floor), and use biodiesel fuel in their school buses. In addition, during a scheduled electrical upgrade they replaced 50,000 watts worth of light bulbs in Green Run High School with Light-Emitting-Diode (LED) fixtures. Only 2,538 watts of LED lights were needed to replace the 50,000 watts of other lighting, and bring with them a “potential energy cost savings, including bulb costs, [amounting] to \$12,732 per year” (Virginia Beach, 2009).

Our research team contacted York County and several other school districts regarding the exact costs for retrofitting a school, but unfortunately did not receive the information by the time this report was published. We were referred to Mark Tschirhart as the individual in charge of retrofits for York County, but have yet to hear back. Virginia Beach Public Schools did provide us with a report, however, detailing efforts to allow 3 of their schools to become LEED certified. Tim Cole, Sustainable Tools Project Manager for the City of Virginia Beach, noted that recent “green” construction projects on Virginia Beach Middle School and Windsor Oaks Elementary School “were built for less than the average square foot cost for traditional schools in our region” (Cole, 2009). Cole also provided us with the 2008 Annual School Construction Report, which can be viewed in its entirety in Appendix A. The document places our local region in Region 3 of nine areas examined, and gives a typical cost-per-square foot for all levels of school construction, as seen below:

ES	cost/sq/ft. \$183.24
MS	cost/sq/ft. \$218.41
HS	cost/sq/ft. \$187.76
Average MS/HS = \$201.58	
WOES	cost/sq/ft. <u>\$163.71</u>
VBMS	cost/sq/ft. <u>\$198.27</u>
RA	cost/sq/ft. <u>\$187.00</u>

**Source: Annual School Construction Report (Appendix A)*

While a great deal of retrofitting costs are not yet differentiated from general construction, Cole noted that a “performance contract” is the most typical way for retrofitting existing buildings with more energy efficient equipment (Cole, 2009). He stated that such a contract was used to retrofit Providence Elementary School.

[Circadian Rhythm and the Start of the School Day](#)

The Committee also expressed concerns that current Administrative officials are not fully examining the idea of rearranging the school schedule. Currently, elementary schools in Williamsburg-James City County begin at either 8:35 or 9:20am, middle schools begin at either 7:20 or 8:05 am, and high schools start at 7:20 am (Calendar, 2009). These times may not accurately coincide with a child’s circadian rhythm, defined as our “internal clock” which can regulate the times at which we are feeling most awake and productive during the day (Haley, 2009). Starting school at the wrong time can disrupt a child’s circadian rhythm, which “can have an impact on academic achievement and the school’s daily schedule” (Biggers, 1980). The typical school day, which starts around approximately 8:30, was originally designed to “accommodate the work world” and allow children to arrive “home in time to help with chores around the farm” (Biggers, 1980).

An older study from the *Journal of Experimental Education* found that younger students reported being more alert during the afternoon, while older students reported being more sluggish in the afternoon. The bulk of a typical school day occurs during the “morning-active [student’s] peak period of mental efficiency,” while students who peak during the afternoon or evening are not at their prime (Biggers, 1980). While this coincides somewhat with the general start times of the school day, elementary schools start only one hour after high schools, meaning that younger students may not be at their best. Still, the vast majority of modern day studies appear to contradict the findings of this one, arguing that older students are at their best later in the day.

A study entitled *U.S. Teens in Our World: Understanding the Health of U.S. Youth in Comparison to Youth in Other Countries* found that “40% of U.S. teens reported being tired in the morning,” while many other nations found only “15% of teens reported a tired feeling at day’s start” (Croasmun, 2004). This tired feeling may be the result of the American trend to start high school early in the morning.

Indeed, a House Congressional resolution is currently before Congress on the topic of circadian rhythm in school. Entitled the “ZZZ’s to A’s Act,” and was referred to the House Committee on Education and Labor as of July 31, 2009. This Act encourages school districts to start their secondary education schools later than 9:00 a.m. If it does indeed pass the House, it will be a strong message to schools that they should reexamine their school schedules. While extracurricular activities often dictate the timing of the school day, Representative Zoe Lofgren’s (D-CA) resolution pushes the ideas that perhaps the quality of learning should be placed before these other activities. That may mean pushing the start of the school day back so that teens can be as prepared to start the day as children in elementary school.

There is no necessarily fixed cost relating to changing the time of the school day. If Elementary school days were pushed back further, however, it is possible that new bus drivers may need to be hired. The current school day setup stands in stark contrast to the needs of the student, and angers many parents and students who struggle to create unnatural sleeping patterns. Indeed, the idea of working with a student's biological clock instead of against it is an increasingly popular notion. It may even help individuals currently enrolled in private school reexamine their local public school, as it may appear more friendly to student patterns.

A Laptop for Every Student

In this 21st century, many school systems have moved to a more computer-based academic environment. Indeed, some school systems actually furnish a laptop computer for every student. Some systems required students to pay at least part of the cost of a computer; while this would certainly bring down costs considerably, legal issues have been raised by individuals who argue that the public school system is not supposed to charge any mandatory fees. These systems often have considerable subsidies for individuals who cannot afford laptops, however, with some students paying less than \$100 to purchase a Mac laptop. The cost of doing this is considerable, and can bring with it several drawbacks. Some school systems found that students become distracted while using computers and the educational environment was actually impaired by bringing computers into the classroom.

While most literature on the subject seems to lean favorably regarding computers in the classroom, there are still more than a few voices of dissent. An article in the Wall Street Journal notes that many school systems should simply say "no to school laptops" (Vascellaro, 2006). The author cites the example of Fullerton, California, where students are able to take home an Apple iBook for a heavily subsidized price. Many parents began to worry that distractions, such

as “instant messages” took their child’s focus off of the subject at hand and onto social networking (Vascellaro, 2006). In fact, one parent noted that her child’s standardized testing scores actually fell after the introduction of computers in the classroom. Some argue that this movement is heavily encouraged by computer makers who profit off of the contracts, but an increasing number of parents are fighting back. Some individuals feel that computers teach the wrong skills, and need to be able to “learn to research beyond what is accomplished by Googling a word or phrase” (Vascellaro, 2006). Despite this argument, many argue that the in depth introduction to computers far outweighs any of these potential setbacks, as students will rely heavily on computers in virtually any form of higher education and in almost any career. Still, few studies exist to determine definitive impacts on student achievement; a Texas study found that computers in the classroom “improved student attitudes and behaviors but had a neutral impact on student achievement” (Vascellaro, 2006).

School districts are also being hit with an array of hidden costs, according to Stanford University Professor Larry Cuban. In Fullerton, families are asked to “lease” a computer for a total cost of \$1,200; after the three year lease, the device is theirs to keep (Vascellaro, 2006). Often, Dell and Apple provide some type of insurance for students who break or lose their computers, but this could potentially present an added cost to both the student and the school district. Parents who meet a certain income threshold may be asked to cover the entire cost of the device, depending on the school district.

Henrico County, located approximately one hour from Williamsburg, budgeted “\$17.9 million” for a four year contract with Dell Computers (Business Wire, 2005). They engaged in a four year experiment, entitled the 1:1 program, in which Dell provided laptop computers to every County student in grades 6 through 12, totaling 24,000 laptops (Henrico, 2009). The County

also purchased laptops for all 3,700 faculty members. Laptops given to middle school students come equipped with “more robust filters” and provide a log of websites visited as an added incentive for parents to keep an eye on their child’s internet habits (Vascellaro, 2006). Each elementary school was given five computers per classroom and carts can be checked out which house enough computers for an entire classroom (Henrico, 2006). Laptops last approximately 4 to 6 hours, but charging stations were set up in the school for students to recharge computers between class periods. This program continues past its four year mark; our research team contacted the County for more information regarding the status of the project, but did not hear back by the time of this study’s publication. A cost analysis for the computer program is printed online, however; for the 2009 school year, Henrico County estimates an annual cost of \$12,270,967 (Henrico Cost Analysis, 2008). For detailed information on this cost projection, please see the Appendix. Examples of added costs include a help desk (\$30,000), an e-Learning program (\$10,000), and curriculum writing instruction (\$40,000) (Henrico, 2006). This annual cost broken down on a per student basis (Henrico County has approximately 48,822 students) equals \$254.47. If Williamsburg could hypothetically secure a contract with Dell for the same per-pupil cost, the city would pay roughly \$203,575 for a 1:1 laptop program.

In addition, our research team contacted Dell and Apple Computers, but was unsuccessful in obtaining a price projection. The local sales representative for Apple Computers, Earl Praeger, noted that he is bound by company policy and can only provide a cost projection to officials from a local school district. He did, however, provide us with ideas regarding Apple’s ideas for an innovative curriculum, which are discussed in greater detail below. Perhaps this is an area that Williamsburg could examine further once the proper school administrators are on board with this new, innovative idea.

