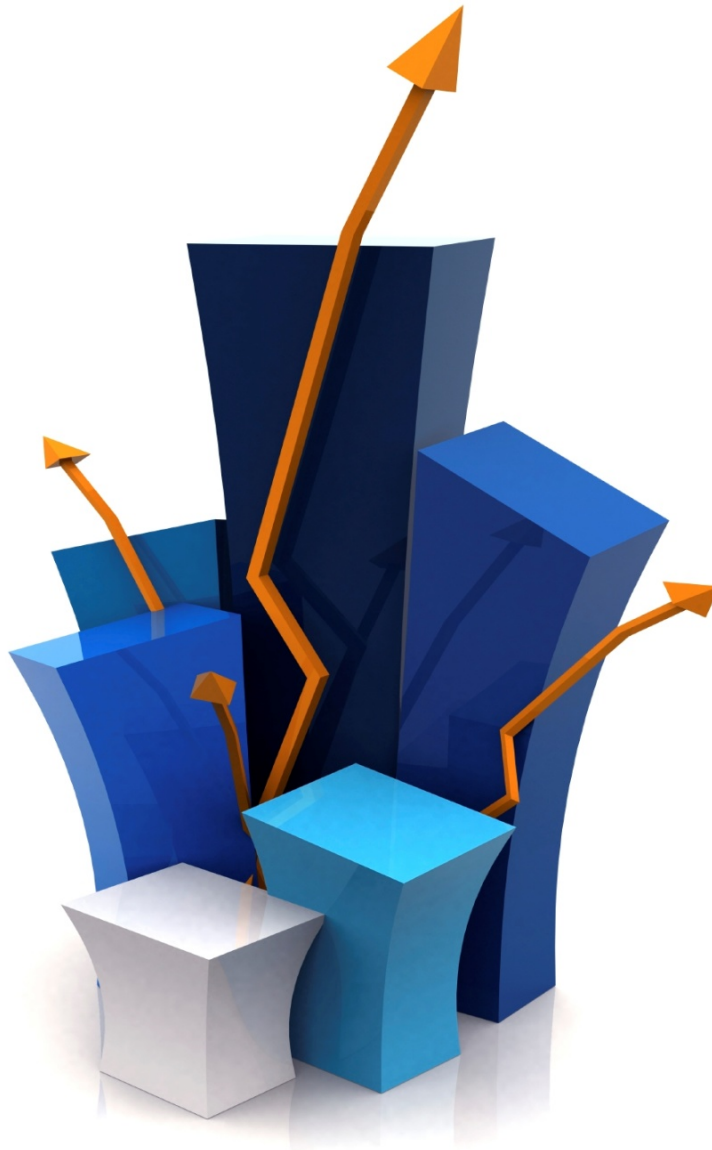**Final Report May 2011**

School Efficiency Review of Hanover County Public Schools

Submitted by:

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of

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Introduction

State of Virginia's Efficiency Program

In 2005, as part of the then governor's *Education for a Lifetime* initiative, a comprehensive school efficiency review program was created in the Commonwealth of Virginia to ensure that Virginia's education dollars were being spent wisely and effectively. The goal of the efficiency review program is to identify administrative savings achievable through the examination and implementation of best practices and operational improvements in school division administration, educational service delivery, human resources, facilities use and management, financial management, transportation, technology management, food services, and other non-instructional expenditures, thereby allowing the school division to return administrative savings to the classroom to more directly benefit Virginia's children.

Review of Hanover County Public Schools

In August 2010, Gibson Consulting Group, Inc. (Gibson) was contracted by the Virginia Department of Planning and Budget to conduct an efficiency review of Hanover County Public Schools (HCPS). The purpose of this project was to conduct an objective review of operational areas within the division and to determine whether savings can be achieved through increased efficiencies.

While Gibson found several opportunities to improve efficiency during this study, it is important that the recommendations in this report are placed in their proper context. **HCPS is a very good school system and a very well-governed school system.**

- Student achievement is well above state averages in virtually all grade levels and subject areas.

- The division spends a higher percentage of its expenditures on instruction than any other school division in Virginia.

- HCPS has a highly effective governance structure with stability not found in public education today. The average Board member tenure is 19 years; the current superintendent has been in the position at HCPS for 16 years.

- The Board and division leadership are committed to continuous improvement through a highly structured long-range planning process.

- The division has a very constructive and collaborative relationship with Hanover County in jointly meeting the needs of its citizens. This is governing at its best.

- HCPS reaches out to its community often, and values the input received. Virtually every major decision made by the school system has the benefit of community involvement.

During this review, Gibson identified commendable practices occurring in the division that could be applied division-wide. The division has highly effective governance, effective collaboration among and between staff groups, employee programs to support personal and professional well-being, an aggressive and effective energy conservation program, a robust and transparent planning and budgeting

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process, automated technologies to increase operational efficiency, and a well-organized and highly skilled food service operation. The division has also responded to fiscal challenges by identifying savings opportunities on its own.

These accomplishments notwithstanding, there are opportunities for even greater efficiencies that should be implemented by HCPS. Some of these issues have resulted from lagging information systems, procedures, and training to support consistent application across the division. The division has not routinely measured and reported on its efficiency, and would benefit from incorporating efficiency measures into its budget process to further increase transparency and provide more meaningful insights as to what is going on behind the numbers. This report contains 49 recommendations for improving the efficiency and effectiveness of HCPS operations, including the opportunity for several new investments.

Potential Savings and Investments

The review team anticipates that the recommendations contained in this report will be implemented over the next five years (2012-16). Once fully implemented, these recommendations will result in gross savings of $12,344,753 over the next five years. This report also includes recommended investments by HCPS to achieve high-degrees of efficiency or to generate savings. If fully implemented, recommendations contained in this report will require an investment of approximately $9,665,775 for net five-year savings achievable by HCPS of $2,678,978.

Appendix A lists all recommendations made as a result of the review, by operational area, priority level for implementing each recommendation, as well as estimated savings, investments, and net fiscal impacts.

Methodology

Data Collection

To conduct a comprehensive review of HCPS, Gibson used a variety of data collection and analysis approaches. This comprehensive review of HCPS' non-instructional areas included the following data collection approaches:

- Existing HCPS data
- Interviews
- Focus group sessions
- School visits

Existing HCPS Data

To provide proper context for the review, Gibson requested from HCPS a broad spectrum of data and documents related to the operational areas under review. Gibson collected over 1,000 documents from HCPS staff. The purpose of this data request and subsequent analysis was to gain a deeper understanding of HCPS operations and provide background and context for the review. In addition, these data and documents were utilized to help formulate questions for the interviews and focus group

sessions held with division administrators, department heads and staff, school administrators and staff, and teachers. Data analyses, discussed later, were conducted to determine levels of efficiency within the organization.

Interviews with Division Staff

To ensure that the review team had a complete and thorough understanding of division processes, procedures, operations, and issues, interviews of key staff involved in day-to-day operations in HCPS were conducted (December 6, 2010 to December 13, 2010). Interviews included School Board members, division leadership, department heads and staff, operational leads, and support staff among others.

Since substantial preliminary data analysis had been completed prior to the site visit, interview time was dedicated more to understanding performance trends as opposed to learning about system processes and staff responsibilities. In addition, the review team was able to develop a better overall understanding of divisional operations and clarify any data questions that arose during preliminary analysis including investigation of possible causes of unfavorable variances, current efficiency or performance measurement systems, current plans and initiatives, current approach to cost savings, recent cost savings or cost cutting measures, decision-making frameworks, and additional areas of concern for staff.

Focus Group Sessions

Focus groups are an effective way of obtaining more in-depth information from staff than a one-on-one formal interview or other data collection instruments. In addition, the dynamics of a focus group often stimulate the expression of ideas that might otherwise go unstated. The project team conducted focus group sessions with varying groups of stakeholders (e.g., principals, teachers, operational area leads, departmental and campus staff). These focus groups were conducted during the fall 2010 site visit.

Observation of Business Operations

During the on-site work, the review team observed division operations to further identify opportunities for improvement. Team members looked for effectiveness and efficiency in processes to determine how they can be improved, if needed. Effectiveness was also evaluated in terms customer satisfaction. As such, the review team identified each department's major customers and determined their primary expectations for measurement against current performance.

School Site Visits

A sample of HCPS schools was selected for site visits based on geographic location within the division. The review team conducted site visits to seven of HCPS' 25 schools. The purpose of the school visits was to gather information on school operations, as well as staff members' perceptions of the services provided by the central office. The site visits, which were conducted over the December 6, 2010 to December 10, 2010 period, included four elementary schools, two middle schools, and one high school in the division. Following is a list of the campuses visited during this review:

- Battlefield Elementary
- Beaverdam Elementary

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- Cold Harbor Elementary
- Pole Green Elementary
- Chickahominy Middle School
- Oak Knoll Middle School
- Atlee High School

Analysis

Data Analysis

As discussed previously, existing HCPS data were requested and analyzed to provide background and context for this review. During the assessment phase of this project, each functional area was reviewed individually to determine whether efficient financial and operational management practices were in place. For the analysis of each functional area, the review team applied the Department of Planning and Budget's protocols for developing well-supported findings and recommendations. Qualitative interview and focus group data were analyzed by functional area leads conducing the focus group sessions to determine common trends across the various stakeholder groups (e.g., division administration, school leaders and staff, department heads and staff). All other sources of input (e.g., observations, divisional data, and industry best practices) were included in analyses.

Comparative Cost Analysis

The Virginia Department of Planning and Budget has established clusters of divisions to support comparability of selected criteria across similar school divisions. From the established peer clusters, the review team worked collaboratively with the Virginia Department of Planning and Budget and HCPS to select four peers closest in demographic characteristic to HCPS. Comparative costs analyses were conducted for HCPS and the four peers. For this review, peer comparisons were conducted for HCPS against Roanoke County Public Schools, Spotsylvania Public Schools, Stafford Public Schools, and York County Public Schools. Peer data comparisons were analyzed for staffing levels, fund sources, disbursements, and expenditures, among others. Appendix B – Peer Comparison includes all peer analysis conducted for this review.

Interview and Focus Group Data

Qualitative interview and focus group data were analyzed by functional area leads conducing the focus group sessions to determine common trends across the various stakeholder groups (e.g., division administration, school leaders and staff, department heads and staff).

Organization of Report

The remainder of this report is organized into the following chapters:

- Chapter 1 – Divisional Administration

- Chapter 2 – Educational Service Delivery

- Chapter 3 – Human Resources

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- Chapter 4 – Facilities Use and Management

- Chapter 5 – Financial Management

- Chapter 6 – Transportation

- Chapter 7 – Technology Management

- Chapter 8 – Food Services

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Chapter 1 – Divisional Administration

Introduction

Hanover County Public Schools (HCPS) serves 19,231 pre-k through grade 12 students in 15 elementary schools, four middle schools, four high schools, one alternative school, and one technical school. All schools are accredited by the Southern Association of Colleges and Schools. The school division employs 2,737 staff, including 1,502[1] teachers, and operates under an annual operating budget of almost $200 million. In addition to providing direct instructional services to students, the organization manages various student support services, auxiliary services such as student transportation, student safety, facilities management, food services, and administrative support at the division and school levels. All of the services and operations must comply with federal and state requirements for public school systems, as well as those specific requirements established by local governing bodies. The size and complexity of school systems, and HCPS in particular, highlight the importance of governance, management and planning to ensure ongoing effectiveness and efficiency in the achievement of stated goals.

This chapter provides commendations and recommendations related to three aspects of school system governance and division administration:

    A. Division Management
    B. Procedures
    C. Planning and Evaluation

Several significant commendations are made in this chapter:

- HCPS has a highly effective and stable governance structure that focuses on continuous improvement;

- HCPS policies are readily accessible on-line, and are updated efficiently through a subscription service with the Virginia School Boards Association; and

- The division's budget process has been awarded for its process and presentation by the Government Finance Officers Association.

Table 1.1 provides a summary of divisional administration recommendations and resulting fiscal impacts over the next five years.

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[1] FY 2009-10 Budget File

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Table 1.1.Fiscal impacts of recommendations

Recommendation	Priority	One-Time Cost/ Savings	2011-12	2012-13	2013-14	2014-15	2015-16	Total Fiscal Impact
Division Management								
1-1. Position reclassifications	Low	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	**$ 0**
Policies and Procedures								
1-2. Process re-engineering	Medium	($250,000)	($100,000)	($100,000)	($100,000)	$ 0	$ 0	**($550,000)**
Planning, Budgeting, and Evaluation								
1-3. Incorporate tangible measures of performance into planning process	High	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	**$ 0**
1-4. Incorporate efficiency measures into budget process	High	($150,000)	($75,000)	($75,000)	($75,000)	($75,000)	($75,000)	**($525,000)**
Net Fiscal Impact		**($400,000)**	**($175,000)**	**($175,000)**	**($175,000)**	**($75,000)**	**($75,000)**	**($1,075,000)**

Note: Costs are negative. Savings are positive.

A. Division Management

The framework for governance of public schools in Virginia is set forth in Article 8 of the Virginia Constitution[2]. This provision places the responsibility for providing an efficient system of free public schools with the General Assembly of Virginia, and further directs the establishment of local school boards to operate, maintain, and supervise local schools. The HCPS school board derives its authority from the Constitution of Virginia, the Code of Virginia, and the regulations of the Virginia Board of Education. The school board is the policy-making body for HCPS and serves within the framework provided by law, the will of the local citizenry, and the ethics of the professional personnel.

HCPS is governed by a seven-member board that meets on the second Tuesday of each month. Each member represents a magisterial district in Hanover County, and is appointed by the Hanover County board of supervisors to a four-year term. Table 1.2 presents the list of current HCPS board members.

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[2] http://legis.state.va.us/laws/search/toc.html

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Table 1.2. HCPS board of directors

Board Member	Title	District
John F. Axselle III	Chairman	Beaverdam
Ann F. Hagan Gladstone	Vice Chairman	South Anna
Earl J. Hunter, Jr.	Member	Henry
Robert L. Hundley, Jr.	Member	Chickahominy
Sue Forbes Watson	Member	Ashland
Robert L. Wood	Member	Cold Harbor
Glenn T. Millican, Jr.	Member	Mechanicsville

The board meets in a closed session at 6:00pm and convenes its regular meeting, open to the public, at 7:30pm.

The superintendent of HCPS is appointed by the school board as the chief administrator and executive officer. Dr. Stewart D. Roberson is the current superintendent and has been in this role since 1995.

Commendation: Highly effective governance

HCPS has one of the most effective governance structures Gibson Consulting Group, Inc. (Gibson) has seen in 18 years of conducting these types of projects. This is governing at its best, and other school systems would benefit from the model offered by HCPS. There are several factors that have contributed to this success:

- **Stability**. The average board member has 19 years of experience with the HCPS school board. The superintendent has led the division for 16 years. This level of stability is extremely rare in public education, where the average superintendent tenure is three years. The HCPS school board is not a "yes" board – the members have very different views and the board minutes reflect constructive debates on important issues. School board members have learned to work together effectively over the years, respecting each other's differences and respecting the ultimate vote of the board. HCPS is one of the few school systems in Virginia whose board members are appointed by the county board of supervisors. This has contributed to the stability of the school board and the quality of its members.

- **A strong relationship with the county**. The county administrators are advocates of the public school system in Hanover County, and work with division officials effectively in long-term planning, budgeting, and capital improvements. A two-tiered governance structure often leads to conflict in public education, as school boards generally do not have taxing authority and their spending authority is subject to approval. HCPS and Hanover County provide a model for others to follow: open and frequent communication; effective long-term planning; and the

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commitment to common goals. This model has contributed to a mutual trust that has greatly benefitted HCPS and the students it serves.

- **Effective communication with the community**. HCPS rarely makes an important decision without first obtaining input from the community. The community is actively engaged in long-term planning, the annual budget process, division and school-based committees, and a myriad of other opportunities for public input. HCPS management places a high value on community input and reaches out frequently to obtain it.

Recommendation 1-1: Make minor position reclassification to the high level organization structure.

An effective organization structure should logically align functions, have reasonable spans of control, and support accountability for performance. A span of control is the number of direct reports to a supervisory position. Several factors can affect span of control, including the degree of complexity or homogeneity of the reporting functions, the size (personnel and/or spending) of the reporting functions, the degree to which technology supports the functions, and the relative financial or legal risk of the functions to the organization. One supervisor can oversee 50 or more homogeneous positions, such as bus drivers or custodians, but another supervisor may have six different functions reporting to it, with no two positions being alike. There is no single best practice for span of control, although acceptable spans of control over non-homogeneous functions generally range from four to 10 positions.

In a school system, the number of direct reports to the superintendent reflects the priorities of the board and the strengths of the superintendent. In larger school systems, superintendents tend to be more outwardly focused, focusing on public, stakeholder, and community relations, with a chief of staff position overseeing the internal day-to-day operations of the school system. In smaller systems, the organization chart is flatter with many functions reporting directly to the superintendent. HCPS is a mid-sized school system, and its organization chart reflects a balance of outward (community, external stakeholder) and inward (operations, schools) focus. This balance has likely contributed to the effective governance of HCPS over the years.

The HCPS organization structure is presented in Figure 1.1. Four positions report directly to the superintendent: (1) an associate superintendent of policy and administration, (2) an assistant superintendent of instructional leadership, (3) an assistant superintendent of human resources, and (4) an assistant superintendent of business and operations.

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Figure 1.1. HCPS organization structure – senior leadership