Splitting the Middle: How to Divide Students among Two Schools

If the City of Williamsburg creates its own school system, only two school buildings will likely be necessary. Using Matthew Whaley and James Blair would give the system the option to lease out Berkeley, and thus offset some additional costs of the Williamsburg only system. With only two schools, however, comes a need to redefine the traditional notions of elementary, middle, and high school. Middle school is the only school of the three which could feasibly be divided, and thus will not be represented in a Williamsburg only system. The question then becomes whether or not to move 6-8 grade students to elementary school, to high school, or whether to split the grades between the two schools. A discussion of these options follows.

Dr. Staples, noted above, has a tremendous amount of experience in dealing with Hampton Roads school districts. Not only was he Superintendent of York County Public Schools, but he also (unsuccessfully) applied to assist with the Williamsburg-James City County redistricting efforts and helped the city of Hampton redesign their school structures. In fact, Dr. Staples introduced the idea of schools housing Kindergarten-8th Grade in Hampton, noting that Middle School is often a tough time for children and seen as a socially undesirable group to place together. These schools will house approximately 1,300 students each, and open in September of 2010 (Hampton, 2009). Within these schools, students will be grouped into smaller “separate learning communities” (Hampton, 2009). The “PreK-2 Grade community as well as the Grade 3-5 community will have a capacity of 400 students each, while the Grade 6-8 community will allow for 500 students” (Hampton, 2009). The transition from 5th to 6th grade is often difficult, and combining the traditional elementary and middle school may help ease this concern. Perhaps then middle school will not be viewed simply as preparatory years for high

school, but a continuance of one's education that leaves the student adequately prepared for future rigorous educational opportunities.

In 2007, the Terry Sanford Institute of Public Policy at Duke University performed a study on this matter entitled "Should Sixth Grade be in Elementary or Middle School? An Analysis of Grade Configuration and Student Behavior." In this study they found that sixth graders who attend a traditional middle school "are much more likely to be cited for discipline problems than those who attend elementary school" (Cook, 2007). The difference remains even after the study adjusted for socioeconomic and demographic characteristics, and the higher "infraction rates" for those students persisted well into the ninth grade (Cook, 2007). The study concluded with the recommendation that sixth graders be separated from older adolescents. They believed that students should be separated into K-6 and 7-12, however, arguing that giving sixth graders one more year of "childhood culture" is vital; K-8 schools, on the other hand, expose all young students to older adolescents (Cook, 2007).

With an experiment about to begin in Hampton, Williamsburg would be well suited to watch these two new schools closely to determine if a K-8 school is ideal. If, after a few years, the schools do not appear to be improving student achievement, Williamsburg may be better off simply moving sixth grade into their elementary school, and allowing the emerging adolescents of 7th and 8th grade to join the high school. These small "learning communities" employed by Hampton to separate groups within one school building should also be carefully studied. Indeed, these partitioned groups may help the City avoid discipline and other related problems associated by mixing different grade levels within the same school.

AN INNOVATIVE CURRICULUM

With the creation of a new school system comes many new opportunities for an innovative way to design a school curriculum. Indeed, the current model of education consists of a textbook, a chalkboard, and a teacher with lecture notes. Study after study indicates that today's students are more visual, however, as their constant interaction with television, video games, and other highly stimulating activities make the current educational environment seem dull. Williamsburg has the unique opportunity to step into the 21st century style of education by employing a variety of new tools and techniques in the classroom.

Virtual AP Programs

Dr. Staples mentioned to our research team that many smaller school systems have employed what's known as a "Virtual AP" program. This program is run on a computer and offers dozens of Advanced Placement Courses, allowing a school to offer a course that is not popular enough to require a full-time Teacher. The program, designed by WHRO and purchase by the Virginia Department of Education, "offers online AP and foreign language courses to students across the Commonwealth" (Virtual Virginia, 2009). Indeed, the program proudly utilizes "the technology of the 21st century" and provides "a unique opportunity for educators to reach students who want the experience of Advanced Placement coursework" where it is not already offered (Virtual Virginia, 2009). Each course employs a variety of teaching techniques, including "video segments, audio clips, whiteboard and online discussions as well as text" and e-Teachers in case a student needs assistance (Virtual Virginia, 2009)." Senator Warner hailed this virtual AP program, noting that it that expands course offerings in rural and other underserved areas (Warner, 2009). This program does not cost a school system anything, as it is owned by the Department of Education, and would thus be a mainstay in any Williamsburg only high

school where only a limited number of foreign language and Advanced Placement courses would be offered due to the school's small size.

Technical Education

Any school system today will be inferior if it does not provide a student with opportunities to obtain certification in a technical, trade related field. When he was Governor, Mark Warner pledged the following to individuals who are interested in a technical career but cannot complete their certification in high school:

“For students who are going straight to work after graduation, we are providing the opportunity to earn industry-recognized certification in their chosen vocations, such as electronics or auto mechanics. If they do not have enough credits for the industry certification before they graduate, the state will pick up the cost of finishing up the coursework at a community college as long as the students finish by the end of the calendar year in which they graduated. An industry certification allows a graduate to increase his or her earning power by as much as \$8,000 per year” (Warner, 2004).

While this is a promising idea if students cannot obtain a certificate in High School, Williamsburg should attempt to provide these opportunities to students during their four high school years. Perhaps the best way for a small school system like Williamsburg to offer technical educational opportunities is through a partnership. Thomas Nelson Community College's Workforce Development Program offers a variety of “certifications and professional certificates” which may be able to be tailored to a high school level (Thomas Nelson, 2009). Currently, their Workforce Development office offers certificates for everything from EMT services and Microsoft Certified Engineering to Personal Training and Administrative Office Specialists (Thomas Nelson, 2009). Given their proximity to the system with their new James City County campus, Thomas Nelson may be extremely willing to develop a program for Williamsburg students. While no fixed cost of such a program may be assigned without actual discussions between the two schools, this is certainly an idea worth exploring further if a Williamsburg only school system is indeed created.

The Apple® Approach to Education

Apple Computers, a company known for being on the cutting edge of technology, has developed its own White Paper report on an innovative curriculum entitled “Challenge Based Learning” (Apple, 2009). It argues that traditional teaching methods have become “increasingly ineffective with a generation of secondary students who have instant access to information” (Apple, 2009). High school curriculums lack any “real-world context,” forcing students to learn how to cope with the outdated system or become frustrated and drop out. Apple argues that school should become more innovative, and they offer a variety of solutions.

Challenged Based Learning is described as “an engaging multidisciplinary approach to teaching and learning that encourages students to leverage the technology they use in their daily lives to solve real world problems” (Apple, 2009). It is described as both collaborative and hands on, and more reminiscent of an episode of television’s *Project Runway* (where contestants take knowledge they have already acquired and use it to complete a challenge) than a room with a chalkboard. In addition, Challenge based learning should provide students with the following:

- *“A multiple entry point strategy and varied and multiple possible solutions*
- *A focus on universal challenges with local solutions*
- *An authentic connection with multiple disciplines*
- *An opportunity to develop 21st century skills*
- *The purposeful use of Web 2.0 tools for organizing, collaborating, and publishing*
- *The opportunity for students to do something rather than just learn about something*
- *The documentation of the learning experience from challenge to solution*
- *24/7 access”* (Apple, 2009).

These attributes are said to not only “engage learners,” but also provide them with necessary skills to embrace the so-called “digital life” of 21st century America (Apple, 2009). Indeed, the idea of providing each student with a laptop will obviously coincide well with Apple’s Challenge based learning curriculum.

Team Based learning is critical when following Apple's instructions for a more innovative curriculum. The company notes that "in today's workforce individuals with various skill sets typically work together in teams on specific projects or challenges" (Apple, 2009). Teachers will work with teams to discuss how to solve these real world problems and then assess how each team did. This allows students to actively engage an Educator and learn about critical thinking from a young age. An example Apple provides of a Challenge Based Curriculum includes assigning students the following question to answer: "How does my water consumption impact my world?" This question forces students to look not only at scientific evidence regarding issues like water shortages and water's necessity for humans, but also at historical issues like where and how water is acquired. Students are then challenged to design a plan to improve a home, school, or communities use of water. A program like this allows students to solve what is a real-world problem in their own community, while learning traditional curriculum material simultaneously (Apple, 2009). For a complete discussion of Apple's Challenge Based Learning Curriculum, please visit their website:

http://ali.apple.com/cbl/global/files/CBL_Paper.pdf.

Example: Millis Public Schools

Millis Public Schools is not your ordinary school district. It serves 1,300 students with just 326 students attending the high school. Although small, 44% of high school students take at least one Advanced Placement course and 66% of those students earn scores of 3 or better. (School Data Direct). Even though the Millis high school is small, it offers advanced placement courses in English, Spanish, Calculus, Biology, Chemistry, Physics and US History. The consortium also provides non-AP courses and tries to cater to "students of all levels and abilities" (Lefferts, 2009). These different courses are offered through the Virtual High School

(VHS), a non-profit consortium which serves 9,500 students, 419 schools, and 260 teachers in 28 states and 23 countries. In order to participate, schools must provide one of their teachers to lead an online course that is available to all students participating in the program. At \$6,500 per year, the cost of participating in High School is much less than a curriculum that uses textbooks after the large up-front technology costs have been paid. With smaller budgets due to the current economic recession, VHS has become an increasingly popular option for schools in Massachusetts (Lefferts, 2009).

Yet, in order to be effective, programs such as VHS must be implemented properly. As with most education, positive online courses begin with well qualified, trained and effective teachers. Because in some cases teachers do not have direct access to the students during the lessons, teachers must anticipate questions and try and be as interactive as possible. Interactivity is key to success because students in online courses consistently become disconnected. Teachers can help students gain the proper skills needed for online courses by offering effective student support through specific class structure and programs which will help students with self-discipline, providing opportunities to look over drafts of assignments and fostering student to student cooperation through group projects. In addition, students need significant availability from the teacher. It is best when a teacher makes him or herself available not only during regular school hours, but after hours as well, making an attempt to respond to any students questions within 24 hours. Yet, along with a commitment to their students, teachers must make a commitment to professional development. Because so many of the tools needed for effective online teaching are utilized through the online programs, it is imperative that teachers are proficient in with the software. Along with the technology, teachers need to be willing to learn new communication tools, and a new form of pedagogy designed for online courses. Perhaps

most importantly, in addition to effective online teachers, there must also be an in school coach which is available to students. This person can be another school employee, but must be able to help students either with the material or find the material they need. This cuts down on the availability problem inherent in online courses (Aaronson, 2007).

Another large part of online courses is aid from the service provider, the administration and the home environment. First, there must be a positive relationship between the school and the source that is providing the online course. The technology used is fairly complex and the service provider's expertise is imperative to a successful program. They can help train the teachers, and the school in the proper utilization, not to mention best practices techniques. Second, the administration plays a major role in the success of any online program. They need to foster the professional development of the staff involved, promote the courses to the students who need them the most, and ensure accountability and productivity in the courses. Without the proper support, online courses have little chance of success. Parents and the home are another important component. Parents can help with self-discipline and ensure that the students are turning in their online course work. Parents are imperative to the assessment process because they are some of the only people who can keep the student accountable (Aaronson, 2007).

CONCLUSION

Many opportunities exist for implementing an innovative curriculum and improved educational quality policy choices in the WJCC, or a Williamsburg-only, school system. With the best ranked small public university in the nation just next door, this area is presented with a unique prospect for forming a collaborative partnership with William and Mary's School of Education. However, amidst a recession, the need for cost-savings is ever-present. A baseline

Williamsburg-only K-12 system is projected to cost between 10.6 and 11.2 million dollars which, once subtracting the state contribution, comes to 8.48 to 8.96 million dollars for Williamsburg to cover. Compared to the 7 million dollars Williamsburg currently contributes to the joint system, the separate system is a 21% to 28% increase. Even in times of surplus, this is a large mark-up on what Williamsburg residents pay for their schools. The range 10.6 to 11.2 million dollars also is for provision of the same educational quality and does not include expenses for things like smaller class sizes, which increases the total cost by 1 to 1.5 million dollars itself. The costliness of implementing a Williamsburg-only school system seems to be the biggest disadvantage, while the greatest advantage of a Williamsburg-only school system would be the autonomy that Williamsburg could have in making educational quality policy choices. Through a consideration of the existing literature, exploration of numerous case studies, and a projected operating budget for a Williamsburg-only school system, we have enumerated the advantages and disadvantages to several options for producing educational excellence in Williamsburg.

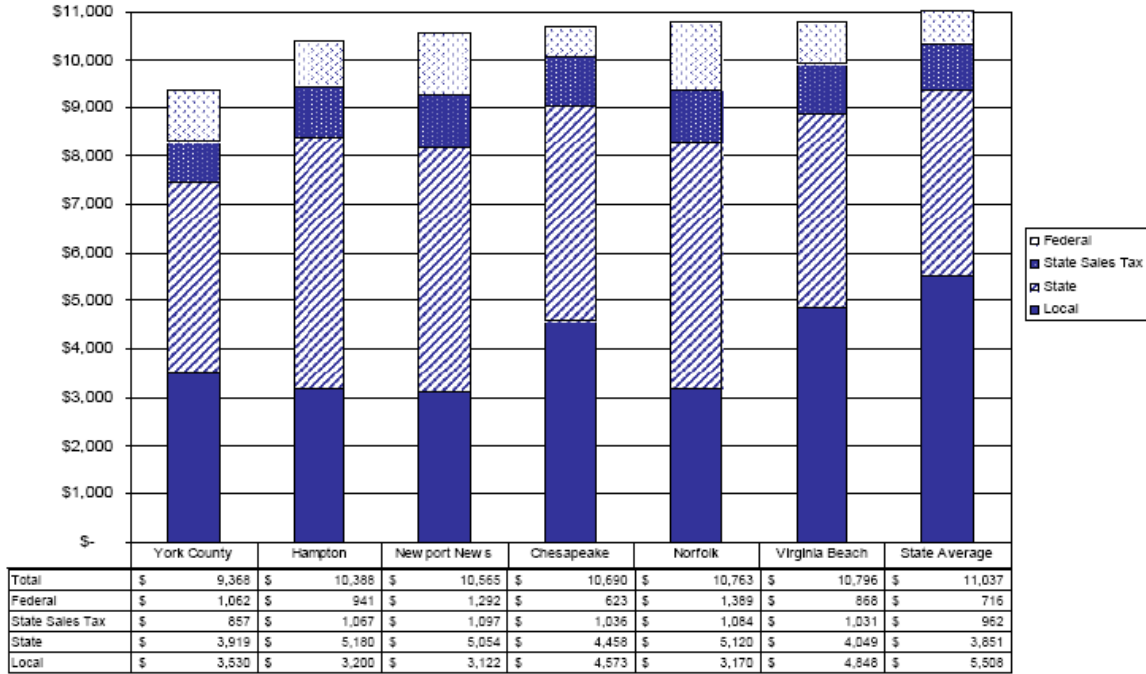
APPENDIX

Appendix A:
Information Discussed in the
Introduction and New Standards
of Quality Section

Superintendent's Annual Report for Virginia (Newport News Public Schools)



Per Pupil Expenditures for Operations by Source
Comparison of Local Area School Districts
Fiscal Year 2008



Henrico County 1:1 Computer Program Cost Analysis



1:1 Teaching & Learning Annual Cost Analysis for school year 2009

	Annual Cost	Estimated Annual Cost without 1:1 Initiative	Net Additional Annual Cost for 1:1 Initiative
Hardware			
Laptop Leases			
High School	\$ 4,475,000	\$ 1,310,000	\$ 3,165,000
Middle School	3,375,000	1,020,000	2,355,000
Total leases	<u>7,850,000</u>	<u>2,330,000</u>	<u>5,520,000</u>
Network			
Infrastructure Leases			
High School	300,000	200,000	100,000
Middle School	272,000	150,000	122,000
HS/MS Printers	700,000	700,000	-
Wide Area	700,000	700,000	-
Internet connection	200,000	200,000	-
Online Instructional Resources			
Instructional Budget	327,996	327,996	-
Individual School Budget	26,171	26,171	-
Technology Budget	100,000	100,000	-
Filtering services	147,800	147,800	-
Personnel Resources			
Positions			
Technology - 3 TST's	170,000	170,000	-
Staff Development - 12 ITRT's	510,000	510,000	-
Assistant Principals - H.S. - 35%	240,000	240,000	-
Assistant Principals - M.S. - 25%	180,000	180,000	-
Librarians - 20%	205,000	205,000	-
Hourly staffing			
Help desk	30,000	-	30,000
E-learning	10,000	-	10,000
Temporary - content review	12,000	-	12,000
Curriculum writing			
Instruction	40,000	40,000	-
Summer Institutes	250,000	250,000	-
Total	<u><u>12,270,967</u></u>	<u><u>6,476,967</u></u>	<u><u>5,794,000</u></u>

ANNUAL SCHOOL CONSTRUCTION REPORT (RE: RETROFITTING)

08

The 2008 Annual School Construction Report

Region 3 includes Delaware, the District of Columbia, Maryland, Virginia, and West Virginia. During the last six years, school districts in this region have

tended to spend about \$18 annually. In 2007, spending was up, reaching over \$1.5B, with slightly more than half the dollars going to new schools. Spend-

ing may fall off slightly in 2008, but the region will remain a major school construction area.

While districts in Region 3 are spending more on school construction, they may not be getting significantly more in results. Costs in this area have been spiraling upwards with construction of new schools now near or at \$200 per sq. ft.