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                          ┌──────────────┐
                          │ School Board │
                          └──────┬───────┘
        ┌──────────────────┐    │    ┌──────────────┐
        │ School Board     │────┼────│ School Board │
        │ Attorney         │         │ Clerk        │
        └──────────────────┘    │    └──────────────┘
                          ┌──────┴────────┐
                          │ Superintendent│
                          │ of Schools    │
                          └──────┬────────┘
     ┌───────────────┐           │
     │ Associate     │           │
     │ Superintendent│───────────┤
     │ Policy &      │           │
     │ Administration│           │
     └───────────────┘   ┌───────┼──────────────┐
     ┌───────────────┐ ┌─┴──────────┐ ┌─────────┴──────┐
     │ Assistant     │ │ Assistant  │ │ Assistant      │
     │ Superintendent│ │Superintend.│ │ Superintendent │
     │ Instructional │ │ Human      │ │ Business &     │
     │ Leadership    │ │ Resources  │ │ Operations     │
     └───────┬───────┘ └────────────┘ └────────────────┘
     ┌───────┴───────┐
     │ School        │
     │ Principals    │
     └───────────────┘
```
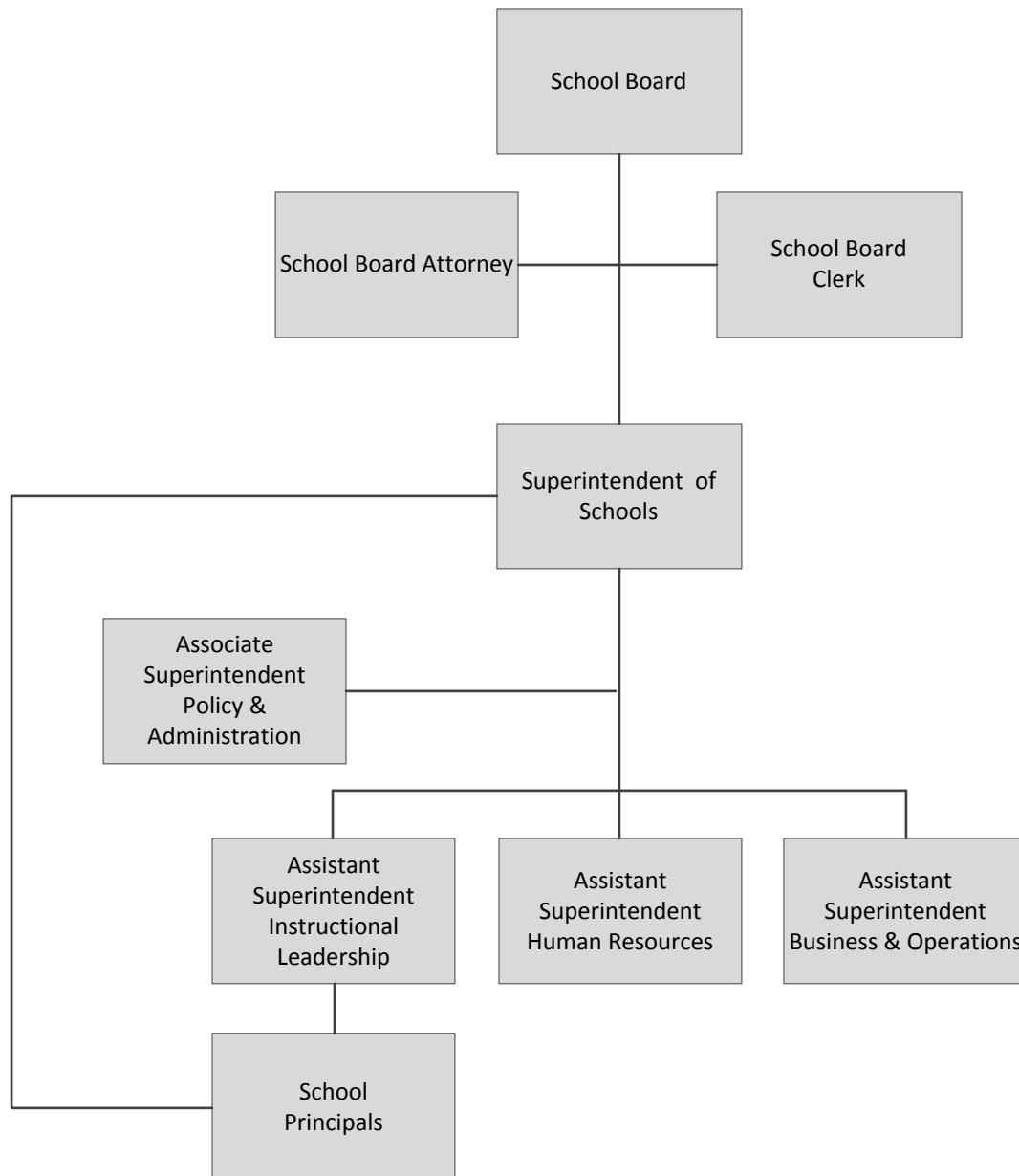
Source: HCPS, fall 2010

Two years ago there was an additional executive position that reported to the superintendent – the assistant superintendent for student and support services. This position was eliminated to reduce administrative costs through the redistribution of functional responsibilities to remaining senior staff members, where logical.

The human resources department has by far the smallest budget and staff counts of the four major leadership positions. However, more than 80 percent of the division's spending relates to human resources, and it is not uncommon for this important function to be directly reporting to the

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superintendent in a school system. With the exception of the assistant superintendent for instructional leadership, the span of control for other senior administrators is reasonable, ranging from four to nine direct reports. The span of control for instructional leadership is addressed in detail in Chapter 2 – Educational Service Delivery of this report. The prior organization structure represented a more logical alignment of functions, but the new structure has not created functional issues and could be sustained. Over time, the position title for policy and administration should be changed to reflect the bulk of the underlying responsibility placed on this position, (student services) and be at an organizational level consistent with the other assistant superintendent positions (on the same row within the organization chart). Otherwise, this well-functioning organization structure should remain as is.

FISCAL IMPACT

The minor reclassification of the current associate superintendent for policy and administration is not expected to result in any significant fiscal impact.

B. Policies and Procedures

Policies and procedures guide public school system decisions at the board, management and staff levels. Policies are different from procedures in that policies must be formally adopted by the school board. Administrative regulations, which do not require board approval but must be approved by the superintendent, provide additional guidance to administrators and staff. Documented procedures describe how the work is to be done, are action oriented, and serve as a guide for employees in the day-to-day conduct of their jobs.

Commendation: Efficient and accessible policy manual.

HCPS maintains its policy manual online through the division's web site, and subscribes to the Virginia school boards association's policy update service. The subscription costs the division $3,500 per year and provides all legislatively required changes to local policies. The division also applies a very structured approach, through the office of policy and administration, for the development and refinement of policies and administrative regulations. There are separate processes for state and locally initiated policies, and each process involves the affected department administrator and a review by legal counsel. Administrative regulations are included in the online policy manual and are cross-referenced to individual policies and lower level documents such as the student handbook and the student code of conduct. This approach is well managed and efficient, and provides real-time policy access to employees, students, parents, taxpayers and other stakeholders in Hanover County.

Recommendation 1-2: Improve operational efficiency through process re-engineering.

Each HCPS department is responsible for maintaining its own operating procedures. The depth of these procedures manuals and the frequency with which they are updated are left to the discretion of the department heads. Job descriptions are maintained by the human resources department with assistance

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from each department head that oversees the position. Based on interviews with HCPS staff, job descriptions are current and consistent with actual job duties performed.

HCPS' weakness in procedures lies not in their documentation but in their efficiency. HCPS has many manual, paper-intensive processes at the central office and campuses. The lack of integrated software, under-used software, and the need for additional software applications has contributed to the continued use of cumbersome procedures that are not efficient. Examples of inefficient processes are identified in several chapters of this report, including processing of individualized education program (IEP) plans for special education (Chapter 2 – Educational Service Delivery), processing of grades at secondary schools (Chapter 2 – Educational Service Delivery) and processing of payroll (Chapter 5 – Financial Management).

HCPS should make additional investments in technology and training to improve the efficiency of its processes. (See related recommendations in Chapter 7 – Technology Management and Chapter 5 – Financial Management of this report.) Needed investments, including technology and staff among others, can be identified for all areas through a process re-engineering effort. Process re-engineering involves the diagramming or "mapping" of processes as opposed to a textual description. Figure 1.2 provides a sample process map for an attendance process.

Figure 1.2. Sample "as-is" process map – attendance
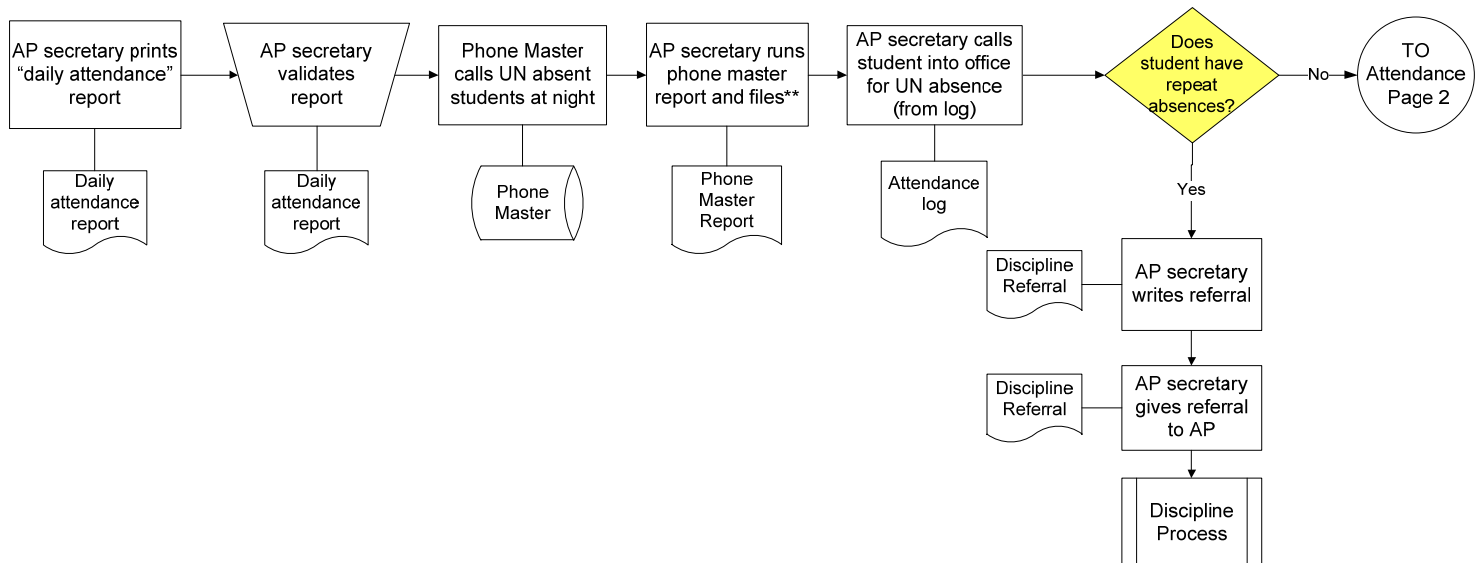
Source: Gibson Consulting Group, Inc.

The process map included in Figure 1.2 provides an "as-is" or current picture of a school system's student attendance reporting process. By analyzing the process map, opportunities for streamlining and automation can be identified. Production and delivery of hard copy reports can be replaced with sending needed information electronically. Processes of entering data from manual forms can be replaced with processes that require system entry by the originator who previously filled out a form. Once manual processes have been identified and efficient solutions generated, a revised "to-be" map can be developed that shows an efficient process that maximizes the use of technology.

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Process maps can be used to support software purchases as well as to update documented procedures and job descriptions, since staff members across departments are involved in a joint definition and analysis of entire processes beyond what is prescribed in individual job descriptions and procedures manuals. The exercise of process mapping is an effective training tool in that many individuals prefer to utilize a visual step-by-step process, including major decision points, in addition to documented procedures.

HCPS should undertake a major process re-engineering effort to streamline its processes. In implementing this recommendation, several considerations should be made, including:

- Identifying a position within HCPS to serve as project manager responsible for overseeing the process re-engineering effort;

- Creating a list of processes for each major campus and administrative area (e.g., human resources, finance and student information management);

- Utilizing a user-friendly process or workflow mapping tool (such as Microsoft Visio^{TM}) so that process owners can easily update and modify their own process maps;

- Including all representatives affected by the process in the process mapping and re-engineering effort regardless of their location or department. For example, for a purchasing transaction, an originator (teacher, department head), school administrator (approver), school clerical staff (data entry), and central office personnel (approvers and purchasers) should be involved in a work session to document the procurement process;

- Considering the use of external assistance to facilitate a structured approach to process re-engineering;

- Coordinating the timing of process re-engineering with planned technology investments;

- Establishing centralized responsibility for the maintenance and indexing of all process maps;

- Dedicating a sufficient amount of time to training and support before and after the new processes are implemented. New process training should be coordinated with any computer software training; and

- Utilizing the "to-be" process maps as starting points for updating procedures manuals and job descriptions.

Process re-engineering will reduce demands on clerical staff time at campuses and the central office. As such, more effort can be devoted to monitoring data quality, compliance, analysis and problem solving.

FISCAL IMPACT

This recommendation will require an investment of time by many HCPS employees, but the average employee time (for approximately 30 employees) should not exceed 40 hours in a year. In addition, the division should hire or contract a project manager for this effort for three years. It is expected that

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external assistance will be used to provide a structured methodology and to facilitate the process mapping sessions with staff. The project manager cost is assumed to be $100,000 per year.

Outside assistance will be needed for the process mapping in student information, human resources, and finance at an estimated one-time cost of $250,000.

Recommendation 1-2	One-Time Costs/ Savings	2011-12	2012-13	2013-14	2014-15	2015-16
Hire/contract project manager	$ 0	($100,000)	($100,000)	($100,000)	$ 0	$ 0
Consulting services – process re-engineering	($250,000)	$ 0	$ 0	$ 0	$ 0	$ 0
Total	**($250,000)**	**($100,000)**	**($100,000)**	**($100,000)**	**$ 0**	**$ 0**

Note: Costs are negative. Savings are positive.

C. Planning and Evaluation

Planning and evaluation are two important components in providing direction to an organization and holding it accountable for intended results. A third component essential to an organization is budgeting. Planning is particularly important in public education, as the size and demographics of the student population directly affects the need for schools, teachers, and many student support services for future years. In Hanover County, division plans must be in sync with county plans for development. Effective planning must provide clear direction based on established goals and priorities, and provide mechanisms for measuring actual results against targeted goals.

An effective evaluation function closes the accountability loop by measuring actual performance against targeted performance goals. A school system must evaluate itself against state and federal accountability systems, as well as against its own goals. Evaluations should occur at the system-, department-, and school-level to ensure that the entire organization is moving in the same direction and toward common goals.

The budget process allocates available financial resources to meet the priorities established in planning documents. An effective budget process contributes to efficient practices and allocates resources to the highest needs.

Commendation: Effective budget process and presentation.

In 2010, HCPS received the Distinguished Budget Presentation Award by the Government Finance Officers Association. HCPS' budget process was found to meet the highest principles of governmental budgeting and received a proficient rating for serving as a model in the following four categories: (1) a policy document, (2) a financial plan, (3) an operations guide, (4) and a communications device. The school division's budget met 14 mandatory areas within these four categories and was chosen to receive

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the award based on its ability to serve as an excellent example for school systems and other governmental entities.

During this project, the review of the budget process yielded a similar assessment. The budget process starts within weeks after the previous year-end and continues year round. The process involves internal and community stakeholders, including a budget advisory group, and has several elements that are worthy of mention:

- The beginning of the budget process includes establishing goals. Many school systems develop budgets independent of board goals or priorities, focusing on incremental changes from prior years. HCPS guarantees the integration of planning and budgeting by starting the budget process with board goals. Budget goals are then developed to drive the budget process. Perhaps the best evidence of HCPS linking priorities and spending is the additional funds provided for two high-need schools that, according to division leadership, contributed to higher student achievement at those schools.

- HCPS has a very structured budget calendar that divides the budget process into four phases: (1) budget development, (2) budget balancing, (3) HCPS school board review and approval, and (4) Hanover County board of supervisors review and approval. The school board is connected throughout the process and community input is provided at key points to generate ideas and respond to management's budget proposals.

Another indicator of the effectiveness of the budgeting process is the division's percentage of expenditures related directly to instruction. For fiscal year 2010, HCPS ranked first in the Commonwealth of Virginia for the highest percentage (68 percent) of expenditures devoted to instruction.

Recommendation 1-3: Incorporate tangible measures of performance into the division's planning and evaluation process.

In 2006, HCPS created a long-range plan for 2007-13 that was developed through a planning committee which included division and community representatives. This plan has effectively articulated and guided division priorities and actions over the past four years. Figure 1.3 provides the framework for the long range plan for 2007-13, depicting the relationship between the HCPS vision statement, mission statement, goals, strategies and action plans.

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Figure 1.3. HCPS long-range plan framework

VISION
Building on our Tradition of Excellence while striving to exceed community expectations.

MISSION
Hanover County Public Schools is a student-centered, community-driven school district that assures a quality education for success in a changing world

GOALS			
To provide the highest quality education and appropriate support for each student while meeting and exceeding state, national and international standards	To analyze and address the influences of growth proactively	To employ and retain highly qualified staff for all positions	To Increase family involvement and community partnerships

STRATEGIES									
Assessment	Communica-tion	Community	Curricula	Economic Development	Environment	Facilities	Professional Development	Safety	Staff

ACTION PLANS

Source: HCPS long range plan, 2007-2013

The goals in the long-range plan also drive annual school board, superintendent, and administrator goals. The board goals for the 2010-11 school year are[3]:

I. "The Board will assert its role in the community as the educational policy leader of public education in Hanover County.

II. The Board will promote the delivery of effective instructional services as the primary responsibility of the entire school community.

III. The Board will demonstrate leadership in and support efforts to attract and retain the best qualified employees.

IV. The Board will monitor the effects of significant enrollment influences and consider plans for their effective management.

V. The Board will embrace additional opportunities to promote its accountability to the public."

Longer lists of goal statements are developed by the superintendent and other members of division administration. The implementation status of action plans are formally monitored and reported on a quarterly basis. This planning process and resulting documents have been effective in supporting the continued improvement of HCPS.

There is an opportunity for HCPS to expand its efforts with respect to addressing accountability (as reflected in the fifth board goal above). The long-range plan and underlying goals and strategies are very useful in identifying what HCPS needs to "do." However, they are not specific as to what HCPS needs to "achieve." The division should include tangible, measurable outcomes – stated as objectives – under

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[3] http://hanover.k12.va.us/schoolboard/school_boardgoals.htm

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each goal to provide clear expectations for results for the entire school system. Following are examples of measureable objectives:

- Achieve overall SOL passing rate of 96 percent by 2015;

- Reduce student achievement gaps among student subgroups by 50 percent by 2015;

- Increase division attendance rate by 0.5 percentage point by 2015; and

- Reduce dropout rate by one percentage point by 2015.

HCPS calculates and analyzes these and other measures in evaluating historical performance, but does not establish out year targets for expectations of performance at the system level. Developing targets, and measuring against those targets, will support greater accountability and higher levels of achievement for HCPS, and provide school and division leaders with clear expectations of results. A sample of 2009-10 principal evaluations was analyzed to determine how board and superintendent goals filtered down to the schools. The evaluations contained two sections – a formal summative assessment and an action plan. The action plans contained findings, many of which were expressed as performance measures, and targets for each HCPS long-term goal. Examples of performance targets contained within the action plans included:

- Performance of IEP students will increase to at least 77 percent in grade 3 reading;

- 100 percent of seniors will meet graduation requirements; and

- Performance in all NCLB subgroups will meet the 2010 annual measureable objective or safe harbor in English to achieve adequate yearly progress (AYP). Annual measurable objectives at the system level are driven by No Child Left Behind (NCLB) and exist for reading and mathematics.

The summative evaluation forms did not reference performance against targets – this was only evident in the action plans. Performance against measurable targets should be included in the summative evaluations of the superintendent, department heads, principals, teachers, as well as other employees in order to hold individuals accountable for results.

As HCPS prepares for its next long-range planning effort, measurable objectives should be included the framework under each board goal, and the same should be done for lower level goals (e.g., departmental and campus goals) at the superintendent and management levels in the organization. The monitoring of action plan implementation should include an assessment of actual performance against stated targets. This analysis may result in different action plans and resource allocations to address areas where performance does not meet expectations. Other implementation strategies include:

- Starting with 15 to 20 global performance measures/targets and adding more in future years;

- Tracking performance measures at the global level, and identifying applicable targets for mid-level and low-level management within the organization; and

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- Modifying personnel evaluation instruments to include objective components and scoring that are directly tied to the achievement of measurable objectives.

FISCAL IMPACT

This recommendation can be accomplished with existing staff resources that are currently devoted to the planning process. It is expected that most of the data needed to support the development of performance measures is already tracked, and that planning time will be redirected to focus on the development of out-year targets. Approximately one to two hours of effort will be required to incorporate these measures into each management and supervisory job description. No single department head or manager should need to expend more than ten to twenty hours in this effort.

Recommendation 1-4: Incorporate efficiency measurement into the budget process and staffing formulas.

In the development of the HCPS long-range plan in 2006, "efficiency" was considered among the list of goals to be included in the plan, but was ultimately excluded from the final list of division goals. This notwithstanding, the division has undertaken many initiatives to become more efficient.

The school board and division management would benefit from incorporating efficiency measures into the budget process and resulting budget document to ensure that ongoing operations are carried out at the lowest possible cost. This recommendation does not constitute an overhaul of the existing budget process, but rather an enhancement to it. The HCPS budget document has several favorable attributes with respect to measuring efficiency including:

- Examining trends in spending over a four or five year period – a sufficient period for analyzing trends. Most school system budgets include a three-year trend;

- Clearly identifying expenditures by cost center, such as a department or a school; and

- Presenting staffing count trends and pupil-teacher ratios at the campus level.

Examples of HCPS cost center budgets and staff counts for FY 2010-11 are provided in Table 1.3 and Table 1.4.

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Table 1.3. FY 2010-11 HCPS operating budget – support services

Index/Function	2007-08 Actual	2008-09 Actual	2009-10 Budget	2010-11 Budget	Dollar Change	Percentage Change
Salaries and Benefits	$ 445,879	$ 389,298	$ 400,929	$ 212,121	($ 188,808)	(47.1%)
Purchased Services	441,994	348,316	798,848	504,120	(294,728)	(36.9%)
Other Charges	98,874	58,561	53,400	53,400	0	0%
Capital Outlay	0	0	0	0	0	0%
Total	**$ 986,747**	**$ 796,175**	**$ 1,253,177**	**$ 769,641**	**($ 483,536)**	**(38.6%)**

Source: HCPS 2010 operating budget, fall 2010

Table 1.4. FY 2010-11 HCPS operating budget – staffing worksheet excerpt

Index/Function	2009-10			2010-11			Change
	Enrollment	Staff	Ratio	Enrollment	Staff	Ratio	
Grade Level Teachers:							
Grade 6	324	11.0		366	14.0		
Grade 7	395	15.0		338	12.0		
Grade 8	366	14.0		395	12.8		
Sub-total	1,085	40.0		1,099	38.8		
Subject Specific Teachers:							
English/Tutorial		1.5			1.5		
PE / Health		6.0			6.0		
Foreign Language		4.0			3.4		
Technology / Vocational		4.5			4.0		
Art		3.0			3.0		
Music		2.6			2.6		
Sub-total		21.6			20.5		
Total Teachers	**1,085**	**61.6**	**17.6**	**1,099**	**59.3**	**18.5**	**(2.3)**
Administrative and Support:							
Principal		1.0			1.0		
Assistant Principal		2.0			2.0		
School Nurse		1.0			1.0		
Technology		1.0			1.0		
Custodian		6.0			6.0		

Source: HCPS 2010 operating budget, fall 2010

The pupil-teacher ratio is the only staff ratio disclosed in the budget document. Other ratios could be included, such as pupil-administrator ratios and pupil-counselor ratios. HCPS has staffing formulas that assist in determining staff levels, but there are no comparisons to efficiency standards for most staffing or expenditure levels. The budget document should continue to provide expenditures and staff counts
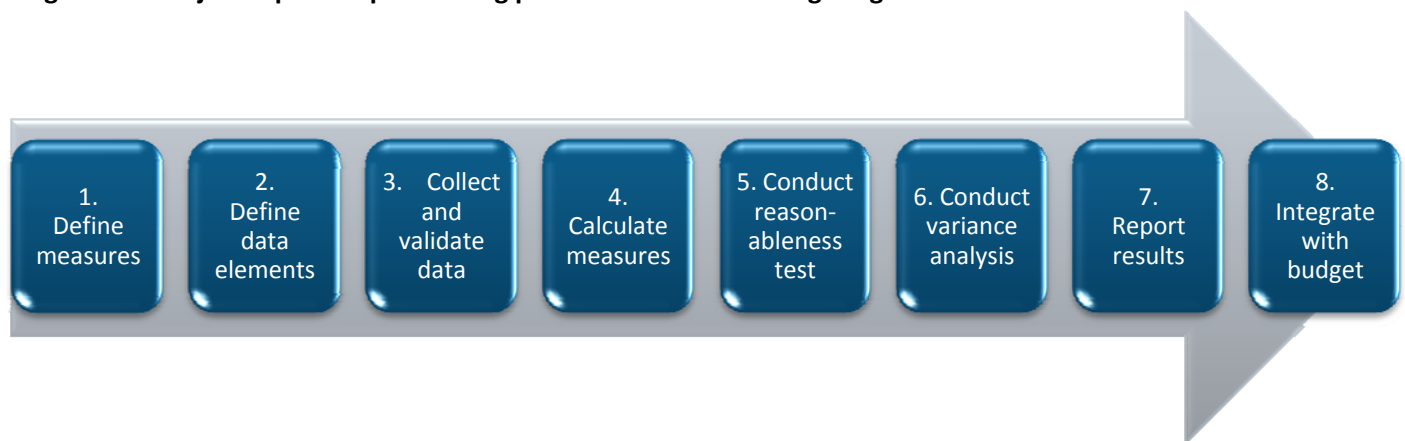
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by function, and should also explain or justify the current versus budgeted levels. For example, energy costs are primarily driven by the size of the facility, or gross square feet. Energy costs per square foot should be disclosed in the HCPS budget, with explanations as to why the per-foot cost has changed, if applicable. Out-year targets for energy costs per square foot could be developed to evaluate the effectiveness of energy conservation measures. The dispersion of per-foot costs could also be analyzed by campus and compared to a standard for the region.

In another example, the number of food service workers needed at a school is driven by the number of meal equivalents served. There are industry standards for meals per labor hour based on the number of meals and the type of kitchen facility. Food service staff levels should be compared to these standards, globally and at the campus level, and out-year targets should be developed to achieve the standards if the division is falling short of the efficiency standards. Through this exercise, staffing formulas can be changed to support a more efficient budget.

These types of analyses provide increased budget transparency and help readers understand what is going on behind the numbers and whether the division is operating efficiently.

Incorporating efficiency measurement into the budget process is commonly referred to as performance-based budgeting. Performance-based budgeting has rarely been used in public school systems, but its application works well, as school systems are moving toward increased transparency and fiscal accountability. For school systems, a focus on the efficiency of inputs and the effectiveness of outputs will result in a more meaningful budget and improved accountability for efficiency. There are eight major steps (see Figure 1.4) involved in implementing performance-based budgeting. These steps are described below:

Figure 1.4. Major steps in implementing performance-based budgeting

1. Define measures
2. Define data elements
3. Collect and validate data
4. Calculate measures
5. Conduct reason-ableness test
6. Conduct variance analysis
7. Report results
8. Integrate with budget

1. Define Measures

This type of budgeting requires the definition of performance measures at the beginning of the process, as linking these performance measures to school system resources is the key to this approach. Both efficiency and effectiveness measures should be defined at this point. When creating efficiency measures the factors driving the level of cost should be identified, such as the number of meals served

at a campus or the number of square feet each custodian cleans in a day. With effectiveness measures there may be data limitations, but analyzing the costs and benefits of tracking the information will help a system decide which measures should be used. It is important not to choose too many measures at the beginning – this may be too overwhelming for an organization to absorb at one time. It is best to phase in more performance measures over time.

2. Define Data Elements

Each performance measure should have a specific definition to ensure consistent reporting over time – many of the data elements will not be subject to a state data standard or definition. Examples include gross square feet of space and the number of computers in the school system. It is crucial to collect data at the same point in time every year and to base the data upon the same definition/source as the prior year in order to achieve consistent results. The source of data should be documented to aid in consistent collection in future years. A good practice is to time the collection of data based upon other data collection and cutoff dates.

3. Collect and Validate Data

In many school systems, data are generally stored in two places: (1) application systems, or (2) other automated or manual data systems, such as spreadsheets or database files. Once data have been collected, a central data repository is highly desirable to maximize data quality. This allows for control, efficiency and data integrity. All data collected should be independently validated by another unit in the school system. Independent validation of data is crucial as management should not build an accountability system based on inaccurate data.

4. Calculate Measures

There are three methods that school systems can generally use to calculate measures: (1) spreadsheets, (2) databases, and (3) data visualization tools. Utilizing spreadsheets is the easiest method for calculating measures as most users are familiar with inserting various formulas. Databases are more time consuming but more effective for analysis than spreadsheets. Data visualization tools are a relatively new way school systems are calculating measures and are far more powerful than conventional tools. Data visualization tools have measures built into the background of the system so users are able to dynamically view different data scenarios, stratifications, and levels of data.

5. Conduct Reasonableness Tests

Reasonableness testing is perhaps the most important step when defining new performance measures. The first question to ask in this step is, "Do the measures make sense?" In the initial year, there will likely be data issues that need to be resolved. There may be multiple sources of the same data that are not consistent. In other cases certain types of data could have been erroneously omitted or added. Reasonable tests will need to be conducted annually to ensure that the measures are accurate and ready for analysis.

6. Conduct Variance Analysis

Tracking performance becomes more meaningful when lower level analysis is conducted to understand what the data are telling you. Five-year performance trends and comparisons to available benchmarks

standards and best practices should be analyzed. It is important to research the causes of an unfavorable variance or trend instead of relying on probable explanations. This may require the analysis of additional data at a more granular level.

7. Report Results

In order to garner maximum buy-in for performance-based budgeting, it is important to report the results of the analysis. School boards will typically be more receptive to budget increases or changes if the budget and performance measures are supported by performance analysis. The division already owns and uses a business intelligence tool – *Business Objects* – to track student performance data. This tool should be used to support the reporting and analysis of any new measures and targets developed by HCPS as part of its planning process

8. Integrate with the Budget

It is important to show at least a five-year performance trend in the budget for budget decision makers to be most informed. Any time frame of less than five years can result in data outliers that can be attributed to an extenuating circumstance and are not indicative of a trend. When showing budget dollars, underlying staffing levels and performance trends should be shown as well. It is important to note productivity changes and other highlights of the variance analysis. As part of the budget process, out-year performance targets should be established and plans on how to meet them should be developed.

Appendix C – Sample Operational Performance Measures includes sample performance measures HCPS could draw from in developing its own performance-based budgeting approach.

FISCAL IMPACT

This recommendation will require an investment of time by department heads, and the investment in a financial analyst position for the division (unless this work can be absorbed by the budget department). The annual cost for this position is estimated to be $75,000 including salary and benefits. The division may also need outside assistance in the development of an efficiency measures tracking process or tool, which would eventually be turned over to division staff for ongoing maintenance. This cost is not expected to exceed $150,000.

Recommendation 1-4	One-Time Costs/ Savings	2011-12	2012-13	2013-14	2014-15	2015-16
Invest in a financial analyst	$ 0	($75,000)	($75,000)	($75,000)	($75,000)	($75,000)
Consulting services – efficiency measurement tracking process	($150,000)	$ 0	$ 0	$ 0	$ 0	$ 0
Total	**($150,000)**	**($ 75,000)**	**($ 75,000)**	**($ 75,000)**	**($ 75,000)**	**($ 75,000)**

Note: Costs are negative. Savings are positive.

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Department heads, on average, will need to incur an additional 10 to 20 hours per year to review their measures and research the variances. The financial analyst will be able to support this effort and minimize the time required by department heads.

Chapter 2 – Education Service Delivery

Introduction

The primary function of any school division is educating children. The extent to which this goal is achieved is dependent largely on the effective and efficient use of the division's human and financial resources. The division must also have a well-designed and well-managed process for directing instruction, maintaining the curriculum, and providing the resources needed to support its programs. In addition, assessment data must be collected and used to evaluate and monitor its educational programs.

Hanover County Public Schools (HCPS) provides educational services to 19,231 students in grades pre-K to 12 in 25 schools—four high schools, four middle schools, 15 elementary schools, one technical school, and one alternative school. All schools in the division are fully accredited.

The Virginia Standards of Learning (SOL) establish the expectations for student learning and achievement for various subjects in grades K-12. These tests determine the extent to which students have mastered the specific knowledge and skills contained in the curriculum frameworks for core subject areas. Compared with students state-wide, the pass rates for HCPS students were higher for every grade level and subject area except one – grade 5 writing, where the state average was one percentage point higher. Overall, the HCPS passing rates were more than six percentage points higher than the state passing rates.

HCPS also achieved higher advanced passing rates than the state average in all but six of the 37 grade level and subject area assessments. Table 2.1 presents the division's 2009-10 SOL passing rates by grade and subject compared to the state. The green shaded boxes indicate subjects where HCPS grade levels and subject area passing rates were higher than the state average. The red shaded boxes indicate where the state average was higher.

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Table 2.1. SOL pass rates by grade and subject, HCPS and state, 2009-10

Grade Level	Subject	HCPS Passed	State Passed	HCPS Advanced	State Advanced
Grade 3	English Reading	92	83	57	41
Grade 3	History	98	93	82	68
Grade 3	Mathematics	98	92	70	52
Grade 3	Science	97	91	62	42
Grade 4	English Reading	94	88	61	48
Grade 4	History	100	92	92	74
Grade 4	Mathematics	96	88	65	49
Grade 5	English Reading	95	90	46	38
Grade 5	Mathematics	96	90	73	58
Grade 5	Science	97	88	50	32
Grade 5	Writing	87	88	27	22
Grade 6	English Reading	96	88	61	42
Grade 6	History	100	94	80	74
Grade 6	Mathematics	80	77	28	35
Grade 7	English Reading	95	89	56	43
Grade 7	History	100	92	82	69
Grade 7	Mathematics	84	75	44	28
Grade 8	English Reading	94	90	49	44
Grade 8	History	100	91	67	69
Grade 8	Mathematics	97	87	72	53
Grade 8	Science	96	92	50	40
Grade 8	Writing	91	91	7	5
Grades 9-12	Algebra I	97	94	41	29
Grades 9-12	Algebra II	93	91	20	24
Grades 9-12	Biology	94	89	21	18
Grades 9-12	Chemistry	97	93	14	17

Grade Level	Subject	HCPS Passed	State Passed	HCPS Advanced	State Advanced
Grades 9-12	Earth Science	99	88	16	21
Grades 9-12	English Reading	96	94	55	46
Grades 9-12	Geography	97	86	47	31
Grades 9-12	Geometry	96	88	29	23
Grades 9-12	History	100	91	58	68
Grades 9-12	Mathematics	100	80	92	64
Grades 9-12	Science	100	88	67	60
Grades 9-12	VA & US History	98	95	55	41
Grades 9-12	World History I	97	93	45	41
Grades 9-12	World History II	95	92	38	36
Grades 9-12	Writing	94	92	39	34

Source: Virginia Department of Education

The division establishes target class sizes for schools to determine teacher staffing levels, but makes exceptions to these levels based on the individual needs of the schools. The division has prided itself in maintaining smaller class sizes, but in recent years the pupil-teacher ratio has increased because of budgetary constraints. Compared to its peers, HCPS has been able to support lower pupil-teacher ratios at both the elementary and secondary levels. Table 2.2 presents this comparative analysis based on data from the 2008-09 school year.

Table 2.2. Comparative pupil-teacher ratios, 2008-09

School Division	Total Teachers per 1000 Students	Ratio of Pupils per Classroom Teaching Position Grades K-7	Ratio of Pupils per Classroom Teaching Position Grades 8-12
Spotsylvania	77.24	13	13
Stafford	74.03	16	11
Roanoke County	86.19	15	9
York County	71.22	14.2	13.9
Peer Division Average	**77.17**	**14.55**	**11.73**
Hanover	90.39	12	10

Source: State Superintendent's Annual Report, 2008-09

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Table 2.3 presents HCPS pupil-teacher ratios by school for the 2008-09 and 2010-11 school years. Only one school, Kersey Creek Elementary School, had a lower pupil-teacher ratio in 2010-11 than in 2008-09.

Table 2.3. Pupil-teacher ratio by school, 2008-09 and 2010-11

School	2008-09	2010-11	Increase (Decrease)
Battlefield Park Elementary	20.5	21.1	0.6
Beaverdam Elementary	19.4	19.8	0.4
Cold Harbor Elementary	21.2	22.6	1.4
Elmont Elementary	18.6	20.7	2.1
Henry Clay Elementary	15.4	16.6	1.2
John Gandy Elementary	14.2	16.6	2.4
Mechanicsville Elementary	15.9	17.6	1.7
Pearson's Corner Elementary	20.9	21.1	0.2
Rural Point Elementary	21.8	22.9	1.1
South Anna Elementary	20.1	21.5	1.4
Washington Henry Elementary	20.2	22.2	2.0
Cool Spring Elementary	21.6	22.8	1.2
Pole Green Elementary	20.4	22.0	1.6
Kersey Creek Elementary	22.0	21.9	(0.1)
Laurel Meadow Elementary	21.1	22.3	0.6
Chickahominy Middle	18.5	20.1	1.6
Liberty Middle	17.6	19.2	1.6
Stonewall Jackson Middle	17.8	19.7	1.9
Oak Knoll Middle	18.2	20.0	1.8
Atlee High	17.8	18.6	0.8
Lee Davis High	17.8	18.4	0.6
Patrick Henry High	16.9	17.5	0.6

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School	2008-09	2010-11	Increase (Decrease)
Hanover High	14.6	15.3	0.7

Source: HCPS' operating budget, 2010-11

Note: Secondary ratios include non-base teaching positions for programs such as career and technology education and international baccalaureate programs.

Table 2.4 provides peer comparisons for other types of instructional staff. HCPS has fewer school administrators, teacher aides, counselors and librarians relative to the average of its peers.

Table 2.4. Peer comparisons of selected school staff levels, 2008-09

School Division	End-Of-Year Average Daily Membership (Count)	Principals/Assistant Principals Per 1000 Students	Teacher Aides Per 1000 Students	Guidance Counselors/ Librarians Per 1000 Students
Spotsylvania	23,730	2.87	12.77	4.39
Stafford	26,762	3.26	16.98	3.93
Roanoke County	14,782	3.89	18.43	5.74
York County	12,624	3.64	21.62	4.18
Peer Division Average	**19,475**	**3.42**	**17.45**	**4.56**
Hanover	18,854	3.39	16.34	4.49

Source: State Superintendent's Annual Report, 2008-09

This chapter provides commendations and recommendations related to the deployment of instructional resources and the factors that affect this deployment. The scope of this chapter does not include a review of the quality of instructional programs or their impact on student achievement. Four aspects of educational service delivery were assessed during this project:

A. Organization and Management
B. School Administration and Decision Making
C. Curriculum Policies and Management
D. Special Programs

Two commendations are made in this chapter:

▪ School automation tools for substitute management and calling parents on attendance matters are used by HCPS schools. These tools significantly increase the efficiency of work at the school offices and reduce the demands on clerical time.

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- HCPS is preparing to implement an automated system for tracking special education student data. This system, once implemented, will substantially reduce the amount of effort and paper needed to support the extensive reporting and documentation requirements for students with disabilities.

Table 2.5 provides a summary of education service delivery recommendations and resulting fiscal impacts over the next five years.

Table 2.5. Fiscal impact of recommendations

Recommendation	Priority	One-Time Costs/ Savings	2011-12	2012-13	2013-14	2014-15	2015-16	Total Fiscal Impact
Organization and Management								
2-1. Reduce span of control for instructional leadership	Medium	$0	$0	($75,000)	($75,000)	($75,000)	($75,000)	**(300,000)**
School Administration and Decision-Making								
2-2. Develop site-based decision-making framework	High	$0	$ 0	$ 0	$ 0	$ 0	$ 0	**$ 0**
2-3. Re-engineer activities associated with certain teacher duty periods	Medium	($250,000)	($250,000)	$440,000	$1,155,000	$1,155,000	$1,155,000	**$3,405,000**
2-4. Reduce school copying costs	Medium	$0	$152,125	$304,250	$304,250	$304,250	$304,250	**$ 1,369,125**
Curriculum Policies and Management								
2-5. Expand scope and use of data warehouse	Low	$0	$ 0	$ 0	$ 0	$ 0	$ 0	**$ 0**
Special Programs								
2-6. Implement Response to Intervention district-wide	High	$0	($500,000)	($500,000)	$ 0	$ 0	$ 0	**($1,000,000)**

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Recommendation	Priority	One-Time Costs/ Savings	2011-12	2012-13	2013-14	2014-15	2015-16	Total Fiscal Impact
2-7. Develop long range plan and delivery model for special education	Medium	$0	$ 0	$ 0	$ 0	$ 0	$ 0	**$ 0**
Net Fiscal Impact		($250,000)	($597,875)	$169,250	$1,384,250	$1,384,250	$1,384,250	$3,474,125

Note: Costs are negative. Savings are positive.

A. Organization and Management

Recommendation 2-1: Reduce span of control for instructional leadership.

As described in chapter one, an effective organization structure should logically align functions, have reasonable spans of control, and support accountability for performance. A span of control is the number of direct reports to a supervisory position.

HCPS instructional programs are organized under the assistant superintendent of instructional leadership. This organization structure is presented in Figure 2.1.

Figure 2.1. Organization structure – instructional leadership
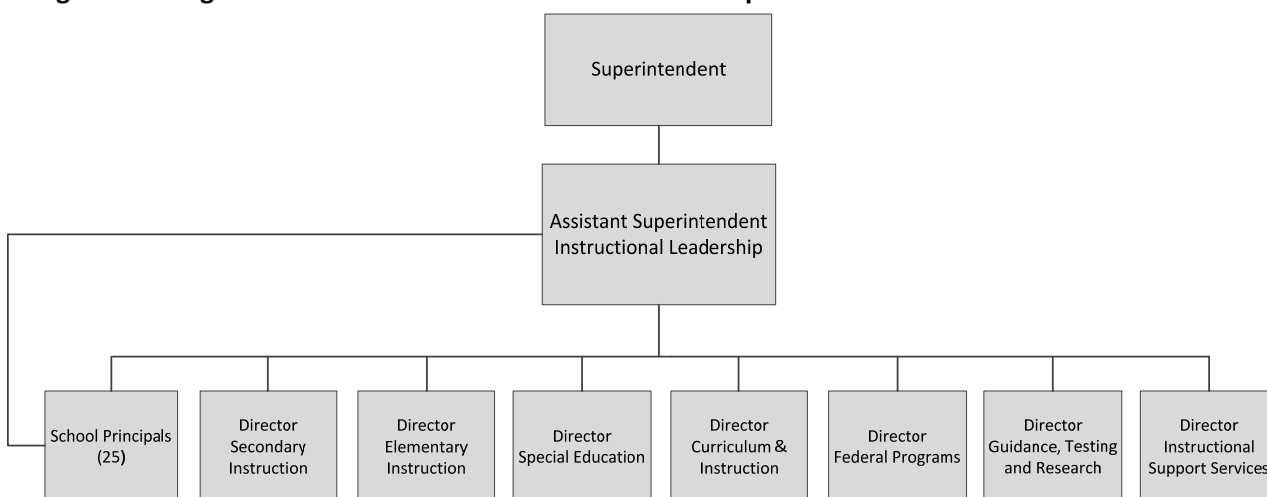
Source: HCPS, fall 2010

Reporting to the assistant superintendent are seven positions/departments and 25 school principals, or a total of 32 direct reports. School principals have direct access to the superintendent, but the assistant superintendent of instructional leadership completes the personnel evaluation for each principal.

A previous organization structure had separate middle school and high school director positions and curriculum management was executed through the elementary, middle school and high school reporting units. An organizational change was made to separate curriculum and

instruction under a separate director and combine middle and high school directors into a secondary school reporting unit (now secondary instruction). This reorganization was an effective change in that curriculum development and instructional support are better coordinated and aligned under a single reporting unit. Middle schools and high schools also have similar support needs, and the number of secondary schools in HCPS – 10, including the alternative school and the vocational school – are now supported by one director position and supporting staff. However, this reorganization did not relieve the span of control for the assistant superintendent of instructional leadership. The current organization structure implicitly reflects a highly decentralized decision-making framework and culture. The decision-making framework is discussed in more detail in section B – School Administration and Decision-Making - of this chapter. Any instructional organizational changes made by HCPS should be done in conjunction with – and consistent with – changes made in the decision-making framework. In the context of the recommendation in this report to develop a site-based decision-making framework, HCPS should consider reducing the span of control for the assistant superintendent of instructional leadership. This would require some mechanism to have principals report to a position other than the assistant superintendent.

Several options are available for reducing span of control, and each has strengths and weaknesses including:

1. Upgrade the assistant superintendent of instructional leadership to a chief academic officer (reporting directly to the superintendent) and upgrade elementary and secondary director positions to assistant superintendents. This maintains the current reporting level of principal (reporting to an assistant superintendent) and distinguishes the academic leadership as the second most important position in the division.

2. Upgrade elementary and secondary director positions to executive director positions and have principals report directly to them. This option could be perceived as pushing principals down the organization chart by having them report to a lower position.

3. Create a new assistant superintendent position for overseeing schools. This approach would separate instructional leadership from school leadership, and for that reason alone is not a recommended option. This change also adds a separate administrative position, which would be more expensive than upgrading positions.

In the context of a separate recommendation in this chapter to implement a site-based decision-making framework, the first option above is recommended for HCPS. Upgrading the assistant superintendent of instructional leadership position to a chief academic officer acknowledges several truths:

- Instruction is the single most important function in any school system, including HCPS; and

- The vast majority of HCPS expenditures and staff currently fall under this function.

This organizational change, presented in Figure 2.2, would allow the director positions over the schools to be upgraded to assistant superintendent positions, and these positions would oversee the schools and complete the personnel evaluations for principals. Principals could still have an indirect reporting relationship to both the superintendent and chief academic officer, but the majority of oversight responsibilities would be with the new assistant superintendent positions. The superintendent should decide whether to upgrade the current staff in these positions, or open the positions to other applicants. Since the timing of this change should coincide with the implementation of the site-based decision-making framework, the first year of implementation is assumed to be 2012-13.

Figure 2.2. Proposed organization structure – instructional leadership
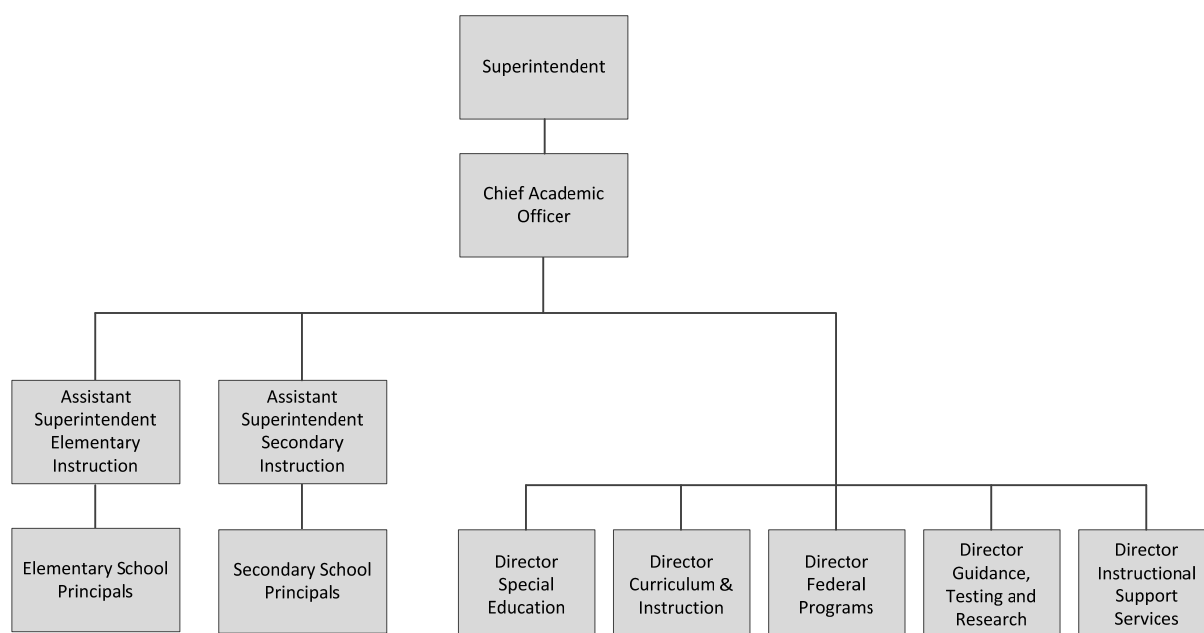
Source: Gibson Consulting Group, Inc.

FISCAL IMPACT

The fiscal impact of this recommendation is not expected to exceed $75,000 per year, based on the upgrade of three positions. The HCPS human resources department and superintendent should evaluate the upgrade cost of each position in the context of other positions in the organization.

Recommendation 2-1	One-Time Costs/ Savings	2011-12	2012-13	2013-14	2014-15	2015-16
Position upgrades	$0	$0	($75,000)	($75,000)	($75,000)	($75,000)

Note: Costs are negative. Savings are positive.

B. School Administration and Decision-Making

Principals are responsible for student learning and performance, instructional leadership and supervision, coordination of staff development, and community and overall stakeholder involvement and support, among many other functions. HCPS operates 25 schools, each under the leadership of a full-time school principal. The Virginia Standards of Quality (SOQ) provide minimum staffing requirements for school administrative and other school-based staff. The SOQs prescribe a minimum of one principal per school, except in the case where elementary enrollment is less than 300 students, in which case one half-time principal is suggested. HCPS has only two schools that have enrollment less than 300 students, Henry Clay and John Gandy Elementary Schools, and both are considered higher-need schools. These schools have lower pupil-teacher ratios than other elementary schools (15.1:1 versus 20:1 to 21:1 at most elementary schools in the division), and have as many teachers as a 370-student elementary school.

The division employs one assistant principal at each elementary school, two at each middle school, and three at each high school. The alternative school and trades and technology school each has a half-time assistant principal. HCPS staffing levels easily meet the minimum requirements of the SOQs. For elementary schools, the SOQs do not prescribe an assistant principal until the school reaches enrollment of 600 students, at which point a half-time assistant principal is suggested. At 900 students, an elementary school is prescribed a minimum of one assistant principal. For middle schools and high schools, one full-time assistant principal is prescribed for each 600 students. HCPS is closer to the SOQ minimums in secondary schools than in elementary schools, as each elementary school has one assistant principal, but only four schools have more than 600 students and none have more than 900 students.

Commendation: Schools use automated technologies to increase operational efficiency.

HCPS employs technologies that support more efficient operations at schools. The division uses a software tool for substitute management (Aesop) that allows teachers and substitutes to call in or log in to the system to identify and fill needs. The system automatically assigns a substitute to fill staffing needs. This technology is much more efficient than previously used manual systems that required administrative staff at the schools to take calls from teachers needing substitutes and making calls to substitutes to fill them.

A second software product, an auto-dialer, automatically calls parents and leaves a recorded message that their student is not at school. This informs parents of student absences without a staff person having to communicate directly with parents. This system interfaces with the division's attendance system so that absences can be automatically transferred to the auto-dialer.

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These two software products help reduce the demands for administrative and support staff work at the schools.

Recommendation 2-2: Develop site-based decision-making framework.

HCPS currently does not have a site-based decision-making framework or any document that defines decision authority between the central office and the schools. As a result, decision authority is not consistently applied. Job descriptions for principals and the assistant superintendent of instructional leadership provide little guidance on decision authority, focusing instead on responsibilities and duties. This is not uncommon.

For some decisions, such as curriculum decisions and computers, there is universal agreement as to the decision authority at HCPS. In other areas such as scheduling and human resource decisions, the decision authority was not clearly understood, or the understanding varied among schools. With respect to textbook decisions, which are made by division administration, some principals reported that schools were not instructed to use the textbooks, but that they were available for use.

Some decisions need to be made or guided centrally in order to provide consistent application and efficient operations at the schools and division administration. Other decisions, such as differentiation of instruction for individual students, can and should be made at the school level. Documentation of a single decision-making framework will help ensure that all principals and division administrators understand the ground rules for decision making. Adopting a decision-making framework will ensure its consistent use by all positions involved in decision-making. At a minimum, decisions should be identified in the following four categories:

1. **Site-based decisions not requiring division administration approval**. Decisions that can be made or approved independently by principals or their designees without intervention or approval required of the division administration. These decisions might include teaching strategies used, certain disciplinary actions, and assignments of special projects to staff.

2. **Site-based selection from a list of district provided options**. Examples of selection lists might include computer and instructional software purchases. Schools can be given choices of computer brands and software as long as they meet minimum specifications established by the division administration technology function. Making purchases not on the approved list could result in the inability of the technology function to effectively support hardware or software. Selecting from a list provides decision-making flexibility within a framework that helps ensure district-wide efficiency and effectiveness.

3. **Site-based decisions requiring division administration approval**. Certain decisions, such as hiring or terminating school staff, should require the approval of the division administration, as the human resources department should be involved in these decisions to ensure compliance with state and federal laws and district policy.

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4. **Division administration decisions**. There are certain decisions that should be made by division administration and enforced at all schools. A single standardized curriculum and the school bell schedule are examples of decisions that should be established, or standardized, by division administration. In making these decisions, however, division administration should solicit input from schools to ensure that decisions make sense for the schools as well as the division. Obtaining stakeholder input in the decision-making process is discussed later in this section.

In developing a site-based decision-making framework, the authority – using the four options above – should be defined for the types of decisions as shown in Table 2.6.

Table 2.6. Site-based decision-making framework – recommended template

Decision	(a) Principal Decision	(b) Principal Choice	(c) Division Approval	(d) Division Decision
Curriculum / curriculum guides				
Course offerings (secondary)				
School calendar				
School bell schedule				
Class size				
Bus routes				
Cafeteria schedule				
Authority over custodians and how they spend their time				
Authority over food service workers and how they spend their time				
Work schedules for any categories of staff				
Number of work days per year for any categories of staff				
Block scheduling (secondary)				
Terminating school staff				
Establishing staffing needs				
Establishing non-staff budget needs				
Ability to re-allocate instructional and/or non-instructional staff to meet needs identified by school				
Benchmark testing (if applicable)				
School facility renovations				
Student discipline – code of conduct				
Student activity funds – software /				

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Decision	(a) Principal Decision	(b) Principal Choice	(c) Division Approval	(d) Division Decision
processes				
Class rank determination / computation				
Identification of professional development needs				
Purchasing decisions as they relate to teachers' or principals' authority to select vendors, versus using the division administration purchasing department or only pre-approved vendors				
Computers / servers				
Instructional software purchases				
Hiring school staff				

Source: Gibson Consulting Group, Inc.

In implementing this recommendation, division administration should first conduct a brief online staff survey to gauge perceptions of decision-making authority based on the list of decisions included in Table 2.6, and any additional decision areas desired by division management. A committee of eight principals (four elementary and four secondary) and instructional division directors should be convened to review the survey results and develop the decision-making framework.

FISCAL IMPACT

The division should not need to use outside resources to implement this recommendation. Consequently, there is no direct fiscal impact. Approximately 16 school and division administrators will need to dedicate approximately 10 hours each to the development of the framework.

Recommendation 2-3: Re-engineer activities associated with certain teacher duty periods to support other more valuable, instructional needs.

Each HCPS high school teacher has an instructional planning period and a "duty" period. Counselors and school administrators may also have duty periods. There are several different types of duty periods at HCPS including:

- Monitoring common areas at the beginning and end of the school day
- Special program supervision

- Monitoring parking lots at the beginning and end of the school day and during lunch periods
- Emergency coverage

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- Bus duty
- Restroom supervision
- Hall duty
- Attendance office support
- Front office support
- Study halls
- Lunch duty

- Library duty
- Department coordination
- Detention
- School store
- Technology support
- Mentorship

Several of these duty functions, such as study halls and department coordination, have an instructional purpose, but most do not. Duty periods are common in Virginia, but the use of a certified teacher for these purposes is not an effective use of their time, particularly given that their expertise is beyond that which is required by the duties noted above.

The use of teachers and other professional staff to support office management functions distorts the administrative staffing ratios at the schools. During the review, schools were generally found to fall within industry standards for clerical staff levels, but this does not include any time incurred by professional staff in supporting those functions. Separate recommendations in this report to improve software technology and to re-engineer processes should reduce the work demands to a level where current clerical staff levels could do the work without the assistance teachers provide via duty periods. Accordingly, the timing of reducing duty periods will need to be coordinated with these other recommendations.

Some of the duty functions could be performed by lower-paid staff. Other functions, such as monitoring, could be done with fewer staff and increased video surveillance technology.

FISCAL IMPACT

To estimate the fiscal impact of this recommendation, savings from reduced use of teacher time, would be offset, in part, by other costs of lower paid staff and costs to improve video surveillance at secondary schools. The estimated one-time equipment cost is expected to be $250,000, plus ongoing annual maintenance fees and repairs of $25,000. Additional costs for lower-paid staff, recognizing that new, integrated software technologies and video technologies will reduce duty work demands, are not expected to exceed $250,000 a year, with staff changes phasing in over a two year period starting in 2012-13.

The four high schools in HCPS have approximately 400 teachers who are paid an average of $50,000 per year, or a cost of $20 million. Assuming that at least one-half of teacher duty time is unrelated to instruction, the equivalent of one-seventh of time for 200 teachers, or $1.43 million in teacher time, could be freed. This is the equivalent of 28.5 teachers. The 2012-13 school year

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will be the first year that savings can be achieved, and a first year phase-in of 50 percent is assumed.

Recommendation 2-3	One-Time Costs/ Savings	2011-12	2012-13	2013-14	2014-15	2015-16
Video surveillance equipment and ongoing maintenance	($250,000)	$0	($25,000)	($25,000)	($25,000)	($25,000)
Additional lower paid staff	$0	($250,000)	($250,000)	($250,000)	($250,000)	($250,000)
Reduction of teacher duty time	$0	$0	$715,000	$1,430,000	$1,430,000	$1,430,000
Totals	**($250,000)**	**($250,000)**	**$440,000**	**$1,155,000**	**$1,155,000**	**$1,155,000**

Note: Costs are negative. Savings are positive.

Recommendation 2-4: Reduce school copying costs.

Schools lease their copiers and are responsible for both the execution of the lease and the payment for copy services. However, all leases are reviewed by purchasing and legal services at the division level.

During one high school visit, the copier count was examined for August through December 2010, and the month of November was selected to represent an average month. (Higher volume is experienced at the beginning of the school year.) Table 2.7 presents the copy volume by department for November 2010. Table 2.7 also includes an annualized estimate of copier costs for this campus and an average cost per page that is then applied to all students in the division.

Table 2.7. One high school copier volume, November 2010

Department	Copy Volume (Pages)
English	35,612
PE and Career and Technology	37,063
Science	35,462
Social Studies	31,413
Math	38,549
Special Education	24,061
Front Office	11,011
Other	93,555
Total copy page volume	**306,726**
Annualized (x 8 months)	*2,453,808*

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Department	Copy Volume (Pages)
Student enrollment	*1,551*
Copy pages per student	*1,582*
Copy pages per student per day (280)	*5.65*
Average cost per page	*$0.05*
Total cost per student (one HS)	***$79***
Total cost per year (19,231 students)	**$1,521,250**

Source: HCPS, fall 2010

During November 2010, one high school campus had a copy volume of 306,726 pages. Annualized, the total page count is estimated to be 2,453,808 pages for one campus. Based on the calculations presented in Table 2.7, print costs were estimated to be $79 per student at one high school. If this cost is applied to the fall 2010 student enrollment at HCPS, the annual cost of copy volume is estimated to be $1,521,250. As such, HCPS should develop limits and improve controls over the use of copiers. Page limits should be established at the school level and at the department level for secondary schools. Alternative methods of getting information, workbooks, and forms to students should also be evaluated, in addition to the expanded use of online teaching tools and smart boards.

FISCAL IMPACT

Increased controls over copy costs should be able to yield a minimum of 20 percent savings, or $304,250 per year. It is expected that one-half of this savings will be achieved in the first year.

Recommendation 2-4	One-Time Costs/ Savings	2011-12	2012-13	2013-14	2014-15	2015-16
Reduce copy costs	$0	$152,125	$304,250	$304,250	$304,250	$304,250

Note: Costs are negative. Savings are positive.

C. Curriculum Policies and Management

HCPS uses a curriculum that is driven by the Virginia SOL. The division's curriculum and instruction department is responsible for maintaining and updating the curriculum, monitoring classroom instruction, analyzing student achievement data, providing professional development and coaching to teachers, and other direct services to schools.

Recommendation 2-5: Expand scope and use of data warehouse.

The division originally created a data warehouse using *Business Objects* so administrators could track student information and achievement data over a period of time. *Business Objects* has the ability to track trends over time and disaggregate data by student subgroups. The data

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warehouse initiative has strengthened and cultivated the data driven decision-making environment within all levels of the division. However, most teachers do not have direct access to the system. As a result, campus leadership pulls data from the data warehouse and transfers the data to spreadsheets for distribution to teachers. Since not all instructional data resides in the data warehouse, staff who prepare these spreadsheets for teachers pull data from different source systems to ensure that teachers have the most current and comprehensive instructional data available. This time consuming process could be eliminated if division teachers had direct access to *Business Objects*. Allowing all HCPS teachers to access the data warehouse will enable the division to get the most value of their data warehouse investment.

In addition to giving all teachers user access to the data warehouse, the division should add ROS (Reports Online System) benchmark test data, Student Reading Initiative (SRI), Read 180 and other initiative and intervention data to the data warehouse. Including all benchmarking, initiative, and intervention data in the data warehouse would significantly reduce the time campus leaders spend compiling spreadsheets for teachers from disparate data sources.

At the time of this review, all curriculum and instruction staff at the central office, school principals and assistant principals, the majority of counselors, and senior and lead teachers had access to the data warehouse. The data warehouse currently includes student demographic data, attendance, discipline, grades, as well as state and standardized testing data (including SOL, ACT, SAT, PSAT, and PALS).

FISCAL IMPACT

Since the division pays for the data warehouse reporting tool license based on the computer processor and not the number of users, adding teachers as users to the data warehouse will not require any significant licensing investment for the division. Additional efforts by current HCPS staff will be needed to support approximately 100 hours of additional development time and four to eight hours of training time per teacher. Out-of-pocket costs should not need to be incurred.

D. Special Programs

This section provides a review of the HCPS special education program. Gifted and talented (GT) programs and programs for limited English proficient (LEP) students were included as part of this review. HCPS spends a small percentage of its budget on GT and LEP programs. The division's LEP population is 119 students, or less than one percent of total enrollment. The division's GT program is also a small program ($1.7 million operating expenditures per year) and in recent years has migrated from a solely pull-out model (GT students served during the regular school day in a separate classroom) to a more collaborative model whereby services are provided in the regular classroom with a GT specialist providing support to teachers on a rotating basis. As such, there are no commendations or recommendations related to these two special program areas.

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The HCPS special education program serves 2,548 students through a wide range of delivery models and an annual operating budget of $25 million. Two major federal statutes that govern special education, *Individuals with Disabilities Education Act* or *IDEA* (revised in 2004) and *No Child Left Behind* or *NCLB* (2002) ushered in a new era of accountability and enhanced the monitoring of progress by districts and individual campuses in a wide variety of areas including the composition of special education populations and the testing of disabled students along with their non-disabled peers. Many states and school systems, including HCPS, responded to these new mandates by making fundamental changes in the processes associated with special education in areas such as student assessments, referrals and methods of instruction.

Driven primarily by the federal legislation, Virginia monitors the performance of special education programs through an annual review of division programs against 14 indicators of performance. During 2008-09, HCPS' 100 percent SOL test participation rate exceeded the state target of 95 percent. For SOL proficiency, the program was two to three percentage points less than the state targets for English/reading and mathematics:

- **English/reading:** HCPS – 79 percent   State target – 81 percent

- **Mathematics:** HCPS – 76 percent   State target – 79 percent

Commendation: HCPS is implementing new software to streamline special education administration.

During school site visits it was learned that manual and paper-intensive processes are used to manage student information in special education. The documentation requirements for students with special needs are intensive, as each student requires an individualized education program (IEP), which must be developed or updated annually through a very structured process. IEP's provide specific information about each student's needs, and prescribes – through a collaborative effort with special education teachers, diagnosticians, school administrators and other specialists – programs and services that will meet those needs in the least restrictive environment (LRE) as required by federal law.

During fall 2010, HCPS initiated a request for proposals to purchase software to alleviate the burden of related paperwork. Before the start of the 2011-12 school year, a new system will have been selected and implemented. Once fully implemented, this software will significantly reduce the work demands for school-based and central office staff.

Recommendation 2-6: Implement response to intervention division-wide.

Response to intervention (RtI) is a method of academic intervention used in the United States which is designed to provide early, effective assistance to any student who is having difficulty learning. RtI was also designed to function as one part of an information-based approach of identifying learning disabilities. This method can be used at the group and individual level. RtI

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seeks to prevent academic failure through early intervention, frequent progress monitoring, and increasingly intensive research-based instructional interventions for students who continue to have difficulty. Students who do not show a response to effective interventions are more likely to be in need of special education services. The 2004 reauthorization of IDEA makes mention of RtI only as an optional method in the process of identifying learning disabled (LD) students; however, most states and school systems are adopting RtI as a best practice.

HCPS began implementing RtI in 2009-10 through a pilot program at four elementary schools. The program involved the use of five teacher/trainers at each campus. These trainers worked with regular education teachers on tools and techniques to identify and meet student needs. Based on interviews during school site visits, the implementation of this program to date is considered very successful by school administrators, and referrals to special education have already been reduced in some instances.

Continued implementation of RtI was halted because of budget constraints in 2010-11. The program is expensive to implement because of the intensive training resources that are needed. However, the potential return on of this investment through a smaller special education population far outweighs the short-term costs. While previous early intervention initiatives reduced the special education population from 17.5 percent to less than 14 percent over the past five years, the division's special education student population is still far above the national average of nine percent.

FISCAL IMPACT

The division should complete its implementation of RtI division-wide over the next two years. Division leadership has estimated a cost of $1 million to complete the implementation based on the cost of the pilot program. Over time it is expected that the division's investment in RtI will be recovered through lower referrals to special education, and resulting lower costs in special education. However these potential savings are too speculative at this point to include in the fiscal impact.

Recommendation 2-6	One-Time Costs/ Savings	2011-12	2012-13	2013-14	2014-15	2015-16
Complete implementation of RtI	$0	($500,000)	($500,000)	$0	$0	$0

Note: Costs are negative. Savings are positive.

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Recommendation 2-7: Develop long-range plan and delivery model for special education.

HCPS has an extraordinarily large autism population relative to the national incidence of this disability. According to recent research conducted by the Cold Spring Harbor Laboratory[1], autism occurs in one of every 150 live births, or a 0.67 percent incidence rate. HCPS serves 233 autistic students, representing 1.28 percent of its student body and over nine percent of its special education population. This level is almost twice the national incidence rate for autism.

Programs for autistic students are resource intensive, requiring lower pupil-teacher ratios and additional support services in many instances. If the division continues to maintain or increase its autistic student population, the financial demands will become increasingly stringent. The fiscal implications of a large and growing autistic population need to be projected to ensure that student needs can be met. Some economies of scale may be achieved through serving a larger population, but the dispersion of students among schools and grade levels limits the ability of HCPS to run an efficient program.

The division should evaluate its current delivery models for all its special education services, including those provided for autistic students, and develop alternative models that continue to meet student needs and federal least restrictive environment (LRE) requirements. A financial forecast should be developed to determine the cost of alternative models in light of the projected special education enrollment and anticipated revenues for the program. This analysis will help the division ensure that the special education program will not be put at risk by financial constraints.

FISCAL IMPACT

The development of a long range plan and delivery model will require approximately 100 hours of planning and analysis effort by the special education and finance departments. No out-of-pocket cost should need to be incurred for the implementation of this recommendation.

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[1] http://www.pnas.org/content/104/31/12831.full, http://www.cshl.edu/

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Chapter 3 – Human Resources

Introduction

This chapter provides commendations and recommendations related to four aspects of human resources (HR) management at Hanover County Public Schools (HCPS):

A. Organization and Management
B. Policies and Procedures
C. Recruitment, Hiring, and Retention
D. Staff Development

While compensation and classification systems were included as part of the review of HR, no major commendations, findings, or recommendations resulted from the review.

HCPS expends more per pupil on instruction and administration than the average peer spends, as is illustrated in Table 3.1. When it comes to administration spending per pupil, HCPS' spending is 8.8 percent higher than the average and is the second highest of the peer schools. However, instruction spending per pupil is 1.8 percent higher than the peer average.

Table 3.1. Disbursements per pupil

School Division	Instruction Spending Per Pupil	Administration Spending Per Pupil
Spotsylvania	$7,681.35	$235.11
Stafford	$7,201.03	$267.99
Roanoke County	$7,639.03	$225.93
York County	$7,312.37	$348.76
Peer Division Average	**$7,458.45**	**$269.45**
Hanover	$7,595.69	$293.18

Source: 2008-2009 Superintendent's Annual Report

As discussed in chapter one, HCPS maintains a lower pupil-teacher ratio than most peers (see table 3.2). In grades K-7, HCPS has the lowest pupil-teacher ratio among all peers (12:1).

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Table 3.2. Teacher staffing levels

School Division	Total Teachers per 1000 Students	Ratio of Pupils per Classroom Teaching Position Grades K-7	Ratio of Pupils per Classroom Teaching Position Grades 8-12
Spotsylvania	77.24	13	13
Stafford	74.03	16	11
Roanoke County	86.19	15	9
York County	71.22	14.2	13.9
Peer Division Average	**77.17**	**14.55**	**11.73**
Hanover	90.39	12	10

Source: 2008-2009 Superintendent's Annual Report

Although the number of HCPS full-time equivalent principals/assistant principals and counselors per 1,000 students are similar to peers, the division is staffed slightly higher than most peers. However, teacher aide staffing levels at HCPS are the second lowest among peers. Staffing levels for these positions are shown in Table 3.3.

Table 3.3. Staff per 1,000 students

School Division	End-Of-Year Average Daily Membership (Count)	Principals/Assistant Principals Per 1000 Students	Teacher Aides Per 1000 Students	Guidance Counselors/ Librarians Per 1000 Students
Spotsylvania	23,730	2.87	12.77	4.39
Stafford	26,762	3.26	16.98	3.93
Roanoke County	14,782	3.89	18.43	5.74
York County	12,624	3.64	21.62	4.18
Peer Division Average	**19,475**	**3.42**	**17.45**	**4.56**
Hanover	18,854	3.68	16.34	4.49

Source: 2008-2009 Superintendent's Annual Report

HR management is an important area to examine in an organization review of this nature, as more than 75 percent of all financial resources in public education are devoted to labor expenses. As financial resources for school divisions become increasingly restricted, HR management is an area that is often looked to for change, primarily because the fiscal impact can be significant.

HR management involves recruitment, selection, hiring, development, compensation (salary and benefits), retention, evaluation, and promotion of personnel within the division, and compliance with equal employment opportunity statutes and other federal and state laws.

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Several significant commendations resulting from the review of HCPS are made in this chapter:

- The HR department provides exceptional customer service to division employees;

- The HR and payroll departments effectively collaborate to ensure that employees are paid correctly;

- HCPS has achieved a 100 percent return rate for performance evaluations; and

- The HR department utilizes temporary one-year contracts to reduce the number of layoffs that will be necessary as funding is lost.

Table 3.4 provides a summary of HR recommendations and resulting fiscal impacts over the next five years.

Table 3.4. Fiscal impact of recommendations

Recommendation	Priority	One-Time Costs/ Savings	2011-12	2012-13	2013-14	2014-15	2015-16	Total Fiscal Impact
Organization and Management								
3-1. HR organization	Low	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	**$ 0**
Policies and Procedures								
3-2. Streamline and document HR processes	High	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	**$ 0**
3-3. Reduce spreadsheet usage	Medium	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	**$ 0**
3-4. Expand Aesop usage	Medium	$ 0	($6,275)	($6,275)	($10,494)	($10,494)	($10,494)	**($44,032)**
Recruitment, Hiring and Retention								
3-5. Staffing strategy for retirements	High	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	**$ 0**
3-6. Automate summer school processes	Low	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	**$ 0**
Staff Development								
3-7. Increase focus on staff development for support staff	Medium	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	**$ 0**
Net Fiscal Impact		**$ 0**	**($6,275)**	**($6,275)**	**($10,494)**	**($10,494)**	**($10,494)**	**($44,032)**

Note: Costs are negative. Savings are positive.

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A. Organization and Management

The organization and management of the human resources department is an essential part of how the division effectively achieves its goals. In order to evaluate the organization and management of HCPS' HR department, interviews were conducted with all HR employees, as well as division 'customers' of HR. Customers included department leaders, principals, assistant principals and support staff. The organization and management component of the HR review focused on the HR organization as a whole, including the structure of the department, planning documents, turnover rate, and the budget.

School systems vary in how the HR department is organized, as well as which functions fall under the department's purview. HCPS' HR department includes both staff development and benefits, which sometimes reside in departments other than HR.

According to the 2009 Society for Human Resource Management (SHRM) Human Capital Benchmarking Study[1], an organization with 2,737 employees and a narrowly focused HR department (i.e., with a limited scope of responsibility) typically has 14.5 full-time-equivalents (FTEs).

HCPS currently has 15.25 FTEs; however, this includes the central office receptionist, wellness coordinator and benefits staff. Because reception, benefits and wellness are housed in the HCPS HR department, and because of the many HR programs that are administered in the HR department, such as mentoring, student teacher placement, staff recognition, tuition reimbursements and staff development, the department can be considered slightly more than narrowly focused and the additional FTE is appropriate.

The HR department at HCPS is led by an assistant superintendent. Four employees are at least partially devoted to recruiting and hiring: a director, assistant director and two coordinators. One employee is dedicated to compensation and compliance with federal and state laws, and also acts as the lead regarding issues with the internally developed software systems utilized by HR staff. This employee supervises the records and licensure functions as well. In addition, the employees who administer benefits report to the assistant superintendent of HR. The wellness coordinator, who oversees the BE WELL program, reports to the director of HR and the county. Figure 3.1 illustrates the current HCPS HR organization structure.

[1]http://www.shrm.org/Research/SurveyFindings/Articles/Documents/090620_Human_Cap_Benchmark_FULL_FNL.pdf

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Figure 3.1. HCPS HR organization structure
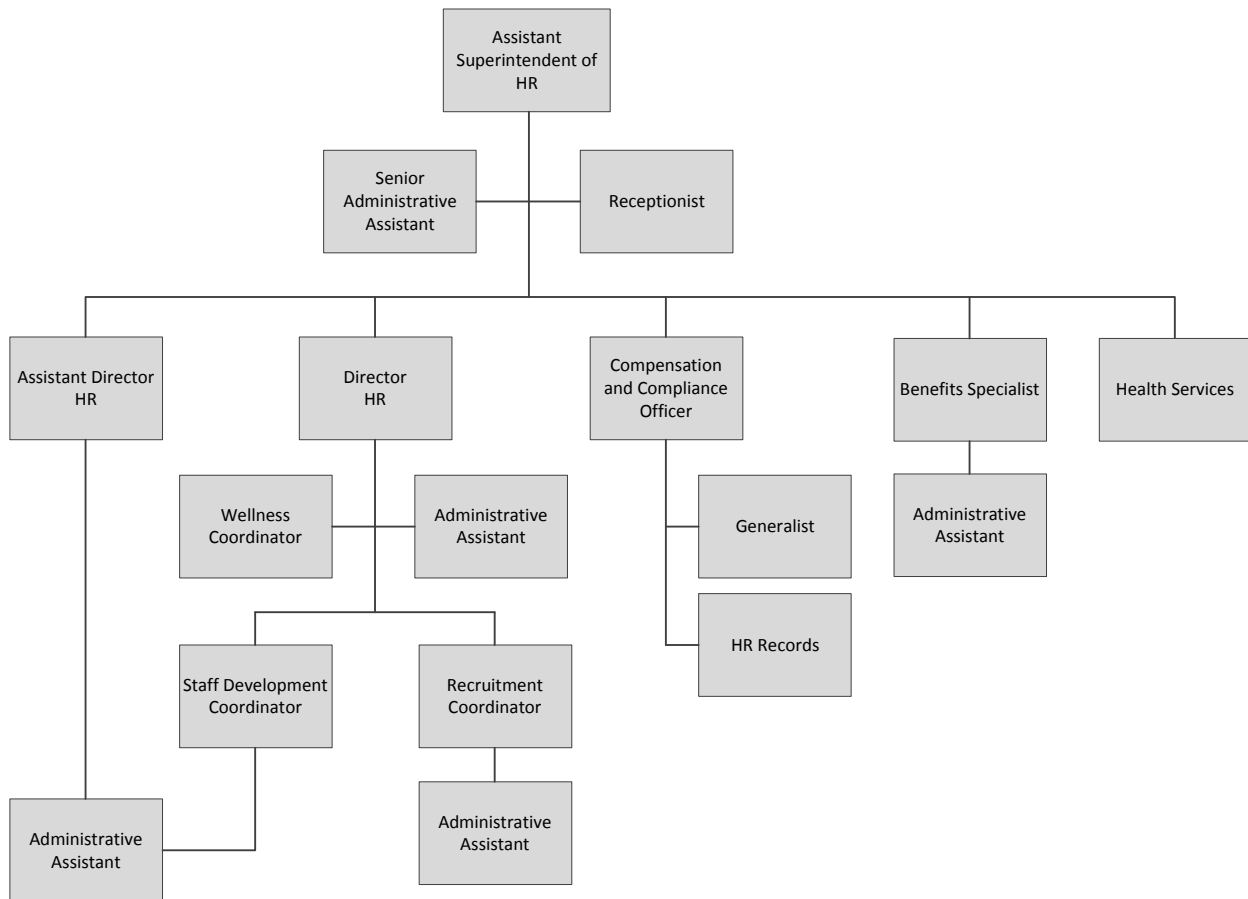
Source: HCPS HR department, fall 2010

The assistant superintendent of HR has six direct reports; an assistant director, director, compensation and compliance officer, benefits specialist, and two clerical positions – a senior administrative assistant and the receptionist for the central office. Additionally, the health services department reports to her.

Reporting directly to the director of HR is the wellness coordinator, staff development coordinator, recruitment coordinator, and an administrative assistant. There is not a reporting relationship between the director and the assistant director positions. The assistant director shares an administrative assistant with the staff development coordinator, but has no other direct reports.

Although the incumbents have other duties, the director, assistant director and staff development coordinator each have some staffing duties for various types of employees. For example, the director has overall responsibility for recruiting, and performs all recruiting tasks related to elementary teachers and administrators, as well as the technology and food services departments. The assistant director is responsible for HR policies and substitute, special education and transportation staffing. The recruitment coordinator performs the staffing functions for secondary teachers and administrators, as well as custodians. The staff development coordinator manages staff development for support staff, the tuition reimbursement program, and employee recognition programs, and is responsible for staffing office professionals, nurses, media specialists and those substitutes.

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On July 1, 2010, two positions were eliminated from HR; an HR specialist and an administrative assistant I. The eliminated HR specialist was responsible for staffing and employee relations for the transportation, technology, nursing, food services, and custodial services departments. Upon the elimination of the position, these duties were divided among the assistant superintendent of HR, the director, the assistant director, the recruitment coordinator, and the staff development coordinator. The administrative assistant I provided relief for the HCPS central office receptionist, and performed payroll processing, data entry, and filing duties. These duties were divided among the remaining administrative assistants. Currently, the HR administrative assistants cover the division's front desk daily during the central office receptionist's breaks, lunches and each afternoon after the incumbent's work hours, until the offices close.

The absorption of the specialist duties by the remaining HR professional staff has created a slight misalignment in the HR department structure. Although it is not currently negatively affecting the delivery of services to the division, the department may wish to address this.

Recommendation 3-1: Consider revising the HR department's organization structure.

In order to better align the functions and permit the assistant superintendent to focus on strategic and critical issues, the HR department organization structure should be revised, as shown in Figure 3.2. This re-alignment will:

- Reduce the span of control for the assistant superintendent of human resources;
- Align recruiting functions to report to the director of HR, as this position has overall responsibility for this area;
- Provide the senior administrative assistant with day-to-day responsibilities for coordinating the work of the SBO receptionist; and
- Permit the assistant superintendent of HR to focus on strategic issues.

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Figure 3.2. Proposed HCPS HR organization structure
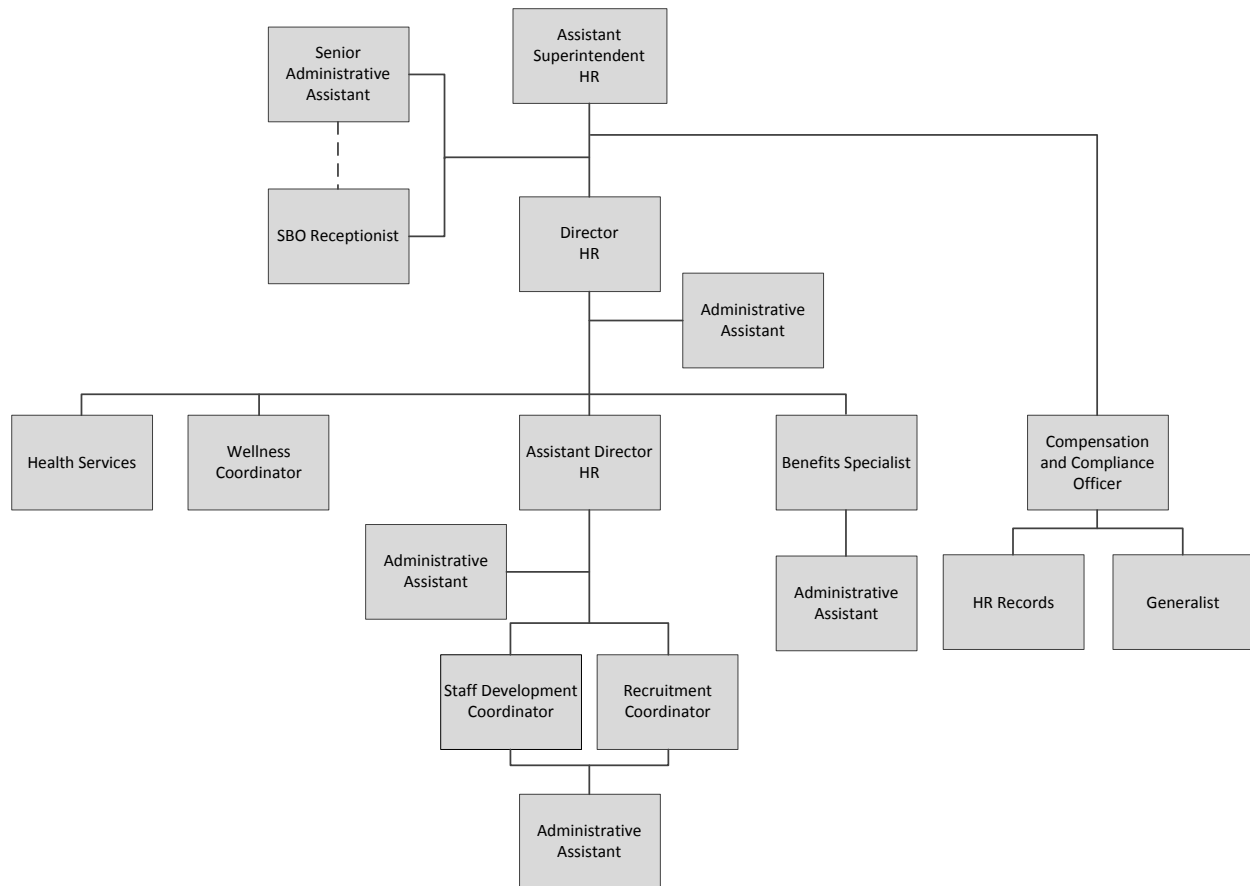
Source: Gibson Consulting Group, Inc.

The HR director should assume a broader HR role by transferring recruitment and staffing duties to the assistant director and applicable staff, and by managing the benefits staff, wellness and health services. The assistant director should assume day-to-day leadership of the staffing and recruiting functions and transfer duties related to employee relations to the director.

Because the compensation and compliance officer frequently works very closely with the assistant superintendent on significant issues related to legal compliance and division compensation, this function should continue to report directly to the assistant superintendent of HR.

Additionally, 'dotted line' supervision of the central office receptionist should be transferred to the assistant superintendent's senior administrative assistant, to allow the incumbent to coordinate breaks and other needs, as well as manage the receptionist's workload. It is also recommended that the duties relating to the receptionist's breaks be shared amongst all central office administrative assistants, rather than only the HR administrative assistants. By distributing the workload, these duties will have minimal impact on any one person.

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FISCAL IMPACT

This recommendation can be implemented by the assistant superintendent of HR, with no fiscal impact.

Commendation: The HR department provides high quality customer service to employees of the division.

Although the HR staff has been reduced since the last school year, without exception, each person interviewed from outside of the HR department – when asked to provide feedback as a customer of HR – was very complementary of the level and quality of customer service provided by the department.

Commendation: There is effective collaboration between HR and payroll.

When conducting reviews of this type in other school systems, an adversarial relationship between HR and payroll departments is commonly found. This is not the case at HCPS. These two departments work well together towards the common goal of paying employees correctly. This goal is furthered by quarterly meetings wherein the departments' staff discuss common issues, how to handle them, and generally keep the lines of communication open.

B. Policies and Procedures

Policies and procedures are a key method of communicating HCPS' expectations to employees. Additionally, they must guide management in dealing with employee issues of all types. The review of policies and procedures involved an examination of employee handbooks and HCPS' HR website, board policies related to HR, new hire forms and paperwork, and other paperwork related to employment.

HCPS' board policies related to HR are stored online and are accessible to anyone with an internet connection. In addition, most departments maintain a hard copy and each school has two hard copies: one in the library and one in the principal's office. When revisions or additions are made to these policies, the department of policy and administration provides replacement or new pages to each department and school – with a memo describing the change or addition made.

There is not wide-spread documentation of HR processes and procedures. However, some HR staff members have begun creating simple documents that outline the steps that they perform to accomplish a task, such as hiring a substitute teacher. The review team examined some of these documents during the site visit.

Although most processes within HR are not fully documented, there are some common practices for which staff can be commended.

Commendation: HCPS' performance evaluation and contracts processes result in a 100 percent return rate of performance evaluations.

The HR department oversees the completion and return of each employee's performance evaluation. Additionally, HR staff is responsible for providing employee contracts to each school leader prior to the

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end of the school year. When a contract is issued, it assures the employee that they will be employed in the following school year and that he or she does not need to find other employment over the summer. Once signed, the contract provides the principal with some confidence that he or she will not need to conduct recruiting and hiring activities for that position.

The HR department currently withholds contracts for a manager's employees until that manager conducts performance evaluations and provides the completed evaluations to the HR department. This practice has resulted in a 100 percent return rate for evaluations.

Commendation: The HR department's practice of using temporary, one-year contracts has decreased the number of lay-offs that have been necessary.

As the recent economic environment became apparent to HR leadership, it became a priority to identify those areas that may be subject to a reduction in force (RIF) and take steps to minimize the number of lay-offs that would be necessary.

One very effective strategy that was employed was issuing temporary, one-year contracts when hiring staff that may be subject to RIF. In 2009-10, 59 temporary contracts were issued and in 2010-11, 68 were issued. This practice has decreased the number of lay-offs that were necessary at HCPS.

Recommendation 3-2: Examine processes in HR in order to streamline and establish documentation for the continuity of business. [Related to Recommendation 1-2]

As stated in recommendation 1-2, HCPS has many manual, paper-intensive processes at the central office. This situation has been exacerbated by the lack of integrated software, under-used software and the need for additional software applications.

HR staff should examine each major department process to determine whether opportunities for increased efficiencies exist, then process documentation should be developed. Process documentation will allow the capture and sharing of critical organizational knowledge and can ensure the continuity of business and the transfer of knowledge should the incumbent leave the division. This recommendation applies primarily to support staff, as they typically perform transaction processing in the division. However, it may be a benefit for administrative employees to document how they perform common tasks or solve typical issues.

In order to create documentation for a process or procedure, it will be necessary to involve all actors in that process (i.e., those employees who actually perform tasks within the process) in a process mapping (or process documentation) session. It may be helpful to have a third-party from outside of the department facilitate the process mapping sessions. Key steps in documenting a process or procedure include:

1. Begin with the first step in the process.

2. Step through all subsequent steps in the process – in order. At each step in the process:

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    a. Determine if there are any decisions to be made.

    b. Determine if any sub-processes branch from that step.

3. Create a flowchart document (Gibson recommends Microsoft Visio, as it is very intuitive) showing the high-level flow of the process.

4. Expand the flowchart into a text-based document that provides additional information about each step. This is particularly relevant for transactional processes in departments such as purchasing or HR. Utilize screen-shots where beneficial.

5. Cross reference the flowchart document with the text-based detail to promote ease-of-use.

Although the Figure 3.3 is based on a school-level attendance process, these same techniques can be used for documenting HR processes. Figure 3.4 illustrates text-based detail used to support this process.

Figure 3.3. High-level flowchart for attendance process

Source: Gibson Consulting Group, Inc.
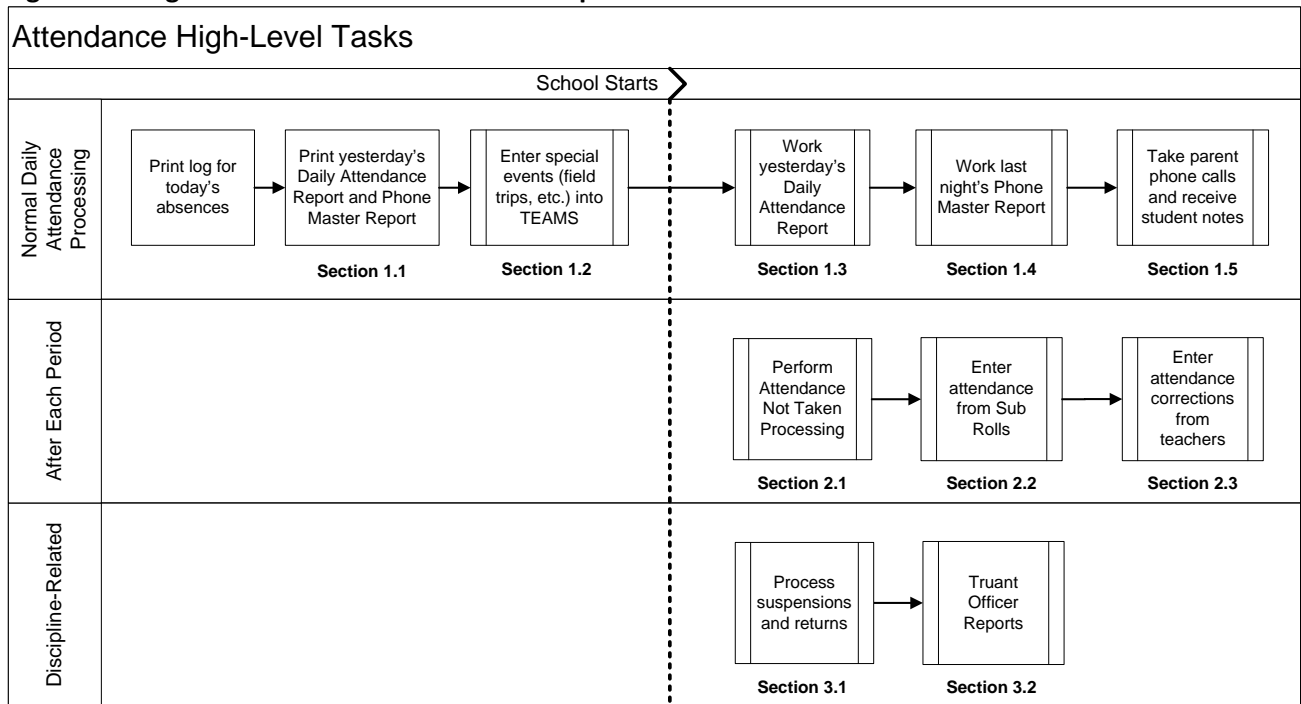
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Figure 3.4. Text-based document with detail

1.3 "Work" the Daily Reports

This section will describe how to clear the unexcused student absences from the Daily Attendance report. This is referred to as 'working the Daily Attendance Report'.

1.3.1. LOCATE THE FIRST STUDENT WITH AN UNEXCUSED ABSENCE TO ADDRESS (in the Daily Attendance Report)

1.3.2. Perform research to determine if an excuse has already been received.

Look in the appropriate daily file to see if the student turned in a note for that absence, or if their parent or guardian has called in.

- *If 'Yes', go to step 1.3.4 to update the student's record.*

1.3.3. Attempt to resolve the remaining items.
   1.3.3.1. *Check the Phone Master report to see if the parent was called.*

   1.3.3.2. *Call the student into the office and inquire about the reason for the absence.*

   1.3.3.2.1. *Ask the student for a note.*

   1.3.3.2.2. *Confirm the parent or guardian contact information.*

   ✚ *Note: If contact information has been corrected in TEAMS, it will automatically update in the Phone Master.*

   1.3.3.3. *After attempting to reconcile an absence for three days, change the student absence reason to* **No Contact**.

Source: Gibson Consulting Group, Inc.

FISCAL IMPACT

This recommendation can be accomplished with existing resources resulting in no fiscal impact to the division.

Documentation of key processes may take up to six months of part-time effort and should be initiated as soon as possible in order to have an impact prior to July 1st. It should not be necessary to augment the HR staff to carry out this recommendation. However, based on current resources available, key processes performed by those employees most likely to retire should be a priority. Although the assistant director, coordinators and administrative assistants will execute the bulk of the work, because of the risk associated with this task, high-level oversight should be assigned to the HR director or assistant superintendent.

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Recommendation 3-3: Reduce the number of spreadsheets used in the tracking of HR-related information.

During this review, at least 26 separate spreadsheets were identified that staff use in the HR department to track information. Some of the information contained in the spreadsheets is also entered into Asset (HCPS' employee tracking system), but some information is recorded only in an HR spreadsheet.

Following are examples of the types of spreadsheets that are maintained by HR support employees:

A. Benefits related

1. COBRA Tracking List
2. Medical, Dental Tracking List
3. Early and Regular Retirees Benefits List
4. Cobra Subsidy
5. Unpaid Leave
6. Budgets for Wellness Program, Flexible Spending Plan and Short-Term Disability
7. HR Department Budget

B. Human Resources related and other

1. Food Services Substitute List
2. Cafeteria Monitor Substitute List
3. Custodial Substitute List
4. Student Teacher Placement for Fall, Spring, Summer and Practicum
5. College Recruitment Log
6. Coach, Extracurricular and Leadership Stipend List
7. Transfer Request Tracking
8. Recognition List
9. Recruitment Trip Contact List
10. Job Fair Contact List
11. Summer School Staff List
12. Vacancy Tracking List
13. Tuition Reimbursement Tracking
14. Cohort Tracking
15. CPS Billing and Tracking
16. Transportation Recruitment and Hiring Tracking
17. Student Teacher Reception Tracking
18. Panel Interview Tracking List
19. Early Retiree Hours Tracking List

For example, although each spreadsheet may be used for a different purpose, duplicate demographic information is being entered into each Excel file, as well as into the Asset system. In addition to increasing the likelihood of data entry errors, this duplication of effort decreases the efficiency of the HR

department support employees. Additionally, there is not an easy way to access consolidated data for the purpose of reporting.

The following implementation steps should be executed to reduce the number of disparate spreadsheets utilized and maintained by HR staff:

- **HCPS should catalog all spreadsheets used in HR.** Review each spreadsheet that is utilized in HR to determine:

    – The purpose of each spreadsheet (i.e., what is being tracked);

    – The fields being entered;

    – Which data are being duplicated in one or more spreadsheet (e.g., employee name, ID);

    – Which spreadsheets are being maintained **IN ADDITION TO ENTERING DATA INTO A SYSTEM** because of an inability to easily extract the data out of the system of record, or because the person maintaining the spreadsheet does not have access to the data in the system of record; and

    – Which spreadsheets are being maintained **IN LIEU OF ENTERING THEM INTO A SYSTEM** because the system lacks the capability to track or report the information in a satisfactory manner.

    This task can easily be performed by an HR administrative assistant.

- **Explore system functionality and migrate data.** Conduct analysis to determine if any of the spreadsheet information can be tracked within the available administrative systems (e.g., Asset – the division's internally developed HR system; AppTrack – the internally developed applicant tracking system; Aesop Automated Substitute Placement & Absence Management software from Frontline Technologies (Aesop) – the substitute placement system; or SunGard HTE – the county's financial system) using existing functionality, user-defined fields, or by repurposing existing fields to meet needs.

    If it is determined that the information can be tracked in one of the administrative systems, it will be necessary to evaluate the ease of reporting from the system(s) in question.

    If both tracking and reporting are possible, begin planning how the spreadsheet data will be migrated into the system, as well as how HR staff will receive reports concerning this data.

    This task may require the assistance of a technology department resource, in addition to HR department system experts.

- **Request modifications to existing systems, where practical.** It is possible that there will be data that cannot be easily migrated into one of the administrative systems utilized by HR at this time. In these cases, the HR department system experts should collaborate with technology department resources to construct detailed specifications describing the system changes that would be necessary to successfully track the data. Each requested change must be evaluated to

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determine its relative importance and all requested modifications should be prioritized. Additionally, some thought must be given to how the information will be reported out of the system, as needed.

- **Consolidate remaining spreadsheets.** Any data that cannot be integrated into systems, or is a lower priority, should be consolidated into an Access database so that commonly entered data items can be entered once – to reduce data entry error and duplication of effort – and linked to multiple tables.

  If the HR staff does not possess the necessary Access expertise, a less desirable option would be to consolidate into fewer spreadsheets to the extent possible in order to reduce the duplicate entry of data. Some strategies that can be helpful in reducing data entry error in Excel include:

  - **Data Validation.** This is a standard functionality in Excel, whereby dropdown lists can be created to reduce the amount of "freeform" data entry. This can be a very effective way to decrease errors. Additionally, this same feature can be used to highlight cells which contain values that are out of an expected range for that data point, or even block the entry of such values.

  - **Formulas.** For those fields requiring calculations, utilize Excel formulas functionality to automate those calculations, and thus reduce the likelihood of errors.

FISCAL IMPACT

This recommendation can be accomplished using internal HR department staff and should be undertaken within three months in order to supply administrative staff members with more time for strategic HR activities.

The cataloging of individual spreadsheets by the various spreadsheet owners should take no more than one day for each person. However, the HR records specialist or compensation and compliance officer may need several days to clarify and finalize the listing of spreadsheets and data included in them.

The systems analysis, identification and migration of data that can be entered into a system with no modification, and prioritization of requested modifications may take several months of part-time effort by the HR records specialist or the compensation and compliance officer, given the current workloads of these staff.

The actual programming of all modifications by the technology department senior programmer analyst and acceptance testing by the HR records specialist and/or the administrative assistants may take up to six months of intermittent activity, so it is important that the highest priority be given to those programming items that will affect the most staff or spreadsheets.

The HR records specialist or the compensation and compliance officer can assist the HR administrative assistants with consolidating any remaining spreadsheet data into a shared Access database. This task may take several weeks of part-time effort.

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There is no fiscal impact related to implementing this recommendation.

Note: *Should HCPS determine that the Asset system be replaced by an integrated enterprise resource planning (ERP) system, then the integration of these data into Asset will not be necessary.* [See Chapter 5 – Financial Management]

Recommendation 3-4: As funding permits, expand the usage of Aesop for all employees to efficiently track leave and substitutes.

Currently, teachers, senior teachers, Junior Reserve Officers' Training Corps (JROTC) instructors/assistants and instructional aides (a total of 1,763 employees) utilize Aesop to call in absences, and locate and schedule substitutes. For all other types of employees, the absence reporting and substitute placement processes are handled manually. At the time of this review, additional employee groups, totaling 500 division employees, had not been added to the Aesop system due to cost considerations. This includes 179 employees needing substitutes when they are absent and 321 employees not needing substitutes.

The manual absence reporting process requires the routing of paper forms to multiple HCPS departments, where duplicative data are entered into multiple systems. For example, in the case of an absence, nurses and food service managers must contact their own substitute and submit a paper leave request to their supervisor. This paper is routed to the school or department secretary, where it is entered into the CIMS leave system. Next, the payroll department must extract the leave from CIMS and hand-enter it in the SunGard HTE payroll system.

Incorporating remaining employees into Aesop for leave tracking and substitute placement would allow the data to be automatically transferred from Aesop to SunGard HTE and reduce the amount of time that payroll and finance employees must devote to the duplicative entry of this data into multiple systems.

The monthly cost to add employees to the Aesop system depends on whether the employee will require substitute placement, or leave tracking only. The related monthly costs for each employee who is entered into Aesop are:

- Employees needing subs: $1.05 per month
- Employees not needing subs: 40 cents per month

Based on these figures, the estimated monthly cost to add the remaining employees to Aesop are shown in Table 3.5.

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Table 3.5. Employees types not currently included in Aesop

Employee Group	Headcount	Aesop Monthly Cost
Need Substitutes		
Auto driver	20	$21.00
Bus drivers	242	$254.10
Cafeteria monitor	17	$17.85
Custodial	117	$122.85
Food service workers	139	$145.95
Lead teacher	10	$10.50
School nurse	25	$26.25
School-based clerical/secretarial staff	90	$94.50
Senior teacher	6	$6.30
Sub Total	*666*	*$699.30*
Do Not Need Substitutes		
Assistant principals, nonteaching	36	$14.40
Central clerical staff	37	$14.80
Counselors	49	$19.60
Food service mangers	27	$10.80
Leadership	31	$12.40
Librarians/audiovisual staff	29	$11.60
Other professional staff	99	$39.60
Principals	25	$10.00
Psychological	10	$4.00
Service workers	36	$14.40
Skilled craft	23	$9.20
Technicians	36	$14.40
Sub Total	*438*	*$175.20*
TOTAL Monthly Cost	**1,104**	**$874.50**

Source: HCPS HR department, February 2011

The greatest impact in terms of reducing the division's efforts in placing substitutes can be realized by incorporating bus drivers, custodians, and food services workers into Aesop – at a cost of $522.90 per month.

As funding allows, HCPS should add employee groups to Aesop until all employees utilize the system for leave requests and substitute placement.

FISCAL IMPACT

This recommendation can be implemented by the HR generalist that manages the Aesop system, with the help of Aesop support services, and should not take more than two weeks of part-time effort for each employee group to be added.

The resulting fiscal impact for adding only the three groups mentioned above would total $6,275 annually. Adding the remaining employees in subsequent years would raise the fiscal impact to $10,494 (projected to being during the 2013-14 school year in the following fiscal impact chart).

Recommendation 3-4	One-Time Costs/ Savings	2011-12	2012-13	2013-14	2014-15	2015-16
Add employee groups to Aesop	$0	($6,275)	($6,275)	($10,494)	($10,494)	($10,494)

Note: Costs are negative. Savings are positive.

C. Recruitment, Hiring, and Retention

The recruitment, hiring and retention of qualified employees are the foundation of human resources management and were examined through interviews with each HR coordinator, a department manager focus group, and a principal focus group. Additionally, written documentation related to these activities was reviewed and employee turnover analysis was performed.

Because most positions at HCPS are instructional or student-related, the composition of the student membership drives the types of positions that must be staffed each school year. Table 3.6 shows an overview of student membership in 2008-09.

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Table 3.6. Overview

School Division	End-of-Year Membership Count	Student Population per 1000 General Population (Ratio)*	Percentage Students with Disabilities	Percentage Economically Disadvantaged	Total Number of Schools**
Spotsylvania	23,538	194.5	11.8%	27.1%	29
Stafford	26,219	211.2	8.9%	21.4%	30
Roanoke County	14,666	161.1	14.9%	21.9%	26
York County	12,651	206.9	9.4%	18.2%	19
Peer Division Average	**19,269**	**193.4**	**11.3%**	**22.2%**	**26**
Hanover	18,619	186.3	13.7%	16.6%	23

Source: 2008-2009 Superintendent's Annual Report, Virginia DOE 2009 enrollment reports

*General population based on 2009 census estimates

**Number of schools from Virginia DOE school report cards

HCPS has the second highest percentage of students with disabilities among its peers. This may necessitate additional emphasis (and subsequently time) on special education recruitment, hiring and retention.

Recruitment and Hiring

Four employees within HR perform recruiting duties for HCPS. Three of the four also provide additional services to the division. The breakdown for staffing responsibilities and other duties are shown in Table 3.7.

Table 3.7. HR recruiter duties

HR Position	Staffing Responsibilities	Other Duties
Director	Elementary teachers and administrators, technology, food services	Overall recruiting coordinator
Assistant director	Special education, transportation, substitutes	Employee relations, HR policies and procedures
Coordinator	Secondary teachers and administrators, custodians	None
Coordinator	Office professionals, nurses, library/media specialists, nurse substitutes	Support staff development, staff recognition, mentoring program, evaluations, tuition reimbursements, national board certifications

Source: HCPS, fall 2010

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Most of the division's recruitment activities occur between mid-September and late May. During school year 2005-06, HR staff attended approximately 33 recruiting events, including job fairs, education expos, and campus visits. These recruiting events were both in and out of state.

In 2009-10 and 2010-11, recruiting trips decreased significantly, with out-of-state trips being eliminated completely. Instead, local efforts – such as job fairs shared with other divisions, programs to develop non-teachers into teachers, student teachers from area colleges, advertising on channel 99 (the division's television station) – are made to ensure that the quality of candidates is not negatively impacted by the decrease in funds.

Recommendation 3-5: Construct a staffing strategy to fill the large number of teacher vacancies that may occur during the summer of 2011 as a result of retirement.

According to data received from the HR department in January 2011, 699 HCPS employees will be eligible for retirement on July 1, 2011; this is over 25 percent of the full- and part-time workforce[2]. Over 43 percent of eligible retirees are teachers and 10.7 percent are instructional aides.

Table 3.8 shows the distribution of eligible retirees by employee group.

Table 3.8. Eligible retirees – July 1, 2011

Employee Group	Number of Eligible Retirees	Percent of Eligible Retirees
Teachers	301	43.1%
Instructional aides	75	10.7%
Food services	69	9.9%
Custodial	58	8.3%
Support staff	49	7.0%
Administration	43	6.2%
School social worker/career counselor	17	2.4%
Technology support	17	2.4%
Maintenance	13	1.9%
Lead teacher specialists	13	1.9%
Senior teachers	12	1.7%
Library/media specialists	11	1.6%
Transportation	11	1.6%

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[2] Based on a total of 2,737 employees from the School Year 2010-11 Budget

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Employee Group	Number of Eligible Retirees	Percent of Eligible Retirees
School nurse	10	1.4%
TOTAL	**699**	

Source: HCPS retiree data files, January 2011

An analysis of the types of teachers eligible for retirement revealed that 46 were special education teachers. Because of the large number of teaching positions in special education that will be vacated, it will be important to address the staffing plan for these teachers first.

In order to identify the position most likely to be vacated, those potential retirees who will be at least 60 years of age and have at least 20 years of experience were isolated for analysis. Using these criteria, 54 teachers and 11 instructional aides are most likely to retire. Additionally, 10 administrators meet these same criteria. Among the administrators are an associate superintendent, two directors, an assistant director, two principals and two assistant principals. However, these administrative positions do not require the immediate attention of leadership because HR has identified candidates who are currently being trained and mentored, or a steady stream of qualified candidates for the positions exists. Additionally, the division has been able to fill a majority of these types of positions from within HCPS in the past.

Losing a significant percentage of the workforce can present a risk to the school system, as a great amount of institutional knowledge may be lost and turnover is costly. Common costs related to turnover, regardless of the kind, include:

- Administrative costs to finalize the incumbent's employment;
- Cost to recruit externally, including advertising and salary costs for recruiters;
- Temporary replacement costs;
- Lost productivity while the position is vacant;
- Loss of expertise;
- Administrative costs to process the new employee through orientation;
- Lost productivity while the new employee is trained, including quality problems; and
- Training cost.

The potential risk of losing such a high number of employees has been acknowledged by HR management with the creation and adaptation of programs. A brief description of each existing program follows.

- **Leadership Academy:** This academy was originally formed to help employees become principals and assistant principals. It was later expanded to enable employees of all interests to train for

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leadership roles. HR management indicated that approximately 33 percent of past participants have moved into leadership positions within HCPS.

- **Support Services Leadership Institute:** This institute is a professional development opportunity for support staff within HCPS. This program focuses on leadership development as a life-long learning process, which cultivates individual and organizational transformation. The institute offers practical leadership education that will help participants apply new skills and knowledge which allows them to excel in their current work environment and prepare for future leadership roles within HCPS.

- **Staff Transition:** In positions where incumbents must provide training to replacement staff, HCPS allows a period of overlap in the incumbent's final employment period and the new employee's beginning of employment – up to one month as needed. This is most often utilized in technical and administrative positions which may require more intensive on-the-job training in order to learn division processes and procedures.

- **Early Retiree Program:** This program was designed as a benefit for long-term employees of the school division. Upon retirement, early retirees may continue to work up to 20 days per year for as many as seven years. (Effective July 1, 2011, retirees are required to work 25 days per year.) It is available to all full-time employees and work assignments are based on school division needs. Although this program may provide additional support to a key employee's replacement, this support would not be immediate, as there is a minimum separation requirement of 30 working days prior to re-employment. Additionally, the limitation of 25 days per year may not allow enough time to fully train a new hire in the duties of such a position.

- **Competitive Salary Studies:** An annual salary review is conducted to determine HCPS' competitiveness in compensation with surrounding school divisions. Data are collected and used to determine if adjustments to specific employee groups are needed to remain competitive.

Although these programs will mitigate some risk, they do not specifically address the high number of upcoming teacher vacancies, particularly the special education teacher vacancies. The following implementation steps should be executed to lessen the impact of these and future retirements:

- **Construct a staffing plan to fill key teacher vacancies.** HCPS should begin planning for how upcoming teacher vacancies will be filled.

  - **Identify issues.** Identify legal or diversity issues to consider. Avoid approaches that reduce diversity in leadership or violate discrimination laws.

  - **Determine high risk positions.** Determine which positions are critical and may be more difficult to fill, such as special education. Identify potential sources of candidates for these positions and create a strategy for attracting them to HCPS.

  - **Know the position.** Through conversations with incumbents and principals, determine what qualities and skills will be required for a candidate to succeed in the position. Use

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this information to develop screening questions and scoring rubrics for use in the screening and hiring process.

- **Partner with area schools, colleges and universities.** Establish and maintain relationships with area colleges and universities that have high-quality teacher preparation programs. Find ways to build relationships with future teachers – students at the freshman and sophomore level – as well as the career services employees at the area institutions.

- **Determine other candidate sources.** Other sources of candidates include area professional associations or neighboring divisions who can be actively recruited via advertisements, networking and other targeted marketing efforts.