Based on total dollars spent on new schools, and average costs, indications are that about 30 new schools were completed in 2007. More than half of Region 3's school districts are involved in construction of some sort.

Region 3 DC, DE, MD, VA, WV

HOW MUCH IS BEING SPENT (000's)?

	New Schools	Additions	Renovations	Total
Completions in 2007	\$790,816	\$325,368	\$430,390	\$1,546,574
Completions in 2008	\$434,684	\$308,227	\$316,165	\$1,059,076
Starting in 2008	\$713,647	\$358,743	\$424,787	\$1,497,177
Total Activity	\$2,138,147	\$1,012,737	\$1,171,346	\$4,322,230
% of Total	49.5%	23.4%	27.0%	

WHERE IS THE MONEY GOING?

	Total (000's)	Elementary	Middle	High	District
Completions in 2007	\$1,546,574	32.8%	21.8%	42.8%	2.8%
Completions in 2008	\$1,059,076	43.2%	27.5%	29.3%	0.0%
Starting in 2008	\$1,497,177	39.5%	25.3%	35.3%	0.8%
Total Activity	\$4,320,230	38.2%	24.8%	36.5%	1.5%

NEW SCHOOLS ONLY

	Cost/sq. ft.	Cost/student	Sq. ft./student	Median Cost (000's)	Median # Students	Median Size (sq. ft.)
Elementary	\$183.34	\$20,333	114.1	\$16,000	759	87,682
Middle/HS	\$218.41	\$21,030	144.3	\$26,786	780	120,828
High School	\$182.76	\$32,079	177.9	\$42,050	1050	212,000

Region 4 consists of Kentucky, North Carolina, South Carolina, and Tennessee. These are areas of growth in terms of students and schools, with \$1.6B worth of construction put in place during 2007. Indications are that spending will remain pretty close to that level in terms of construction

expected to be completed in 2008, and projects scheduled to get underway.

Region 4, in a sense, represents the national median in terms of school construction. The median elementary school in Region 4 is almost exactly at the national median in terms of sq. ft. costs, cost per student, space per stu-

dent, overall cost, size, and population. Its middle schools tend to be just above the national median in all categories, and while the high schools deviate somewhat from the national middle, the differences are not significant.

One major deviation is in terms of where money is spent. Region 4 put

almost 80 percent of its dollars into new schools, which is why, based on total dollars spent on new schools and average costs, indications are that about 70 new schools were completed in 2007.

About four in 10 of Region 4's districts either completed a construction project in 2007 or expect to complete or start a project this year.

Region 4 KY, NC, SC, TN

HOW MUCH IS BEING SPENT (000's)?

	New Schools	Additions	Renovations	Total
Completions in 2007	\$1,202,214	\$201,838	\$151,506	\$1,644,757
Completions in 2008	\$1,316,887	\$154,577	\$153,490	\$1,644,929
Starting in 2008	\$1,307,312	\$136,300	\$154,405	\$1,648,017
Total Activity	\$4,826,352	\$491,814	\$488,407	\$4,977,703
% of Total	80.3%	9.9%	9.2%	

WHERE IS THE MONEY GOING?

	Total (000's)	Elementary	Middle	High	District
Completions in 2007	\$1,644,757	46.0%	21.7%	26.4%	5.9%
Completions in 2008	\$1,644,929	39.4%	18.6%	40.7%	1.3%
Starting in 2008	\$1,648,017	39.7%	26.6%	30.0%	1.7%
Total Activity	\$4,877,703	41.7%	26.8%	32.3%	3.0%

NEW SCHOOLS ONLY

	Cost/sq. ft.	Cost/student	Sq. ft./student	Median Cost (000's)	Median # Students	Median Size (sq. ft.)
Elementary	\$154.84	\$18,766	124.2	\$13,880	780	81,350
Middle/HS	\$184.79	\$24,285	144.7	\$21,107	864	130,890
High School	\$180.89	\$27,750	130.3	\$26,950	1478	234,642

APPENDIX B:

Tables Discussed in the

Teacher/Staffing Costs and

Faculty Retention Section

Appendix C:
Tables Discussed in the Non-
Staffing Operational Cost Analysis
Section

Proposed Williamsburg-Only Non-Staffing Operating Budget

Instruction Non-Staff Expenditures

Object	Description	WJC Amt	Wmbg-only Amt
1100	Instruction (Regular)	1,766,007	136,439.57
1200	Instruction - Special Education	981,069	89,197.53
1210	Guidance Services	19,850	2,261.74
1220	Social Worker Services	8,000	2,032.82
1230	Homebound Instruction	-	-
1300	Instruction - Career & Technical	338,450	25,854.28
1310	Instructional Improvement	200,563	17465.8
1313	Staff Training	133,650	9860.29
1320	Media Services	243,477	18667.85
1400	Instruction - Gifted & Talented	98,751	7558.4
1410	Office of the Principal	352,259	27,999.60
1500	Instruction - Athletics	209,800	17259.31
1600	Instruction - Summer School	5300	406.2
1700	Instruction - Adult Education	16,110	1217.32
1800	Instruction - Preschool	84,717	6648.46
	Totals	4,458,003	362,869.17



Instruction (Regular)

See WJCC Budget, pg 89

Object	Description	WJC Amt	Wmbg-only Amt	Formula
3000	Purchased Services	136638	10472.06	WJCamt/WJCstudents * WMBGstudents
3810	Tuition-Paid-Oth Div In-State	-	-	none
3830	Tuition-Paid-Private Schools	-	-	none
5400	Leases and Rentals	20800	2971.43	WJCamt/WJCbldgs * WMBGbldgs
5500	Travel	53732	3963.53	WJCamt/WJCftes * WMBGftes WJCamt/WJCstudents *
5800	Miscellaneous	211,252	16190.55	WMBGstudents
5801	Dues & Memberships	39583	2919.83	WJCamt/WJCftes * WMBGftes
5805	Staff Development	6173	455.35	WJCamt/WJCftes * WMBGftes WJCamt/WJCstudents *
6000	Materials and Supplies	191,053	14642.48	WMBGstudents WJCamt/WJCstudents *
6020	Textbooks and Workbooks	514,115	39402.25	WMBGstudents WJCamt/WJCstudents *
6030	Instructional Materials	551,362	42256.89	WMBGstudents
7000	Tuition Payments to Joint Ops	-	-	none WJCamt/WJCstudents *
8100	Capital Outlay Replacement	40000	3065.64	WMBGstudents WJCamt/WJCstudents *
8200	Capital Outlay Additions	1299	99.56	WMBGstudents
	Totals	1766007	136439.57	



- *WJC students = 10360, pg 364 WJCC budget
- *Wmbg students = 794, pg. 13 2008 Student Enrollment Report
- *WJC buildings = 14, pg 364 WJCC budget
- *Wmbg buildings = 2 (would only utilize 2 of 3, per WERC discussion)
- *WJC FTEs = 729.48, pg. 89 WJCC budget
- *Wmbg FTEs = 53.81, as estimated previously

(instructional, technical, instructional aides)
(Instructional, technical, instructional aides)



Instruction – Special Education

See WJCC Budget, pg 91

Object	Description	WJC Amt	Wmbg-only Amt	Formula
3000	Purchased Services	4500	424.59	WJCamt/WJCstudents * WMBGstudents
3830	Tuition Paid - Private Schools	157,600	14870.05	WJCamt/WJCstudents * WMBGstudents
5500	Travel	8000	521.54	WJCamt/WJCftes * WMBGftes
5800	Miscellaneous	33500	155.95	WJCamt/WJCstudents *
5805	Staff Development	4500	293.37	WJCamt/WJCftes * WMBGftes
6000	Materials and Supplies	-	-	none
6030	Instructional Materials	26,600	2509.79	WJCamt/WJCstudents * WMBGstudents
7000	Tuition Pd - Joint Ops	746369	70422.24	WJCamt/WJCstudents *
8200	Capital Outlay Additions	-	-	none
	Totals	981069	89197.53	

*WJC students = 1399

*Wmbg students = 132

*WJC buildings = 14, pg 364 WJCC budget

*Wmbg buildings = 2 (would only utilize 2 of 3, per WERC discussion)

*WJC FTEs = 184.07, pg. 91 WJCC budget

*Wmbg FTEs = 12, as estimated previously

(instructional, technical, instructional aides)

(instructional, technical, instructional aides)



Guidance Services

See WJCC Budget, pg 93

Object	Description	WJC Amt	Wmbg-only Amt	Formula
3000	Purchased Services	15000	1149.61	WJCamt/WJCstudents * WMBGstudents
6000	Materials and Supplies	700	794.07	WJCamt/WJCstudents * WMBGstudents
6030	Instructional Materials	4150	318.06	WJCamt/WJCstudents * WMBGstudents
	Totals	19850	2261.74	