- **Involve current employees**. Use referral programs to obtain quality candidates. For example, if a current employee refers a special education teacher and that candidate is selected for hire, the employee receives a partial referral payment upon the referred candidate's first day of work. Upon the referred employee's six month service anniversary with positive supervisor feedback, the referring employee – if still employed at HCPS – will receive the final referral payment.

- **Consider implementing hiring incentives**. For positions that prove harder to fill, consider instituting temporary hiring bonuses to entice more candidates to apply.

FISCAL IMPACT

This recommendation can be accomplished with existing resources resulting in no fiscal impact to the division.

The assistant superintendent and director will be key in establishing strategy and providing direction, while the recruiting professionals will implement the strategy. Their time on this task should be no more than a total of eight hours.

The implementation of the staffing plan to fill upcoming vacancies will be an extension of the current recruitment tasks currently performed by the staff development coordinator, director, assistant director, and recruitment coordinator and will not require additional staff. The time required to lay the groundwork for the selected strategy may be approximately 40 hours for each staff member mentioned, however it need not occur in one week or concurrently.

Recommendation 3-6: Perform summer school staffing and payroll processes using AppTrack and Asset.

Major recruiting and hiring tasks performed by the HR department are generally automated, as the department staff utilize a custom-written applicant tracking system (AppTrack), and a custom-written employee management system (Asset).

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The AppTrack system allows HR staff to post jobs and allows candidates to apply for jobs online. Applicants can also upload documents and attach them to their online application. When staffing a particular position, HR staff can execute a query to see the candidates for that position, and can electronically forward the candidate's information to the hiring manager or principal.

Once an applicant has been selected, HR staff can transfer basic information and scanned documents from AppTrack to Asset, and then begin the detailed data entry of the new employee's credentials, education, and position information.

However, these systems are not utilized to manage the human resources necessary for summer school. In preparation for summer school each year, HR employees and principals perform typical staffing activities, such as advertising open positions, taking applications, interviewing candidates, and hiring employees to fill all of the positions necessary to deliver summer school classes to enrolled students.

Although the same activities are performed for "regular" school year employees by using the HR administrative systems (i.e., AppTrack and Asset), the same activities for summer school are performed manually on spreadsheets, Word documents, or hardcopy documents outside of the systems. Examples of the types of activities performed are included in Table 3.9.

Table 3.9. Data tracking methods for regular and summer school

Process/Activity	Systems Used	
	Fall/Spring Semesters	**Summer School**
Accepting applications and screening applicants	AppTrack	Paper applications
Tracking employee demographic, position and salary information	Asset	Excel sheet for each school
Creating employment contracts	Asset	Word merge from Excel
Providing pay information to the Payroll Department	Asset	Excel provided at the end of July and August

Source: HCPS HR department, fall 2010

Those summer school employees that are HCPS regular employees have already been entered into the Asset system and must be re-entered in the Excel tracking spreadsheet related to their summer school assignment.

The HR department should conduct an analysis to determine the configuration and system set-up that will be necessary to incorporate summer school into the division's administrative systems. Special attention should be paid to any potential difficulties with keeping summer school work activity separate from ongoing summer payments to regular year employees.

FISCAL IMPACT

This recommendation does not result in a fiscal impact to the division. The compensation and compliance officer has the expertise necessary to implement this recommendation – with assistance

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from the programming staff in the technology department – and should be able to accomplish this prior to the beginning of summer school in 2012. It may be fairly time-consuming, and may take a total of approximately two months of part-time effort over the next year and a half.

Note: *Should HCPS determine that the Asset system be replaced by an integrated enterprise resource planning (ERP) system, then the integration of these data into Asset will not be necessary.* [See Chapter 5 – Financial Management]

Retention

HCPS has implemented many programs for the purpose of retaining employees. For example, a bus driver appreciation contest is held in which students vote for their favorite bus driver. The winner receives an award at a pizza lunch at their home school. In another recognition effort, breakfast is provided in one location on the last day of school and all employees with 25 or more years of service may attend. As is done in most school systems, HCPS also recognizes service milestones with a recognition event and a gift commensurate with the years of service being celebrated, and awards a beginning teacher of the year annually.

Besides recognition events, the division also provides and/or administers benefits programs that increase employee retention, such as tuition reimbursement, a wellness program, payroll deductions as a method for paying for the Virginia Commonwealth University cohort program for educational leadership (rather than the employee paying in full in advance of beginning the program), and providing the funding for those teachers going through the application process for national board certification.

Following are some commendations for programs that are directed at employee retention.

Commendation: The division participates in a wellness program.

Although many scientific studies have found work-site wellness programs to provide a positive return-on-investment by lowering healthcare costs, raising employee morale and increasing employee retention, few U.S. employers institute them. A U.S. Department of Health and Human Services report from 2003[3] states that health promotion and disease management programs provide significant returns on investment; ranging from $1.49 to $4.91 (with a median of $3.14) in benefits for every dollar spent on the program.

Further, the report discussed the following major companies and their programs:

- Motorola's wellness program, which saved the company $3.93 for every $1 invested.

- Northeast Utilities WellAware Program, which in its first 24 months, reduced lifestyle- and behavioral-related health claims by $1,400,000.

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[3] http://aspe.hhs.gov/health/prevention/

- Caterpillar's Healthy Balance program, which is projected to result in long term savings of $700 million by 2015.

- Johnson & Johnson's Health and Wellness Program, which has produced average annual health care savings of $224.66 per employee.

Hanover County implemented a Wellness Program called BE WELL in November of 2008. This program offers many benefits to HCPS employees, including:

- Onsite exercise programs
- Fitness center discounts
- Weight Watchers at Work
- Stress management programs
- Smoking cessation programs

Additionally, Southern Health Insurance subscribers receive supplementary support, in the form of online interventions and support and incentives, for completing an online health risk appraisal.

HCPS has a part-time wellness coordinator who provides service to HCPS and county employees.

BE WELL appears to have had a positive impact on morale. During interviews, the employees who participate in the program expressed appreciation for the availability of these benefits.

Commendation: HCPS' new teacher mentor program has impacted first year teacher turnover.

The Virginia Education Accountability and Quality Enhancement Act of 1999 requires all divisions to provide beginning teachers (those with zero years of experience) with a mentor teacher. HCPS has implemented a robust program which provides one-on-one assistance to first year teachers hired into the division.

Each new teacher is assigned as a classroom teacher mentor at their location who has achieved continuing contract status. These mentors guide their mentees by modeling instructional strategies, observing the new teacher and providing feedback, and conducting consultations to promote instructional excellence.

A major goal of a new teacher mentor program is to help new teachers adapt to the teaching profession, division and school, and to retain quality teachers by reducing first year turnover. It appears that the HCPS program has been effective in that teacher turnover dropped from 21 percent to 5.6 percent in the pilot year of the program.

D. Staff Development

HCPS employs two staff members who are at least partially dedicated to division professional development: a professional development coordinator in curriculum and instruction who oversees

teacher staff development, and a coordinator of HR/staff development in human resources who oversees professional development for support staff. These two positions are physically located in different offices within the central office building.

To analyze these processes, interviews with the staff development coordinators, as well as focus groups with the customers of the staff development function, were conducted.

Commendation: Well-designed professional development instructional framework.

An initiative to create a structured instructional framework for professional development was completed recently. The framework seeks to give structure to the link between performance evaluations, goal-setting, and professional development and contains three components: design, implementation, and interpretation. Each component details the framework for creating instruction. For example, under design, the framework for the design of content, delivery, and assessment are set out. The implementation component provides information on the elements to consider through all stages of the implementation of instruction. The interpretation component notes the steps to take when interpreting the implementation and design of instruction.

For each general type of employee, such as gifted and talented teachers, special education teachers, and administrative assistants, the division has identified tiers of competency. These documents describe strands of expertise (e.g., content knowledge, planning and instruction) and the specific competencies that the incumbent in each tier will demonstrate. These tiers are posted on the professional development website and can be accessed by any HCPS employee.

The framework and the competencies for each type of position appear to be very well thought out, although the documents relating to teachers are more developed than those related to support positions.

Recommendation 3-7: Increase the focus placed on support staff development.

In addition to the likelihood that the physical location of the two employees dedicated to professional development could hinder collaboration, the employee assigned to support staff professional development has a significant number of other duties. Other duties include staffing responsibilities for office professionals, nurses, library media specialists and some substitutes, as well as accountability for administering the mentoring program and overseeing the staff evaluation process for the entire division. These additional duties do not allow this employee to place adequate focus on support staff professional development and support staff members throughout the division are aware of this. During interviews, many support staff reported being dissatisfied with the amount and type of professional development offered to non-teachers.

HCPS should modify office assignments in order to place the two staff dedicated to professional development in closer proximity to one another. Further, the HR and curriculum and development

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departments should work together to determine a strategy for increasing emphasis on support staff development including:

A. Transferring some duties from the coordinator of HR/staff development to other HR staff; and/or

B. Transferring some support staff professional development duties to the professional development coordinator assigned to teacher staff development.

FISCAL IMPACT

Implementation of this recommendation can be completed by HR and curriculum and instruction leadership resulting in no additional cost to the division. Should the division select option A (above), the recommendation should be undertaken after recommendations 3-3 and 3-4 have been implemented, as they will increase HR efficiency and provide other HR staff the ability to absorb some of the HR/staff development coordinators non-staff development duties without undue hardship. This transfer of duties may require a one to two month transition period.

Chapter 4 – Facilities Use and Management

Introduction

School facilities should be designed and maintained to support the educational curriculum and to provide an effective learning environment that is educationally adequate to deliver the curriculum. Having suitable facilities requires good planning which is made possible by accurate measurement of school capacities and enrollment projections.

Once facilities are built, preventive maintenance (i.e., an ongoing plan for addressing maintenance through annual maintenance and operations) and a long-term capital improvements program are critical. One of the most important aspects of maintaining facilities in the long-term is preventive maintenance. Through preventive and ongoing maintenance, life cycle costs are reduced and the serviceable life of facilities is extended. Beyond operations and maintenance, an aggressive energy management program is critical to reducing operating expense and providing a sustainable built environment.

This chapter presents commendations and recommendations for facilities use and management for the Hanover County Public Schools (HCPS) and includes the following major sections:

A. Plans, Policies and Procedures
B. Maintenance Operations
C. Custodial Operations
D. Energy Management

While organization and management were included as part of review of facilities, no major commendations, findings, or recommendations resulted from the review.

The facilities of HCPS are spread over a large geographical area. There are 15 elementary schools, four middle schools, four high schools, one technical school, one alternative school, and three administrative support facilities totaling 2.74 million square feet. **RS**Means®, a division of Reed Construction Data, is a trusted industry standard providing nationally-based construction costs, organized by facility type and adjusted regionally, for over 60 years. The total HCPS facility replacement value, based on **RS**Means® 2010 cost factors, is $380 million. School ages vary across the division - from those built at the turn of the 20th century (Henry Clay Elementary School) to newer schools built in the last five years. HCPS schools have a cumulative current student capacity of 21,285 students, and a 2010 enrollment of 19,231 (including 293 pre-K students) resulting in an overall utilization of 90 percent.

While HCPS has experienced a historic growth in enrollment from 2001 to 2006, averaging 2.1 percent per year, enrollment over the past four years has consistently decreased an average of 0.9 percent per year. This decline in enrollment is projected to continue for the next five years. This will result in the loss of over 1,400 students or approximately eight percent of the peak 2006 student body.

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Overall, the facilities management department at HCPS has done a good job of planning, managing, and operating its school facilities, including creating numerous commendable practices that meet or exceed either industry standards or acknowledged best practices. The following practices are commended in this chapter:

- The division employs a director of safety who is responsible for student discipline as well as safety programs. Crisis management programs are in place with a range of table top as well as full scale crisis management drills.

- The county, in coordination with the division, carries out grounds maintenance. This collaboration benefits the division by requiring less coordination, and providing pooled equipment and greater flexibility to maintain a ten-day cut cycle. This approach alleviates a maintenance challenge that is often difficult for school divisions to manage and provides the county with greater economies of scale.

- Energy management is a program of recent focus at HCPS. Energy reductions from these initiatives are reported to have exceeded 17 percent from 2009 to 2010 with the same rate charges. The division is also implementing an energy incentive program to return 25 percent of any energy savings to the schools. Energy audits are conducted at each school and they are provided with an energy report card. Next, the program will focus on introducing behavioral changes aimed at reducing energy consumption by building occupants.

While the facilities department has several commendable practices, this chapter also includes several recommendations that should be considered in order to enhance operations or reduce overall cost. These recommendations are summarized in Table 4-1, with more detailed findings and recommended actions following in each of the five sections.

Table 4-1. Fiscal impact of recommendations

Area/Recommendation	Priority	One-Time Costs/ Savings	2011-12	2012-13	2013-14	2014-15	2015-16	Total Fiscal Impact
Plans, Policies and Procedures								
4-1. Review school capacity and utilization	Medium	($350,000)	$0	$0	$0	$0	$0	**($350,000)**
4-2. Consider School Dude facility scheduling to manage shared use	Low	--	--	--	--	--	--	**Requires SchoolDude Quote**
Maintenance and Operations								
4-3. Plan for maintenance staff retirements	High	$0	$0	$0	$0	$0	$0	**$0**

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Area/Recommendation	Priority	One-Time Costs/ Savings	2011-12	2012-13	2013-14	2014-15	2015-16	Total Fiscal Impact
4-4. Create a plan to address aging maintenance vehicle fleet	Medium	$0	$0	$0	$0	$0	$0	**$0**
4-5. Increase coordination among preventive maintenance activities	High	$0	$0	$0	$0	$0	$0	**$0**
Custodial Operations								
4-6. Centralize custodial operations	Medium	$0	($50,000)	($50,000)	($50,000)	($50,000)	($50,000)	**($250,000)**
4-7. Allocate custodial staff labor and other operating costs to food services*	Low	$0	$384,140	$384,140	$384,140	$384,140	$384,140	**$1,920,700**
4-8. Reduce school calendar for custodial operations	Medium	$0	$215,105	$215,105	$215,105	$215,105	$215,105	**$1,075,525**
Net Fiscal Impacts		**($350,000)**	**$549,245**	**$549,245**	**$549,245**	**$549,245**	**$549,245**	**$2,396,225**

Note: Costs are negative. Savings are positive.

*General fund savings. Food services costs are shown in Chapter 8.

A. Plans, Policies and Procedures

Engaging in planning for facilities is one of the most important activities of a school board and administration. The essential activities of the facilities planning process include:

1. The development of facilities plans that are responsive to the educational needs of the students and related educational programs;

2. The optimum utilization of existing facilities to ensure that overbuilding does not occur;

3. The collection of accurate student demographic information that ensures new facilities are located in appropriate geographic areas of the school division, are designed to the optimum capacity, and are expandable if necessary; and

4. The understanding of the safety and security needs of the contemporary educational setting.

HCPS has a process in place to provide for an updated CIP with a rolling five-year annual work plan. This process is based upon enrollment projections, presented in Table 4.2, and these enrollment projections are compared with school capacity as part of the planning process.

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Table 4.2. Summary of HCPS historical and 5-year projected enrollment

School	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2015
Elementary	**7,953**	**8,029**	**8,183**	**8,180**	**8,270**	**8,354**	**8,198**	**8,172**	**8,142**	**7,938**	**7,473**
Battlefield Park	563	569	588	591	606	615	600	615	590	563	533
Beaverdam	414	418	433	428	433	427	411	427	412	409	416
Henry Clay	310	288	286	272	286	308	296	307	289	297	276
John Gandy	319	313	319	311	293	302	291	284	284	281	278
Cold Harbor	591	598	617	621	636	645	630	637	639	586	555
Cool Spring	907	890	907	893	869	802	796	776	769	708	668
Elmont	383	382	410	395	373	398	390	372	370	373	323
Kersey Creek	553	584	611	613	633	698	673	661	636	624	560
Laurel Meadow	666	674	696	699	717	727	710	718	725	735	683
Mechanicsville	532	538	556	559	572	581	567	590	577	607	570
Pearson's Corner	438	473	495	502	520	500	493	480	484	462	420
Pole Green	554	560	578	581	596	604	590	570	599	569	543
Rural Point	509	514	531	534	547	555	542	546	556	548	507
South Anna	721	724	692	716	723	723	727	705	706	676	635
Washington-Henry	493	504	464	465	466	469	482	484	506	500	506
Middle	**4,136**	**4,362**	**4,442**	**4,407**	**4,418**	**4,452**	**4,423**	**4,295**	**4,329**	**4,312**	**4,106**
Chickahominy	1,086	1,133	1,149	1,150	1,157	1,224	1,161	1,173	1,165	1,234	1,145
Liberty	1,120	1,210	1,162	1,125	1,122	1,152	1,165	1,085	1,099	1,088	1,039
Oak Knoll	769	819	869	897	908	853	890	872	887	847	808
Stonewall	1,161	1,200	1,262	1,235	1,231	1,223	1,207	1,165	1,178	1,143	1,114
High	**5,108**	**5,190**	**5,354**	**5,563**	**5,830**	**6,038**	**6,065**	**6,099**	**5,949**	**5,941**	**5,822**
Atlee	1,213	1,230	1,252	1,333	1,390	1,472	1,513	1,536	1,554	1,526	1,582
Hanover	1,189	1,211	1,084	1,155	1,251	1,330	1,366	1,342	1,317	1,296	1,268
Lee-Davis	1,270	1,292	1,472	1,509	1,580	1,651	1,652	1,648	1,604	1,599	1,539
Patrick Henry	1,436	1,457	1,546	1,566	1,609	1,585	1,534	1,573	1,474	1,520	1,433

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School	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2015
Division Total	17,197	17,581	17,979	18,150	18,518	18,844	18,686	18,566	18,420	18,191	17,401
% CHANGE		2.2%	2.3%	1.0%	2.0%	1.8%	-0.8%	-0.6%	-0.8%	-1.2%	-4.3%

Source: Enrollment projections provided by the division in the FY 2011-2012 operating budget enrollment history and forecast summary. These projections exclude pre-K enrollment.

The division has facilities management and operations policies that are administered by each department and these policies and procedures contribute to efficient operations. Additionally, the division has a director of safety who has established procedures for crisis situations that might occur including natural disasters, shelter in place, and acts of aggression.

Recently, the division has established an energy conservation policy and the deployment of energy conservation measures have provided substantial savings in 2009.

Commendation: The division has placed emphasis on safety and energy efficiency with the appointment of a director of safety.

The division has appointed a director for safety who is responsible for student discipline as well as safety programs. Crisis management programs have been put in place, in addition to a range of table top and full-scale crisis management drills.

The department is closely coordinated with county and town law enforcement and updated Memoranda of Understanding are in place. The sheriff places student resource officers (SRO) in each secondary school and rotates DARE officers throughout the elementary schools. The sheriff's office also conducts periodic school patrols and provides written school safety audits on which the principal follows-up.

First responders at each location have been provided floor plans and 360 degree videos of school/building entrances and hallways. Additionally, a safety handbook is available with annual reviews, and the division conducts two safety meetings each year.

Each principal and assistant principal has received FEMA certification for emergency response, and each classroom is issued a red "crisis bag" with light sticks, thermal blanket, first aid kit, and "all clear" cards.

HCPS schools feature key card access for entry control and check-in/check-out procedures; however, this equipment does not execute background checks.

Recommendation 4-1: Review school capacity and utilization for long range planning.

The division maintains and tracks the capacity and utilization of each school building. The capacity is based on how the school is used, and supports a 21.5:1 pupil to teacher ratio and a 15:1 ratio for schools with high economically disadvantaged populations. The division has a written policy which defines an "over capacity" school as one that has been at 120 percent capacity for three consecutive years. For

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schools with utilization over 120 percent for three years, permanent construction or other measures to reduce overcrowding are implemented.

The division rezoned attendance boundaries in 2007 because of the new schools that opened in 2008. Because of the new schools and rezoning, current modular building use is minimal and an initial review of capacity and enrollment suggest that these modular buildings are justified at the locations where they have been placed.

Through 2006, enrollment at HCPS grew at a rate of just over two percent per year. However, since 2006 it has been declining at a rate of about one percent per year. Projections indicate that enrollment will continue to decline over the next five years. If enrollment continues to decline beyond the five-year horizon, the division will be left with excess capacity in almost every school. Even if enrollment reverses and shows modest increases after the five-year projected decline, the division may still be left with excess capacity.

The current additional capacity is 10 percent of the 2010 enrollment, and does not justify consolidating schools at this time. However, if enrollment continues to decline over the next five years, capacity surplus is projected to increase to 2,132 elementary students, 899 middle school students, and 853 high school students - for a total capacity surplus of 3,884 students (excluding pre-K students). By 2020, if enrollment trends continue, surplus capacity will be in excess of 4,200 students. [Detailed information on capacity and utilization can be found in Appendix D.]

Recommendation 4-1 suggests that the division may wish to evaluate enrollment sensitivity and permanent capacity. In the next five years, consolidation of schools may need to be considered. Comparing a third-party review of division enrollment projections - by school - for the next ten years to school permanent capacities would identify opportunities for greater efficiencies. Those schools where utilization remains below 85 percent should be evaluated for boundary adjustments or consolidation.

FISCAL IMPACT

Gibson recommends that this task be completed within one year, and believes that this recommendation may be completed by internal staff, including the director of construction and planning as part of the normal position responsibilities. However, in order to complete impartial analysis, the district should consider outside subject matter experts that will bring educational adequacy and building condition assessment experience, lessons learned, a database of cost estimating knowledge, and a community engagement process. An external contract for these services might approach 12 cents per foot for an expected contract cost of $350,000. Average delivery time for a district of this size typically spans six months.

Cost savings have not been identified as they would not be material in the next five years; however, they could become material after five years, if enrollment trends continue.

Recommendation 4-1	One-Time Costs/ Savings	2011-12	2012-13	2013-14	2014-15	2015-16
Consultant for long-range planning	($350,000)	$0	$0	$0	$0	$0

Note: Costs are negative. Savings are positive.

Recommendation 4-2: Consider using the SchoolDude.com facility scheduling module to improve shared-use management

The division reports a high volume of community and shared use of school facilities. The costs for usage are scheduled and charged back to the users by issuing invoices in advance for the use of the space. For certain non-profit organizations, the division only requires the payment of utilities, rather than a rental fee.

The division has a joint use policy in effect and tracks scheduling and payments on a Microsoft Excel spreadsheet. However, additional income may be realized through a more rigid adherence to the policy of centralized collection for joint and community use fees.

Recommendation 4-2 suggests that deploying the SchoolDude.com facility scheduling module, which is not currently implemented, may provide greater control over the in-house scheduling and may increase chargeback revenues.

FISCAL IMPACT

This recommendation could be implemented by the director of building services, using SchoolDude support as a resource. Implementation tasks will include system configuration, testing and deployment, including training for school-based personnel. These tasks should require no more than eight hours per week for four weeks. Gibson recommends that this task be completed within six months.

B. Maintenance Operations

The maintenance of school facilities, including roofing, the structure, and the infrastructure systems within, is an ongoing task that requires adequate funding. An effective maintenance effort provides a safe and welcoming environment in which the core function of the school division - achieving student learning - can proceed with minimal distractions.

Maintenance protects the investment made in facilities. If materials and systems are replaced after their life expectancy has been reached or exceeded, and scheduled maintenance is performed as appropriate, deferred maintenance will be minimal. If there are sufficient maintenance workers to complete work orders in a timely manner and without a backlog, then the buildings can perform satisfactorily for many years. On the contrary, if maintenance is not carried out as needed, and funding is minimized, facilities will prematurely reach the end of their life and investment in the built environment will be lost.

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Commendation: Grounds maintenance is coordinated with the county, increasing the level of service possible.

The county, in coordination with the division, provides grounds maintenance services to HCPS. This approach alleviates a maintenance challenge that is often difficult for school divisions to manage. This collaboration requires less coordination and provides pooled equipment and greater flexibility to maintain a 10-day cut cycle than if the division were to perform this task independently. Additionally, it provides the county with greater economies of scale.

Recommendation 4-3: Plan for the possible retirement of more than half of the maintenance staff.

The maintenance department is organized across four geographical regions: east, west, central, and courthouse regions. Each maintenance team is dedicated to a region, although teams do support one another when necessary.

The department consists of 24 technicians covering electrical, carpentry, A/C, refrigeration, plumbing and painting. According to the 38th Annual Maintenance and Operations Cost Study for K-12 Schools by American School and University Magazine, the current average floor area maintained per maintenance worker in K-12 schools across the entire United States is 79,293. HCPS' 24 technicians cover a total of 2,742,868 square feet (see Table 4.3); therefore each maintenance worker's share is 114,286 square feet which is considerably higher than the national average.

The HCPS maintenance department may be slightly understaffed in the painting and plumbing areas, with one painter full-time equivalent (FTE) and three plumber FTEs.

Table 4.3. HCPS school square footage

School	Square Feet
Battlefield Park	72,290
Beaverdam	48,206
Henry Clay	65,283
John Gandy	49,600
Cold Harbor	74,900
Cool Spring	88,000
Elmont	52,230
Kersey Creek	90,448
Laurel Meadow	90,448
Mechanicsville	70,700

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School	Square Feet
Pearson's Corner	68,690
Pole Green	89,568
Rural Point	79,600
South Anna	77,000
Washington-Henry	48,950
Elementary	**1,065,913**
Chickahominy	140,371
Liberty	136,743
Oak Knoll	167,165
Stonewall	137,454
Middle	**581,733**
Atlee	260,000
Hanover	290,078
Lee-Davis	226,564
Patrick Henry	224,431
High	**1,001,073**
School Board Offices	39,400
Georgetown School	15,381
Hanover Center	39,368
Support	**94,149**
Division Total	**2,742,868**

Source: HCPS, fall 2010

Division custodians perform some minor preventive and maintenance work (e.g. replacement of filters and light bulbs), which is a practice that is common in most schools.

The maintenance department is currently staffed by skilled members with at least 10 years of experience in HCPS and the department has historically faced challenges recruiting newer staff to the department. While it is generally advantageous to have highly experienced staff in this area, it may cause issues as the current staff nears retirement age.

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Currently, 13 of the 24 technicians, 54 percent, are eligible for retirement on July 1, 2011. Table 4.4 illustrates the total number of maintenance staff and eligible retirees.

Table 4.4. Maintenance department eligible retirements – July 1, 2011

Title	Total # Employees	# Eligible for Retirement	% Eligible for Retirement	% Likely to Retire
Carpenter	3	1	33.3%	33.3%
Electrician	1	0	0%	0%
Energy Management Control Specialist	1	1	100%	0%
HVAC Helper	1	0	0%	0%
HVAC Mechanic	9	6	66.7%	11.1%
Maintenance Team Leader	4	3	75%	75.0%
Painter	1	1	100%	100%
Plumber	3	1	33.3%	33.3%
Refrigeration Tech	1	0	0%	0%
Total	**24**	**13**	**54.2%**	**29.2%**

Source: Staffing history (FY2011) and upcoming retiree file from HR

Of the 13 maintenance employees who are eligible to retire on July 11, 2011, seven – or 29.2 percent - are the most likely to retire because they have 20 or more years of experience with HCPS. This may leave the division without adequately experienced maintenance staff.

Recommendation 4-3 suggests the division continue to conduct periodic salary benchmark studies in the maintenance area and make increases to starting salaries to address recruitment issues, if necessary. The division should begin staffing vacancies in this department with employees who can supplement, apprentice, and eventually backfill these retiring workers. HCPS should review staffing levels each year.

FISCAL IMPACT

While increases in entry level salaries would have an initial fiscal impact, this would be offset as more experienced – and thus more highly paid - workers retire. Over the next five years, the retirement of these workers may result in reduced overall cost as less experienced workers with lower salaries replace them.

Gibson recommends that this task be completed within nine months. This recommendation can be completed by internal staff, led by the director of building services and the four maintenance team leaders. The salary review can be performed using publicly available information and will take two to three days to complete. Department leadership should then meet to review salary, positions and

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benchmarks and make any recommendations for changes. This review and recommendation meeting is expected to occur over a two to four hour period.

An overall recommendation related to upcoming division retirements is addressed in Chapter 3 – Human Resources.

Recommendation 4-4: Create an upgrade plan to address the aging maintenance vehicle fleet

The maintenance department uses 24 cargo vans and one truck. With an average vehicle age of almost nine years and ten vehicles with more than 150,000 miles, this fleet is growing old. Additionally, the average mileage for all vehicles is 127,000 miles.

Because the priority of the school division vehicles rightly falls behind that of the police, fire department, EMS and school buses, there is frequently extended downtime and lost productivity when a maintenance department van becomes inoperable.

Recommendation 4-4 suggests that the aging maintenance fleet should be analyzed and a current equipment refresh plan should be developed and implemented. While upgrading the fleet will generate a cost increase, this cost will further increase in the future. Additionally, this cost will be encumbered in the near future as vehicles continue to be used well beyond their serviceable life.

If not addressed, the fleet will eventually age to the point where the entire fleet will require replacement simultaneously, at a substantial capital cost outlay.

FISCAL IMPACT

Development of the plan can be completed by the director of building services within 12 months, and no cost impact has been identified. Expected time to complete a review of the fleet, with recommendations for replacement is 16 hours.

Recommendation 4-5: Increase coordination for preventive maintenance activities

A lack of preventive maintenance will reduce equipment life and increase facility cost in the long term. Preventive maintenance at HCPS is currently very limited due to reductions in both staff and funding.

Interviews with maintenance and custodial supervisors suggest that additional coordination may bring small efficiencies and better service where activities are cross-functional or involve shared responsibilities (e.g., filter and light bulb replacement). Currently, the coordination of shared preventive maintenance duties may be leaving some tasks incomplete.

Recommendation 4-5 suggests the division should consider additional - and perhaps dedicated - resources to carry out preventive maintenance, incorporating the use of the SchoolDude.com Preventive Maintenance Direct module which is currently being implemented. Additionally, an analysis

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of work order backlog may indicate the need for increased staffing in order to avoid unfunded need that will increase long-term costs.

HCPS should also consider conducting workshops with maintenance and custodial staff for the purpose of identifying better ways to execute and coordinate the preventive maintenance activities between the departments.

Maintenance and custodial leadership should also consider implementing custodial reviews of deferred maintenance items with an assessment checklist so that maintenance work order execution can be better planned. Additionally, standard school report cards (monthly or quarterly) should be instituted and should incorporate the following:

- Checklist for on-site reviews by supervisors indicating the day/night of planned and unplanned visits;
- Surveys of principals/assistant principals of satisfaction and areas for improvement; and
- Regular reports of absences and the assignment of substitutes at each school.

FISCAL IMPACT

Gibson recommends that this task be completed within three months and can be led by the director of maintenance and the director of custodial operations.

The preventive maintenance workshop can be completed by the director of maintenance and the director of custodial operations, and no cost impact has been identified. This workshop would take no more than half of a day, and the participants should include the custodial night supervisors, the maintenance trades supervisors, and representation from one or two school-based staff from each major school type to include elementary, middle and high schools.

The follow-up documentation and development of applicable checklists and performance surveys can be completed after the workshop as part of the supervisor's daily responsibilities.

C. Custodial Operations

Safe, clean, and sanitary facilities are essential elements in today's educational environment. Management of a school custodial function may be reside at the central office, at the school, or may be outsourced to a third-party provider. Additionally, it may reside either partially in the central office and the individual school/cost center. The decision to implement a particular structure is usually made with the goals of minimizing costs to the school division, improving services to schools, and reducing the span of control of division or school administrators.

Custodians are the "eyes and ears" of maintenance; they can see and hear evidence of trouble before a major problem develops (e.g., an air handler about to seize, or a small variable air volume leak that reduces ventilation efficiency). Custodians are often the initiators of work orders to correct minor problems before they become bigger ones.

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A great deal of a school's reputation depends on how students and staff perceive their time in the building. Regardless of age, a clean and neat school that is free of unpleasant odors enables teachers and students to focus on learning in classrooms. Pleasant conditions also favorably impress visitors, whether they are parents registering a new student or a veteran administrator from the central office.

At HCPS, campus custodial staff is managed at the school by the principal, and guided by the custodial support services department. The custodial department has two specialists that support the custodial staff with logistics, training, equipment management and supplies. The custodial specialists supervise the night janitors and target a visit to each school once a week. The department is characterized by low turnover and a dedicated staff.

The department is supported by two vendors providing janitorial supplies and equipment repair.

Recommendation 4-6: Centralize custodial operations.

HCPS employs 116 custodians to clean approximately 2.75 million square feet of space daily - 28 are considered day-shift custodians and 88 are evening shift.

The Planning Guide for Maintaining School Facilities[1] establishes custodial productivity expectations. While there is not a nationwide standard for describing standards of cleanliness, the ASBO guide establishes a five-tiered system of expectations to help guide decision-making when staffing school buildings with custodial staff:

- **Level 1** cleaning results in a "spotless" building, as might normally be found in a hospital environment or corporate suite. At this level, a custodian with proper supplies and tools can clean approximately 10,000 to 11,000 square feet in an eight-hour period.

- **Level 2** cleaning is the uppermost standard for most school cleaning, and is generally reserved for restrooms, special education areas, kindergarten areas, and food service areas. A custodian can clean approximately 18,000 to 20,000 square feet in an eight-hour shift.

- **Level 3** cleaning is the normal level for most school facilities. It is acceptable to most stakeholders and does not pose any health issues. A custodian can clean approximately 28,000 to 31,000 square feet in eight hours.

- **Level 4** cleaning is not normally acceptable in a school environment. Classrooms would be cleaned every other day, carpets would be vacuumed every third day, and dusting would occur once a month. At this level, a custodian can clean 45,000 to 50,000 square feet in eight hours.

- **Level 5** cleaning can very rapidly lead to an unhealthy situation. Trash cans might be emptied and carpets vacuumed on a weekly basis. One custodian can clean 85,000 to 90,000 square feet in an eight-hour period.

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[1] Association of School Business Officials, February 2003

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It is important to note that the square footage numbers above are estimates. The actual number of square feet per shift that a custodian can clean will depend on additional variables, including the type and age of flooring and wall coverings, and the type of structure to be cleaned.

To maintain acceptable levels of cleanliness, the ASBO standards suggest that each custodian can clean between 28,000 and 31,000 square feet of space per eight-hour shift to attain a level of cleaning satisfactory for most school facilities. This does not include bathrooms or areas used by pre-kindergarten, kindergarten and special education classes, which require a slightly higher level of cleanliness.

Table 4.5 presents the square footage and custodial staffing level for each HCPS school. The column for custodians includes all staff for both day and evening shifts.

Table 4.5. Custodial assignments

School Name	Permanent Area	Portables Area	Total Area	Students	Custodians	Custodial Coverage	Evening Shift Only Coverage
Elementary Schools							
Battlefield	72,290		72,290	627	4	18,073	24,097
Beaverdam	48,206	1,728	49,934	421	3	16,645	24,967
Cold Harbor	74,900		74,900	651	4	18,725	24,967
Cool Springs	88,000		88,000	760	4	22,000	29,333
Elmont	52,230		52,230	369	3	17,410	26,115
Henry Clay	65,283		65,283	308	3	21,761	32,642
John Gandy	49,600		49,600	290	3	16,533	24,800
Kersey Creek	90,448		90,448	662	4	22,612	30,149
Laurel Meadow	90,448		90,448	711	4	22,612	30,149
Mechanicsville	70,700	4,320	75,020	586	4	18,755	25,007
Pearson's Corner	68,690		68,690	469	3	22,897	34,345
Pole Green	89,568		89,568	585	4	22,392	29,856
Rural Point	79,600		79,600	545	4	19,900	26,533
South Anna	77,000	4,320	81,320	721	4	20,330	27,107
Washington Henry	48,950	2,592	51,542	508	3	17,181	25,771
Subtotal Elementary	*1,065,913*	*12,960*	*1,078,873*	*8,213*	*54*		

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School Name	Permanent Area	Portables Area	Total Area	Students	Custodians	Custodial Coverage	Evening Shift Only Coverage
Middle Schools							
Chickahominy	140,371		140,371	1,139	6	23,395	29,552
Liberty	136,743		136,743	1,095	6	22,791	28,788
Oak Knoll	167,165		167,165	894	6	27,861	35,193
Stonewall Jackson	137,454		137,454	1,182	6	22,909	28,938
Subtotal Middle	*581,733*	*0*	*581,733*	*4,310*	*24*		
High Schools							
Atlee	260,000		260,000	1,554	9	28,889	37,143
Hanover	290,078		290,078	1,291	9	32,231	41,440
Lee Davis	226,564		226,564	1,624	8	28,321	37,761
Patrick Henry	224,431		224,431	1,504	8	28,054	37,405
Subtotal High	*1,001,073*	*0*	*1,001,073*	*5,973*	*34*		
Support							
School Board Offices	39,400		39,400		2	19,700	19,700
Georgetown School	15,381		15,381		1	15,381	15,381
Hanover Center	39,368		39,368		1	39,368	39,368
Subtotal Support	*94,149*	*0*	*94,149*	*0*	*4*		
Totals	**2,742,868**	**12,960**	**2,755,828**	**18,496**	**116**	**23,757**	**31,316**

Source: HCPS building services

HCPS sets a goal of level 2 cleaning quality; however, actual practice appears to be just above level 3 using the ASBO guidelines. With 116 total custodial staff, the overall average square feet cleaned per staff member is on target at 23,757 square feet. The division incurred cleaning costs $1.78 per square foot ($4,873,123 ÷ 2,724,868 square feet) which is comparable, if not low, considering peer divisions.

At the elementary schools, one custodian is assigned to the day shift and also cleans the cafeteria after breakfast and lunch periods.

At the middle schools, one custodian is assigned to the day shift - similar to at the elementary schools. However, at the middle schools another custodian comes in mid-morning to help with the lunch period cafeteria cleaning. For purposes of evening shift analysis, 75 percent of this custodian's time in the evening shift has been included. For high schools, two custodians are assigned to the day shift and clean the cafeteria after breakfast and lunch periods.

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As shown in table 4.5, HCPS custodians clean an average of 23,757 square feet daily. However, when the evening shift alone is considered, the area cleaned per custodian, on average, is over 31,000 square feet. This productivity level is consistent with the national standard for level 3 and well above the level 2 standard.

The division may wish to consider centralizing custodial responsibility within the custodial department, including the hiring and direct supervision of custodial staff. Although this may cause some minor issues with coordination – because principals, to some extent, lose access to custodial staff for daily operations – it allows custodial staff members to be more focused on custodial and preventive maintenance tasks. Making a change of this type will require discussion and collaboration between custodial leadership and principals.

Additionally, HCPS should also consider designating a head day custodian at the elementary school level to provide for elevated custodial supervision and improve performance and accountability.

FISCAL IMPACT

This recommendation should be completed within nine months and could be completed by the director of custodial services. A negative fiscal impact may be incurred with designation of a head day custodian; however this cost should be less than $2,000 per campus location. Cost savings are not directly quantifiable, as better coordination would result in better quality custodial and preventive maintenance levels of service.

Recommendation 4-6	One-Time Costs/ Savings	2011-12	2012-13	2013-14	2014-15	2015-16
Designate head day custodian at each of the 25 schools	$0	($50,000)	($50,000)	($50,000)	($50,000)	($50,000)

Note: Costs are negative. Savings are positive.

Recommendation 4-7: Allocate custodial staff labor costs to food services fund.

As noted in the food services chapter of this report, certain expenditures are considered allocable, direct costs of the food service operation. These allocable costs include the actual time spent by each custodian cleaning the cafeteria.

Each elementary school custodian devotes approximately two to three hours daily cleaning the cafeteria seating area and disposing of associated waste. For each school type, the number of hours of cafeteria cleaning is shown in table 4.6.

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Table 4.6. Annual custodial hours spent on cafeteria cleaning

School Level	Number of Custodians	Annual Hours
Elementary	15	8,100
Middle	8	4,320
High	8	4,320
Total	**31**	**16,740**

Source: HCPS building services

Based on average hourly rate of $11 (excluding benefits), the amount of expense allocable to food services for custodial staff is approximately $184,140 annually.

FISCAL IMPACT

The fiscal impact shown below represents a *savings to the general fund and costs to the food services fund, and as such, these savings are also represented as a cost in Chapter 8 - Food Services, Recommendation 8-4.*

Recommendation 4-7	One-Time Costs/ Savings	2011-12	2012-13	2013-14	2014-15	2015-16
Allocate custodial staff labor and other operating costs to food services	$0	$384,140	$384,140	$384,140	$384,140	$384,140

Note: Costs are negative. Savings are positive.

This recommendation should be implemented immediately by current accounting staff (via journal entry) and there is no incremental cost associated with the implementation of this recommendation.

Recommendation 4-8: Reduce calendar workdays for custodial staff based on summer cleaning needs.

All custodians are on a 12-month appointment (261 days annually). This includes full-time assignment at their respective schools during the summer months when schools may have significantly reduced activities. Use of division schools in the summer months can include summer school, parks and recreation department programs, and special education needs. For each of these programs, the use of the school may be limited to particular classrooms, gymnasium or cafeteria areas. For example, it was learned that Pole Green holds summer school periodically and that three other schools combine their summer activities at one school. For the other two schools, no summer school is held. The Hanover parks and recreation department conducts a program which utilizes the Pole Green cafeteria and four to five classrooms. Special education needs similarly are limited to a handful of classes.

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For these summer activities, maintaining a full complement of custodians for programs lasting only a few weeks or using only part of the school is not necessary. Deep cleaning of the schools should take a dedicated crew no more than one month (four weeks) to complete. Given that the department strives to maintain each school at the optimal level of cleaning year-round (level 2), it should not require a significant amount of additional work to address those areas of the school that are cleaned only annually. An alternative to deep cleaning each school with the existing staff is forming tiger teams of specialists which can move from school to school over the summer months and perform deep cleaning while the schools are closed.

HCPS should develop a detailed calendar of summer events planned at each school and schedule custodial staff according to the percentage of the school in use at any time. Based on this calendar, leadership should develop a detailed schedule of deep cleaning tasks and the resources (custodian work hours) necessary to accomplish each task.

HCPS should consider reducing the calendar for new custodians from the current 261-day calendar to an appropriate level providing adequate summer cleaning.

An alternative to deep cleaning each school with the existing staff is forming tiger teams of specialists which can move from school to school over the summer months and perform deep cleaning while the schools are closed.

FISCAL IMPACT

The average annual salary for custodians is $22,493. Given the 261-day work year, each custodian earns an average of $86.18 per day. Reducing the work days of one-third of custodians (i.e., 39) from 261 days to 197 days (a reduction of 64 days per year) would provide savings of $215,105 per year. (39 custodians x 64 days x $86.18)

Recommendation 4-8	One-Time Costs/ Savings	2011-12	2012-13	2013-14	2014-15	2015-16
Reduce custodial workdays	$0	$215,105	$215,105	$215,105	$215,105	$215,105

Note: Costs are negative. Savings are positive.

D. Energy Management

Energy management in a school division encompasses two distinct but related spheres of activity: technical efforts, such as installing effective monitoring and control systems, replacing inefficient equipment, and optimizing selected rates from the utility company contract; and energy conservation, which is achieved by changing human behavior in schools though a comprehensive and focused educational effort.

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Commendation: HCPS has implemented an aggressive and effective energy conservation program.

Energy management is a program of recent focus at HCPS, as is evidenced by the assignment of an individual employee to the development and management of an aggressive energy conservation program. The program was implemented in 2009 and has been in place for over one year. The division has about 85 percent of its facilities (excluding stadiums and fields) on remote energy monitoring systems with set points for temperatures placed at 69 degrees and 74 degrees.

Additionally, energy audits are conducted at each school, resulting in an energy report card that is issued to each one. Energy reductions from these initiatives are reported to have exceeded 17 percent from 2009 to 2010 - without any rate changes.

To encourage school staff to change their behavior, the division has also deployed a program for sharing 25 percent any energy savings with the schools.

There are no cost savings recommendations for this section.

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Chapter 5 – Financial Management

Introduction

The central business office manages and controls the funds made available for the Hanover County Public Schools (HCPS). It assists the superintendent and the school board in developing and administering the annual budget consistent with the school board policies and applicable federal and state laws. The central business office is also responsible for fiscal planning and the management of the collection, transfer and disbursement of funds for the support of the education mission of HCPS.

This chapter presents commendations and recommendations financial operations for HCPS and includes the following major sections:

A. Organization, Management and Staffing
B. Financial Performance
C. Planning and Budgeting
D. Policies, Procedures and the Use of Administrative Technology
E. Review and Evaluation of Contracting Process

Several factors or trends contribute to the efficient and effective management of HCPS funds, including:

- Low central office and administrative staffing levels;

- Effective sharing of financial and administrative functions with Hanover County government;

- Depth of experience and low turnover of central office management;

- Low per-pupil expenditures relative to other Virginia school systems;

- Robust and transparent annual planning and budgeting processes; and

- Effective use of procurement cards for small dollar purchasing.

Table 5.1 illustrates the priorities and fiscal impacts of the recommendations related to financial operations.

Table 5.1. Summary of fiscal impacts

Recommendation	Priority	One-Time Costs/ Savings	2011-12	2012-13	2013-14	2014-15	2015-16	Total Fiscal Impact
Policies, Procedures and the Use of Administrative Technology								
5.1 Streamline the payroll process	High	($50,000)	$0	$0	$0	$0	$0	($50,000)

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Recommendation	Priority	One-Time Costs/ Savings	2011-12	2012-13	2013-14	2014-15	2015-16	Total Fiscal Impact
5.2 Invest in integrated systems	High	($150,000)	$0	($1,150,000)	($537,500)	($300,000)	($300,000)	**($2,437,500)**
5.3 Expand access to the GL	Medium	$0	$0	$0	$0	$0	$0	$0
5.4 Automate the P-card program	Medium	$0	$0	$0	$0	$0	$0	$0
Review and Evaluation of Contracting Process								
5.5 Analyze commodity codes	Medium	$0	$0	$0	$0	$0	$0	$0
Net Fiscal Impact		**($200,000)**	**$0**	**($1,150,000)**	**($537,500)**	**($300,000)**	**($300,000)**	**($2,487,500)**

Note: Costs are negative. Savings are positive.

A. Organization, Management and Staffing

The financial operations team provides budgeting, accounting and financial reporting, purchasing and payroll services to HCPS. Figure 5.1 shows the positions currently budgeted for the financial operations arm of the business and operations department.

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Figure 5.1 Financial operations organization chart

```
                    ┌─────────────────────┐
                    │     Assistant       │
                    │   Superintendent    │
                    │   Business and      │        ┌──────────────────┐
                    │    Operations       │────────│  Administrative  │
                    └─────────────────────┘        │    Assistant     │
                       │            │              └──────────────────┘
        ┌──────────────┘            └──────────────┐
┌─────────────────┐              ┌──────────────────────┐
│    Director      │              │      Director        │
│ Budget and Risk  │              │ Financial Operations │
│   Management     │              └──────────────────────┘
└─────────────────┘        │            │            │
              ┌────────────┘            │            └────────────┐
    ┌──────────────┐        ┌──────────────────┐        ┌──────────────────┐
    │  Accounting   │        │ Chief Accountant │        │ Purchasing Officer│
    │  Specialist   │        └──────────────────┘        └──────────────────┘
    └──────────────┘              │          │                    │
                         ┌────────┘          └────────┐           │
                ┌──────────────┐          ┌──────────────────┐  ┌──────────────────┐
                │ Lead Payroll  │          │ Lead Accounts    │  │   Purchasing     │
                │  Specialist   │          │ Payable Specialist│  │   Assistant      │
                └──────────────┘          └──────────────────┘  └──────────────────┘
                ┌──────────────┐          ┌──────────────────┐
                │   Payroll     │          │    [Vacant]      │
                │  Specialist   │          │  A/P Specialist  │
                └──────────────┘          └──────────────────┘
```
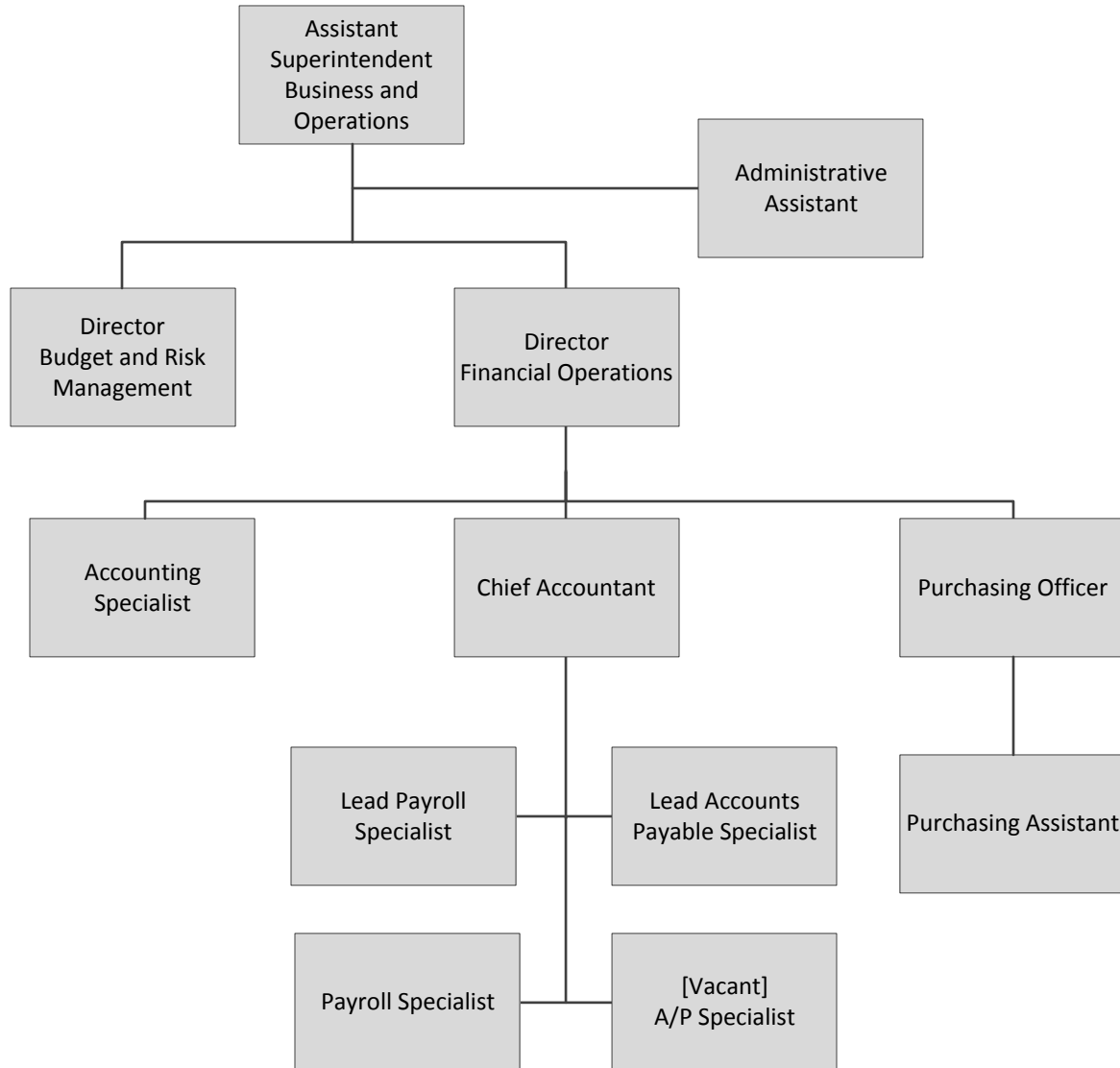
Source: HCPS financial operations, fall 2010

In addition to financial operations, the assistant superintendent of business and operations oversees budget and risk management, food services, building services, custodial services, planning and construction energy management, business partnerships and technology services. For a school system of HCPS' size, the financial operations team is very efficiently staffed.

Commendation: HCPS' staffing levels compare favorably to peers.

Staffing data for the business function for other Virginia school divisions is not available; however, HCPS compares favorably to other school divisions with regard to staffing for the overall administrative function. The most recent data available state-wide shows that HCPS has fewer administrative staff per

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1,000 students than similar school divisions. Tables 5.2 and 5.3 compare HCPS' administrative staff levels to other peer and regional school systems for fiscal year 2009.

Table 5.2 Administrative staffing peer comparison, FY 2009

School Division	Staffing per 1,000 Students	Students	Administrative	Technical & Clerical	Other Professional	Total
Hanover	**4.3**	**18,619**	**11.00**	**18.50**	**50.17**	**79.67**
Virginia	**5.5**	**19,139**	**15.33**	**31.18**	**58.40**	**104.91**
Spotsylvania	**4.3**	23,538	14.92	27.05	59.72	101.69
Roanoke County	**5.6**	14,666	12.00	20.77	49.22	81.99
Stafford	**6.7**	26,219	29.00	53.15	92.37	174.52
York	**6.9**	12,651	9.75	36.45	40.50	86.70

Source: Virginia Department of Education, fall 2010

Table 5.3 Administrative staffing regional peer comparison, FY 2009

School Division	Staffing per 1,000 Students	Students	Administrative	Technical & Clerical	Other Professional	Total
Hanover	**4.3**	**18,619**	**11.00**	**18.50**	**50.17**	**79.67**
Virginia	**5.5**	**19,139**	**15.33**	**31.18**	**58.40**	**104.91**
Chesterfield	**3.6**	57,957	33.45	104.36	69.15	206.96
Henrico	**4.8**	47,783	21.00	101.00	109.20	231.20
Goochland	**5.1**	2,431	6.00	3.00	3.30	12.30
Louisa	**5.9**	4,591	11.00	5.00	11.00	27.00
King William	**8.9**	2,101	7.60	5.20	6.00	18.80
Richmond (city)	**9.2**	21,586	18.00	61.00	119.50	198.50
Richmond (county)	**11.1**	1,193	6.00	3.09	4.11	13.20

Source: Virginia Department of Education, fall 2010

HCPS' staffing ratio is lower than or equal to all other peer school systems except Chesterfield County which has three times the number of students. HCPS has 25 fewer administrative staff employees than the state-wide average.

Each school has one staff member assigned for business-related functions. This "financial secretary" reports to the principal and handles all purchasing and student activity fund (SAF) accounting duties.

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Some secretaries are also responsible for payroll duties. Responsibility for the collection and deposit of funds for food services, as well as any purchases of cafeteria-related goods are handled by the individual cafeteria managers at each school.

Commendation: There is effective sharing of financial and administrative functions with Hanover County government.

HCPS maintains a close and effective relationship with Hanover County administrative offices. The county supports the division's financial operations by providing a variety of services. These include:

- **Financial software** – The county supports the software system used for general ledger, procurement, accounts payable and payroll functions.

- **Internal audit** – The county's internal audit office provides internal reviews of both county and HCPS operations.

- **Cash and investment management** – The treasury function is provided by Hanover County.

- **Fleet and transportation services** – The county provides maintenance service for cars and buses for HCPS and receives payment for labor and parts plus a mark-up for administrative overhead.

- **Ground maintenance** – The county's maintenance team provides ground maintenance for all division schools and administrative offices.

- **Comprehensive annual financial report (CAFR)** – HCPS does not produce a separate CAFR, but is included in the county's combined CAFR. The audit for the CAFR is primarily funded by the county. HCPS funds any audit fees associated with the SAF.

In addition to the above services, the county and HCPS recently contracted with a third-party for check printing and distribution. This joint initiative saves time and effort for both staffs. The vacant position in accounts payable (A/P specialist) has not been filled partly due to the reduced workload resulting from the outsourcing of check processing.

Commendation: Central office management displays depth of experience and low turnover.

The individual members of the management of the financial operations group (assistant superintendent, as well as the directors and managers who report to him) each has extensive experience at both the Hanover County and school division levels. This level of expertise and low degree of turnover provides a continuity that improves the operations and ensures a good relationship with their counterparts in county government administration.

B. Financial Performance

The expenditures for HCPS on a per-pupil basis compare favorably with other school systems in Virginia. The costs per pupil for HCPS over the past five years, along with the state-wide average are shown in Table 5.4. Table 5.4 also compares Hanover to the same peer school systems used in Tables 5.2 and 5.3

above. The rank indicated below is based on spending per pupil for the period from fiscal year 2006 through 2009.

Table 5.4 Cost per pupil

Year	HCPS	Virginia Average	Rank Among Peer Group
2010	$9,252	$11,020	1st
2009	$9,711	$11,315	5[th]
2008	$9,192	$11,037	2[nd]
2007	$8,601	$10,584	2[nd]
2006	$7,937	$9,755	2[nd]

Source: Virginia Department of Education, spring 2011

Over the five-year period from 2006 through 2010, costs per pupil at HCPS have increased slightly more than other school systems. HCPS per-pupil expenses have risen by almost 17 percent since 2006, while state-wide, costs have gone up by 13 percent.

According to the statistics reported by the Virginia Department of Education, in fiscal year 2007, HCPS had the 10[th] lowest cost per pupil of all 94 county school systems in Virginia and 14[th] lowest of all 132 county and city systems. In fiscal year 2010, the most recent year for which state-wide information is available, HCPS ranked 14[th] lowest of 94 counties and 15[th] overall of all 132 city and county school systems.

For the 2010 budget, expenditures were maintained at roughly the same levels as the previous year. For the 2011 budget however, HCPS adopted a budget with spending reduced to FY 2007 levels. General fund expenditures were reduced by approximately $18 million, to $179 million from $197 million in 2010. In order to achieve this budget reduction, over 142 budgeted positions were eliminated as shown in Table 5.5.

Table 5.5 Positions eliminated in fiscal year 2011

Position Type	Number of Positions
Instructional	54.2
Leadership	46.6
Other – non-Standards of Quality	8.4
Vacant positions	33.0
Total	**142.2**

Source: HCPS, adopted school budget, 2010-11

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C. Planning and Budgeting

The planning and budget process for HCPS is a nearly year-round process. The fiscal year for HCPS is July 1 through June 30 with the budget being adopted in April prior to the new fiscal year. Initial planning for the budget begins in the summer of the year prior to adoption of the budget. The development process incorporates input from school system staff, county government and community constituencies. Groups that provide formal input during the development of the annual budget include: principals, senior staff, parent-teacher associations, teacher groups, the school board, and members of the superintendent's business advisory focus group.

The budgeting process uses a DOS-based tool called BUDGEN. BUDGEN does not interface with the human resource system (Asset); therefore, all HR changes during the year are input separately to BUDGEN and Asset. Also, BUDGEN does not include hourly positions such as car drivers, certain special education staff or substitutes. Until 2010, all information in BUDGEN was keyed manually into the division's financial accounting system. Beginning in 2010, this step was automated by creating a file from BUDGEN in Microsoft Excel format for upload directly to the county general ledger system.

As a stand-alone system, BUDGEN facilitates the creation of the annual budget. However, the lack of effective integration with the HR system and with the school-county accounting system creates more work for the budget director in keeping the system in agreement with other financial information. For example, the BUDGEN system is periodically reconciled to the Asset system to ensure that all HR changes are reflected in BUDGEN. The fact that the Asset system does not include all vacant positions makes this reconciliation even more complicated. Finally there is no vendor technical software support for the BUDGEN system and HCPS is at risk of system failure during the budget process. It is recommended that the Asset system be updated to track all positions including vacant and this system be used as a source for budget data related to salaries.

Outside of funds raised from the issuance of debt, HCPS relies on division prior year surpluses, cash proffers, and support from the Hanover County governmental unit to finance capital improvement projects. HCPS management works closely with Hanover County administrative staff regarding the availability of funds for long-range capital improvement projects (CIP). The CIP is a five-year rolling schedule that summarizes the sources and uses of funds for capital projects such as new construction, renovation of existing facilities, technology projects and computer replacement, and other infrastructure investments. The HCPS adopted budget for fiscal year 2011 identifies approximately $68 million in investment projects over the next five years. The 2011 adopted budget also reports that, in addition to the positions that were eliminated for fiscal year 2010-11, the economic downturn also required the deferral of capital investments totaling over $12 million for school buses, a technical and career facility and improvements to increase elementary school capacity to fiscal years 2013 and beyond.

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Commendation: HCPS has developed robust and transparent annual planning and budgeting processes.

The school system maintains a five percent reserve (hold-back) on all school-based budgets as a contingency for revenue short-falls or cost overruns during the year. According to the 2011 adopted budget, this reserve was approximately $500,000. As the end of the school year approaches, schools are notified of the likelihood of the reserve being needed to cover other operating costs. Otherwise, schools are given ample time to utilize the remaining portion of their budgets prior to year-end.

All budget transfers in excess of $75,000 are approved by the school board. Transfers under this amount may be approved by the superintendent. On a practical basis, the budget director indicated that all changes in positions which impact the adopted budget must be submitted to and approved by the school board before any change is made in BUDGEN.

Each January, the superintendent publishes a proposed budget for the following fiscal year. This publication presents a comprehensive picture of HCPS' recent operating results and future financial plans. Detailed information is provided for the combined division, as well as financial information for each school and cost center. [Budgeting is discussed further in section C, Chapter 1 – Divisional Administration.]

D. Policies, Procedures and Use of Administrative Technology

Policies and procedures for the administrative and financial processes are well documented and understood. These processes include payroll, procurement card and general purchases, leave reporting and SAFs at each school. These procedures are codified in the HCPS policy manual which is available to employees online. Policies are comprehensive and address all areas of business activity.

The financial staff members who were interviewed at the schools are very knowledgeable and experienced for their assigned roles. Schools and the financial operations department utilize the HCPS intranet to ensure that procedures are followed and that the appropriate forms are consistently used.

Each school maintains one external bank account to help manage SAFs. The number of individual funds comprising each school's SAF account is extensive and includes student organizations (e.g., band, yearbooks, cheerleaders, and student clubs), academic areas (e.g., math, science, and art departments) and school operational areas (e.g., field trips, fundraisers, and vending machines). The scope and amount of funds associated with each SAF fund varies depending on the school level; however, the use of funds for school and student expenses is an integral part of the financial activity at each school. Each school uses a third-party, web-based system for tracking receipts and disbursements, as well as for reconciling SAF activity on a monthly basis. Access to the software system is protected. Central office staff can also access the system to check activity and verify balances of each school.

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Recommendation 5-1: Streamline the payroll process.

For payroll alone, HCPS maintains three information systems – Aesop Automated Substitute Placement & Absence Management system (Aesop), CIMS and SunGard HTE (HTE) – to account for the various types of leave and effort. For each of these systems, schools must use a complicated set of forms to record leave and hours worked. There appears to be some differences between the forms used at different schools; however, a detailed analysis of the procedures in place at the schools was not performed. As an example of the variety of forms in use, Table 5.6 notes forms and reports observed during elementary school site visits.

Table 5.6 Payroll-related forms and reports

Form or Report	Description	Frequency	Comments
Faculty sign-in sheet	All staff and faculty are required to sign-in daily	Daily	Sheets are not reviewed or used for other purposes
Notification of absence	Used by teachers only	Event only	Filed in school office only; duplicates information in Aesop
Leave request	Teachers complete for personal leave only	Event only	Input to Aesop; filed in school office
Leave request	All staff complete for requested leave	Event only	Staff leave is input to CIMS
Professional activity request	Teachers complete for professional activities (conferences, etc.)	Event only	Input to Aesop; filed in school office
Leave spreadsheet	Excel report listing all teacher leave and related substitutes	Monthly	Duplicates information maintained in Aesop
Monitor and substitute timesheet	Cafeteria staff monitors and substitutes only	Bi-weekly	Sent to central office for input to HTE
Extra duty pay	Custodians complete for pay in addition to regular hours	Bi-weekly	Sent to central office for input to HTE
Tutor stipend	Tutor on federal grants complete for stipend pay	Bi-weekly	Sent to central office for input to HTE
Attendance card	Non-certified staff complete	Monthly	Not input to any information system; reviewed in central office only
Attendance card	Administrative and professional staff complete	Monthly	Not input; reviewed in central office only
Attendance card	Aides and classified staff (10- and 11-month employees) complete	Monthly	Not input; reviewed in central office only

Sources: Pole Green Elementary and Battlefield Elementary School site visits, December 2010

In addition to the forms described above, a staff member at each school downloads reports of daily leave and substitute hours from the Aesop system for re-entry to the CIMS system which tracks leave balances for all employees. Leave taken by other staff is entered into CIMS based on leave request forms or other contemporaneous records (such as hand-written logs of daily employee absences) maintained of sick leave. On a monthly basis, central office staff members download the substitute teacher hours

from CIMS and re-key them into the HTE system for payroll processing. Other non-standard types of pay such as extra-duty pay and overtime are separately keyed into HTE for payroll processing.

The payroll process for certain groups, such as cafeteria employees, car drivers, and substitutes (custodians or other non-teaching employees), is entirely paper-based and manual. For each group, payroll data must be validated and input manually and this requires up to eight days per month for one employee in the central office to re-calculate manual timesheets, verify codes, and input timesheets into the HTE system. The timecards (for overtime only) are completed by every non-teaching employee and must be reviewed individually by the lead payroll specialist. This step requires approximately three days per month and generates a vast volume of paper records for filing and storage.

Significant time and division resources could be saved by streamlining the payroll process. The efficiency of the process would be improved by eliminating duplicate or unnecessary steps, reducing the number of forms used, and combining the different information systems (Aesop, CIMS and HTE) or automating the transfer of information from one system to the other. Automated timekeeping systems or time clocks would also eliminate the need for paper timesheets and allow employees to record their time and leave daily for upload to, or integration with, the payroll system. HCPS would continue to maintain the separate teacher/aide leave and substitute tracking system to automate the substitute calling and placement process. However, the data in the Aesop system could be formatted for upload to the leave and payroll systems rather than manually re-keyed as it is now.

All other forms for leave could be eliminated and division staff would be able to devote additional time to the review and analysis of employee leave and effort data, rather than data input.

FISCAL IMPACT

Streamlining payroll will require extensive mapping of current processes and forms. This could be performed by a joint effort of staff in the central business office and school administrative staff; however, an external consultant/facilitator would shorten the time needed to complete the process mapping and allow existing staff to focus on their primary responsibilities.

Improvements could be realized through simple measures such as the elimination of duplicate forms. It will likely require three to six months to map the current processes, identify improvements and implement changes, including training of staff on new procedures and forms.

To achieve maximum efficiency, the HCPS will need to invest in either electronic time clocks or a fully automated, web-based payroll system. If the decision is made to implement such systems, HCPS will need to develop requirements and issue a request for proposal to potential vendors. Depending on the solution adopted, investment in new equipment or software could range from a low of $25,000 to $50,000 for electronic time clocks to several hundred thousand dollars for time and attendance management systems.

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In addition to providing management with more reliable time and attendance information, automating payroll would eliminate paper flow and reduce time spent in the central business office and at the schools in administrative record keeping. However, we would not expect that HCPS would eliminate any current staff.

In the table below, costs are estimated at the lower end of the range for investment. Depending on the system selected, costs could be significantly higher.

Recommendation 5-1	One-Time Costs/ Savings	2010-11	2011-12	2012-13	2013-14	2014-15
Streamline payroll processes	($50,000)	$0	$0	$0	$0	$0

Note: Costs are negative. Savings are positive.

Recommendation 5-2: Invest in an integrated human resources / finance system.

Hanover County maintains the information system that supports financial functions as a shared service. The administrative functions supported by the county system include payroll, purchasing, accounts payable and general ledger. Separate systems are maintained for budget development (BUDGEN) and human resource management (Asset). The accounting systems for payroll (HTE) and purchasing (BAI) are HCPS centralized systems that depend largely on manual, paper-intensive processes.

In addition to the systems, schools and departments complete a variety of paper forms for timekeeping or leave reporting (depending on the position) and purchase requisitions. These forms are routed and approved manually and must be keyed into the respective information system by division administrative staff. This duplication of effort – preparing paper forms and re-entering data into the information system – for payroll and purchasing results in additional time spent than would not be required if using systems that support the work flow for payroll and purchasing transactions.

The division requires each employee to use direct deposit for payroll, rather than receive manual paychecks. However, each pay period, deposit advices are printed and stuffed for each employee.

An integrated human resources/finance system which includes employee self-service functions would enable employees to access pay check information online and the division could discontinue the distribution of payroll deposit advices. Such systems can also automate many common tasks, including the entry and routing of employee address changes, W-2 elections, requisitions and purchase orders, and other transactions that currently require HR, finance or payroll employees to handle administrative tasks manually.

Similar to the payroll process, significant aspects of the purchasing process are manual and paper-intensive. Paper requisitions are used by each school or department. Different forms are used depending on the source of the funds: SAF or county (appropriated) funds.

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Purchasing in HCPS occurs in three ways:

1. Purchase Order (PO)
2. Student Activity Fund Accounts
3. Procurement Cards (P-cards)

Purchase orders are issued only for purchases from appropriated funds that equal or exceed $5,000. The extensive use of SAF and procurement cards for school purchases reduces the volume of POs issued. During the past three fiscal years (2009, 2010 and six months of 2011), HCPS has used 659, 446 and 211 POs, respectively.

FISCAL IMPACT

The selection and implementation of a human resources/finance system will most likely require outside expertise for the requirements definition and the actual implementation of the system. However, one internal staff member for each module of the software purchased should be relieved of regular duties for the duration of the implementation so that they may focus on the proper configuration, population and documentation related to the project. Implementation projects typically last from 12 to 18 months.

Conservative estimates for the five-year fiscal impact could reach $2,550,000 – based on $150,000 for the requirements definition assistance, $1,500,000 for the software and implementation support, and $300,000 per year for maintenance and support for years three, four and five.

Based on our experience with system selections and implementations, one subject matter expert (SME) in each functional area (i.e., finance, purchasing, HR, Payroll, benefits) will be required to devote from half- to full-time to the implementation project during the implementation of their particular module. At other times, the time requirements will be minimal.

Recommendation 5-2	One-Time Costs/ Savings	2011-12	2012-13	2013-14	2014-15	2015-16
Requirements definition assistance	($150,000)	$0	$0	$0	$0	$0
Purchase and implement integrated system	$0	$0	($1,000,000)	($500,000)	$0	$0
Maintenance for system	$0	$0	$0	$0	($300,000)	($300,000)
Back-fill for SMEs	$0	$0	($150,000)	($37,500)	$0	$0
Total fiscal impact	**($150,000)**	**$0**	**($1,150,000)**	**($537,500)**	**($300,000)**	**($300,000)**

Note: Costs are negative. Savings are positive.

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Recommendation 5-3: Expand accessibility to the general ledger.

For SAF purchases, requisitions are routed to the school office and purchasing decisions are made by school administrative staff. Each school uses an external bank account for SAF purchases and tracks the use of SAF funds using the *SchoolFunds* software system.

All schools utilize a Microsoft Excel spreadsheet to track expenditures from appropriated funds (SAF – *SchoolFunds* software). A running balance of available funds (taking into consideration the five percent reserve for contingencies) is maintained for each account. Just recently, connectivity to the county AS400 that houses the BAI accounting system has been established for individual schools. Departments in the central office have been given access to the BAI accounting system within the last year for real-time inquiry of the general ledger and accounts payable. With the newly established connectivity, this access will be granted to individual schools. Financial operations and food services currently input disbursements to the accounting system, and access will be granted to additional departments in the central office, and ultimately the schools.

Furthermore, the BAI system does not "pre-encumber" funds when a purchase requisition is entered; encumbrances are created only after a requisition is approved and the purchase order is created. Periodic financial information sent to each school includes only budgeted (original and revised) expenditures, encumbered funds (where a PO has been issued), and actual expenditures to date.

Giving schools and departments access to their accounts on the general ledger would ideally eliminate the need for maintaining a separate set of books, although without pre-encumbrance functionality, pending purchases will need to be tracked manually. Additional training would be needed to give school staff the ability to prepare monthly financial analyses using the county/division's accounting system data similar to those prepared now on spreadsheets.

FISCAL IMPACT

The implementation of this recommendation would take approximately four hours of a county financial system security specialist's time, and would have no fiscal impact to HCPS.

Commendation: HCPS effectively uses P-cards for small dollar purchasing.

Schools and departments can utilize P-cards for any purchases up to the limit on each card/account. For most cards, the limit is generally $5,000 per transaction and $10,000 per monthly billing cycle. Further restrictions are placed on the category of merchants and types of goods/services for which the cards can be used. As of December 2010, there were 223 active P-cards. In fiscal year 2010, HCPS cardholders made 6,429 individual purchases totaling approximately $1.3 million, an average of just over $200 per transaction.

The P-card program is an efficient means of delegating purchasing authority to schools and departments. The program is administered by a large U.S. bank and the cards are used by almost all schools and departments. One elementary school does not use a P-card.

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Recommendation 5-4: Automate the P-card program.

The technology supporting the P-card program is not state-of-the-art. It requires significant manual review/approval of transactions and manual entry of financial data to the BAI accounting system. P-card transactions cannot be downloaded from the bank administrator's website for entry to BAI in an efficient manner. Also, there is no workflow for transaction coding (validation) and approval. All transactions are manually coded and each transaction is approved on paper statements. All paper receipts and statements are forwarded to the central office and re-verified and re-keyed by purchasing staff. Based upon external audit requirements, the use of pre-approval forms effectively results in the use of a "purchase order" for procurement card transactions which is antithetical to the purpose of the card.

It is also important that controls be implemented over the electronic processing of individual transactions and monthly statements. Each employee should review and approve his/her transactions online and verify or change the respective account code charged. Each transaction should also be reviewed online by someone with knowledge of the types of transactions permitted for that card. These reviews must be performed on a timely basis to ensure that payment of the balance of the card represents valid and appropriate charges to the school division.

Automating the coding, review and approval of transactions will relieve administrative burden on financial staff at the schools and accounts payable at the central office. The P-card program is managed by the state of Virginia, and, as such, HCPS may not be able to eliminate or reduce the manual aspects of the P-card program. According to county officials, the program's bank administrator is automating the transaction processing and the division has recently received notification that more streamlined processes are available to the division.

It is likely that the volume of purchases using the P-cards (both in number of transactions and total dollar amount) will increase over time. Using paper receipts or statements for accounting or control purposes with increased usage will become more inefficient. Therefore, it is critical that all P-card users become familiar with and utilize the online system to process transactions and approve statements.

FISCAL IMPACT

Streamlining the procurement card processing can be accomplished with existing central business office and selected school administrative staff and would require approximately 40 hours. No additional costs are expected to be incurred to automate P-card processing. We also anticipate that the automation of the process will alleviate administrative duties both in the central office and at the schools, but will result in no reduction in overall staff.

E. Review and Evaluation of Contracting Process

The central office purchasing staff assists schools and departments in the negotiation of contracts. Data provided by the purchasing department reports that as of December 2010 there were 240 active,

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competitively-bid contracts. Of these, 94 contracts were negotiated through cooperative organizations (county, state and national cooperative groups).

The purchasing process at HCPS is decentralized due to the relatively low volume of POs and high level of purchases using SAF and P-cards. There may be opportunities to gain leverage when HCPS is purchasing larger quantities of goods individually for all schools. The purchasing officer reported that she continually monitors purchases to determine whether amounts exceed $5,000 and where collective bidding could be advantageous.

Recommendation 5-5: Analyze commodity codes for contract purchasing.

Current spending by schools and departments (including SAF account spending) ideally would be analyzed by commodity codes or categories to determine whether centralized contracts for products or services with collectively high amounts of annual purchases could be negotiated to obtain better terms. However, the current BAI financial system does not track purchases by commodity code.

FISCAL IMPACT

Central business office purchasing staff can implement this recommendation. Full implementation would require approximately 40 staff-hours to complete. Without further, extensive analysis of current purchasing patterns, we cannot estimate potential savings opportunities.

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Chapter 6 – Transportation

Introduction

School divisions in Virginia may, but are not required to, provide transportation for students in the general population between home and school, from school to vocational training and for extracurricular activities. The federal Individuals with Disabilities Education Act (IDEA) requires a school division to provide transportation for students with disabilities if the school division also provides transportation for students in the general population, or if students with disabilities require transportation to receive special education services. The pupil transportation services department (transportation department) of Hanover County Public Schools (HCPS) is responsible for the planning and operation of home to school transportation services for regular, exclusive (special needs), Head Start and preschool programs. In addition, the department provides transportation for educational field trips and extracurricular activity trips within a 50-mile radius for all schools in the division. The mission of the transportation department is to provide excellent customer service while transporting students to and from school in a safe, efficient, and cordial manner.

The geographical size of Hanover County is 473 square miles and there are 25 schools in the county. Approximately 86 percent of HCPS enrolled students use school transportation. The Hanover County fleet services department (HCFSD) maintains school buses and other school division vehicles. The HCPS transportation department and the HCFSD are co-located in a facility on Lakeridge Parkway in Ashland, Virginia. HCFSD is responsible for maintaining and servicing school buses, school division general service vehicles, and county vehicles. Spare buses and a small number of route buses are assigned overnight parking at the Lakeridge compound. Most route buses are parked overnight at various locations throughout the county, including school parking lots, local churches, and drivers' homes. School buses are fueled at one of six Hanover County facilities around the county.

A review of the Virginia Department of Education pupil transportation report for the 2008-09 school year (the most recent year for which the transportation department had completed the report as of December 2010) shows the total cost of operations was $8,433,000. The transportation department operated 2,548,200 total school bus miles for an average cost of $3.31 per mile. The daily number of vehicles operated to provide home to school transportation were 250 school buses (222 regular route and 28 special needs route buses) and 24 cars for special needs students. The average annual cost per rider for regular home to school miles (excludes deadhead miles) was $266. The average annual cost per special needs rider for home to school miles (excludes deadhead miles) was $3,160.

The HCPS transportation department is dedicated to transporting children to and from school safely and on time and to ensuring the fleet of vehicles is clean and well maintained. Personnel in the HCPS transportation department do an excellent job of transporting students safely and with limited incidents. Transportation management staff has implemented changes in school bus routes and bus assignments to reduce cost and improve efficiency in the last two years.

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This chapter provides commendations and recommendations related to five aspects of student transportation:

A. Organization and Staffing
B. Routing and Scheduling
C. Planning, Policies and Practices
D. Training and Safety
E. Vehicle Maintenance and Bus Replacement Schedules

While state reporting was included in the review of the transportation department, no major commendations, findings, or recommendations resulted from the review.

Several significant commendations are identified in this chapter:

- The transportation department lowered operating costs from $8.6 million in 2007-08 to $8.2 million in 2009-10;

- Special needs transportation costs per student rider are lower than peer school divisions;

- The special education department reports an excellent partnership with the transportation department to ensure every special needs student is provided the required transportation services;

- The transportation department reduced deadhead miles by almost 20 percent;

- Department launched a new telephone service to provide recorded information about school bus routes and schedules and to reduce phone calls directly to staff;

- Hanover County replaced the aging and outdated public safety radio system with a modern digital system and facility at no cost to the school division; and

- Administrators in the schools support school bus drivers and take responsibility for disciplining students who misbehave on the bus.

Table 6.1 provides a summary of transportation recommendations and resulting fiscal impacts over the next five years.

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Table 6.1. Fiscal impact of recommendations

Recommendation	Priority	One-Time Costs/ Savings	2011-12	2012-13	2013-14	2014-15	2015-16	Total Fiscal Impact
Organization and Staffing								
6-1. Revise organization structure	High	$0	$0	$0	$0	$0	$0	$0
6-2. Establish dispatcher positions	High	$0	($66,413)	($66,413)	($66,413)	($66,413)	($66,413)	**($332,065)**
6-3. Establish contract substitute drivers	Medium	$0	($72,742)	($72,742)	($72,742)	($72,742)	($72,742)	**($363,710)**
Routing and Scheduling								
6-4. Adopt written guidelines for route design	High	$0	150,171	150,171	150,171	150,171	150,171	**$750,855**
6-5. Implement automated routing and scheduling for special needs	Medium	$0	$0	$0	$0	$0	$0	**$0**
6-6. Develop procedures to implement all features of the T.O.M. software	Low	$0	$0	$0	$0	$0	$0	**$0**
Planning, Policies and Practices								
6-7. Adopt a system for performance measurement and monitor trends	High	$0	$0	$0	$0	$0	$0	**$0**
Vehicle Maintenance and Bus Replacement Schedules								
6-8. Develop a master plan for transportation facilities	Medium	($50,000)	$0	$0	$0	$0	$0	**($50,000)**
Net Fiscal Impact		**($50,000)**	**$11,016**	**$11,016**	**$11,016**	**$11,016**	**$11,016**	**$5,080**

Note: Costs are negative. Savings are positive.

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A. Organization and Staffing

The director of pupil transportation services reports to the associate superintendent for policy and administration. The director oversees the personnel in transportation department, which includes 12 administrative staff, 238 contracted bus drivers, 29 car drivers, 21 attendants, and eight traffic guards. There are approximately 41 substitutes (bus drivers, car drivers, and attendants) employed on an as needed basis for two or four hours per day.

The administrative staff is comprised of an assistant director, three lead drivers, two routing specialists, a special needs specialist, a trainer, a payroll specialist, an accounting specialist, and a field trip coordinator. The director of pupil transportation services is responsible for coordinating with the director of HCFSD to ensure all school buses are well maintained.

Lead drivers are responsible for 70 to 90 drivers for which they answer questions, help with issues, and ensure that the paperwork for each driver's route is completed. In addition to responsibilities to supervise drivers, lead drivers answer phones and respond to calls from parents and school administrators, pull and review videotapes from cameras on buses, review vehicle fuel records, and serve as assistant trainers. Lead drivers also drive school bus routes when there are not enough drivers available.

The route specialists are responsible for planning and scheduling all regular routes. The special needs coordinator works with department of special education and oversees scheduling special needs routes. The trainer is responsible for all training for new drivers and attendants. Support staff for the transportation department includes a payroll specialist, an accounting specialist, and a field trip coordinator.

Bus drivers and car drivers are generally contracted to work a four-hour day at a minimum; however, two drivers work a five-hour day, three shuttle bus drivers work a six-hour day, and seven shuttle bus drivers work an eight-hour day. Each attendant is employed for a four-hour day and is assigned to a special needs route when required to assist students. Traffic guards help to direct traffic and assist bus drivers at school campuses where needed.

Over the past two years, the number of lead drivers was reduced from four to three. Ten bus driver positions were eliminated to control rising costs. The 10 driver positions represent a reduction in 18 bus trips (an individual bus trip to a school). When a bus trip is eliminated, the route coverage and student load must be accommodated on another bus. A reduction in number of bus trips increases route time for other affected buses and increases the number of students assigned to the buses.

Table 6.2 documents the actual HCPS expenses for student transportation for the school years 2005-06 through 2009-2010, as well as the approved budget for 2010-11. Overall expenses, including fuel, decreased from the previous year in 2008-09 and 2009-10. The budget reflects a 10 percent increase in expenses for 2010-11; however, 7.8 percent of the 10 percent increase is budgeted for an expected rise in the cost of fuel. Another 1.7 percent of the 10 percent increase reflects additional costs for personnel benefits according to division policy.

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Table 6.2. HCPS student transportation expenses, 2005-06 through 2009-10 and budget 2010-11

Expense Type	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11 Adopted Budget
Salaries Administration	$492,411	$520,022	$548,271	$563,584	$544,251	$531,869
Salaries/Wages Drivers	$3,671,030	$3,887,088	$4,089,899	$4,251,183	$4,129,628	$4,071,252
Personnel Benefits	$865,113	$1,117,560	$1,194,162	$1,325,004	$1,320,870	$1,460,701
Vehicle Maintenance	$1,017,876	$1,097,716	$1,131,390	$1,133,824	$1,056,978	$1,127,085
Motor Vehicle Insurance*	$151,663	$165,457	$173,460	$189,746	$196,618	$196,618
Contracted Services	$12,453	$20,735	$29,873	$34,529	$32,826	$43,958
Other Costs	$41,071	$62,002	$38,249	$110,316	$48,032	$64,556
Subtotal	**$6,251,617**	**$6,870,580**	**$7,205,304**	**$7,608,186**	**$7,329,203**	**$7,496,039**
Percent Annual Change		10%	5%	6%	-4%	2%
Fuel & Lubricants	$918,469	$973,499	$1,416,524	$887,197	$886,971	$1,526,659
Total Cost	**$7,170,086**	**$7,844,079**	**$8,621,828**	**$8,495,383**	**$8,216,174**	**$9,022,698**
Percent Annual Change		9%	10%	-1%	-3%	10%

Source: HCPS fund 700 & 750 reports 2005-06 through 2009-10 and management budget, FY 2010-11 operating budget.

*Motor vehicle insurance estimated for 2010-11 equal to 2009-10

Commendation: The transportation department has lowered operating costs.

The transportation department lowered operating costs each of the past two school years, 2008-09 and 2009-10. Savings were due to attrition of staff and a reduction in miles operated.

Recommendation 6-1: Revise the transportation department's organization structure.

The formal organization structure of the transportation department reflects 11 direct reports to the director of pupil transportation services. This reflects an excessive span of responsibility for the director and unclear lines of authority and responsibility for the assistant director. Figure 6.1 illustrates the current organization chart for the department.

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Figure 6.1. HCPS transportation department – current organization