*WJC students = 10360, pg 364 WJCC budget

*Wmbg students = 794, pg. 13 2008 Student Enrollment Report



Social Worker Services

See WJCC Budget, pg 95

Object	Description	WJC Amt	Wmbg-only Amt	Formula
5500	Travel	6000	500	$WJCamt / WJCftes * WMBGftes$
6030	Instructional Materials	2000	1532.82	$WJCamt / WJCstudents *$ WMBGstudents
	Totals	8000	2032.82	

*WJC students = 10360, pg 364 WJCC budget

*Wmbg students = 794, pg. 13 2008 Student Enrollment Report

*WJC FTEs = 6, pg. 95 WJCC budget

*Wmbg FTEs = 0.50, as estimated previously



Homebound Instruction

See WJCC Budget, pg 97



Object	Description	WJC Amt	Wmbg-only Amt	Formula
3000	Purchased Services	-	-	none

*WJC students = 10360, pg 364 WJCC budget

*Wmbg students = 794, pg. 13 2008 Student Enrollment
Report



Instruction - Career and Technical

See WJCC Budget, pg 99

Object	Description	WJC Amt	Wmbg-only Amt	Formula
3000	Purchased Services	1000	76.64	WJCamt/WJCstudents * WMBGstudents
5500	Travel	10450	716.06	WJCamt/WJCftes * WMBGftes WJCamt/WJCstudents *
5800	Miscellaneous	1000	76.64	WMBGstudents WJCamt/WJCstudents *
6020	Textbooks & Workbooks	6500	498.17	WMBGstudents WJCamt/WJCstudents *
6030	Instructional Materials	21000	1609.46	WMBGstudents WJCamt/WJCstudents *
7000	Tuition Payments to Joint Ops	285000	21842.66	WMBGstudents WJCamt/WJCstudents *
8100	Capital Outlay Replacement	11000	843.05	WMBGstudents WJCamt/WJCstudents *
8200	Capital Outlay Additions	2500	191.6	WMBGstudents
		338450	25854.28	

*Career and Technical Education is offered at the middle and high school levels

*WJC students = 5686, pg 364 WJCC budget

*Wmbg students = 412, pg. 13 2008 Student Enrollment Report

*WJC FTEs = 28.02, pg. 99 WJCC budget

(instructional)

*Wmbg FTEs = 1.92, as estimated previously

(instructional)



Instructional Improvement

See WJCC Budget, pg 101

Object	Description	WJC Amt	Wmbg-only Amt	Formula
3000	Purchased Services	56,571	4,335.65	WJCamt/WJCstudents * WMBGstudents
5400	Leases and Rentals	7,000	1,000	WJCamt/WJCbldgs * WMBGbldgs
5500	Travel	46,013	4793.02	WJCamt/WJCftes * WMBGftes WJCamt/WJCstudents *
5800	Miscellaneous	18,683	1431.88	WMBGstudents
5801	Dues & Memberships	5,777	601.77	WJCamt/WJCftes * WMBGftes
5805	Staff Development	7,462	777.29	WJCamt/WJCftes * WMBGftes WJCamt/WJCstudents *
6000	Materials and Supplies	30,745	2356.33	WMBGstudents WJCamt/WJCstudents *
6030	Instructional Materials	28,312	2169.86	WMBGstudents WJCamt/WJCstudents *
8100	Capital Outlay Replacement	-	-	WMBGstudents WJCamt/WJCstudents *
8200	Capital Outlay Additions	-	-	WMBGstudents
Totals		200,563	17,465.80	

*WJC students = 10360, pg 364 WJCC budget

*Wmbg students = 794, pg. 13 2008 Student Enrollment Report

*WJC buildings = 14, pg 364 WJCC budget

*Wmbg buildings = 2 (would only utilize 2 of 3, per WERC discussion)

*WJC FTEs = 24, pg. 101 WJCC budget

*Wmbg FTEs = 2.5, as estimated previously

(administrative, instructional, supervisor, technical, clerical)

(administrative, instructional, supervisor, technical)



Staff Training

See WJCC Budget, pg 103

Object	Description	WJC Amt	Wmbg-only Amt	Formula
3000	Purchased Services	-	-	none
5500	Travel	1500	110.6	WJCamt/WJCftes * WMBGftes
5805	Staff Development	130150	9596.41	WJCamt/WJCftes * WMBGftes
6030	Instructional Materials	2000	153.28	WJCamt/WJCstudents * WMBGstudents
Totals		133650	9860.29	

*WJC students = 10360, pg 364 WJCC budget

*Wmbg students = 794, pg. 13 2008 Student Enrollment Report

*WJC FTEs = 833, pg. 60 WJCC budget (teachers)

*Wmbg FTEs = 61.42, as estimated previously (teachers)



Media Services

See WJCC Budget, pg 105

Object	Description	WJC Amt	Wmbg-only Amt	Formula
3000	Purchased Services	94108	7212.52	WJCamt/WJCstudents * WMBGstudents
5801	Dues & Memberships	375	36.29	WJCamt/WJCftes * WMBGftes
6000	Materials and Supplies	129,944	9959.03	WJCamt/WJCstudents * WMBGstudents
6030	Instructional Materials	19,050	1460.01	WJCamt/WJCstudents *
8200	Capital Outlay Additions	-	-	none
	Totals	243477	18667.85	

*WJC students = 10360, pg 364 WJCC budget

*Wmbg students = 794, pg. 13 2008 Student Enrollment Report

*WJC FTEs = 31, pg. 105 WJCC budget

*Wmbg FTEs = 3, as estimated previously

(librarians, clerical)

(librarians)



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Instruction – Gifted & Talented

See WJCC Budget, pg 105

Object	Description	WJC Amt	Wmbg-only Amt	Formula
3810	Tuition Paid - Oth Div In-State	68355	5238.79	WJCamt/WJCstudents * WMBGstudents WJCamt/WJCstudents *
5800	Miscellaneous	20396	1563.17	WMBGstudents
5805	Staff Development	1000	66.67	WJCamt/WJCftes * WMBGftes WJCamt/WJCstudents *
6000	Materials and Supplies	1000	76.64	WMBGstudents WJCamt/WJCstudents *
6030	Instructional Materials	8000	613.13	WMBGstudents
	Totals	98751	7558.4	

*WJC students = 10360, pg 364 WJCC budget

*Wmbg students = 794, pg. 13 2008 Student Enrollment Report

*WJC buildings = 14, pg 364 WJCC budget

*Wmbg buildings = 2 (would only utilize 2 of 3, per WERC discussion)

*WJC FTEs = 15, pg.107 WJCC budget

*Wmbg FTEs = 1, as estimated previously

(instructional)

(instructional)



Office of the Principal

See WJCC Budget, pg 109

Object	Description	WJC Amt	Wmbg-only Amt	Formula
3000	Purchased Services	80437	6164.77	WJCAmt/WJCstudents * WMBGstudents
5400	Leases and Rentals	217,095	16,638	WJCAmt/WJCstudents *
5500	Travel	1180	165.49	WJCAmt/WJCftes * WMBGftes
5800	Miscellaneous	6800	521.16	WJCAmt/WJCstudents *
5801	Dues & Memberships	7376	1034.44	WJCAmt/WJCftes * WMBGftes
5805	Staff Development	7200	1009.76	WJCAmt/WJCftes * WMBGftes
6000	Materials and Supplies	32,171	2465.62	WJCAmt/WJCstudents *
6030	Instructional Materials	-	-	WMBGstudents
8100	Capital Outlay Replacement	-	-	WJCAmt/WJCstudents *
	Totals	352259	27999.6	WMBGstudents

*WJC students = 10360, pg 364 WJCC budget

*Wmbg students = 794, pg. 13 2008 Student Enrollment Report

*WJC buildings = 14, pg 364 WJCC budget

*Wmbg buildings = 2 (would only utilize 2 of 3, per WERC discussion)

*WJC FTEs = 82, pg.109 WJCC budget

*Wmbg FTEs = 11.5, as estimated previously

(principal, asst principal, clerical)

(principal, asst principal, clerical)



Instruction – Athletics

See WJCC Budget, pg 111

Object	Description	WJC Amt	Wmbg-only Amt	Formula
3000	Purchased Services	56800	4353.2	WJCamt/WJCstudents *
5500	Travel	2000	1333.33	WMBGstudents
6030	Instructional Materials	150,000	11496.14	WJCamt/WJCftes * WMBGftes
8100	Capital Outlay Replacement	-	-	WJCamt/WJCstudents *
8200	Capital Outlay Additions	1000	76.64	WMBGstudents
	Totals	209800	17259.31	

*WJC students = 10360, pg 364 WJCC budget

*Wmbg students = 794, pg. 13 2008 Student Enrollment Report

*WJC buildings = 14, pg 364 WJCC budget

*Wmbg buildings = 2 (would only utilize 2 of 3, per WERC discussion)