```
                    ┌──────────────────┐
                    │    Associate     │
                    │  Superintendent  │
                    │   Policy and     │
                    │  Administration  │
                    └──────────────────┘
                             │
                    ┌──────────────────┐
                    │     Director     │
                    │      Pupil       │
                    │  Transportation  │
                    └──────────────────┘
                             │
     ┌────────────────────┐  │  ┌────────────────────┐
     │  Assistant Director│──┼──│  Payroll Specialist│
     └────────────────────┘  │  └────────────────────┘
     ┌────────────────────┐  │  ┌────────────────────┐
     │     Lead Driver    │──┼──│    Accounting      │
     │                    │  │  │    Specialist      │
     └────────────────────┘  │  └────────────────────┘
     ┌────────────────────┐  │  ┌────────────────────┐
     │     Lead Driver    │──┼──│  Routing Specialist│
     └────────────────────┘  │  └────────────────────┘
     ┌────────────────────┐  │  ┌────────────────────┐
     │     Lead Driver    │──┼──│  Routing Specialist│
     └────────────────────┘  │  └────────────────────┘
     ┌────────────────────┐  │  ┌────────────────────┐
     │      Trainer       │──┼──│   Special Needs    │
     │                    │  │  │    Specialist      │
     └────────────────────┘  │  └────────────────────┘
     ┌────────────────────┐  │  ┌────────────────────┐
     │    Bus Drivers     │──┴──│    Field Trip      │
     │                    │     │   Coordinator      │
     └────────────────────┘     └────────────────────┘
```
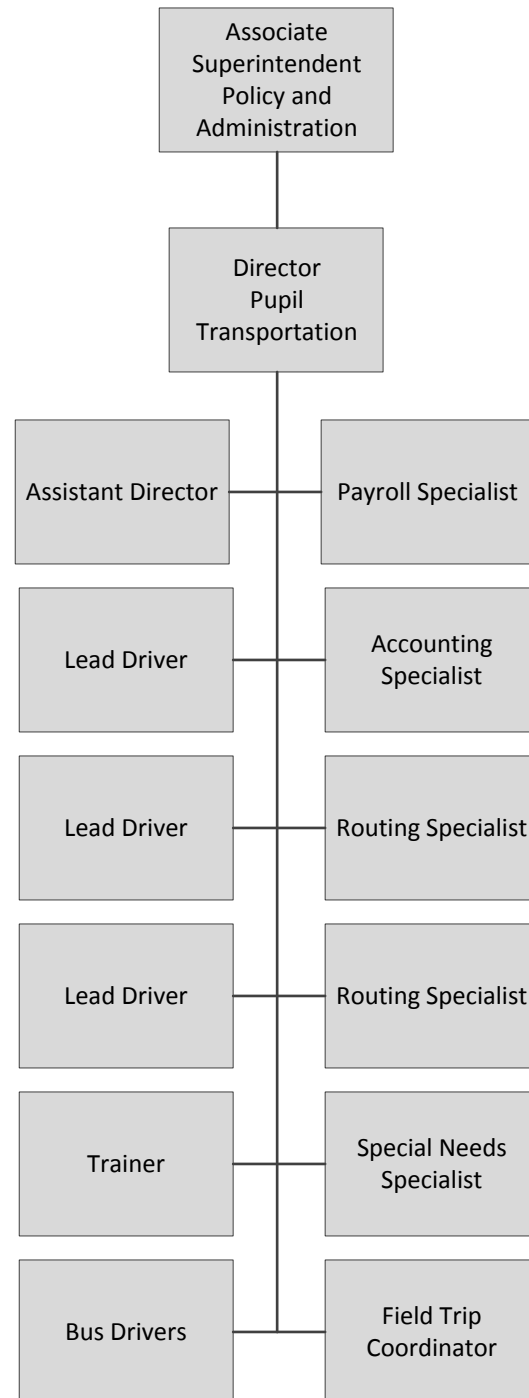
Source: HCPS organization chart, 2010

Figure 6.2 illustrates the recommended organization structure designed to meet the following objectives:

- Reduce the span of control for the director of pupil transportation services;
- Establish the assistant director as responsible for day-to-day operations;

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- Define clear reporting relationships for all staff;

- Add a dispatcher in the operations group (see Recommendation 6-2);

- Align the special needs specialist with the routing specialists in anticipation of implementing automated routing and scheduling for special needs routes;

- Focus the time of routers on efficient route design and route revisions;

- Place the strategic route design and planning function under the direct management of the director of pupil transportation; and

- Permit the director to focus on long-term planning and process improvements.

Figure 6.2. HCPS transportation department – proposed organization
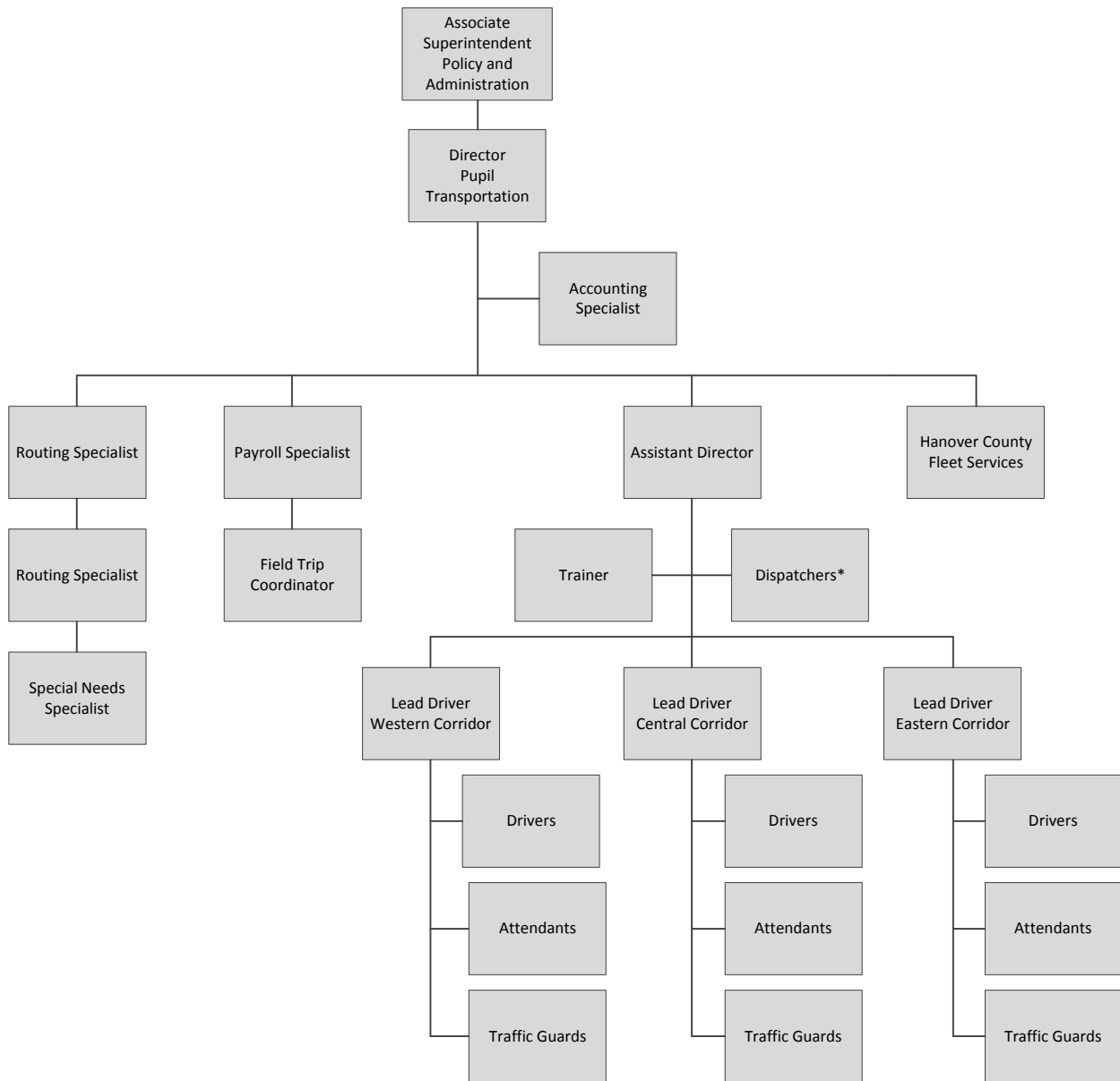
Source: Texas Transportation Institute

*Dispatchers are a new proposed position

FISCAL IMPACT

This recommendation can be implemented with existing resources with a commitment of no more than 16 hours by the director of pupil transportation services. The director should communicate the new organization chart to all employees and then follow through by delegating authority to the assistant director for day-to-day operations. This will permit the director to dedicate his time to inter-departmental management, long-term planning, and resolving processes that need improving. For

example, the director can work directly with the routing specialists to define guidelines for bus route design.

Recommendation 6-2: Establish positions for dispatchers.

The staffing levels for administrative staff are appropriate; however, there is no dispatcher to monitor field communications and oversee operations.

HCPS does not have bus compounds where drivers report each day and park school buses overnight. Buses must be parked in many different locations, spread across the entire county. Many buses are driven home by the driver each night. The remote parking locations and lack of a central place for drivers to report each day creates challenges in supervising service. Supervisors are not in contact with bus drivers each morning, creating difficulty in communication and control. When a driver does not report and does not call in by telephone, there is no way to know the school bus is not in service until a parent calls and reports a "no-show."

Radios are monitored by all lead drivers and all administrative personnel in the HCPS transportation department; however, there is no single point of contact and authority. During periods of inclement weather or other significant disruption in normal operations, there are many telephone calls, as well as radio messages, coming into the transportation department from parents, school administrators, and drivers. Virtually every member of the administrative staff is distracted from normal duty to answer telephone calls and radio messages. Several administrative staff told the reviewer that on a typical day of operation, telephone calls about operations regularly disrupt normal duties.

Dispatch is a vital function of any transportation department. In most public transit agencies, the use of radios allows a dispatcher to manage service for the entire agency from one centralized location in a professional manner. Without a qualified and trained dispatcher and without adequate dispatch procedures, communication between supervisors and drivers can be disrupted. Such disruptions can result in poor on-time performance, which was cited by the director of pupil transportation as one of the most critical performance challenges for quality of service.

All HCPS buses have radios and could communicate with a dispatcher at any time. Daily reports should include a required "report to duty" by each driver to verify all bus routes are operating on schedule. The dispatcher would relay any delays in service to the appropriate school administrator and update other automated notices.

A dispatcher will be the single point of contact for all drivers, ensuring consistency for needed communication. The dispatcher will also be responsible for filling same day vacant driver assignments and absences with substitute drivers in a timely manner. By directing primary responsibility for communication with drivers to the dispatcher, other personnel in the transportation department will be able to go about normal business without unnecessary interruptions. In particular, lead drivers will be more available for field supervision.

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The evaluation team's recommendation is to employ a full-time dispatcher and a part-time dispatcher required to be on duty at all times during operations. During the summer, only one dispatcher needs to be on duty since fewer buses are on the road. The full-time dispatcher should work year-round, and the part-time dispatcher should work only during the school year.

FISCAL IMPACT

A full-time dispatcher at eight hours each day for a 260-day year will result in 2,080 hours per year. One part-time dispatcher at four hours each day for a 180-day year will result in 720 hours per year. Benefits for the full-time dispatcher are based on a new non-professional position. Benefits for the part-time dispatcher assume additional hours for a current four-hour driver, plus benefits.

In order to estimate the fiscal impact of creating these positions, the following assumptions were made:

Table 6.3. Dispatcher cost calculation

Assumption	Full-Time Dispatcher	Part-Time Dispatcher
Average Driver Hourly Rate	$16.67	$16.67
Days per Year	260	180
Hours per Day	8	4
Wages	**$34,673.60**	**$12,002.40**
Benefits Cost Factor	40.0%	48.89%
Annual Costs for Position	**$48,543.04**	**$17,870.37**
Total Annual Costs	**$66,413.41**	

Source: Texas Transportation Institute

Based on these assumptions, creating these new positions will cost $66,413.41 per year.

Recommendation 6-2	One-Time Costs/ Savings	2011-12	2012-13	2013-14	2014-15	2015-16
Establish dispatcher positions	$0	($66,413)	($66,413)	($66,413)	($66,413)	($66,413)

Note: Costs are negative. Savings are positive.

The director and assistant director of pupil transportation services will prepare a draft job description for a dispatcher and then work with the human resources department to post the full-time and part-time positions. The time required to prepare the job description should be no more than 16 hours of effort to gather an example job description from another school division or public transportation agency and revise to suit HCPS. The responsibility for certifying the job description and recruiting and employing qualified candidates is part of the duties of the HCPS human resources department. The assistant

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director of pupil transportation services and the trainer will be responsible for training the full-time and part-time dispatchers during the summer of 2011. Approximately 40 hours of classroom training and 40 hours of on-the-job training should be provided to the new dispatchers. The summer is an excellent time to do the training as it can be incorporated in the regular work of the assistant director and trainer. The dispatchers can be on-duty and ready for work by the start of the 2011-12 school year.

Recommendation 6-3: Establish contract substitute drivers who will be available for duty each day.

Driver lateness and absences are problems for the HCPS transportation department. Records to evaluate individual driver attendance records and chronological absentee trends were not available; however, the payroll specialist estimated average daily driver absence as 10 percent of scheduled drivers.

Drivers may schedule personal leave and may be absent due to illness. The transportation department administrative staff schedules part-time substitute drivers to fill vacant assignments that are known in advance. However, each day the staff faces a challenge to fill driver assignments when drivers call-in absent without advance notice. The part-time substitute drivers are expected to be available by telephone. In actual practice, the substitute drivers are often not available or simply do not answer the telephone. Substitute drivers are permitted to decline an assignment, often leaving the transportation department without sufficient drivers for all routes. There are no permanent substitute drivers to ensure a ready source of available drivers. The transportation department eliminated substitute drivers as a cost saving effort within the last two years.

Establishing contract positions for substitute drivers will ensure a pool of drivers is prepared and available to fill same day vacant assignments. A pool of eight drivers (three percent of daily assignments) will represent an adequate resource to fill most daily needs. The payroll specialist can adjust the number of drivers needed to reflect actual experience after conducting additional analysis.

FISCAL IMPACT

The cost of establishing contract positions is detailed in Table 6.4. The transportation department has already budgeted $165,819 for substitute drivers' wages in 2010-11. However, as contract employees, the substitute drivers will be guaranteed four hours per day and will receive health benefits. Assuming a net increase of two hours per day (the guaranteed four hours, less the assumed budgeted two on-call hours for substitute drivers) the increased wages and benefits for each contract substitute will be $9,092.81 per driver, bringing the total annual costs to $72,742.48 ($9,092.81 x 8 drivers).

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Table 6.4 Cost for substitute drivers

Assumption	On-Call Substitute Driver	Contract Substitute Driver	Increased Cost
Average Driver Hourly Rate	$13.53	$13.53	
Days per Year	180	180	
Hours per Day	2	4	
Wages	**$4,870.80**	**$9,741.60**	
Benefits Cost Factor	11.1%	48.89%	
Annual Costs per Driver	**$5,411.46**	**$14,504.27**	**$9,092.81**
Drivers			8
Total Increased Cost for Eight Contract Substitute Drivers			**$72,742.48**

Source: Texas Transportation Institute

Based on these assumptions, establishing contract substitute driver positions will cost $72,742.48 per year.

Recommendation 6-3	One-Time Costs/ Savings	2011-12	2012-13	2013-14	2014-15	2015-16
Establish contract substitute drivers	$0	($72,742)	($72,742)	($72,742)	($72,742)	($72,742)

Note: Costs are negative. Savings are positive.

The director and assistant director of pupil transportation services will work with the human resources department to post the positions for contract substitute drivers. The job description is already available since the position was part of the transportation department previously. The responsibility for recruiting and employing qualified candidates is part of the duties of the HCPS human resources department. The assistant director of pupil transportation services and the trainer will be responsible for training the contract substitute drivers during the summer 2011 as part of regular school bus training classes. Contract substitute drivers may be recruited from the current pool of substitute drivers, requiring little or no additional training. The contract substitute drivers can be on-duty and ready for work by the start of the 2011-12 school year.

B. Routing and Scheduling

Routing and scheduling student bus routes are one of the most important factors in establishing an effective and cost-efficient student transportation system. The routing specialists for HCPS use an automated program (Edulog) to plan routes and schedules for regular routes. The staff responsible for

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special needs transportation does not use an automated system; all routes are planned and scheduled through manual procedures.

Performance indicators to measure service effectiveness and efficiency are riders per bus, miles per bus, cost per mile, and cost per rider. Tables 6.5 through 6.12 provide a comparison of performance indicators for HCPS to peer school divisions based on data reported to the Virginia Department of Education in 2008-09, the most recent year for which peer data are available. Table 6.5 documents riders per bus for regular routes, and Table 6.6 illustrates riders per bus for special needs routes. Riders per bus route is determined by dividing the average daily riders by the number of route buses.

Table 6.5. HCPS and peer divisions regular route riders per bus, 2008-09

School Division	Daily Regular Riders	Regular Route Buses	Regular Riders/Bus
Roanoke County	9,080	123	74
Spotsylvania County	21,830	232	94
Stafford County	17,243	166	104
York County	12,167	111	110
Peer Average	*15,080*	*158*	*96*
Hanover County	**16,048**	**222**	**72**
Percent Different from Peer Average	*6%*	*41%*	*-25%*

Source: Virginia Department of Education pupil transportation reports, 2008-09

Table 6.6. HCPS and peer divisions special needs route riders per bus, 2008-09

School Division	Daily Special Riders	Special Route Buses	Special Riders/Bus
Roanoke County	284	31	9
Spotsylvania County	509	48	11
Stafford County	532	41	13
York County	221	26	9
Peer Average	*387*	*37*	*11*
Hanover County*	**280**	**28**	**10**
Percent Different from Peer Average	*-28%*	*-23%*	*-5%*

Source: Virginia Department of Education pupil transportation reports, 2008-09

*Hanover County also operates 24 cars for special needs student transportation, including cars, the Hanover average special riders per vehicle = 5

Table 6.7 documents miles per bus for all student transportation services. On average, HCPS operates fewer miles per route bus than peer school divisions.

Table 6.7. HCPS and peer divisions annual miles per bus, 2008-09

School Division	Total Annual Miles	Total Bus	Miles/ Bus	Average Miles/Day
Roanoke County	1,837,434	154	11,931	66
Spotsylvania County	4,817,811	280	17,206	96
Stafford County	3,353,132	207	16,199	90
York County	2,231,057	137	16,285	90
Peer Average	*3,059,859*	*195*	*15,405*	*86*
Hanover County	**2,548,231**	**250**	**10,193**	57
Percent Different from Peer Average	*-17%*	*29%*	*-34%*	*-33%*

Source: Virginia Department of Education pupil transportation reports, 2008-09

One reason for lower riders per bus and lower miles per bus is that HCPS has fewer school campuses for the county land area as compared to peer school divisions, as shown in Table 6.8. Middle and high schools in HCPS are co-located. This means home to school bus routes are structured to operate bus trips to elementary schools and to middle/high schools (two tiers). Other school divisions locate middle and high schools on different campuses, calling for a third tier for home to school bus trips. Multiple

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tiers (multiple bus trips for a single bus) generate more miles per bus and more daily riders per bus. Another factor is the HCPS goal to limit student ride time to no more than 50 minutes.

Table 6.8. HCPS and peer divisions population, land area and number of schools, 2009

School Division	Population 2009	Land Area Square Miles	Population/ Square Mile	Schools*	Square Miles/ School
Roanoke County	91,011	251	363	26	9.6
Spotsylvania County	120,977	401	302	29	13.8
Stafford County	124,166	270	459	30	9.0
York County	61,140	106	579	26	4.1
Peer Average	*99,324*	*257*	*426*	*28*	*9.1*
Hanover County	**99,933**	**473**	**211**	**23**	**20.6**

Source: Square miles from Census 2000 and population based on 2009 census estimates

* Number of schools from Virginia Department of Education school report cards

Table 6.9 documents student transportation cost per mile of operation for HCPS and peer school divisions. Cost per mile reflects operating cost-efficiency.

Table 6.9. HCPS and peer divisions cost per mile, 2008-09

School Division	Total Annual Miles	Total Operational Cost	Cost/Mile
Roanoke County	1,837,434	$5,140,812	$2.80
Spotsylvania County	4,817,811	$14,792,216	$3.07
Stafford County	3,353,132	$11,959,453	$3.57
York County	2,231,057	$5,743,072	$2.57
Peer Average	*3,059,859*	*$9,408,888*	*$3.00*
Hanover County	**2,548,231**	**$8,433,024**	**$3.31**
Percent Different from Peer Average	*-17%*	*-10%*	*10%*

Source: Virginia Department of Education pupil transportation reports, 2008-09

Table 6.10 documents student transportation cost per daily rider for HCPS and peer school divisions. Cost per rider reflects operating cost-effectiveness. Based on the total student transportation program, HCPS' cost per rider is 12 percent lower than peer school divisions.

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Table 6.10. HCPS and peer divisions annual operational cost per daily rider, 2008-09

School Division	Total Daily Riders	Total Operational Cost	Total Annual Operational Cost/Rider
Roanoke County*	9,367	$5,140,812	$549
Spotsylvania County	22,339	$14,792,216	$662
Stafford County*	17,946	$11,959,453	$666
York County	12,388	$5,743,072	$464
Peer Average	*15,510*	*$9,408,888*	*$585*
Hanover County	**16,328**	**$8,433,024**	**$516**
Percent Different from Peer Average	*5%*	*-10%*	*-12%*

Source: Virginia Department of Education pupil transportation reports, 2008-09

*Roanoke County reported 3 riders and Stafford County reported 171 riders in addition to riders on regular and special needs routes

The HCPS operational cost per mile for student transportation is higher than peer school divisions, but the annual operational cost per rider is lower. The reason cost per rider is lower is because HCPS operates fewer annual miles per school bus and fewer average annual miles per daily student rider than peer school divisions, as illustrated in Table 6.11.

Table 6.11. HCPS and peer divisions average miles per bus and average miles per daily rider, 2008-09

School Division	Total Annual Miles	Total Buses	Average Miles/Bus	Total Daily Riders	Average Miles/ Daily Rider
Roanoke County	1,837,434	154	11,931	9,367	196
Spotsylvania County	4,817,811	280	17,206	22,339	216
Stafford County	3,353,132	207	16,199	17,946	187
York County	2,231,057	137	16,285	12,388	180
Peer Average	*3,059,859*	*195*	*15,405*	*15,510*	*195*
Hanover County	**2,548,231**	**250**	**10,193**	**16,328**	**156**
Percent Different from Peer Average	*-17%*	*29%*	*-34%*	*5%*	*-20%*

Source: Virginia Department of Education pupil transportation reports, 2008-09

Table 6.12 compares the cost per daily rider for regular transportation and the cost per daily rider for special needs transportation. HCPS' cost per regular rider is four percent higher than the average of peer school divisions, and HCPS' cost per special needs rider is 40 percent lower than peer school divisions.

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The cost-effectiveness of HCPS' special needs transportation is the reason the HCPS total student transportation cost per rider is 12 percent lower than peer school divisions.

Table 6.12. HCPS and peer divisions regular and special cost per daily rider, 2008-09

School Division	Annual Cost/ Regular Rider	Annual Cost/ Special Rider	Annual Cost/ Rider
Roanoke County	$263	$3,610	$549
Spotsylvania County	$244	$6,915	$662
Stafford County	$306	$5,848	$666
York County	$212	$4,594	$464
Peer Average	*$256*	*$5,242*	*$585*
Hanover County	$266	$3,160	$516
Percent Different from Peer Average	*4%*	*-40%*	*-12%*

Source: Virginia Department of Education pupil transportation reports, 2008-09

Between 2005-06 and 2007-08, the HCPS student transportation program reflected a decrease in school-related miles and extracurricular miles, but an increase in deadhead miles. Deadhead miles are the miles to and from the start/end of school bus routes when student riders are not on the bus. More recently, the HCPS transportation department reduced deadhead miles to improve operating efficiency. The data in Table 6.13 documents HCPS' student transportation miles by category for 2005-06 through 2008-09.

Table 6.13. HCPS student transportation miles by category, 2005-06 through 2008-09

Miles by Category	2005-06	2006-07	2007-08	2008-09	Change 2005-06 to 2008-09	Category of Miles as Percent of Total Cost 2008-09
Regular Route Miles	1,489,630	1,329,320	1,480,218	1,287,634	-201,996	
Special Route Miles	253,028	245,180	213,455	204,349	-48,679	
Between Schools Miles	102,265	97,663	84,642	87,500	-14,765	
Summer School Miles	22,572	23,588	25,357	24,850	2,278	
Federal Program Miles	71,495	74,712	43,911	40,001	-31,494	
School Miles	**1,938,990**	**1,770,463**	**1,847,583**	**1,644,334**	**-294,656**	**65%**
Change School Miles		-9%	4%	-11%		
Deadhead Miles	**782,056**	**906,980**	**1,018,917**	**819,025**	**36,969**	**32%**

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Miles by Category	2005-06	2006-07	2007-08	2008-09	Change 2005-06 to 2008-09	Category of Miles as Percent of Total Cost 2008-09
Change Deadhead Miles		16%	12%	-20%		
Extracurricular Miles	**105,696**	**100,610**	**81,581**	**84,872**	**-20,824**	**3%**
Change Extracurricular		-5%	-19%	4%		
Total Miles	**2,826,742**	**2,778,053**	**2,948,081**	**2,548,231**	**-278,511**	**100%**
Change Total Miles		*-2%*	*6%*	*-14%*		

Source: Virginia Department of Education pupil transportation reports, 2005-06 through 2008-09

Commendation: Special needs route transportation costs per student rider are lower than peer school divisions.

The HCPS cost per student rider for special needs route transportation was 40 percent lower than the peer school division average in 2008-09, the most recent year that peer school division data are available. Students with special needs are assigned to regular route buses whenever appropriate, and the transportation department uses a small fleet of 24 cars and 28 wheelchair-accessible school buses to provide special needs transportation. The cars are provided by Hanover County from vehicles retired by the sheriff's department. The use of cars saves costs as compared to use of school buses.

Commendation: The special education department reports an excellent partnership with the transportation department.

Representatives from the special education department work closely with the special needs specialist in the transportation department to ensure every special needs student is provided the required transportation services according their individual education plan (IEP). The special education representatives said the transportation department is dedicated to quality of service for all students and can be counted on to resolve a problem when it occurs quickly and professionally.

Commendation: The transportation department reduced deadhead miles.

The HCPS transportation department reduced deadhead miles by almost 20 percent from 2007-08 to 2008-09 by revising the assignments of drivers to bus routes in order to reduce the distance between overnight parking location and the start (or end) of the school bus route.

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Commendation: The transportation department launched a new telephone service to provide recorded information about school bus routes and schedules and to reduce phone calls directly to staff.

In January 2011, HCPS launched a new telephone service for those individuals that want the latest information on school closings or delays. Citizens can now call a local number to hear information that may affect the regular school schedules. This system will reduce the number of telephone calls the transportation department will have to answer to provide information about school bus routes and schedules during periods of peak demand in the morning and afternoon.

Recommendation 6-4: Adopt written guidelines for bus route design.

The transportation department does not have a written set of route design guidelines. Routing specialists do not use the same criteria for route evaluation and for placement of bus stops. The absence of standards or guidelines creates an environment in which exceptions are the rule. Exceptions for more frequent bus stops and route deviations to get closer to homes increase the time required per route and limits the number of students that can be accommodated within a reasonable travel time.

The routing specialists monitor route design by personal knowledge and manual systems. The transportation department does not use the full capacity of the Edulog system to produce reports that will permit the routing specialists and the director to review, evaluate, and monitor key logistical statistics for bus routes. Examples of key statistics are total run length, total run time, total stops, average stops, average time for stops, and capacity utilization. Automated reports can help to confirm compliance with adopted route design guidelines and to monitor system performance.

Student transportation is provided for all students. The school division does not recognize walk zones around all schools because there are limited or no sidewalks in areas around most schools. Nationally, many states do not pay for student transportation within a radius distance from the schools, with exceptions for hazardous routes to school. The radius distance ranges from one-half mile to two miles. When implemented appropriately, walk zones can encourage students to adopt a healthier physical life style and reduce the cost of student transportation.

A significant number of regular runs are comprised of a single trip in the morning and the afternoon. The review team was provided schedules for a sample of regular buses (approximately 150 buses). Analysis of the data showed that approximately 35 percent of buses have single trip assignments in the morning and in the afternoon. Greater operating efficiencies can be achieved if the number of buses providing two trips per morning and afternoon assignment is increased.

Bus route design guidelines, and the implementation of revised or consolidated bus stops, should be developed under the leadership of the director of pupil transportation services. Considerations to improve route design efficiency can include criteria for location of bus stops, safe walk to school zones, and minor adjustments to school bell separation windows to permit more time to pair bus trips.

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Written policies and guidelines can ensure safe placement of standardized bus stops, reasonable walking distances, more efficient route design, and an increase in the percent of buses operating multiple trips each morning and afternoon. Route design guidelines can include the goal to limit student ride time to no more than 50 minutes.

FISCAL IMPACT

An increase in the percent of buses operating multiple trips each morning and afternoon will reduce the number of buses required for the same number of student riders. Each bus will save operating expenses that are based on the driver-related costs. Mileage based costs and administrative costs are not changed because the balance of school buses will operate more miles each. Table 6.14 documents the cost assumptions for savings per bus based on the HCPS adopted 2010-11 budget for the transportation department.

Table 6.14. HCPS student transportation cost allocation by category of expenses, budget 2010-11

Expense Type	2009-10	Driver-Based Costs	Mileage Based Costs	Administrative Costs
Salaries Administration	$531,869			$531,869
Salaries/Wages Drivers	$4,071,252	$4,071,252		
Personnel Benefits	$1,460,701	$1,291,924		$168,777
Vehicle Maintenance	$1,127,085		$1,127,085	
Motor Vehicle Insurance	$196,618			$196,618
Contracted Services	$43,958			$43,958
Other Costs	$64,556			$64,556
Fuel & Lubricants	$1,526,659		$1,526,659	
Total Costs	**$9,022,698**	**$5,363,176**	**$2,653,744**	**$1,005,778**
Percent of Total Costs	*100%*	*59%*	*29%*	*11%*
Route Buses	250			
Cost per Route Bus	$36,091	$21,453	$10,615	$4,023

Source: HCPS FY 2010-11 operating budget

*Motor vehicle insurance estimated for 2010-11 equal to 2009-10

The transportation department can save $21,453 in transportation related costs (payroll expense for driver time plus benefits) for each bus that can be saved by improving efficient route design. Reducing the required number of school buses by seven buses will save $150,171 ($21,453 x 7 buses) each year.

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Recommendation 6-4	One-Time Costs/ Savings	2011-12	2012-13	2013-14	2014-15	2015-16
Adopt written guidelines for bus route design	$0	$150,171	$150,171	$150,171	$150,171	$150,171

Note: Costs are negative. Savings are positive.

The director of pupil transportation services will be responsible for working with the routing specialists to draft guidelines for bus route design. The director will benefit by collecting example guidelines from peer school divisions in Virginia and school divisions in other states that use the same automated routing software. The director should review the draft guidelines with the associate superintendent of policy and administration and principals. After thorough review and appropriate revisions to the draft guidelines, the director of pupil transportation services should discuss the draft guidelines with small groups of parents and principals. The final guidelines should be published in formats that are easily accessible to all transportation department staff, school administrators, parents, and students.

The time required to develop the guidelines will be about 80 hours for the director of pupil transportation services and about 40 hours each for two route specialists, for a total of 160 staff hours. The guidelines can be developed during the summer 2011. The time to review and discuss the draft guidelines might require four hours for each of 10 meetings, for a total of 40 hours, plus an additional 40 hours to revise the guidelines. The time to review and discuss the second draft with parents and principals will be another four hours for each of 10 meetings. The vetting of the guidelines should be conducted over several months during the fall 2011 with a goal to complete by January 2012.

Recommendation 6-5: Implement automated routing and scheduling for special needs transportation.

The HCPS cost per rider is lower than peer school divisions. This achievement is due in part to the effort by the special education department and the transportation department to ensure the required transportation services are provided according to the needs of each eligible student.

Although special needs route costs are lower per student rider than peer school divisions, HCPS still makes a significant investment of $3,160 per special needs rider (2008-09). The ability to manage overall transportation costs requires significant staff effort to ensure the level of service meets required transportation needs of each eligible student.

The transportation department should implement the special education module of the Edulog automated routing and scheduling system. The automated system will assist department staff in maintaining the current cost-effective schedules. In addition, an automated system will permit more efficient design of routes using the Edulog geographic information system for mapping, permit better documentation and record keeping, and provide flexibility to accommodate more frequent changes to student program assignment, residence location, and other factors that occur more frequently with special needs students than with regular education students.

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FISCAL IMPACT

This recommendation can be implemented with current resources. The transportation department budgeted $5,000 in 2010-11 to procure a special education module with which the current version of Edulog is compatible. The regular routing specialists will need to invest about 40 hours in learning the new module. The special needs specialist will require about 40 hours hands on training and another 80 hours practical application to learn the new system. Training can be accomplished during the summer 2011. Any routing specialist will require time over several months working with the new module to develop expertise. This learning period will be a part of regular duties of the special needs specialist over the 2011-12 school year.

Recommendation 6-6: Develop procedures to implement all features of the software to manage extracurricular bus trips.

The transportation department uses an automated system for scheduling drivers to operate extracurricular bus trips (T.O.M. field trip software); however, field trips are still requested and approved through a paper-based process. The existing software includes a module that will permit each school or department to schedule field trips using an automated process and a module for automated billing.

When the additional modules are implemented, principals, teachers, or authorized sponsors can make reservations by entering the activity, number of buses, date and time, origin and destination, and other relevant information into the T.O.M. scheduling system. The school principal or authorized administrator must then approve the field trip—the system will automatically flag requests that are pending approval.

Once the field trip request is completed, T.O.M. allows schools and departments to review and evaluate charges for driver time. Disputed charges are automatically flagged so that HCPS transportation department staff or the financial officer can quickly address the situation. The system also allows easy viewing of all reserved or completed trips for a school or a department, depending on user authorization.

Automated reservations for extracurricular bus trips will expedite the process for all those involved, will provide automated recordkeeping, ensure more accurate billing for driver time, and will permit the field trip coordinator in the transportation department to devote attention to customer service rather than administrative tracking of paper processes.

FISCAL IMPACT

This recommendation can be implemented with current resources; however, the transportation department will require the technical assistance of HCPS information technology department to launch the additional T.O.M. modules. The technology department technician may spend about 40 hours implementing the additional modules. The field trip coordinator in the transportation department

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should recruit a volunteer group of school and department representatives to pilot test the software. After initial implementation, the new procedures can be announced to all schools and departments. This may require about 40 hours by the field trip coordinator and about four to eight hours each by about 10 volunteers, for a total time not to exceed 80 to 120 hours total time. The new modules can be demonstrated during the fall 2011 and launched for all schools and departments in the spring 2012.

C. Planning, Policies and Practices

The transportation department mission statement identifies goals for safety, efficiency, and quality of service but the department does not use metrics to measure departmental performance. Key elements of a performance measurement system include performance indicators and measures used to gauge benchmarks or standards against which performance will be assessed.

Recommendation 6-7: Adopt a system for performance measurement and monitor trends.

The HCPS transportation department does not have formal management reports that provide efficiency and effectiveness measures to school administrators or the public. The department does not compare HCPS' performance against established benchmarks or peer divisions. The transportation department does not define benchmarks to gauge performance and identify areas of improvement related to cost-efficiency, routing, and scheduling effectiveness, staffing levels, on-time performance, and safety. Many public transit agencies and private fleet managers use performance measures to identify improvement opportunities for employee and customer satisfaction and to reduce cost.

Key elements of a performance measurement system include measurable goals and objectives, performance indicators or measures used to gauge performance and benchmarks or standards against which performance will be assessed. Performance measures include both short-term internal measures to evaluate and improve day-to-day transportation operations, such as driver absentee rates and long-term measures for major aspects of the transportation department, such as the operating cost per mile, student riders per route bus and on-time performance of buses.

Table 6.15 shows some standard transportation performance indicators and the HCPS performance statistic for each performance indicator (if available from HCPS). The cost data were calculated by the evaluation team from data reported by HCPS to the DOE for 2008-09. The evaluation team has also proposed targets for each performance indicator; however, the transportation department is encouraged to review these recommendations and then adopt targets that are deemed appropriate for the division. In some cases, unit costs go up even though total costs may go down. This can occur when the units of measure (riders, miles, buses) are decreasing at a rate greater than the decrease in costs.

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Table 6.15. Transportation performance indicators, HCPS performance statistics, and proposed targets

Performance Indicator	HCPS 2008-09	Target	Reporting Frequency
Personnel Management (As of 2/2011)			
Number route driver positions vacant*	Not available	0	Weekly as long as > goal
Number drivers absent average day*	Not available		
Number of drivers absent average day – Scheduled	Not available	≤15	Monthly
Number of drivers absent average day – Less than 24-hour notice	Not available	<5	Monthly trend analysis
Number of drivers on long-term leave	4	<5	Monthly trend analysis
Total drivers out average day*	Not available	<25	Monthly trend analysis
Number of drivers in training	6	As required	Monthly
Percent of trainees employed as drivers*	Not available	>80%	Monthly trend analysis
Percent of new drivers > 90 days*	Not available	>90%	Monthly trend analysis
Number attendant positions vacant*	Not available	0	Weekly as long as > goal
Number attendants absent average day*	Not available	≤5	Monthly
Number of attendants on long-term leave	0	--	Monthly
Total attendants out average day	Not available	≤5	Monthly trend analysis
Number of attendants in training	0	As required	Monthly
Percent time overtime drivers (2009-10)	2.8%	<3%	Monthly trend analysis
Annual turnover rate for drivers	Not available	≤10%	Annual/Monitor monthly
Cost-Efficiency (Annual Costs 2008-09)			
Operations cost per mile	$3.51	$3.51 adjusted for fuel increase	Annual with trend analysis
Cost-Effectiveness (Annual Costs 2008-09)			
Route cost per rider – Regular	$266	≤$253	Annual with trend analysis
Route cost per rider – Special	$3,160	<$3,160	
Service Effectiveness (2008-09)			
Runs per bus – Regular	1.65	≥1.73	Annual as part of route design and included with cost reports
Route riders per bus – Regular	72	76	

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Performance Indicator	HCPS 2008-09	Target	Reporting Frequency
Route riders per bus – Special	10	>10	
Service Quality			
On-time performance (bus arrival)	Not available	≥90%	Monthly trend analysis
Regular route trips > one hour*	Not available	<5%	Monthly with explanation
Special needs trips > one hour*	Not available	<3%	Due to distance only
Maintenance Performance (as of 1/11)			
Miles between breakdowns in service	Not available	10,500	Monthly
Percent PMs completed on-time	Not available	≥95%	Monthly
Spares ratio as percent of route buses	20%	<20%	Annual
Safety			
Accidents per 100,000 miles	Not available	0.21	Monthly

*HCPS monitors these performance indicators but comparative data are not available.

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This recommendation can be implemented with existing resources under the guidance of the director of pupil transportation services. Reporting and monitoring performance is a primary duty of director of the transportation department. The department can use benchmarks to measure accomplishments or identify areas needing improvement. [There is a more general recommendation related to setting measurable objectives in Chapter 1 – Divisional Administration.]

D. Training and Safety

A full-time trainer conducts classes for school bus drivers on a two to three month cycle. The curriculum includes 24 hours of classroom training, 14 hours of behind-the-wheel training, a commercial driver's road test, and 12 hours of driving with an experienced driver-trainer. The same driving curriculum is offered to regular and special needs drivers. A complete driver handbook is provided to each new driver. Training classes for car drivers and attendants are offered as needed. Each year, all drivers, and attendants participate in an in-service data to reinforce training and introduce any pertinent new policies or practices. Safety is emphasized in every aspect of training and reinforced in daily supervision.

Commendation: New digital radio system installed to improve communication between the department and drivers.

Hanover County replaced the aging and outdated public safety radio system with a modern digital system and facility. The new system expands radio system coverage for school bus drivers, improves communications reliability, and enhances safe operations. The new radio system became operational in

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August 2010. Every school bus, an administrator in each school, and every transportation department employee has access to a radio for improved communication.

Commendation: Administrators in the schools are supportive of school bus drivers.

When a driver reports a problem on the school bus, the school administrator is responsible for student discipline. HCPS school bus drivers informed the review team that they have been empowered by school administration to enforce rules of conduct on the bus. If a student consistently misbehaves or flagrantly violates the rules while on the bus, the school bus driver completes a report and refers the student to the appropriate school administrator. The bus drivers and the assistant director indicated that the school administrators respond promptly, and the transportation department does not have to follow-up to verify the disciplinary action. If problems persist, the school administrators involve drivers and lead drivers in meetings to discuss options and agree upon further action.

E. Vehicle Maintenance and Bus Replacement Schedules

The transportation department is co-located with the HCFSD, in a facility opened in December 2001. The partnership provides many advantages to the school division, including timely vehicle maintenance by qualified staff. The Commonwealth of Virginia requires preventive maintenance inspections of school buses every 2,500-vehicle miles or 30 operating days. The HCFSD is responsible for performing the required inspections.

HCPS revised the school bus vehicle replacement policy from every 12 years of service to every 14 years of service. This is consistent with Virginia Department of Education guidelines. The expected service life of a school bus is 150,000 miles. Since HCPS averages about 10,000 miles per route bus per school year, a 14-year service life is appropriate.

The HCPS school bus fleet includes 308 vehicles ranging in age from 1992 model buses to new 2011 vehicles. Table 6-16 provides the number of vehicles by model year and years in service. The average fleet age is 8.3 years. The vehicles are also identified by age group as follows:

- 15 or more years of service;
- 13 -14 years of service;
- 11-12 years of service;
- 6-10 years of service; and
- 5 or fewer years of service.

Table 6.16. HCPS school bus fleet by model year and years of service

Model Year	Number of Vehicles	Years in Service	Subtotal Buses by Group
1992	4	20	
1993	8	19	
1994	4	18	
1995	2	17	25
1996	4	16	
1997	3	15	
1998	13	14	25
1999	12	13	
2000	8	12	48
2001	40	11	
2002	14	10	
2003	13	9	
2004	24	8	82
2005	29	7	
2006	2	6	
2007	59	5	
2008	23	4	
2009	27	3	121
2010	8	1	
2011	4	<1	
Total	**301**		**301**

Source: Hanover County vehicle maintenance department

Table 6.17 provides the cost of school bus vehicle maintenance expenses by HCFSD as compared to the total annual cost of student transportation.

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Table 6.17. HCPS school bus vehicle maintenance expenses compared to student transportation costs

Expense Type	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11 Adopted Budget
Vehicle Maintenance	$1,017,876	$1,097,716	$1,131,390	$1,133,824	$1,056,978	$1,127,085
Total Cost	**$7,170,086**	**$7,844,078**	**$8,621,827**	**$8,495,382**	**$8,216,174**	**$9,022,698**
Vehicle Maintenance as Percent of Total Cost	*14.2%*	*14.0%*	*13.1%*	*13.3%*	*12.9%*	*12.5%*

Source: HCPS fund 700 & 750 reports 2005-06 through 2009-10 and management budget, FY 2010-11 operating budget

HCPS has a fleet of 301 school buses to meet route requirements and provide spares. Historically, the school division has budgeted and purchased school buses annually. By adopting a regular vehicle replacement plan, HCPS demonstrates the commitment to maintain an up-to-date fleet. The school bus replacement plan ensures a fleet of safe buses and regularly introduces new buses into the fleet. The buses with the highest cost of maintenance can be replaced. Replacement buses will allow retirement and sale for surplus of the oldest buses in the fleet.

In 2009-10, HCPS required 250 buses for peak operation. With a total fleet of 301 buses, the transportation department is holding 20 percent of buses as spares. Figure 6.3 illustrates the annual miles per bus and the cost per mile for maintenance and repairs by vehicle age. As buses age, the cost per mile for maintenance and repairs goes up, but the annual miles of service per bus goes down. Maintaining an aged fleet is less cost-effective.

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Figure 6.3. HCFSD 2010 annual miles and maintenance and repairs cost per mile by vehicle age for school buses

	1-5 yrs, 121 buses	6-10 yrs, 82 buses	11-12 yrs, 48 buses	13-14 yrs, 25 buses	15+ yrs, 25 buses
Annual Miles/Bus	9713	9585	7116	4749	3494
Cost/Mile	$0.233	$0.284	$0.407	$0.422	$0.501
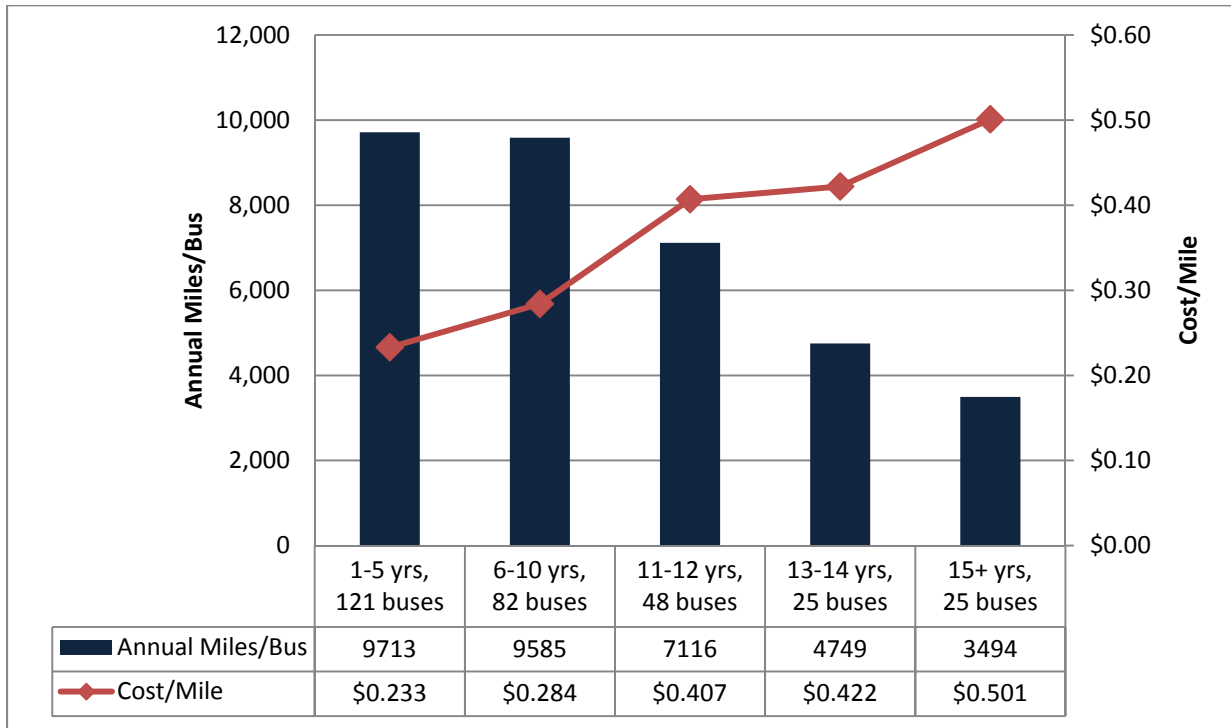
Source: Hanover County fleet services department, December 2010

The expenses reported in Figure 6-3 document maintenance and repair work for school buses. Other vehicle maintenance costs not included in maintenance and repair for school buses include maintenance and repair work for general service vehicles, outsourced contract for bus seat repair, school bus tire services work, technician standby services, as well as miscellaneous technician and parts services. The director of fleet services for Hanover County estimates the other vehicle maintenance costs would add approximately $0.08 per school bus mile in addition to the bus maintenance and repair costs reported in Figure 6-3.

The number of daily route buses required is 250. Assuming a 20 percent spare bus ratio, the total fleet size required is about 300 buses. A 14-year procurement cycle calls for replacement of on average 21 buses per year. At $80,000 each, the annual procurement cycle will require on average $1,680,000 year.

HCPS includes replacement of school buses in the capital improvements program (CIP). Figure 6.4 identifies the appropriations for buses by fiscal year. The first year of the CIP is the only year that is adopted and appropriated by the HCPS board. Years 2011-12 through 2015-16 are for planning purposes and will be reviewed and updated as necessary. The CIP refers to a 12-year replacement cycle for school buses; however, the associate superintendent of policy and administration told the review team the practice is changed to a 14-year replacement cycle. Over six years, the CIP projects a total budget of $10.1 million, sufficient to replace school buses at $80,000 each on a 14-year replacement cycle.

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Figure 6.4. HCPS capital improvements program for replacement of school buses
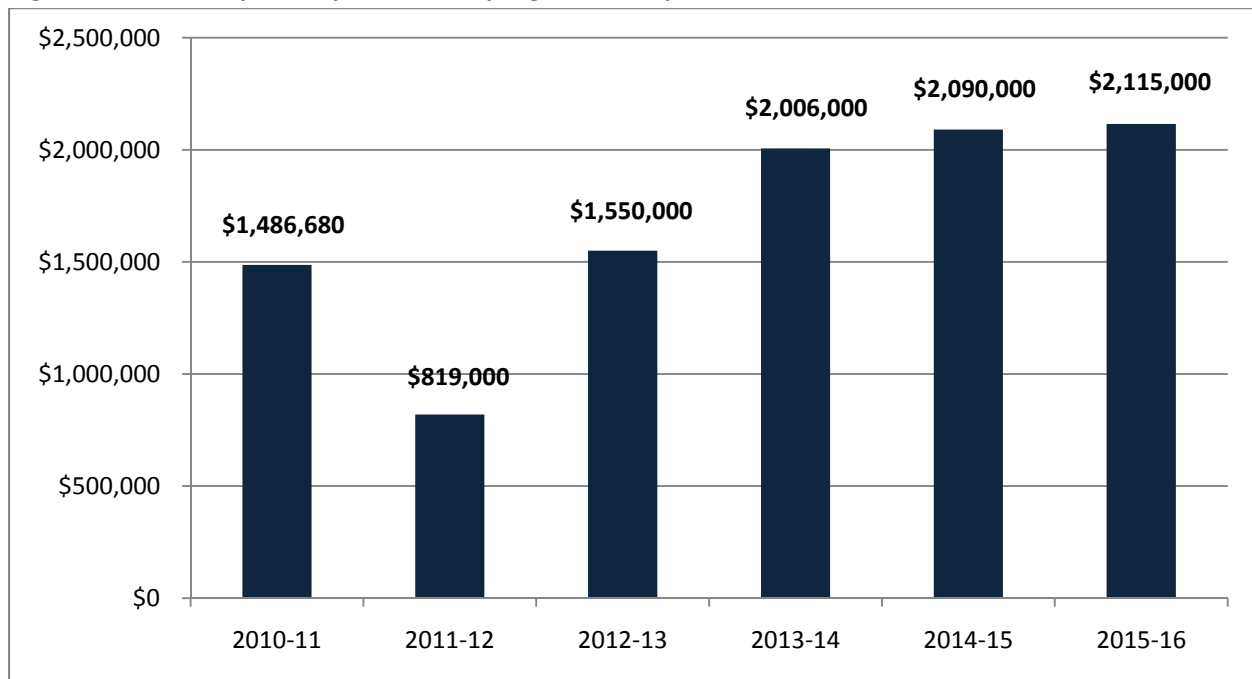
Source: Hanover County public schools recommended budget, 2011-2012

Recommendation 6-8: Develop a master plan for transportation facilities that considers the provision of central and satellite operations, parking, and fueling facilities.

Co-location of the transportation department with the HCFSD is an advantage for the school division. However, the Lakeside compound does not have adequate space for parking school buses and does not include a fueling facility or a bus washing facility.

The transportation department does not have a central reporting facility for drivers/attendants or a central parking area for the entire bus fleet. Buses are parked at drivers' homes, at schools, or at the Lakeside facility. The lack of strategically located facilities for centralized reporting and bus parking creates a number of problems.

- **Supervisory issues arise.** Lead drivers and supervisory personnel are not in contact with drivers each day, creating difficulty in control. Lead drivers and supervisors may have to drive to a school or other location to meet a driver to discuss a particular problem or concern. Supervision can be enhanced when the drivers report daily to a centralized location. The supervisor has the opportunity to talk with a driver each day and can address service problems or performance issues, if necessary, promptly and more effectively.

- **Working around absences is more difficult.** Filling an assignment when a driver who parks the bus at home calls in for any reason can create difficulties. When a driver does not show and does not call in, there is no way to know the school bus is not in service until a parent or school

administrator calls and reports a "no-show." By that time, the HCPS transportation department has lost the ability to dispatch a substitute driver to meet the schedule. Additional costs are incurred when a substitute driver has to be shuttled to a remote parking location to fill in for an absent driver. Centralized reporting and bus parking would make it possible to have substitute drivers available at the report location to take the assigned route bus out immediately.

The remote parking locations and lack of a central place for drivers to report each day also create other problems. Bus routes operate behind schedule when a driver is late or a substitute has to be sent into service at a remote location. The ability to respond is delayed by distance and the relay of information. With a pool of substitute drivers scheduled at each centralized facility, it becomes possible to respond immediately and ensure bus routes are operated on schedule.

- **The department requires more spare buses.** The lack of a central parking area increases the number of spare buses required for maintenance and operation. The director of fleet services for Hanover County told the evaluation team that he manages a good preventive maintenance program by having a larger spare bus fleet. In any school bus fleet, spare buses are needed to replace route buses that are scheduled for preventive maintenance inspections or may be in repair. Without a central parking area where all drivers report, the HCFSD must have additional spare buses ready for mechanics to drive to bus drivers as replacement vehicles if a driver reports a mechanical problem when the bus is started for a daily route. The director of fleet services said spare buses are parked at convenient locations in the county (at a school or county facility) to reduce the necessary response time when a driver reports a problem. In school divisions in other states, the recommended spares ratio is 15 to 20 percent of route requirements. The HCPS spares ratio is 20 percent of the buses required for routes.

- **Deadhead mileage is increased.** Remote parking may increase deadhead mileage, which increases maintenance and fuel costs. HCPS operates about 32 percent of total vehicle miles in deadhead. Based on experience working with school divisions and public transportation agencies in Virginia and several other states, the evaluation team expects the percent deadhead mileage for an operation similar to HCPS and a land area the size of Hanover County but with bus parking at strategic locations should be about 20 percent of total miles.

- **Buses are not secured while parked overnight.** The location and security of parking is not under the control of the school division when drivers are permitted to park buses at home or nearby locations. The ability to ensure secure parking and to protect the school bus asset is improved greatly with central and satellite parking facilities.

The transportation department has not reported a problem of vandalism on buses parked at private residences; however, insurance may be reduced if school buses are parked at secure locations. The director of pupil transportation services has reduced deadhead miles by requiring some drivers to park buses at school locations where space is available rather than driving longer distances to park at home. Although some drivers may prefer to take the school bus home for overnight parking, the director of pupil transportation services told the evaluation team that drivers have willingly made the necessary adjustments.

- **Fueling and washing are off-site.** A new or expanded facility for school bus operations should include on-site fueling and bus wash facilities that meet all environmental guidelines.

The associate superintendent of policy and administration has already initiated conversations with Hanover County about possible opportunities to develop a plan for new or expanded facilities to some or all of the objectives outlined above.

The evaluation team recommends the director of pupil transportation services develop a long-term master plan for additional HCPS centralized parking and operating facilities in order to take advantage of the benefits that can be realized.

Centralized reporting refers to one or more centrally located facilities and strategically located satellite facilities where a number of buses and drivers are assigned. The locations could include modification of the existing Lakeside facility or another school division property, co-development with Hanover County on a county-owned property, or development of a new project. The school division might have one central facility in the central corridor and two satellite facilities, one each in the west and east corridors. The satellite facilities would include an area for parking, a building with a room for drivers to report to a lead driver, and an enclosed area where a mechanic could do required inspections and minor running repair (the HCFSD currently dispatches mechanics to the field to perform these functions at high schools). Ideally, each satellite facility will have fueling capacity and a fuel wash, or be located near a county facility with fueling. The study could identify how the existing central facility could be modified to meet the school division needs to park the central corridor fleet and provide an area for driver report. If the existing central facility cannot accommodate central fueling and bus wash, perhaps another facility nearby could serve these basic fleet services.

FISCAL IMPACT

The recommended reorganization of the transportation department (see Recommendation 6-1) is intended to provide additional time for the director of pupil transportation services to develop a strategy and master plan and then to propose a capital improvement plan that might be presented to the administration and school board for consideration. Reasonably the director might spend about 160 hours developing a master plan and may require the assistance of a qualified individual or company to provide technical assistance for a cost $50,000. The goal should be to prepare the master plan to present to school administrators and the HCPS board for the 2012-13 budget cycle in the spring 2012.

Recommendation 6-8	One-Time Costs/ Savings	2011-12	2012-13	2013-14	2014-15	2015-16
Develop a master plan for transportation facilities	($50,000)	$0	$0	$0	$0	$0

Note: Costs are negative. Savings are positive.

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Chapter 7 – Technology Management

Introduction

Hanover County Public Schools (HCPS) technology functions are distributed among two separate groups: the technology services department, which reports to the assistant superintendent of business and operations, and the instructional technology group that reports to the director of curriculum and instruction. The technology services department's primary responsibilities include:

- Budgeting for all district-level technology purchases, systems and initiatives;

- Designing, installing, managing and supporting the local area network (LAN) and the wide area network (WAN);

- Purchasing, installing, maintaining and supporting division-wide servers;

- Purchasing, installing and supporting all computers and peripherals, including audio visual equipment;

- Installing, developing and maintaining all division-wide applications including the student information system and the human resources system; and

- Installing, developing and maintaining the division website, related applications and the data warehouse system.

The instructional technology group's primary responsibilities include:

- Providing instructional technology-related professional development;

- Integrating technology into division curriculum;

- Providing support for all instructional software; and

- Providing instructional technology-related assistance - including instructional data analysis - to school leadership and staff.

This chapter provides commendations and recommendations related to five aspects of technology management:

A. Organization and Management
B. Staff Development
C. Technology Planning and Budgeting
D. Technology Policies and Procedures
E. Systems Infrastructure and Integration

While other areas were included as part of review of technology management (e.g., inventory and control, technology support and help desk operations), no major commendations, findings, or recommendations resulted from the review.

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Several significant commendations are made in this chapter:

▪ **Comprehensive technology support is provided for all campuses.** The school division provides a wide array of technology services such as technology training, desktop support, audio visual equipment support and website content management system support to division schools using both central and school-based staff.

▪ **Division provides a wide variety of training resources and information for teachers through an online portal application (Blackboard).** Blackboard provides instructional technology resources, division policies and online course information accessible from one online portal location. This makes pertinent information easy to find and readily available for all teachers and division users.

▪ **Energy savings resulted from a reduction in division computer power usage.** The technology services department uses specialized software designed to reduce the power usage of computers and monitors division wide during idle times and off school hours, resulting in energy savings.

Table 7.1 provides a summary of technology management recommendations and resulting fiscal impacts over the next five years.

Table 7.1. Fiscal impact of recommendations

Recommendation	Priority	One-Time Costs/ Savings	2011-12	2012-13	2013-14	2014-15	2015-16	Total Fiscal Impact
Technology Planning and Budget								
7-1 Develop a disaster recovery plan	Medium	($30,000)	$ 0	($79,044)	$ 0	$ 0	$ 0	**($109,044)**
Technology Policies and Procedures								
7-2 Develop a comprehensive procedures manual	Medium	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	**$ 0**
Instructional and Administrative Technology								
7-3 Acquire an integrated student information system	High	($175,000)	$ 0	($985,050)	($67,058)	($38,308)	($38,308)	**($1,303,724)**
Net Fiscal Impact		**($205,000)**	**$ 0**	**($1,064,096)**	**($67,058)**	**($38,308)**	**($38,308)**	**($1,412,768)**

Note: Costs are negative. Savings are positive.

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A. Organization and Staffing

As of December 2010, HCPS' technology services department was comprised of 20 staff led by the assistant superintendent of business and operations. The director of technology services reports directly to the assistant superintendent of business and operations and has six direct reports. An organization chart of the technology services department is depicted in Figure 7.1. The dotted lines and boxes included in the chart represent dual reporting relationships. While the staff in these boxes report to their school leadership, they also work closely with the indicated positions within the technology services department.

Figure 7.1.HCPS technology services department organization chart
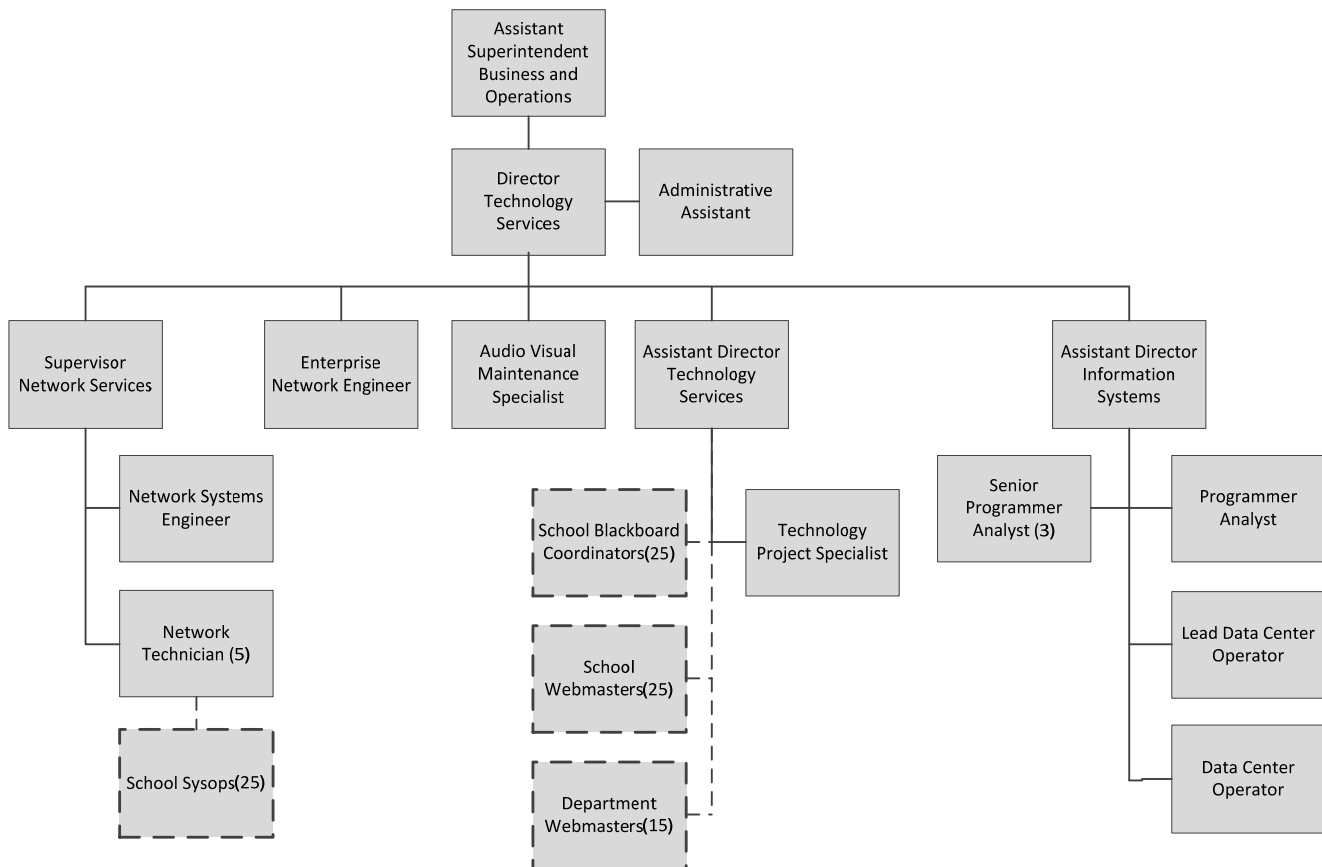
Source: HCPS technology services department, December 2010

Although the instructional technology function is not included in the technology services department organization chart, this group works very closely with technology services department staff, as well as school staff that work in technology-related functions. Instructional technology is comprised of nine staff members led by the instructional technology resource specialist. Instructional technology's organization chart is presented in Figure 7.2.

Figure 7.2. HCPS instructional technology organization chart
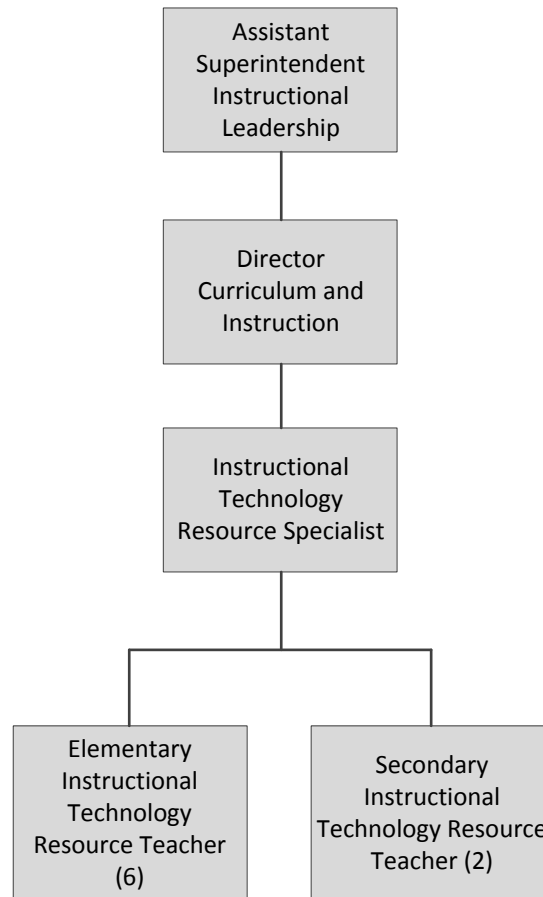
Source: HCPS, December 2010

Commendation: Comprehensive technology support is provided for all schools.

The school division provides a wide array of technology support services such as technology training, desktop support, audio visual equipment support and website content management system support to division schools using both central and school based staff. As part of HCPS' instructional services, the division has eight instructional technology resource teachers (ITRT) who provide technology-related professional development to schools. While each school does not have a dedicated ITRT on site, ITRTs do serve clusters of schools. ITRTs also assist teachers with providing students 21st century skills and integrating technology into their lessons. In addition to ITRTs, the division has a stipend responsibility called technology coach (tech coach) in every campus. Tech coaches are usually teachers or library media specialists. Their primary responsibility (as tech coaches) is to provide Technology Standards for Instructional Personnel (TSIP) competency training and testing for teachers. TSIP is Virginia's technology proficiency requirement for all teachers in the state. Tech coaches also assist with creating and maintaining school websites, provide additional technology professional development if needed, and assist school staff with instructional software-related questions. Most schools have a full-time library and media specialist that supports the school with audio visual instructional technology in addition to their other duties. The division has one dedicated centrally located support staff member that provides support to library media specialists with regards to all audio- and video-related hardware equipment

and software. Each school also has a full-time staff member called system operator (sysop) who provides first line technical support. This position reports to school leadership. Sysops troubleshoot technical issues and repair all hardware including computers, laptops and printers, among other technical equipment. Additionally, the sysops work very closely with the central office network services team, which in turn provides advanced level technical support to the sysops and schools in addition to supporting the division's network and servers. HCPS' technology services department also has an information systems function which provides application software support via a helpdesk.

The division has the right balance of school-based and central support staff. The technology services department and instructional support team provide support services ranging from instructional technology to network and application support, including audio/visual equipment. Although several groups within HCPS provide different support services and have dissimilar roles and responsibilities related to technology support, this information is well-communicated and division users are aware of which group to contact for each type of support. Moreover, the support entities communicate with each other to ensure that the service provided meets the users' needs. As a result, the division users are satisfied with the service that these entities provide.

B. Staff Development

HCPS schools utilize a wide variety of instructional software and provide great flexibility to school staff in choosing programs that aid staff in instruction as their instructional needs change. Despite the quantity and variety of software, both the instructional technology and technology services department staff are able to support the instructional software for the division.

Commendation: Division provides a wide variety of training resources and information for teachers through an online application.

Instructional technology is utilizing Blackboard, an online portal application, to provide training resources and various other pieces of information to teachers and division users. HCPS is providing the following to division users through Blackboard:

- **Announcements:** Instructional technology communicates with its users regarding upcoming events or training opportunities.

- **New teacher:** This section provides new teachers with a training agenda and information regarding who to contact for varying technology support needs.

- **Policy and application information:** Acceptable use/fair use and copyright policies, instructions for how to login and use division email, and other pertinent information is electronically available for staff to read or print.

- **Course information:** This area provides users access to all courses that instructional technology provides. Users are able to find out which ITRT is providing the course, find out who has signed up to participate in the course and access course related materials.

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- **Training content:** This area provides HCPS users with technology competency training and test information related to databases, desktop publishing, excel spreadsheets, file manager and word processing. Training content and tests are used for technology proficiency verification for new HCPS teachers so they can meet the Virginia requirements for technology standards for instructional personnel.

- **Online forms:** Proficiency forms such as technology proficiency verification, technology proficiency demonstration data collection, and technology proficiency demonstration lessons and strategies used by new teachers are available electronically through this area of Blackboard.

Teachers and other division users can go to one place where they access a wide variety of up-to-date content. The ability of users to have one source for accessing pertinent information makes information distribution throughout the division efficient and reduces paper usage.

C. Technology Planning and Budget

HCPS has a 2007-2013 long-range comprehensive technology plan which was created by a division technology planning committee. The planning committee consisted of central office and school staff in both instructional and technology areas. The goals of the plan were aligned with the Virginia Department of Education 2010-2015 Educational Technology Plan for Virginia as well as the division's 2007-2013 comprehensive long-range plan. During the technology planning process the division conducted parent, student, and staff surveys to gather input for the plan.

Table 7.2. Technology department expenditures

Department and Function	2007-08	2008-09	2009-10	Change from 2007-08 to 2009-10
Technology Management	$2,922,664	$2,357,834	$1,959,394	-33%
Technology - Network Support	$413,834	$377,208	$362,066	-13%
Technology - Instructional	$1,116,326	$731,927	$871,097	-22%
Grand Total	**$4,452,824**	**$3,466,969**	**$3,192,557**	**-28%**

Source: HCPS, fall 2010

The technology services department and instructional technology expenditures were reduced from $4,452,824 in 2007-08 to $3,192,557 in 2009-10. This is in line with the division's expenditures reductions in other areas.

Recommendation 7-1: Develop a comprehensive disaster recovery plan.

HCPS does not currently have a comprehensive disaster recovery plan. Should a catastrophic event occur, such as a hurricane, flood, fire or vandalism, the division's data would be at risk of loss. In

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addition to the data loss, the division would not be able to perform important functions related to student information processing and key business operations until the original systems were restored.

Currently, there is a high-level document to provide information for recovery of the student information system and related data. The division performs daily backups for all critical systems and the media of these backups is stored onsite at a secure commercial location. The division also has an extra IBM I Series mid-range computer for the student information system that resides in a separate division building from the primary student system. Having an extra system housed in a separate location from the primary system allows HCPS to restore the student information system's functionality in the event the primary system becomes non-operational. However these procedures are not a comprehensive plan, as they are missing important elements necessary to allow the division to recover key systems and data in the event of a disaster. It is worth noting that HCPS presently has an action item in the current technology plan related to developing a comprehensive disaster recovery plan. However, this action item has not been implemented.

There are five key elements of a comprehensive disaster recovery plan[1]: (1) a disaster recovery team, (2) a list of people to contact after a disaster, (3) an assessment of critical division functions, (4) a list of essential server and network equipment, and (4) a list of staff needed immediately to recover from a disaster.

Table 7.3 includes a summary of essential elements needed for a disaster recovery plan.

Table 7.3. Summary of essential disaster recovery plan elements

Steps	Details
Build the disaster recovery team	▪ Identify a disaster recovery team that includes key policy makers, building management, end-users, key outside contractors and technical staff.
Obtain and/or approximate key information	▪ Develop an exhaustive list of critical activities performed within the division. ▪ Develop an estimate of the minimum space and equipment necessary for restoring essential operations. ▪ Develop a time frame for starting initial operations after a security incident. ▪ Develop a list of key personnel and their responsibilities.

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[1] http://nces.ed.gov/pubs98/98297.pdf

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Steps	Details
Perform and/or delegate key duties	- Develop an inventory of all computer technology assets, including data, software, hardware, documentation and supplies. - Set up a reciprocal agreement with comparable organizations to share equipment or lease backup equipment to allow the division to operate critical functions in the event of a disaster. - Make plans to procure hardware, software and other equipment as necessary to ensure that critical operations are resumed as soon as possible. - Establish procedures for obtaining off-site backup records. - Locate support resources that might be needed, such as equipment repair, trucking and cleaning companies. - Arrange priority delivery with vendors for emergency orders. - Identify data recovery specialists and establish emergency agreements.
Specify details within the plan	- Identify individual roles and responsibilities by name and job title. - Define actions to be taken in advance of an occurrence or undesirable event. - Define actions to be taken at the onset of an undesirable event to limit damage, loss and compromised data integrity. - Identify actions to be taken to restore critical functions. - Define actions to be taken to re-establish normal operations.
Test the plan	- Test the plan frequently and completely. - Analyze the results to improve the plan and identify further needs.
Deal with damage	- If a disaster occurs, document all costs and capture the damage by video. - Be prepared to overcome downtime on your own as insurance settlements take time to resolve.
Give consideration to other significant issues	- Do not make a plan unnecessarily complicated. - Make one individual responsible for maintaining the plan, but have it structured so that others are authorized and prepared to implement it if needed. - Update the plan regularly and whenever changes are made to your system.

Source: Adapted from the Technology and Security Task Force, National Forum on Education Statistics, "Safeguarding your Technology"[2], fall 1998.

To successfully implement this recommendation, HCPS should first establish a disaster recovery planning committee. During the planning process the division should classify applications and systems into categories such as mission critical, critical, essential and non-critical. These categories indicate how important the application or system is to the division's operation and whether or not the application or system functions can be performed manually. The division should then determine the desired restoration timeframe for each category. Results of these discussions will be the primary drivers of the scope of the plan and the financial cost to the division for implementing the disaster recovery plan. The

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[2] http://nces.ed.gov/pubs98/98297.pdf

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division should not invest in new hardware, equipment, software, or physical infrastructure until the disaster recovery plan has been finalized and approved. The division could also seek subject matter expertise from an external consultant to review and assist with the planning process.

FISCAL IMPACT

At this time it is not possible to definitively estimate what the final implementation cost of the disaster recovery plan will be, as the plan has not yet been developed. However, two important factors in disaster recovery will allow us to arrive at the probable cost range of the implementation.

One of the critical cost factors related to disaster recovery is the number of applications and services that the division deems mission critical. In the disaster recovery plan, these applications and services will be assigned a higher priority and will be recovered first in case of disaster. Most school divisions identify the payroll, primary student information system functions, email, communication systems and phones as the critical applications and systems to recover.

The second factor is the disaster recovery strategy. There are three main strategies: cold site recovery, warm site recovery and hot site recovery. A cold site recovery strategy is the least costly option, however recovery time could be anywhere from days to a week. This option requires a minimum amount of equipment, hardware and software investment, and is centered on a recovery facility with minimal communications equipment. A warm site recovery strategy is more costly, but the recovery time can be in the range of hours, up to one day. With this strategy the recovery facility has communication equipment, as well as back-up hardware and software for identified applications and systems. The systems would be installed and configured, but the data in them may not reflect the latest data. It would only reflect the data as of the last restored back-up data date and data changed since then would not be represented in the system. Finally, a hot site recovery strategy is the most costly, but the expectation of downtime is hours, rather than days or weeks. This type of strategy is mostly used by hospitals, financial institutions or the military and involves creating an exact replica of the identified critical system environment at the recovery site, with data being populated into both environments (live and back-up) simultaneously.

Because most school divisions choose a warm site recovery strategy, we can estimate the implementation cost based on this strategy. We have also considered in the cost estimate that the division already has back-up hardware for its student information system and that payroll is housed outside of the division by the county. Based on this information, the implementation cost can be estimated at approximately $70,000.

 If the division acquires outside subject matter expertise for facilitating and creating the disaster recovery plan, an additional investment of $30,000 would be required - assuming an average hourly rate of $150 for the subject matter expert and an estimated 200 hours of work.

Implementing the disaster recovery plan resulting from this recommendation will require a significant investment of time by HCPS technology staff – particularly the network systems and applications

programming staff. It is estimated that during implementation, one senior programmer analyst, the network systems engineer and the enterprise network system engineer will be devoted half-time for one to two months.

Recommendation 7-1	One-Time Costs/ Savings	2011-12	2012-13	2013-14	2014-15	2015-16
Develop a comprehensive disaster recovery plan	($30,000)	($0)	($0)	($0)	($0)	($0)
Implement the disaster recovery plan	($0)	($0)	($70,000)	($0)	($0)	($0)
Back-fill 3 positions for two months	($0)	($0)	($9,044)	($0)	($0)	($0)
Total cost	**($30,000)**	**($0)**	**($79,044)**	**($0)**	**($0)**	**($0)**

Note: Costs are negative. Savings are positive.

D. Technology Policies and Procedures

Having policies and procedures is essential for any department to be effective and in compliance with state and federal regulations or laws. The technology services department has acceptable usage, fair usage and copyright policies. However, the department does not have adequate written procedures that address all key processes.

Recommendations 7-2: Develop a comprehensive procedures manual for all technology functions.

The technology services department does not currently have a comprehensive procedures manual. The department has written policies and procedures in areas including acquiring computer equipment and software, desktop, laptop, printer and projector standards, donation guidelines for hardware and software and information systems help desk guidelines. However, there are areas that do not have written procedures, such as back-up procedures, network services help desk guidelines, email, user account creation, and password creation and deletion procedures. In addition, procedures that do exist are scattered and not readily available to all staff and division users.

Developing and implementing well-written and organized procedures helps an organization to:

- Protect the institutional knowledge of an organization so that new employees can benefit from the knowledge and experience of experienced former employees;

- Provide the basis for training new employees; and

- Provide a tool for evaluating employees based on their adherence to procedures.

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The technology services department should not only create comprehensive written procedures but also keep them in a location easily accessible to all division staff, such as the division's intranet website.

To implement this recommendation, the technology services department should first collect and review all existing written procedures. Once those are reviewed and updated, each function with the department (e.g., information systems, network services) should then identify the critical processes in their respective areas which need written procedures. Once written, procedures should be reviewed and approved by the appropriate division staff. After approval, newly developed procedures should be posted with any existing procedures in a location which provides easy access for all technology staff and division users. Keeping the procedures up-to-date is equally important. As the procedures change, each department function should update the procedures to reflect those changes.

FISCAL IMPACT

Because most of the missing written procedures are in the network services and technology projects areas, the supervisor of network services and the technology project specialist will require about one to two hours each week to create the written procedures for their major processes. The work could be completed within four to six months.

E. System Infrastructure and Integration

Technology infrastructure consists of cabling, phone lines, hubs, switches, routers and other devices that connect the various parts of an organization through local area networks (LANs) and a wide area network (WAN). A high-speed infrastructure allows users to access people and information inside and outside of the organization. HCPS has a robust network that provides high speed network access to all division schools. The technology services department proactively monitors the network with various software and hardware tools to ensure uninterrupted connectivity.

The department supports many HCPS' applications including the student information system (CIMS), the human resource management application (Asset) and an online application tracking system (AppTrack). Asset and AppTrack were internally developed by the technology department. The division also uses Hanover County's finance system (HTC) for payroll and other accounting functions. More detail about the county's finance application can be found in Chapter 5 – Financial Management. The division also has a data warehouse that combines data such as student demographics, discipline, grades, course schedules, standardized test scores and more.

Commendation: Energy and cost savings have been gained by reducing the power usage of division computers.

The technology services department utilizes specialized software to monitor and control power usage by the division's computers and monitors. In 2009, the division purchased and implemented software that allows the technology services department to synchronize computer power settings of all networked

division computers and monitors from one central location. With the help of this software, the technology services department can shut down computers or force computers into low-power modes based on usage or needs. Based on preliminary reports, HCPS anticipates reducing the energy consumption of 7,000 computers by 42 percent. If successful, this will amount to $75,000 in annual savings for the division. As an added functionality, the technology services department is using this software to push software and configuration updates to division computers remotely, therefore eliminating the need to update each computer individually.

Recommendation 7-3: The division should acquire a robust and integrated student information system.

The division has been using CIMS to house student information since 1997. The CIMS application currently resides in an IBM I series mid-range computer platform and unlike many new applications which are windows- or web-based, CIMS is a character based application. CIMS is no longer supported by its vendor. Over time, the technology services department has customized the CIMS application in order to meet the division's changing student information management needs. In areas where customization was not possible or the functionality did not exist, the department either developed an application internally or acquired an additional commercial application to fulfill those needs.

Although these disparate applications have addressed the division's short-term needs, they have also created a student information system environment of many applications that are not truly integrated with one another. This current environment creates inefficient and cumbersome conditions for the division's users and also creates significant issues for the division's technology services department in terms of support, training and technology integration.

Table 7.4 describes in detail the division's current student information management environment. There are 17 different applications or programs that users access for student information. The majority of these applications were developed by the technology department. Although only six of the applications are using older, character-based technology, they are critical and frequently used applications.

Table 7.4 HCPS student information-related applications

Application	Description	Type of Application	Type of Technology
CIMS (V4.04)	Student management system	Commercial	Character-based
Contacts	Part of CIMS that is customized by the division	Internally developed	Character-based
Discipline	Allows electronic collection of discipline information	Internally developed	Character-based
IEPs	Captures basic information about student individualized education program's (IEP)	Internally developed	Character-based
State Reporting	Allows division to fulfill state reporting requirements	Internally developed	Character-based

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Application	Description	Type of Application	Type of Technology
Student Verification	Assists with student verification process	Internally developed	Character-based
Attendance	Allows teachers to enter classroom attendance	Internally developed	Web-based
Grading	Allows teachers to enter student grades (middle and high schools)	Internally developed	Web-based
Interims	Allows teachers to enter interim information for their students	Internally developed	Web-based
Teacher Ease	Allows teachers to enter grades for their students (middle and high schools)	Commercial	Web-based
E-mail Connection	Allows individuals to subscribe to email messages from one or more division schools	Internally developed	Web-based
Family Connection	Allows parents to see their student's café balance , schedule, absences and grades	Internally developed	Web-based
Differentiated Education Plan /Specialized Education Plan	Allows teachers to enter various information about their gifted and specialized students	Internally developed	Web-based
Trade school Competencies	Allows career and technology education (CTE) instructor to record student competencies	Internally developed	Web-based
Trade school enrollment	Allows students interested in CTE courses to sign up	Internally developed	Web-based
Fees program	Allows schools to create invoices and record the collection of monies from students and parents	Internally developed	Desktop-based
School Event Calendar	Allows schools and the division to manage event calendars	Internally developed	Web-based

Source: HCPS technology department, 2010

One of the primary issues with having many applications that are not integrated is that the same data is entered multiple times into several systems. This creates inefficient processes and increases the risk for data entry errors. For example, division users enter grades into two separate systems. Grades are entered into the division's student information system and into an application called Teacher Ease.

Also, as a result of the limited capability of the current systems, HCPS elementary schools are generating report cards manually, i.e., manually writing student grades on paper report cards. This is an inefficient and time-consuming process that could be avoided with use of the proper technology.

The current student information management environment also prevents significant challenges for the division's technology services department including:

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1. Increased numbers and varieties of applications that require support and training;

2. Support and maintenance of a system (CIMS) that is no longer supported by its vendor;

3. Support and maintenance of many disparate, non-integrated, internally developed applications (increases the risk of a lack of knowledge transfer should staff that created these systems leave the division); and

4. Support of internally developed applications that are written in a programming language that is no longer a mainstream programming language, resulting in increased difficulty finding programmers to support them.

In order to reduce inefficiencies and the risk of data entry error resulting from multiple data entry points, HCPS should acquire an integrated and robust student information system (SIS). This acquisition would also reduce the technology services department's workload, as they would be able to spend less time syncing applications and transferring data from application to application. The system acquisition process should be a well-planned, deliberate process that includes key stakeholders from the beginning of the process. There are eight key steps to a sound system selection process (see Figure 7.3). It is recommended that the HCPS consider utilizing external assistance to guide the division through the system selection process.

Figure 7.3. Key steps for selecting a division-wide system

| 1. Create decision-making framework | 2. Analyze processes | 3. Gather require-ments | 4. Issue RFP | 5. Evaluate proposals | 6. Check References | 7. Conduct demonstra-tions | 8. Finalize selection |
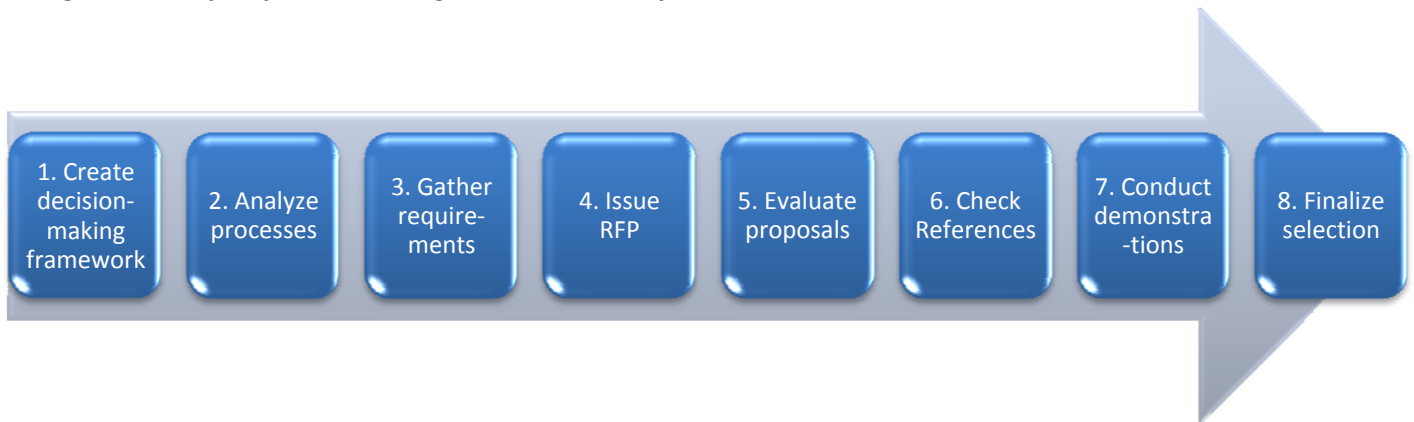
- **Step 1: Create a decision-making framework.** This step may include creating committees and selecting staff to key roles for the project. Usually there are two committees in a system selection project: (1) an executive committee, which consists of senior division leadership and is responsible for making high-level decisions; and (2) an operational committee, which consists of subject matter experts and performs the day-to-day work related to the system implementation.

- **Step 2: Analyze processes.** The second step in the process includes capturing key "as-is" processes and reviewing the processes to identify user requirements, process changes, and process improvements.

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- **Step 3: Gather requirements.** In this step, the division should interview key staff to identify functional user requirements for the new system. The division should also ensure that all state, federal and division compliance and reporting requirements are captured. Additionally, any requirements gathered from the process analysis are incorporated into the final requirements document. Once user requirements have been captured, the division should prioritize each captured requirement in order to help distinguish between the responding proposers' systems.

- **Step 4: Issue request for proposals**. Step four is developing and publishing a competitive request for proposals (RFP). Prior to preparing the RFP, the division should identify and finalize the vendor evaluation and selection criteria, in order that appropriate information is requested from responding vendors. The criteria should include cost, user requirement response scores based on priority, demonstration scores, references, and market information (such as number of installations in Virginia schools).

- **Step 5**: **Evaluate proposals.** Once all proposals have been received, HCPS should begin the evaluation phase of the selection process. This includes evaluating each vendor based on the evaluation and selection criteria developed by the project committees.

- **Step 6: Check references**. Once finalists have been determined, HCPS should perform reference checks for each finalist. The division should create questions for each reference call and if possible, conduct site visits to referenced school divisions.

- **Step 7: Conduct demonstrations**. Finalists should be asked to visit HCPS and provide a product demonstration for the committees and key users. The division should create demonstration scripts that include key and unique processes to their school division that vendors should include in their product demonstration. Score sheets should be created for staff to use for scoring each vendor during demonstrations. If possible, requesting a demo system, or sand box, for further review is recommended.

- **Step 8: Finalize selection**. As a final step, the division should finalize its selection and start the price and contract terms negotiations.

FISCAL IMPACT

It is difficult to estimate the overall fiscal impact of acquiring and implementing a student information system as there are a significant number of variables related to software selection and implementation that can change the outcome drastically, including:

- Which vendor is selected;

- The division's enrollment over the next five years;

- The amount of customization that the division will require;

- The number of additional modules or programs that the division may need as a result of their requirements definition;

- The number of training days that the division decides to purchase from the selected vendor;

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- The amount of historical data the division decides to convert to the new system;

- Vendor team travel costs during implementation;

- Additional software costs, such as database programs, as a result of the selected vendor product requirements; and

- The cost of any needed hardware.

However, an estimate of costs was made based on assumptions included in Table 7.5.

As many student information system license calculations are based on the number of students in the school system, 2010-11 student enrollment of (19,231) was used in the cost estimate. Any changes to the enrollment may affect the maintenance costs. For the purposes of this estimate, student enrollment numbers were not changed when calculating the five-year maintenance costs as percentage growth over time is unknown.

Certain categories of cost estimates for the student information system were calculated based on Virginia's four approved student information system vendors. One vendor was removed from the estimation as the cost of their product varied substantially from the other three. The average one-time cost of software licensing (based on the three approved vendors) is $9.96 per student. Average training costs per day are $1,100. The average one-time vendor cost for data conversion is $39,200. For annual system maintenance, these vendors charge 20 percent of the software license cost per student.

The implementation cost for the student information system may vary highly depending on the hourly rate of the vendor consultants, the number of software customizations, and the amount of time that the division requires the vendor to spend onsite. While much variation exists, the cost of implementation often ranges between 1.3 and two times the software license costs. Data conversion is also another category where the cost can vary highly. Although $39,000 was estimated for data conversion, the actual cost will be different based on the quality of division's legacy data and the number of years that the division wants to convert to the new system. Table 7.5 includes a cost estimate for the acquisition, implementation, training, and maintenance for a new student information system.

Table 7.5. Student information system cost estimate

Category	Assumptions	Calculation	Amount
Software License	Average per student price of $9.96 for Virginia's approved SIS vendors (see explanation above); the division's 2010-11 student enrollment of 19,231	19,231 x $9.96	$191,541
Implementation	Estimated vendor consulting support for implementation and report-writing	$191,541 X 1.5	$287,312
Project Management	Estimated project management based on $200/hour, half-time, for one year (1,040 hours).	$200 x 1,040	$208,000
Training	60 days (total of all trainers) of training; Virginia's approved SIS vendors' average daily rate of $1,100 for training	$1,100 x 60	$66,000

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Category	Assumptions	Calculation	Amount
Data conversion	Average data conversion cost based on Virginia's approved SIS vendors (see explanation above)	N/A	$39,200
Miscellaneous programming	Estimated SIF-related support - $150 per hour for three months (520 hours)	$150 x 520	$78,000
Staff back-fill	Functional staff back-fill for one year, 3 months		$43,750
DBA/ Programmer	Technical staff back-fill for one year, 3 months		$100,000
Total One-time Cost			**$1,013,803**
Maintenance through 2014-15	Virginia's approved SIS vendors charge 20 percent of the software license cost per student	($9.96 X 20%) x 19,231 x 3 years	**$114,924**
Grand Total Over Five Years	One-time costs plus maintenance costs for three years	$1,013,803 + $114,924	**$1,128,727**

This cost estimation assumes no customization or coding changes to the new system, as doing so is not a best practice. Because the hardware infrastructure of a potential system cannot be projected, any costs related to hardware are not included in this estimate.

Because the implementation of an SIS will require significant involvement by at least one key functional staff member, a super user, divisions sometimes back-fill that position temporarily in order to allow the focus to be on a successful implementation. This back-fill will last for the duration of the implementation, and will typically extend into the first quarter of "go-live".

Additionally, for the duration of the implementation plus an additional three months, a database administrator and one programmer will be devoted to the project at half-time.

Recommendation 7-3	One-Time Costs/ Savings	2011-12	2012-13	2013-14	2014-15	2015-16
Requirements gathering and system selection assistance	($175,000)	$0	$0	$0	$0	$0
Software license	$0	$0	($191,540)	$0	$0	$0
Implementation, project management and training	$0	$0	($561,310)	$0	$0	$0
Data conversion and miscellaneous programming	$0	$0	($117,200)	$0	$0	$0
Maintenance	$0	$0	$0	($38,308)	($38,308)	($38,308)
Functional staff back-fill	$0	$0	($35,000)	($8,750)	$0	$0

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Recommendation 7-3	One-Time Costs/ Savings	2011-12	2012-13	2013-14	2014-15	2015-16
Technical staff back-fill	$0	$0	($80,000)	($20,000)	$0	$0
Total cost	**($175,000)**	**$0**	**($985,050)**	**($67,058)**	**($38,308)**	**($38,308)**