*WJC FTEs = 3, pg.111 WJCC budget

*Wmbg FTEs = 2, as estimated previously



Instruction – Summer School

See WJCC Budget, pg 117

Object	Description	WJC Amt	Wmbg-only Amt	Formula
3000	Purchased Services	3540	271.31	WJCamt/WJCstudents * WMBGstudents WJCamt/WJCstudents *
3830	Tuition Paid - Private Schools	38400	2943.01	WMBGstudents
5400	Leases and Rentals	2052	256.5	WJCamt/WJCbldgs * WMBGbldgs
5500	Travel	5000	435.22	WJCamt/WJCftes * WMBGftes
5801	Dues & Memberships	425	36.99	WJCamt/WJCftes * WMBGftes WJCamt/WJCstudents *
6000	Materials and Supplies	3300	252.92	WMBGstudents WJCamt/WJCstudents *
6030	Instructional Materials	32,000	2452.51	WMBGstudents
	Totals	84717	6648.46	

*WJC students = 10360, pg 364 WJCC budget

*Wmbg students = 794, pg. 13 2008 Student Enrollment Report

*WJC buildings = 8, pg 364 WJCC budget

*Wmbg buildings = 1 (per WERC discussion)

*WJC FTEs = 65.14, pg.117 WJCC budget

*Wmbg FTEs = 5.67, as estimated previously

(instructional, supervisor, clerical, instr aides)

(instructional, supervisor, instr aides)



Instruction – Adult Education

See WJCC Budget, pg 115

Object	Description	WJC Amt	Wmbg-only Amt	Formula
5500	Travel	1900	128.25	$WJC_{amt}/WJC_{ftes} * WMBG_{ftes}$ $WJC_{amt}/WJC_{students} *$
6000	Materials & Supplies	1000	76.64	$WMBG_{students}$ $WJC_{amt}/WJC_{students} *$
6030	Instructional Materials	13210	1012.43	$WMBG_{students}$
	Totals	16110	1217.32	

*WJC students = 10360, pg 364 WJCC budget

*Wmbg students = 794, pg. 13 2008 Student Enrollment Report

*WJC buildings = 14, pg 364 WJCC budget

*Wmbg buildings = 2 (would only utilize 2 of 3, per WERC discussion)

*WJC FTEs = 4, pg.115 WJCC budget

*Wmbg FTEs = 0.27, as estimated previously

(instructional)

(instructional)



Instruction – Preschool

See WJCC Budget, pg 117

Object	Description	WJC Amt	Wmbg-only Amt	Formula
3000	Purchased Services	3540	271.31	WJCamt/WJCstudents * WMBGstudents WJCamt/WJCstudents *
3830	Tuition Paid - Private Schools	38400	2943.01	WMBGstudents
5400	Leases and Rentals	2052	256.5	WJCamt/WJCbldgs * WMBGbldgs
5500	Travel	5000	435.22	WJCamt/WJCftes * WMBGftes
5801	Dues & Memberships	425	36.99	WJCamt/WJCftes * WMBGftes WJCamt/WJCstudents *
6000	Materials and Supplies	3300	252.92	WMBGstudents WJCamt/WJCstudents *
6030	Instructional Materials	32,000	2452.51	WMBGstudents
	Totals	84717	6648.46	

*WJC students = 10360, pg 364 WJCC budget

*Wmbg students = 794, pg. 13 2008 Student Enrollment Report

*WJC buildings = 8, pg 364 WJCC budget

*Wmbg buildings = 1 (per WERC discussion)

*WJC FTEs = 65.14, pg.117 WJCC budget

*Wmbg FTEs = 5.67, as estimated previously

(instructional, supervisor, clerical, instr aides)

(instructional, supervisor, instr aides)



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Administration Non-Staff Expenditures

Object	Description	WJC Amt	Wmbg-only Amt
2110	School Board Services	225,060	46,796.30
2120	Executive Services	104,170	25,911.67
2140	Personnel Services	95,350	6,782.13
2160	Fiscal Services	41,765	2,963.70
2170	Purchasing Services	7,725	1,485.86
2180	Reprographic Services	61,200	4,690.43
		535,270	88,630.09



School Board Services

See WJCC Budget, pg 119

Object	Description	WJC Amt	Wmbg-only Amt	Formula
3000	Purchased Services	177450	13599.93	WJCamt/WJCstudents * WMBGstudents
5001	Telecommunications	6310	483.6	WJCamt/WJCstudents * WMBGstudents
5200	Communications	1600	122.63	WJCamt/WJCstudents * WMBGstudents
5500	Travel	10000	10000	WJCamt/WJCftes * WMBGftes
5800	Miscellaneous	5800	444.52	WJCamt/WJCstudents * WMBGstudents
5801	Dues & Memberships	22000	22000	WJCamt/WJCftes * WMBGftes
6000	Materials and Supplies	1900	145.62	WJCamt/WJCstudents * WMBGstudents
8110	Technology-Hardware Replace	-	-	none
	Totals	225060	46796.3	

*WJC students = 10360, pg 364 WJCC budget

*Wmbg students = 794, pg. 13 2008 Student Enrollment Report

*WJC FTEs = -, pg. 119 WJCC budget

*Wmbg FTEs = -, as estimated previously



Executive Services

See WJCC Budget, pg 121

Object	Description	WJC Amt	Wmbg-only Amt	Formula
3000	Purchased Services	40583	3110.32	WJCamt/WJCstudents * WMBGstudents
5200	Communications	100	7.66	WJCamt/WJCstudents * WMBGstudents
5500	Travel	8800	4400	WJCamt/WJCftes * WMBGftes
5800	Miscellaneous	15700	1203.26	WJCamt/WJCstudents *
5801	Dues & Memberships	33547	16773.5	WJCamt/WJCftes * WMBGftes
6000	Materials and Supplies	5440	416.93	WJCamt/WJCstudents * WMBGstudents
	Totals	104170	25911.67	

*WJC students = 10360, pg 364 WJCC budget

*Wmbg students = 794, pg. 13 2008 Student Enrollment Report

*WJC FTEs = 4, pg. 121 WJCC budget

*Wmbg FTEs = 2, as estimated previously

(administrative, superintendent, clerical)

(administrative, superintendent)



Personnel Services

See WJCC Budget, pg 123

Object	Description	WJC Amt	Wmbg-only Amt	Formula
3000	Purchased Services	66500	5096.62	WJCamt/WJCstudents * WMBGstudents
5400	Leases and Rentals	1100	84.31	WJCamt/WJCstudents * WMBGstudents
5500	Travel	8500	438.71	WJCamt/WJCftes * WMBGftes
5800	Miscellaneous	-	-	none
5801	Dues & Memberships	2500	129.03	WJCamt/WJCftes * WMBGftes
5805	Staff Development	10000	516.13	WJCamt/WJCftes * WMBGftes
6000	Materials and Supplies	6750	517.33	WJCamt/WJCstudents * WMBGstudents
8100	Capital Outlay Replacement	-	-	none
8200	Capital Outlay Additions	-	-	none
	Totals	95350	6782.13	

*WJC students = 10360, pg 364 WJCC budget

*Wmbg students = 794, pg. 13 2008 Student Enrollment Report

*WJC FTEs = 7.75, pg. 123 WJCC

budget

*Wmbg FTEs = 0.40, as estimated previously



Fiscal Services

See WJCC Budget, pg 125

Object	Description	WJC Amt	Wmbg-only Amt	Formula
3000	Purchased Services	8471	649.23	WJCamt/WJCstudents * WMBGstudents
5500	Travel	3500	169.7	WJCamt/WJCftes * WMBGftes
5800	Miscellaneous	11369	871.33	WJCamt/WJCstudents * WMBGstudents
5801	Dues & Memberships	2500	121.21	WJCamt/WJCftes * WMBGftes
5805	Staff Development	2425	117.58	WJCamt/WJCftes * WMBGftes
6000	Materials and Supplies	11500	881.37	WJCamt/WJCstudents * WMBGstudents
8100	Capital Outlay Replacement	-	-	none
8200	Capital Outlay Additions	2000	153.28	WJCamt/WJCstudents * WMBGstudents
Totals		41765	2963.7	

*WJC students = 10360, pg 364 WJCC budget

*Wmbg students = 794, pg. 13 2008 Student Enrollment Report

*WJC FTEs = 8.25, pg. 125 WJCC budget

*Wmbg FTEs = 0.40, as estimated previously

(administrative, technical, clerical)

(administrative, technical)



Purchasing Services

See WJCC Budget, pg 127

Object	Description	WJC Amt	Wmbg-only Amt	Formula
3000	Purchased Services	2500	191.6	$WJC_{amt}/WJC_{students} * WMBG_{students}$
5500	Travel	2000	400	$WJC_{amt}/WJC_{ftes} * WMBG_{ftes}$
5801	Dues & Memberships	500	100	$WJC_{amt}/WJC_{ftes} * WMBG_{ftes}$
5805	Staff Development	-	-	none
6000	Materials and Supplies	2725	794.26	$WJC_{amt}/WJC_{students} * WMBG_{students}$
8200	Capital Outlay Additions	-	-	none
Totals		7725	1485.86	

*WJC students = 10360, pg 364 WJCC budget

*Wmbg students = 794, pg. 13 2008 Student Enrollment Report

*WJC FTEs = 1, pg. 127 WJCC budget

(technical)

*Wmbg FTEs = 0.20, as estimated previously

(technical)



Reprographic Services

See WJCC Budget, pg 129

Object	Description	WJC Amt	Wmbg-only Amt	Formula
3000	Purchased Services	15200	1164.94	WJCAmt/WJCstudents * WMBGstudents
5400	Leases and Rentals	10000	766.41	WJCAmt/WJCstudents * WMBGstudents
5800	Miscellaneous	19000	1456.18	WJCAmt/WJCstudents * WMBGstudents
6000	Materials and Supplies	17000	1302.9	WJCAmt/WJCstudents * WMBGstudents
8100	Capital Outlay Replacement	-	-	none
8200	Capital Outlay Additions	-	-	none
		61200	4690.43	

*WJC students = 10360, pg 364 WJCC budget

*Wmbg students = 794, pg. 13 2008 Student Enrollment Report

*WJC FTEs = 1, pg. 129 WJCC budget

*Wmbg FTEs = -, as estimated previously

(clerical)

(clerical)



Student Health Non-Staff Expenditures

Description	WJC Amt	Wmbg-only Amt
Health Services	61,515	5,312.19
Psychology Services	17,850	1405.18
Speech & Audiology Services	6500	895.46
	85,865	7,613





Health Services

See WJCC Budget, pg 131

Object	Description	WJC Amt	Wmbg-only Amt	Formula
3000	Purchased Services	20,815	1,595.28	WJCamt/WJCstudents * WMBGstudents
5400	Leases and Rentals	-	-	none
5500	Travel	11,000	1430	WJCamt/WJCftes * WMBGftes
5801	Dues and Memberships	200	26	WJCamt/WJCftes * WMBGftes
6000	Materials and Supplies	23,900	1831.72	WJCamt/WJCstudents * WMBGstudents
6030	Instructional Materials	5,600	429.19	WJCamt/WJCstudents * WMBGstudents
8100	Capital Outlay Replacement	-	-	none
Totals		61,515	5,312.19	

*WJC students = 10360, pg 364 WJCC budget

*Wmbg students = 794, pg. 13 2008 Student Enrollment Report

*WJC buildings = 14, pg 364 WJCC budget

*Wmbg buildings = 2 (would only utilize 2 of 3, per WERC discussion)

*WJC FTEs = 30, pg. 131 WJCC budget

*Wmbg FTEs = 3.9, as estimated previously

(supervisor, OTs, PTs, school nurses, clerical)

(supervisor, OTs, PTs, school nurses)



Psychology Services

See WJCC Budget, pg 133

Object	Description	WJC Amt	Wmbg-only Amt	Formula
3000	Purchased Services	2000	153.28	WJCAmt/WJCstudents * WMBGstudents
5500	Travel	5,550	462.5	WJCAmt/WJCftes * WMBGftes
6000	Materials and Supplies	300	22.99	WJCAmt/WJCstudents * WMBGstudents
6030	Instructional Materials	10,000	766.41	WJCAmt/WJCstudents * WMBGstudents
	Totals	17,850	1405.18	

*WJC students = 10360, pg 364 WJCC budget

*Wmbg students = 794, pg. 13 2008 Student Enrollment Report

*WJC buildings = 14, pg 364 WJCC budget

*Wmbg buildings = 2 (would only utilize 2 of 3, per WERC discussion)

*WJC FTEs = 6, pg. 133 WJCC budget

*Wmbg FTEs = 0.50, as estimated previously

(psychologists)

(psychologists)



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Speech and Audiology Services

See WJCC Budget, pg 135

Object	Description	WJC Amt	Wmbg-only Amt	Formula
3000	Purchased Services	500	38.32	WJCAmt/WJCstudents *
5500	Travel	6000	857.14	WJCAmt/WJCftes * WMBGftes
6030	Instructional Materials	-	-	none
	Totals	6500	895.46	

*WJC students = 10360, pg 364 WJCC budget

*Wmbg students = 794, pg. 13 2008 Student Enrollment Report

*WJC buildings = 14, pg 364 WJCC budget

*Wmbg buildings = 2 (would only utilize 2 of 3, per WERC discussion)

*WJC FTEs = 14, pg. 135 WJCC budget

*Wmbg FTEs = 2, as estimated previously

(speech and language pathologists)

(speech and language pathologists)



Transportation Non-Staff Expenditures

Object	Description	WJC Amt	Wmbg-only Amt
3100	Transportation - Management	60,171	4,458
3200	Vehicle Operation	1,405,735	106,316.09
3211	Training	2425	183.4
3400	Vehicle Maintenance	338,000	25,563.03
		1,806,331	136,521



Transportation – Management

See WJCC Budget, pg 137

Object	Description	WJC Amt	Wmbg-only Amt	Formula
3000	Purchased Services	20,311	1,536	WJCamt/WJCbuses * WMBGbuses WJCamt/WJCbuses *
5100	Utilities	12,000	907.56	WMBGbuses
5500	Travel	5800	369.09	WJCamt/WJCftes * WMBGftes
5801	Dues and Memberships	200	12.73	WJCamt/WJCftes * WMBGftes
5805	Staff Development	1750	111.36	WJCamt/WJCftes * WMBGftes WJCamt/WJCbuses *
6000	Materials and Supplies	20,110	1520.92	WMBGbuses
	Totals	60,171	4,458	

*WJC school buses = 116 buses and 3 automobiles

*Wmbg school buses = 9 buses, as estimated previously

*WJC FTEs = 11, pg. 137 WJCC budget

*Wmbg FTEs = 0.70, as estimated previously

(administrative, technical, clerical)

(administrative, technical)



Vehicle Operation

See WJCC Budget, pg 139

Object	Description	WJC Amt	Wmbg-only Amt	Formula
3000	Purchased Services	52000	3932.77	WJCamt/WJCbuses * WMBG buses
5300	Insurance	137,541	10402.26	WJCamt/WJCbuses * WMBG buses
6000	Materials and Supplies	2,989	226.06	WJCamt/WJCbuses * WMBG buses
6008	Vehicle/Powered Equip Fuels	1,193,625	90,274.16	WJCamt/WJCbuses * WMBG buses
8100	Capital Outlay Replacement	19,580	1480.84	WMBG buses
8200	Capital Outlay Additions	-	-	none
	Totals	1405735	106316.09	

*WJC school buses = 116 buses and 3 automobiles

*Wmbg school buses = 9 buses, as estimated previously

*WJC FTEs = 122.6, pg. 139 WJCC budget

*Wmbg FTEs = 9.31, as estimated previously

(bus drivers, bus aides)

(bus drivers, bus aides)



Training

See WJCC Budget, pg 141

Object	Description	WJC Amt	Wmbg-only Amt	Formula
6030	Instructional Materials	2,425	183.4	WJCamt/WJCbuses * WMBG buses
	Totals	2,425	183.4	

*WJC school buses = 116 buses and 3 automobiles

*Wmbg school buses = 9 buses, as estimated previously



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Vehicle Maintenance

See WJCC Budget, pg 143

Object	Description	WJC Amt	Wmbg-only Amt	Formula
6009	Vehicle/Powered Equip Supplies	338,000	25,563.03	WJCAmt/WJCbuses * WMBGbuses
8100	Capital Outlay Replacement	-	-	none
Totals		338,000	25,563.03	

*WJC school buses = 116 buses and 3 automobiles

*Wmbg school buses = 9 buses, as estimated previously

*WJC FTEs = 7, pg. 143 WJCC budget

(trades)

*Wmbg FTEs = 0.50, as estimated previously

(trades)



Technology Non-Staff Expenditures

Object	Description	WJC Amt	Wmbg-only Amt
8100	Technology - Classroom Instruction	1,344,053	103,009.45
8200	Technology - Instructional Support	134,500	26,900
8300	Technology - Administration	542,519	76,376
8600	Technology - Operations and Maintenance	591,427	84489.57
		2,612,499	290,775



Technology – Classroom Instruction

See WJCC budget, pg 157

Object	Description	WJC Amt	Wmbg-only	
			Amt	Formula
3000	Purchased Services	230,983	17,702.75	WJCAmt/WJCstudents * WMBGstudents
5200	Communications	-	-	none WJCAmt/WJCstudents *
6000	Materials and Supplies	139,835	10717.08	WMBGstudents
6030	Instructional Materials	-	-	none WJCAmt/WJCstudents *
6040	Tech-Software/ On line Content	40,031	3,068.01	WMBGstudents
6050	Non-Capitalized Tech Hardware	-	-	none WJCAmt/WJCstudents *
8110	Technology-Hardware Replace	600	45.98	WMBGstudents WJCAmt/WJCstudents *
8210	Technology-Hardware Additions	932,604	71,475.63	WMBGstudents
	Totals	1,344,053	103,009.45	

*WJC students = 10360, pg 364 WJCC budget

*Wmbg students = 794, pg. 13 2008 Student Enrollment Report



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Technology – Instructional Support

See WJCC Budget, pg 159

Object	Description	WJC Amt	Wmbg-only Amt	Formula
3000	Purchased Services	88,825	17,765	WJCamt/WJCftes * WMBGftes
5500	Travel	7750	1550	WJCamt/WJCftes * WMBGftes
5801	Dues & Memberships	675	135	WJCamt/WJCftes * WMBGftes
6000	Materials and Supplies	1750	350	WJCamt/WJCftes * WMBGftes
6040	Tech-Software/On line Content	35,500	7,100	WJCamt/WJCftes * WMBGftes
8100	Capital Outlay Replacement	-	-	none
8200	Capital Outlay Additions	-	-	none
Totals		134,500	26,900	

*WJC FTEs = 12, pg. 159 WJCC budget

(supervisor, technical, tech support)

*Wmbg FTEs = 2.4, as estimated previously

(supervisor, technical, tech support)



101

Technology – Administration

See WJCC Budget, pg 161

Object	Description	WJC Amt	Wmbg-only Amt	Formula
3000	Purchased Services	482,537	68,933.86	WJCamt/WJCbldgs * WMBGbldgs
5500	Travel	6500	236.36	WJCamt/WJCftes * WMBGftes
5801	Dues & Memberships	582	21.16	WJCamt/WJCftes * WMBGftes
5805	Staff Development	3500	127.27	WJCamt/WJCftes * WMBGftes
6000	Materials and Supplies	1200	171.43	WJCamt/WJCbldgs * WMBGbldgs
6040	Tech-Software/On line Content	39000	5571.43	WJCamt/WJCbldgs * WMBGbldgs
6050	Non-Capitalized Tech Hardware	-	-	none
8110	Technology-Hardware Replace	9200	1314.29	WJCamt/WJCbldgs * WMBGbldgs
8210	Technology-Hardware Additions	-	-	none
	Totals	542,519	76,376	

*WJC buildings = 14, pg 364 WJCC budget

*Wmbg buildings = 2 (would only utilize 2 of 3, per WERC discussion)

*WJC FTEs = 11, pg. 161 WJCC budget

*Wmbg FTEs = .4, as estimated previously

(administrative, technical, clerical)

(administrative, technical)



WILLIAM & MARY

102

Technology – Operations and Maintenance

See WJCC Budget, pg 163

Object	Description	WJC Amt	Wmbg-only Amt	Formula
3000	Purchased Services	112,000	16,000	WJCamt/WJCbldgs *
5001	Telecommunications	479,427	68489.57	WJCamt/WJCbldgs * WMBGbldgs
	Totals	591,427	84489.57	

*WJC buildings = 14, pg 364 WJCC budget

*Wmbg buildings = 2 (would only utilize 2 of 3, per WERC discussion)



OPS and Maintenance Non-Staff Expenditures

Object	Description	WJC Amt	Wmbg-only Amt
4100	Oper. & Maint. - Mgt & Direction	16,280	1,912.50
4200	Oper. & Maint. - Building Svcs.	5,005,622	715,037.23
4300	Grounds Services	127,900	18,271.43
4600	Security Services	1000	142.86
6600	Mobile Classrooms	244,891	34,984.43
7100	Debt Service	0	0
	Totals	5,395,693	770,348.45



104

Operations and Maintenance – Management and Direction

See WJCC Budget, pg 145

Object	Description	WJC Amt	Wmbg-only Amt	Formula
3000	Purchased Services	6380	911.43	WJCamt/WJCbldgs * WMBGbldgs
5100	Utilities	-	-	none WJCamt/WJCbldgs *
5104	Refuse Removal	4450	635.71	WMBGbldgs
5500	Travel	1000	50	WJCamt/WJCFtes * WMBGftes
5800	Miscellaneous	-	-	none
5801	Dues & Memberships	950	47.5	WJCamt/WJCFtes * WMBGftes
5805	Staff Development	2500	125	WJCamt/WJCFtes * WMBGftes WJCamt/WJCbldgs *
6000	Materials and Supplies	1000	142.86	WMBGbldgs
	Totals	16280	1912.5	

*WJC buildings = 14, pg 364 WJCC budget

*Wmbg buildings = 2 (would only utilize 2 of 3, per WERC discussion)

*WJC FTEs = 4, pg. 145 WJCC Budget

* Wmbg FTEs = .20

(administrative, clerical)

(administrative)



105

Operations and Maintenance – Building Services

See WJCC Budget, pg. 147

Object	Description	WJC Amt	Wmbg-only Amt	Formula
3000	Purchased Services	818,400	116914.29	WJCAmt/WJCbldgs * WMBGbldgs
5101	Electricity	2,010,000	287,142.86	WJCAmt/WJCbldgs * WMBGbldgs
5102	Heating Fuel	560,586	80,083.71	WJCAmt/WJCbldgs * WMBGbldgs
5103	Water/Sewer Services	179,395	25,627.86	WJCAmt/WJCbldgs * WMBGbldgs
5104	Refuse Removal	68,576	9,796.57	WJCAmt/WJCbldgs * WMBGbldgs
5200	Communications	73,899	10,557.00	WJCAmt/WJCbldgs * WMBGbldgs
5300	Insurance	404,459	57,779.86	WJCAmt/WJCbldgs * WMBGbldgs
5400	Leases and Rentals	131,107	18,729.57	WJCAmt/WJCbldgs * WMBGbldgs
5500	Travel	2,000	266.94	WJCAmt/WJCbldgs * WJCAmt/WJCftes * WMBGftes
5800	Miscellaneous	10,000	1,428.57	WJCAmt/WJCbldgs * WMBGbldgs
5801	Dues & Memberships	1,000	133.47	WJCAmt/WJCbldgs * WJCAmt/WJCftes * WMBGftes
5805	Staff Development	2,500	333.67	WJCAmt/WJCbldgs * WJCAmt/WJCftes * WMBGftes
6000	Materials and Supplies	735,700	105,100.00	WJCAmt/WJCbldgs * WMBGbldgs
8100	Capital Outlay Replacement	8,000	1,142.86	WJCAmt/WJCbldgs * WMBGbldgs
8200	Capital Outlay Additions	-	-	none



WILLIAM
& MARY

715037.23

Totals

5,005,622

- *WJC buildings = 14, pg 364 WJCC budget
- *Wmbg buildings = 2 (would only utilize 2 of 3, per WERC discussion)
- *WJC FTEs = 98.75, pg. 147 WJCC Budget
- *Wmbg FTEs = 13.18

(technical, trades, service)

(technical, trades, service)



107

Grounds Services

See WJCC Budget, pg 149

Object	Description	WJC Amt	Wmbg-only Amt	Formula WJCamt/WJCbldgs *
3000	Purchased Services	127,900	18271.43	WMBGbldgs
6000	Materials and Supplies	-	-	none
	Totals	127,900	18271.43	

*WJC buildings = 14, pg 364 WJCC budget

*Wmbg buildings = 2 (would only utilize 2 of 3, per WERC discussion)



801

Security Services

See WJCC Budget, pg 151

Object	Description	WJC Amt	Wmbg-only Amt	Formula
5800	Miscellaneous	-	-	none
6000	Materials and Supplies	1000	142.86	WJCAmt/WJCbldgs *
	Totals	1000	142.86	

*WJC buildings = 14, pg 364 WJCC budget
 *Wmbg buildings = 2 (would only utilize 2 of 3, per WERC discussion)



601

Mobile Classrooms

See WJCC Budget, pg 153

Object	Description	WJC Amt	Wmbg-only Amt	Formula
3000	Purchased Services	-	-	none
5400	Leases and Rentals	244,891	34984.43	WJCamt/WJCbldgs *
8200	Capital Outlay Additions	-	-	none
Totals		244,891	34,984.43	

*WJC buildings = 14, pg 364 WJCC budget

*Wmbg buildings = 2 (would only utilize 2 of 3, per WERC discussion)



110

Debt Service

See WJCC Budget, pg 155

Object	Description	WJC Amt	Wmbg-only Amt	Formula
9000	Other Uses of Funds	-	-	none
	Totals	0	0	

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