Note: Costs are negative. Savings are positive.

Chapter 8 – Food Services

Introduction

The primary mission of a school division's food service program is to provide an appealing and nutritionally-sound breakfast and lunch to students while operating on a cost-recovery basis. In addition, these meals should be provided to the students in a safe, clean and accessible environment. Several success factors can be used to measure the efficiency and evaluate the effectiveness of a school division's food service operation. These factors include a high ratio of meals per labor hour (MPLH), minimizing food costs and waste, maximizing student participation in breakfast and lunch programs, providing a variety of meal choices that meet or exceed nutritional standards, reducing the length of time students must wait in line for service and operating a financially self-sufficient program.

Efficient food service program management and cost controls can allow a division to operate its food services program on a break even basis, thereby preventing the need to drain precious dollars away from classroom instruction. Successfully managed school food service programs provide customer satisfaction and contain costs while complying with applicable federal, state and local board regulations and policies.

Hanover County Public Schools' (HCPS) food services department operates 23 full-service cafeterias and serves over 1,000 breakfasts and 6,000 lunches daily. The four staff members in the central office oversee 168 staff at 15 elementary, four middle and four high schools. All services, excluding the high schools (as they do not participate in the school lunch program), must comply with national meal standards set forth by the United States Department of Agriculture (USDA), as well as policies and procedures established locally at HCPS.

The food services department derives its revenues from reimbursements (on a per-meal basis) from the federal government for meals provided to students who qualify for economic assistance and cash sales from all other students. For the most recent fiscal year, food services earned $6.9 million in total revenues and incurred $6.4 million in expenditures for a net surplus of $500,000.

This chapter presents commendations and recommendations for the food services department of HCPS and includes the following major sections:

    A. Organization and Staffing
    B. Policies, Procedures and Compliance
    C. Planning and Budgeting
    D. Management and Facility Operations
    E. Qualifying Students for Free and Reduced-Price Meals
    F. Student Participation

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While nutrition and nutrition education programs and purchasing, warehousing and contracting were included as part of the review of food services, no major commendations, findings or recommendations resulted from the review.

Several significant commendations are made in this chapter:

- HCPS has a very lean and highly skilled central office food services support staff;

- Food services operations are well organized, using part-time workers to increase efficiency; and

- The food services department has established procedures that are closely followed at each kitchen.

Table 8.1 provides a summary of food services recommendations and resulting fiscal impacts over the next five years.

Table 8.1. Fiscal impact (to food services fund) of recommendations

Area/Recommendation	Priority	One-Time Costs/Savings	2011-12	2012-13	2013-14	2014-15	2015-16	Total Fiscal Impact
Organization and Staffing								
8-1. Staffing efficiency	High	$ 0	$345,600	$345,600	$345,600	$345,600	$345,600	**$1,728,000**
Policies, Procedures and Compliance								
8-2. Install POS devices	High	($80,000)	$ 0	$ 0	$ 0	$ 0	$ 0	**($80,000)**
Management and Facility Operations								
8-3. Conversion of kitchens	Medium	$ 0	$66,172	$132,344	$132,344	$132,344	$132,344	**$595,548**
8-4. Allocation of direct costs	High	$ 0	($384,140)	($384,140)	($384,140)	($384,140)	($384,140)	**($1,920,700)**
Qualifying Students for Free and Reduced-Price Meals								
8-5. Explore participation in NSLP	Medium	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	**$ 0**
Student Participation								
8-6. Study ways to increase number of students purchasing lunch at school	High	$ 0	$300,000	$300,000	$300,000	$300,000	$300,000	**$1,500,000**
Net Impact		**($80,000)**	**327,632**	**$393,804**	**$393,804**	**$393,804**	**$393,804**	**$1,822,848**

Note: Costs are negative. Savings are positive.

A. Organization and Staffing

The HCPS central food services department is led by a director, who manages two supervisors, one of whom is a registered dietician, and one clerical assistant.

Each school location employs a food services manager, and three high schools also have one assistant manager each. Schools are assigned between two and 15 workers each. Managers are responsible for requisitioning and taking delivery of food items, scheduling staff and managing the operations of the cafeterias. The food service workers are responsible for preparing the food, working the food lines and kitchen clean-up following the meal periods. School custodial staff cleans the cafeteria seating areas only.

All kitchens order and stock their own food and non-food supplies on site. Weekly orders are placed with the central office for dry goods and paper supplies. Additionally, bi-weekly orders for federal commodities are also handled centrally. The division utilizes vendors selected through a competitive process to provide dairy and bakery products, which are ordered by each school weekly.

Commendation: The food services department employs a lean and highly skilled central office staff.

The HCPS maintains only a small staff in the central office food services department and recent staff turnover has been low. Additionally, each of the members of the central office team has a long tenure with the Division and excellent experience in food service operations in general.

Commendation: Staffing at the school cafeterias is well-organized and the department utilizes part-time staff to increase efficiency.

Food services department workers' schedules are assigned to provide the flexibility to meet daily workloads for meal planning, preparation, serving and clean-up. Staff in each kitchen cleans the kitchen preparation, serving and storage areas daily. Staffing at each of the schools is shown in Table 8.2.

Table 8.2. Food services staffing

School Name	Manager	Assistant Manager	Staff	Total
Elementary				
Battlefield Park	1	--	5	6
Beaverdam	1	--	3	4
Cold Harbor	1	--	5	6
Cool Spring	1	--	5	6
Elmont	1	--	4	5
Henry Clay	1	--	3	4

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School Name	Manager	Assistant Manager	Staff	Total
J.M. Gandy	1	--	2	3
Kersey Creek	1	--	5	6
Laurel Meadow	1	--	5	6
Mechanicsville	1	--	5	6
Pearson's Corner	1	--	3	4
Pole Green	1	--	5	6
Rural Point	1	--	4	5
South Anna	1	--	5	6
Washington Henry	1	--	3	4
Middle School				
Chickahominy	1	--	10	11
Liberty	1	--	7	8
Oak Knoll	1	--	8	9
Stonewall Jackson	1	--	6	7
High School				
Atlee	1	1	15	17
Hanover	1	1	10	12
Lee-Davis	1	--	13	14
Patrick Henry	1	1	11	13
Total Staff	**23**	**3**	**142**	**168**

Source: HCPS food services department

It is important to note that the staff count listed for each school is a headcount and does not represent full-time equivalents (FTEs), as staff members work a variety of schedules ranging from four and one-half to eight hours daily.

Recommendation 8-1: Conduct monthly school-level productivity analyses and use the results to improve food services operations at all schools.

Industry standards for meals per labor hour (MPLH) assume that more hours are required to prepare a meal in a full, conventional kitchen – where meals are generally prepared from scratch - than in a satellite, convenience kitchen - where prepared and packaged meals are re-heated and served on site.

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Additionally, as the number of meal equivalents served increases, the standard indicates that productivity – or the number of MPLH – increases.

The following analysis was prepared based on contracted hours only, not substitute or overtime hours, which may cause the productivity to appear higher than it is in reality.

Table 8.3 shows the industry standard recommended MPLH for each range of meal equivalents served, as well as for conventional and convenience systems.

Table 8.3. Industry standard recommended meals per labor hour

Number of Meal Equivalents	Meals Per Labor Hour (MPLH)			
	Conventional System		Convenience System	
	Low Productivity	High Productivity	Low Productivity	High Productivity
Up to 100	8	10	10	12
101 – 150	9	11	11	13
151 – 200	10-11	12	12	14
202 – 250	12	14	14	15
251 – 300	13	15	15	16
301 – 400	14	16	16	18
401 – 500	14	17	18	19
501 – 600	15	17	18	19
601 – 700	16	18	19	20
701 – 800	17	19	20	22
801 – 900	18	20	21	23
901 up	19	21	22	23

Source: School Foodservice Management for the 21st Century, 5[th] edition

To analyze the productivity of individual schools, the MPLH must be calculated for each one. To do so, the actual hours worked per day by each staff member were summed to arrive at the total daily number of labor hours at that school.

Next, the MPLH at each school was calculated by dividing the total daily meal equivalent by the total daily labor hours at each school. Table 8.4 compares HCPS food services department MPLH for each school to the national standards, using the standard representing low productivity using a conventional system.

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Table 8.4. Meals per labor hour compared to national standards

School	Daily Meal Equivalents	Daily Labor Hours	HCPS MPLH	Standard MPLH	Variance
Elementary					
Battlefield Park	339.0	35.0	9.7	14	(4.3)
Beaverdam	283.5	23.5	12.1	13	(0.9)
Cold Harbor	457.5	35.0	13.1	14	(0.9)
Cool Spring	508.0	36.0	14.1	15	(0.9)
Elmont	311.0	29.0	10.7	14	(3.3)
Henry Clay	306.0	24.5	12.5	14	(1.5)
J.M. Gandy	238.0	19.5	12.2	12	0.2
Kersey Creek	356.5	35.5	10.0	14	(4.0)
Laurel Meadow	449.0	34.0	13.2	14	(0.8)
Mechanicsville	479.5	37.0	13.0	14	(1.0)
Pearson's Corner	297.0	25.5	11.6	13	(1.4)
Pole Green	351.5	35.5	9.9	14	(4.1)
Rural Point	324.0	29.0	11.2	14	(2.8)
South Anna	431.0	34.0	12.7	14	(1.3)
Washington Henry	296.5	25.5	11.6	13	(1.4)
Middle School					
Chickahominy	988.5	65.5	15.1	19	(3.9)
Liberty	883.0	49.5	17.8	18	(0.2)
Oak Knoll	616.5	49.5	12.5	16	(3.5)
Stonewall Jackson	780.5	45.5	17.2	17	0.2
High School					
Atlee	1360.3	104.0	13.1	19	(5.9)
Hanover	777.4	79.0	9.8	17	(7.2)
Lee-Davis	928.9	89.0	10.4	19	(8.6)
Patrick Henry	722.3	73.0	9.9	17	(7.1)

Source: HCPS food services department

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Negative variances indicate that the school falls below the standard. As the table shows, all but two schools are below the standard low MPLH for conventional kitchens.

When the MPLH for a given kitchen is lower than the recommended standard, it indicates that the number of meals served is relatively low (given the capacity of existing staff) or the number of staff-hours worked daily is relatively high.

For those schools with a MPLH below industry standards, the school's food service operation can develop strategies to achieve the recommended productivity level, including:

- Increase the number of meals served (participation) while maintaining existing staff levels; and
- Decrease the number of staff-hours worked daily by reducing staff counts or adjusting work schedules.

Next, the number of hours that are necessary to deliver each school's daily meal equivalents at a low level of productivity was calculated and that school's actual daily labor hours were subtracted from the result to arrive at a labor hour variance for each (see Table 8.5). The labor hour variance indicates either the number of excess daily labor hours at the school (negative numbers), or additional labor hours necessary to meet the low standard (positive numbers).

Table 8.5. Daily labor hour variances from standard

School	Daily Meal Equivalents	Standard MPLH	Standard (Low) Labor Hours	HCPS Daily Labor Hours	Labor Hours Variance
	[A]	[B]	[C]=[A] ÷[B]	[D]	[C]-[D]
Elementary					
Battlefield Park	339.0	14	24.2	35.0	(10.9)
Beaverdam	283.5	13	21.8	23.5	(1.7)
Cold Harbor	457.5	14	32.7	35.0	(2.3)
Cool Spring	508.0	15	33.9	36.0	(2.1)
Elmont	311.0	14	22.2	29.0	(6.8)
Henry Clay	306.0	14	21.9	24.5	(2.6)
J.M. Gandy	238.0	12	19.8	19.5	0.3
Kersey Creek	356.5	14	25.5	35.5	(10.0)
Laurel Meadow	449.0	14	32.1	34.0	(1.9)
Mechanicsville	479.5	14	34.3	37.0	(2.7)
Pearson's Corner	297.0	13	22.8	25.5	2.7)

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School	Daily Meal Equivalents	Standard MPLH	Standard (Low) Labor Hours	HCPS Daily Labor Hours	Labor Hours Variance
	[A]	[B]	[C]=[A]÷[B]	[D]	[C]-[D]
Pole Green	351.5	14	25.1	35.5	(10.4)
Rural Point	324.0	14	23.1	29.0	(5.9)
South Anna	431.0	14	30.8	34.0	(3.2)
Washington Henry	296.5	13	22.8	25.5	(2.7)
Middle School					
Chickahominy	988.5	19	52.0	65.5	(13.5)
Liberty	883.0	18	49.1	49.5	(0.4)
Oak Knoll	616.5	16	38.5	49.5	(11.0)
Stonewall Jackson	780.5	17	45.9	45.5	0.4
High School					
Atlee	1,360.3	19	71.6	104.0	(32.4)
Hanover	777.4	17	45.7	79.0	(45.7)
Lee-Davis	928.9	19	48.9	89.0	(40.1)
Patrick Henry	722.3	17	42.5	73.0	(30.5)
			Excess Daily Labor Hours – Division-wide		**(226.3)**

Source: HCPS food services department

Overall, the HCPS food services department appears to deliver meals fairly efficiently. However, nine schools have productivity levels that are more than 10 hours below minimum standards on a daily basis.

The potential savings in Table 8.6 were calculated by multiplying the daily hour variance by ten dollars per hour – an estimate of the average hourly rate for food service workers - and then multiplying that result by 180 days (i.e., the typical food service worker's schedule). Table 8.6 shows the potential annual savings for these schools, should the daily hour variance be corrected.

Table 8.6. Potential productivity savings

School	Daily Hour Variance	Potential Annual Savings
Battlefield Park	(10.8)	$19,440
Kersey Creek	(10.0)	$18,000

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School	Daily Hour Variance	Potential Annual Savings
Pole Green	(10.4)	$18,720
Chickahominy	(13.5)	$24,300
Oak Knoll	(11.0)	$19,800
Atlee	(32.4)	$58,320
Hanover	(33.3)	$59,940
Lee-Davis	(40.1)	$72,180
Patrick Henry	(30.5)	$54,900
Total Potential Annual Savings		$345,600

Source: HCPS, food services department

Conversely, Gandy Elementary School and Stonewall Jackson Middle School are the most efficient cafeterias. The operations at these schools should be analyzed in order to identify efficient practices and procedures that may be implemented at other schools. If more efficient processes can be duplicated at all schools, work schedules for existing staff could be modified. As staff turnover occurs, new staff could be scheduled for fewer hours daily.

Food service department management calculates MPLH statistics on an annual basis only and MPLH is not routinely calculated at a school-level basis. Additionally the calculations performed do not include overtime or substitute expenditures. During site visits, it was observed that some schools utilize substitute staff on a regular basis and incur significant overtime expenses each year. For example, during fiscal year 2010, the food services department incurred approximately $100,000 in substitute and overtime costs. These costs should be reviewed monthly, and if the related hours impact productivity levels, the hours should be included in the MPLH analysis.

HCPS should begin analyzing MPLH at the school level, including overtime and substitute hours. When efficient schools are identified, the staffing levels and general operations at those schools should be used to arrive at division best practices which can be implemented at all schools.

FISCAL IMPACT

This recommendation can be completed by food service department management and should require minimal incremental time (approximately two hours per month).

Conducting monthly school-level productivity analyses could result in savings of $345,600 annually, or $1,728,000 over a five-year period.

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Recommendation 8-1	One-Time Costs/ Savings	2011-12	2012-13	2013-14	2014-15	2015-16
Conduct monthly school-level productivity analysis	$0	$345,600	$345,600	$345,600	$345,600	$345,600

Note: Costs are negative. Savings are positive.

B. Policies and Procedures

The central office establishes procedures for each school to follow regarding the collection and deposit of funds, the stocking and ordering of food and other supplies, and compliance with health and safety standards. To ensure that procedures are followed consistently by all schools, the department has developed a variety of forms, checklists and reports for each cafeteria manager to complete on a daily basis. During the site visit, the review team discussed the procedures with each manager and examined recently completed forms and reports as evidence of compliance with these policies and procedures.

Commendation: The central office has established procedures and forms for food services that are well-understood and followed at each kitchen.

The central food services management staff has established procedures and created related forms to be utilized by each school's kitchen staff. These procedures appear to be understood and followed at each school. These standards include food handling, safety procedures, as well as order processing, cash handling and student account management. Internal accounting controls over cash collection, reconciliation and deposit functions appear to be effective.

Recommendation 8-2: Complete the installation of point-of-sale (POS) devices and the full café system functionality at all schools.

Most schools operate POS devices that track student accounts and permit parents to access their children's account for replenishment and daily monitoring of activity. However, a lack of funds has prevented the food services department from implementing POS devices and the related web-based system at all schools.

FISCAL IMPACT

Completing the implementation of POS devices and the full café system functionality would improve the recordkeeping function and better serve the customer base. Management estimates that $80,000 is needed to complete the installation.

Recommendation 8-2	One-Time Costs/ Savings	2011-12	2012-13	2013-14	2014-15	2015-16
Install POS devices	($80,000)	$ 0	$ 0	$ 0	$ 0	$ 0

Note: Costs are negative. Savings are positive.

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C. Planning and Budgeting

The financial management of food service operations has become a major emphasis of school systems nationwide. Food service operations are expected to be run like a business and be self-supporting. To successfully manage a financially successful school food service operation requires a knowledge of the financial goals and objectives of the school board; sound planning and budget development to meet the Board's goals and objectives; and a financial accounting system that provides accurate and timely financial information to assist in managing revenues and expenditures.

While there is not a recommendation or commendation specifically related to planning and budgeting, the following discussion is related to recommendations 8-1 and 8-4.

As shown in Table 8.7, revenues from food service operations have exceeded expenditures for each of the last three fiscal years.

Table 8.7. Food services revenues and expenditures

Fiscal Year	Total Revenues	Total Expenditures	Excess Revenues over Expenditures
2010	$6,908,061	$6,424,641	$483,420
2009	$7,132,863	$7,131,923	$940
2008	$7,383,266	$7,259,556	$123,710
2007	$7,239,821	$7,360,020	($120,199)
2006	$6,885,932	$6,908,998	($23,065)

Source: HCPS food services department

Food services department management has been progressive in adjusting meal prices to reflect economic conditions and prices at other regional school systems. Food services management calculates MPLH statistics on an annual basis only based on contracted labor hours. As noted previously in this chapter, this calculation should include hours incurred for overtime and substitute expenses.

The high schools of HCPS do not participate in the USDA National School Lunch Program (NSLP), which is a federal lunch reimbursement program. It is one of two school systems (Chesterfield County is the other) that do not participate in the NSLP. As a consequence, free and reduced price eligibility statistics are not reported for the high schools. Also, individual meals are not counted, because no reimbursement on a per-meal basis is submitted. For the high schools, meal equivalents are calculated from a la carte revenues based on the assumed price of $3.50 per meal.

Management compiles reports of monthly operating results for each school which include revenues and most direct expenditures related to food services. For fiscal year 2010, the department reported a surplus of approximately $483,000. Individual schools reported results ranging from a deficit of $62,000 to a surplus of $102,000.

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D. Management and Facilities Operations

HCPS operates conventional kitchens at all 23 of its K-12 schools: 15 elementary, four middle and four high schools. Lunch is served for approximately 25-40 students and adults at a satellite kitchen from one of the middle schools.

The equipment at the kitchens observed appears to be well-maintained and operational. There were no major pieces of equipment that were inoperable or in need of immediate servicing. It also does not appear that there is significant deferred maintenance of kitchen equipment at any of the schools or that major systems (freezers, refrigerators, ovens or serving equipment) are in need of immediate replacement.

Recommendation 8-3: Management should consider the implementation of convenience-style kitchens and reduce the number of conventional, full-service kitchens.

Except for a small number of meals prepared at Oak Knoll Middle School and delivered to the Georgetown School daily, HCPS food services does not operate any satellite, or convenience-style kitchens. Convenience kitchens involve the preparation of meals – including cooking and packaging – at a central location for reheating and serving at another cafeteria location.

Economies of scale can be achieved in stocking, preparation and administrative functions by reducing the number of full-service kitchens. Differences between productivity levels for conventional kitchens and convenience kitchens can be seen in table 8.3. On average, the use of convenience kitchens can enable an additional 15-20 percent of meals to be served without increasing staff levels. Stated another way, the same number of meals can be served with 20 percent fewer staff. Factors to consider when changing from conventional to convenience kitchens include:

- **Menu planning** –the types of meals that can be prepared, packaged and re-heated without negatively impacting food quality;

- **Facilities** – identifying how many existing kitchens can handle increasing the number of meals served daily (storage and preparation equipment can be moved if space is available), as well as determining which facilities could be utilized for other purposes; and

- **Logistics** – vehicles and staff would be required for transportation of packaged meals to satellite kitchens, and the geographic dispersal of schools – the distance between schools, or clusters of schools, is a critical for efficient transport of packaged meals.

The complexity of determining which school cafeterias would be good candidates for conversion makes it difficult to estimate potential savings. Based on the average savings of 20 percent of labor costs for a convenience-style cafeteria, HCPS could achieve savings of approximately $132,344 annually by converting five elementary schools, one middle school, and one high school to convenience kitchens. For purposes of this analysis, schools at each level with the lowest total labor costs in FY 2010 were

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selected (see Table 8.8). In practice, the division would need to consider each of the factors discussed to determine the best candidates for conversion.

Table 8.8. Potential savings related to kitchen conversions

School Name	FY 2010 Labor Costs	Potential Annual Savings (20%)
J.M. Gandy Elementary	$79,152	$15,830
Henry Clay Elementary	$92,112	$18,422
Beaverdam Elementary	$18,852	$18,852
Pearson's Corner Elementary	$20,539	$20,539
Laurel Meadow Elementary	$21,134	$21,134
Stonewall Jackson Middle	$160,674	$32,135
Patrick Henry High	$269,259	$53,852
Total	**$661,722**	**$132,344**

Source: HCPS food services department

FISCAL IMPACT

It would be conservative to expect the implementation of this recommendation to require more than one year to implement, as kitchen staffs are downsized to reflect the changes in operations. In the first year, labor savings of approximately $66,172 would be reasonable. For each additional year, labor savings of approximately $132,344 annually could be achieved for a total of $595,550 over the next five years. It is not expected that there would be a net cost associated with converting the kitchens.

Recommendation 8-3	One-Time Costs/ Savings	2011-12	2012-13	2013-14	2014-15	2015-16
Convert kitchens	$0	$66,172	$132,344	$132,344	$132,344	$132,344

Note: Costs are negative. Savings are positive.

Recommendation 8-4: Allocate allowable direct costs to food services operations.

Federal guidelines permit the allocation of certain costs to the child nutrition fund (i.e., those expenditures that are necessary and reasonable for proper and efficient administration of the food program, including utilities, trash removal and janitorial services). Currently, HCPS does not allocate any direct costs associated with the food service operation. The food services fund reported excess revenues over expenditures in FY 2010 of approximately $500,000.

Improvements in productivity discussed in the sections above could result in cost savings of up to $400,000 annually, which would offset these allocated expenses and provide additional resources for

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the general fund. Additional analysis is necessary to determine the amount of expenditures for these services that relate to the breakfast or lunch periods.

- **Janitorial/Custodians** – Approximately 17,000 hours, or $184,000 of expenditures, are expended annually for custodians assigned to cafeteria clean-up.

- **Waste Disposal** – Based on estimates of custodians at school visited, approximately one-half of the trash collected daily relates to the kitchen or cafeteria operations. Additional analysis is necessary to confirm the actual proportion of trash created by food services and the annual fees for trash removal.

- **Utilities** – Electrical costs for heating/cooling and lighting the cafeteria can be estimated based on the cafeteria's proportion of the overall square footage of each school and the mix of uses for the cafeteria facility for food services or other functions during the school year.

All direct costs associated with food service operations, including custodians, utilities, and disposal charges, should be calculated. Journal entries representing the reasonable share of the costs allocable to food services should be prepared to transfer costs from the general fund to the food services fund.

Based on previous experience with school systems of similar size, allocations of costs for waste disposal and utilities could be conservatively expected to total $100,000 annually for each cost type, with a total of $200,000. Based on an average hourly rate for custodians of $11, and total annual hours of 16,740, the amount related to custodial staff would total $184,140. [See Recommendation 4-7 in the Facilities chapter of this report for the calculation of custodial salaries.] Overall savings to the general fund related to the allocation of direct costs to the food services fund are estimated to total $384,140 annually.

FISCAL IMPACT

Allocation of direct costs would yield approximately $384,140 annually or $1,920,700 over a five-year period. The fiscal impact shown below represents *savings to the general fund and costs to the food services fund.*

Recommendation 8-4	One-Time Costs/ Savings	2011-12	2012-13	2013-14	2014-15	2015-16
Allocate costs for custodians assigned to cafeteria clean-up	$0	($184,140)	($184,140)	($184,140)	($184,140)	($184,140)
Allocate costs for waste disposal and utilities	$0	($200,000)	($200,000)	($200,000)	($200,000)	($200,000)
Total	**$0**	**($384,140)**	**($384,140)**	**($384,140)**	**($384,140)**	**($384,140)**

Note: Costs are negative. Savings are positive.

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This recommendation can be accomplished in a joint effort by central office staff in food services, facilities and the business office and should be implemented immediately (via journal entry). There is no incremental cost associated with the implementation of this recommendation.

E. Qualifying Students for Free and Reduced-Price Meals

School divisions that take part in the federal lunch program receive cash subsidiaries and donated commodities from the USDA for each meal they serve. In return, the division must serve its students meals that meet federal requirements for nutritional value and offer free or reduced-price meals to eligible students.

HCPS has a relatively low level of students eligible for free and reduced meal reimbursement compared to other Virginia school systems. HCPS' percentage of free and reduced (16.6 percent in 2009) was less than one-half of the state-wide average. For this reason, HCPS is one of two school systems state-wide that opts not to have its high schools participate in the NSLP. Those students who are eligible are given meal credits at the high schools and must pay for any a la carte items. The division absorbs this expense internally.

Recommendation 8-5: Management should prepare formal analyses of the costs and benefits of opting out of the NSLP.

The cost-benefit analysis of opting out of the federal program has not been formally developed. This analysis would include: the impacts of discontinuing the credits for meals to eligible student and receiving reimbursement at current rates, and additional costs incurred due to lost sales resulting from changes to standard menus and a la carte offerings.

HCPS should consider participating in the NSLP for high schools with the highest eligibility for a period of time to determine the financial and operational impacts, which cannot be estimated at this time.

FISCAL IMPACT

This recommendation can be accomplished by a joint effort of food services management staff and the business office and should collectively take approximately 10 hours to complete. HCPS should be able to decide whether to participate in the NSLP by the beginning of the 2011-12 school year.

F. Student Participation

During the average day - for the 2009-10 school year - approximately 1,184 breakfasts and 6,463 lunches were served. Table 8.9 shows the average daily meals served and the percentage of participating students in each category for the most recently completed school year (2009-10).

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Table 8.9. Average daily meals and participation, 2009-10

Student Group	Breakfast		Lunch	
	Meal Count	Percentage of Eligible Students	Meal Count	Percentage of Eligible Students
Paid	438	4.1%	4,753	44.8%
Reduced	91	19.8%	342	74.6%
Free	655	37.3%	1,369	77.9%
Total	**1,184**	**9.2%**	**6,464**	**50.3%**

Source: HCPS food services department

Meal participation rates in fiscal year 2010 averaged 50.3 percent for lunch and 9.2 percent for breakfast. Participation rates for high schools are not reported because the division does not participate in the federal lunch and breakfast reimbursement programs. However, based on meal equivalents served daily, participation in lunch programs at the high school is at or slightly higher than those of elementary and middle schools.

All of the division's campuses are closed, meaning that students are not allowed off school property once classes begin for the day. Additionally, the division has recently begun offering third-party products, such as Chik-fil-A and a local deli sandwich supplier, to its high schools in order to increase participation and sales.

Recommendation 8-6: Study ways to increase the number of students purchasing lunch at school.

Management should identify reasons that students elect to not purchase meals from the cafeterias and develop specific strategies to increase participation. Specific participation goals should be developed and food service staff should be rewarded for efforts to meet or exceed these goals.

Strategies for increasing student participation and reducing the number of students who bring their lunch or otherwise decline to eat in the cafeterias might include:

- Survey parents of students who participate and opt out in order to solicit ideas for increasing revenues;

- Develop goals for increased participation and give awards to school cafeteria staff members who achieve or exceed the goals; and

- Add new, higher-priced a la carte offerings, such as custom sandwich stations or salad bars.

FISCAL IMPACT

This recommendation can be implemented by food service management staff. The analytic component of this recommendation (identifying reasons why students elect not to purchase meals from the

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cafeterias and creating an action plan) should take approximately 40 hours to complete. Approximately 20 hours per year will be required from food service management in order to sustain the resulting plan. Changes in meal plans or product selections could be implemented by the beginning of the 2011-12 school year.

A 10 percent increase in participation (approximately 600 lunches daily) would add nearly $300,000 (net of food costs) to the food services' surplus annually ($1,500,000 over the next five years). This additional net revenue would also help to offset the allocation of direct costs from the general fund discussed in Section D. above.

Recommendation 8-6	One-Time Costs/ Savings	2011-12	2012-13	2013-14	2014-15	2015-16
Study ways to increase number of students purchasing lunch at school	$0	$300,000	$300,000	$300,000	$300,000	$300,000

Note: Costs are negative. Savings are positive.

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Appendix A – Fiscal Impact Summary

Table A.1 lists all recommendations made as a result of the review, by operational area, priority level for implementing each recommendation, as well as estimated savings, investments, and net fiscal impacts.

Table A.1. Summary of fiscal impacts (five-year)

Recommendation	Priority	One-Time Costs/ Savings	2011-12	2012-13	2013-14	2014-15	2015-16	Total Fiscal Impact
Chapter 1 – Divisional Administration								
1-1. Position reclassifications	Low	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	**$ 0**
1-2. Process re-engineering	Medium	($250,000)	($100,000)	($100,000)	($100,000)	$ 0	$ 0	**($550,000)**
1-3. Implement measurable objectives	High	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	**$ 0**
1-4. Incorporate efficiency measures into budget process	High	($150,000)	($75,000)	($75,000)	($75,000)	($75,000)	($75,000)	**($525,000)**
Net Fiscal Impact – Chapter 1		**($400,000)**	**($175,000)**	**($175,000)**	**($175,000)**	**($75,000)**	**($75,000)**	**($1,075,000)**
Chapter 2 – Education Service Delivery								
2-1. Reduce span of control for instructional leadership	Medium	$0	$0	($75,000)	($75,000)	($75,000)	($75,000)	**(300,000)**
2-2. Develop site-based decision-making framework	High	$0	$ 0	$ 0	$ 0	$ 0	$ 0	**$ 0**
2-3. Re-engineer activities associated with certain teacher duty periods	Medium	($250,000)	($250,000)	$440,000	$1,155,000	$1,155,000	$1,155,000	**$3,405,000**
2-4. Improve controls over school copier use	Medium	$0	$152,125	$304,250	$304,250	$304,250	$304,250	**$ 1,369,125**
2-5. Expand scope and use of student data warehouse	Low	$0	$ 0	$ 0	$ 0	$ 0	$ 0	**$ 0**
2-6. Implement Response to Intervention district-wide	High	$0	($500,000)	($500,000)	$ 0	$ 0	$ 0	**($1,000,000)**

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Recommendation	Priority	One-Time Costs/ Savings	2011-12	2012-13	2013-14	2014-15	2015-16	Total Fiscal Impact
2-7. Develop long range plan and delivery model for special education	Medium	$0	$0	$0	$0	$0	$0	**$0**
Net Fiscal Impact – Chapter 2		**($250,000)**	**($597,875)**	**$169,250**	**$1,384,250**	**$1,384,250**	**$1,384,250**	**$3,474,125**
Chapter 3 – Human Resources								
3-1. HR organization	Low	$0	$0	$0	$0	$0	$0	**$0**
3-2. Review and document HR processes	High	$0	$0	$0	$0	$0	$0	**$0**
3-3. Spreadsheet reduction	Medium	$0	$0	$0	$0	$0	$0	**$0**
3-4. Expand Aesop usage	Medium	$0	($6,275)	($6,275)	($10,494)	($10,494)	($10,494)	**($44,032)**
3-5. Staffing strategy	High	$0	$0	$0	$0	$0	$0	**$0**
3-6. Summer school changes	Low	$0	$0	$0	$0	$0	$0	**$0**
3-7. Staff development for support staff	Medium	$0	$0	$0	$0	$0	$0	**$0**
Net Fiscal Impact – Chapter 3		**$0**	**($6,275)**	**($6,275)**	**($10,494)**	**($10,494)**	**($10,494)**	**($44,032)**
Chapter 4 – Facilities								
4-1. Review school capacity and utilization	Medium	($350,000)	$0	$0	$0	$0	$0	**($350,000)**
4-2. Consider School Dude facility scheduling to manage shared use	Low						**Requires School Dude Quote**	
4-3. Plan for maintenance staff retirements	High	$0	$0	$0	$0	$0	$0	**$0**
4-4. Create a plan to address aging maintenance vehicle fleet	Medium	$0	$0	$0	$0	$0	$0	**$0**
4-5. Increase coordination among preventive maintenance activities	High	$0	$0	$0	$0	$0	$0	**$0**
4-6. Centralize custodial operations	Medium	$0	($50,000)	($50,000)	($50,000)	($50,000)	($50,000)	**($250,000)**

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Recommendation	Priority	One-Time Costs/ Savings	2011-12	2012-13	2013-14	2014-15	2015-16	Total Fiscal Impact
4-7. Allocate custodial staff labor and other operating costs to food services *(savings to general fund)*	Low	$ 0	$384,140	$384,140	$384,140	$384,140	$384,140	**$1,920,700**
4-8. Reduce school calendar for custodial operations	Medium	$ 0	$215,105	$215,105	$215,105	$215,105	$215,105	**$1,075,525**
Net Fiscal Impact – Chapter 4		**($350,000)**	**$549,245**	**$549,245**	**$549,245**	**$549,245**	**$549,245**	**$2,396,225**
Chapter 5 – Financial Management								
5-1. Streamline the payroll process	High	($50,000)	$0	$0	$0	$0	$0	**($50,000)**
5-2. Invest in integrated systems	High	($150,000)	$0	($1,150,000)	($537,500)	($300,000)	($300,000)	**($2,437,500)**
5-3. Expand access to the GL	Medium	$0	$0	$0	$0	$0	$0	**$ 0**
5-4. Automate the P-card program	Medium	$0	$0	$0	$0	$0	$0	**$ 0**
5-5. Analyze commodity codes	Medium	$0	$0	$0	$0	$0	$0	**$ 0**
Net Fiscal Impact – Chapter 5		**($200,000)**	**$0**	**($1,150,000)**	**($537,500)**	**($300,000)**	**($300,000)**	**($2,487,500)**
Chapter 6 – Transportation								
6-1. Revise organizational structure	High	$0	$0	$0	$0	$0	$0	**$ 0**
6-2. Establish dispatcher positions	High	$0	($66,413)	($66,413)	($66,413)	($66,413)	($66,413)	**($332,067)**
6-3. Establish contract substitute drivers	Medium	$0	($72,742)	($72,742)	($72,742)	($72,742)	($72,742)	**($363,710)**
6-4. Adopt written guidelines	High	$0	$150,171	$150,171	$150,171	$150,171	$150,171	**$750,855**
6-5. Implement automated routing and scheduling	Medium	$0	$0	$0	$0	$0	$0	**$ 0**
6-6. Develop procedures to implement all features of the software	Low	$0	$0	$0	$0	$0	$0	**$ 0**

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Recommendation	Priority	One-Time Costs/ Savings	2011-12	2012-13	2013-14	2014-15	2015-16	Total Fiscal Impact
6-7. Adopt a system for performance measurement and monitor trends	High	$0	$0	$0	$0	$0	$0	**$ 0**
6-8. Develop a master plan for transportation facilities	Medium	($50,000)	$0	$0	$0	$0	$0	**($50,000)**
Net Fiscal Impact – Chapter 6		**($50,000)**	**$11,016**	**$11,016**	**$11,016**	**$11,016**	**$11,016**	**$5,080**
Chapter 7 – Technology Management								
7-1. Disaster recovery plan	Medium	($30,000)	$0	($79,044)	$0	$0	$0	**($109,044)**
7-2. Comprehensive procedures manual	Medium	$0	$0	$0	$0	$0	$0	**$ 0**
7-3. Integrated student information system	High	($175,000)	$0	($985,050)	($67,058)	($38,308)	($38,308)	**($1,303,724)**
Net Fiscal Impact – Chapter 7		**($205,000)**	**$0**	**($1,064,096)**	**($67,058)**	**($38,308)**	**($38,308)**	**($1,412,768)**
Chapter 8 – Food Services								
8-1. Staffing efficiency	High	$ 0	$345,600	$345,600	$345,600	$345,600	$345,600	**$1,728,000**
8-2. Investment in POS devices	High	($80,000)	$ 0	$ 0	$ 0	$ 0	$ 0	**($80,000)**
8-3. Conversion of kitchens	Medium	$ 0	$66,172	$132,344	$132,344	$132,344	$132,344	**$595,548**
8-4. Allocation of direct costs *(cost to food services fund)*	High	$ 0	($384,140)	($384,140)	($384,140)	($384,140)	($384,140)	**($1,920,700)**
8-5. Explore participation in NSLP	Medium	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	**$ 0**
8-6. Study ways to increase number of students purchasing lunch at school	High	$ 0	$300,000	$300,000	$300,000	$300,000	$300,000	**$1,500,000**
Net Fiscal Impact – Chapter 8		**($80,000)**	**$327,632**	**$393,804**	**$393,804**	**$393,804**	**$393,804**	**$1,822,848**
TOTAL Net Fiscal Impact		**($1,535,000)**	**$108,743**	**($1,272,054)**	**$1,548,263**	**$1,914,513**	**$1,914,513**	**$2,678,978**

Note: Costs are negative. Savings are positive.

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Appendix B – Peer Comparisons

Table B.1 Overview

School Division	End-of-Year Membership Count	Student Population per 1000 General Population (Ratio)*	Percentage Students with Disabilities	Percentage Economically Disadvantaged	Total Number of Schools**
Spotsylvania	23,538	194.5	11.8%	27.1%	29
Stafford	26,219	211.2	8.9%	21.4%	30
Roanoke County	14,666	161.1	14.9%	21.9%	26
York County	12,651	206.9	9.4%	18.2%	19
Peer Division Average	**19,269**	**193.0**	**11.25%**	**22.15%**	**26**
Hanover	18,619	186.3	13.7%	16.6%	23

Source: 2008-2009 Superintendent's Annual Report, Virginia DOE 2009 enrollment reports

*General population based on 2009 census estimates

**Number of schools from Virginia DOE school report cards

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Table B.2 Teacher staffing levels

School Division	Total Teachers per 1000 Students	Ratio of Pupils per Classroom Teaching Position Grades K-7	Ratio of Pupils per Classroom Teaching Position Grades 8-12
Spotsylvania	77.24	13	13
Stafford	74.03	16	11
Roanoke County	86.19	15	9
York County	71.22	14.2	13.9
Peer Division Average	**77.17**	**14.55**	**11.73**
Hanover	90.39	12	10

Source: 2008-2009 Superintendent's Annual Report

Table B.3 Receipts by fund source

School Division	Sales and Use Tax	State Funds	Federal Funds	Local Funds	Other Funds	Loans, Bonds, Etc.	Total Funds
Spotsylvania	7.25%	38.69%	4.02%	40.59%	3.26%	6.19%	288,090,538.13
Stafford	8.66%	43.41%	4.58%	38.56%	4.04%	0.75%	266,567,157.47
Roanoke County	6.30%	32.13%	3.18%	33.52%	2.27%	22.61%	217,372,651.74
York County	7.81%	41.40%	9.38%	33.95%	3.25%	4.21%	134,049,991.01
Peer Division Average	**7.51%**	**38.91%**	**5.29%**	**36.66%**	**3.21%**	**8.44%**	**226,520,084.59**
Hanover	6.74%	31.56%	3.09%	40.74%	3.28%	14.58%	240,517,949.72

Source: 2008-2009 Superintendent's Annual Report

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Table B.4 Disbursements per pupil

School Division	Instruction Spending Per Pupil	Administration Spending Per Pupil
Spotsylvania	$7,681.35	$235.11
Stafford	$7,201.03	$267.99
Roanoke County	$7,639.03	$225.93
York County	$7,312.37	$348.76
Peer Division Average	**$7,458.45**	**$269.45**
Hanover	$7,595.69	$293.18

Source: 2008-2009 Superintendent's Annual Report

Table B.5 Staff per 1,000 students

School Division	End-Of-Year Average Daily Membership (Count)	Principals/Assistant Principals Per 1000 Students	Teacher Aides Per 1000 Students	Guidance Counselors/ Librarians Per 1000 Students
Spotsylvania	23,730	2.87	12.77	4.39
Stafford	26,762	3.26	16.98	3.93
Roanoke County	14,782	3.89	18.43	5.74
York County	12,624	3.64	21.62	4.18
Peer Division Average	**19,475**	**3.42**	**17.45**	**4.56**
Hanover	18,854	3.68	16.34	4.49

Source: 2008-2009 Superintendent's Annual Report

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Table B.6 Instructional personnel

School Division	INSTRUCTION			
	Administrative Count	Technical and Clerical Count	Instructional Support Count	Other Professional Count
Spotsylvania	6.60	158.63	30.12	0.00
Stafford	20.83	224.64	24.25	15.27
Roanoke County	21.55	106.91	0.00	3.96
York County	9.08	98.26	0.00	2.00
Peer Division Average	**14.52**	**147.11**	**13.59**	**5.31**
Hanover	1.00	91.82	22.00	0.00

Source: 2008-2009 Superintendent's Annual Report

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Table B.7 Administrative, attendance and health personnel

School Division	ADMINISTRATION, ATTENDANCE AND HEALTH		
	Administrative Count	Technical and Clerical Count	Other Professional Count
Spotsylvania	14.92	27.05	59.72
Stafford	29.00	53.15	92.37
Roanoke County	12.00	20.77	49.22
York County	9.75	36.45	40.50
Peer Division Average	**16.42**	**34.36**	**60.45**
Hanover	11.00	18.50	50.17

Source: 2008-2009 Superintendent's Annual Report

Table B.8 Technology personnel

School Division	TECHNOLOGY		
	Administrative Count	Technical and Clerical Count	Instructional Support Count
Spotsylvania	5.00	57.63	25.00
Stafford	8.00	64.47	0.00
Roanoke County	1.30	35.46	0.00
York County	1.00	41.00	0.00
Peer Division Average	**3.83**	**49.64**	**6.25**
Hanover	0.00	44.14	0.00

Source: 2008-2009 Superintendent's Annual Report

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Table B.9 Transportation personnel

School Division	TRANSPORTATION			
	Administrative Count	Technical and Clerical Count	Other Professional Count	Trades, Labor and Service Count
Spotsylvania	2.00	71.50	3.00	334.37
Stafford	2.90	72.78	0.00	261.46
Roanoke County	3.00	2.00	0.00	189.77
York County	0.00	9.00	0.00	125.38
Peer Division Average	**1.98**	**38.82**	**0.75**	**227.75**
Hanover	0.00	7.00	2.00	285.25

Source: 2008-2009 Superintendent's Annual Report

Table B.10 Operations and maintenance personnel

School Division	OPERATIONS AND MAINTENANCE			
	Administrative Count	Technical and Clerical Count	Other Professional Count	Trades, Labor and Service Count
Spotsylvania	1.00	4.00	3.00	166.72
Stafford	7.77	28.30	0.00	132.59
Roanoke County	3.30	0.00	3.00	154.33
York County	0.00	11.00	0.00	134.50
Peer Division Average	**3.02**	**10.83**	**1.50**	**147.04**
Hanover	1.00	3.13	3.50	150.63

Source: 2008-2009 Superintendent's Annual Report

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Table B.11 Food Services disbursements

School Division	Food Services	Per Pupil Cost
Spotsylvania	$8,848,727	$372.92
Stafford	$10,333,020	$391.64
Roanoke County	$6,025,500	$409.24
York County	$4,138,012	$324.65
Peer Division Average	**$7,336,315**	**$374.61**
Hanover	$7,131,923	$382.58

Source: 2008-2009 Superintendent's Annual Report

Table B.12 Free and reduced lunch

School Division	School Nutrition Program Membership (Count)	Total Free Lunches	Percent Free Lunches	Total Reduced Lunches	Percent Reduced Lunches	Percent Free/Reduced Lunch
Spotsylvania	24,264	5,184	21.36%	1,379	5.68%	27.05%
Stafford	26,964	4,506	16.71%	1,258	4.67%	21.38%
Roanoke County	14,874	2,386	16.04%	872	5.86%	21.90%
York County	12,691	1,472	11.60%	832	6.56%	18.15%
Peer Division Average	**19,698**	**3,387**	**16.43%**	**1,085**	**5.69%**	**22.12%**
Hanover	12,804	1,683	13.14%	440	3.44%	16.58%

Source: 2007-2008 VDOE School Food Services Report (more recent data not available)

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Table B.13 Graduates by diploma type

School Division	Percents of Total								Total Graduates and Completions (Count)
	Standard Diploma	Advanced Studies Diploma	Special Diploma	Certificate of Program Completion	GED Certificate	ISAEP	GAD Diploma	Modified Standard Diploma	
Spotsylvania	36.88%	51.94%	2.02%	0.32%	0.05%	6.49%	0.00%	2.29%	1,879
Stafford	37.79%	57.78%	1.07%	0.44%	0.10%	1.80%	0.00%	1.02%	2,051
Roanoke County	39.08%	56.32%	1.76%	0.08%	0.67%	1.17%	0.00%	0.92%	1,195
York County	36.94%	58.90%	1.84%	0.10%	0.29%	0.68%	0.00%	1.26%	1,034
Peer Division Average	**37.67%**	**56.24%**	**1.67%**	**0.24%**	**0.28%**	**2.54%**	**0.00%**	**1.37%**	**1,539.8**
Hanover	30.84%	60.73%	1.01%	0.13%	0.70%	3.17%	0.00%	3.42%	1,579

Source: 2008-2009 Superintendent's Annual Report

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Table B.14 Graduates by continuing education plans

School Division	Percent of Total					
	Attending Two-year Colleges	Attending Four-year Colleges	Other Continuing Education Plans	Employment	Military	No Plans
Spotsylvania	36.8%	37.7%	6.1%	12.1%	5.3%	2.0%
Stafford	32.2%	49.0%	3.0%	7.5%	5.7%	2.6%
Roanoke County	37.7%	45.8%	0.9%	8.3%	2.1%	5.2%
York County	35.4%	51.8%	2.9%	5.6%	3.7%	0.6%
Peer Division Average	**35.53%**	**46.08%**	**3.23%**	**8.38%**	**4.2%**	**2.6%**
Hanover	21.5%	60.0%	4.1%	11.3%	3.0%	0.0%

Source: 2008-2009 Superintendent's Annual Report

Table B.15 Dropout percentage

School Division	Grades 7-12 Total Membership (Count)*	Total Dropouts (Count)	Dropout Percentage
Spotsylvania	11,540	179	1.55%
Stafford	13,230	133	1.01%
Roanoke County	7,312	67	0.92%
York County	6,463	51	0.79%
Division Average	**9,636.25**	**107.5**	**1.07%**
Hanover	9,142	69	0.75%

Source: 2008-2009 Superintendent's Annual Report
*As of September 30, 2008

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Appendix C – Sample Operational Performance Measures

Performance Measure	Level
General District Management	
Ratio of students (enrollment) to full-time-equivalent (FTE) employees	District
Ratio of students (enrollment) to non-teaching FTE employees	District
Central administration and instructional leadership expenditures (general fund) per pupil	District
Central administration and instructional leadership expenditures (general fund), as a percentage of total expenditures	District
General fund balance as a percent of target fund balance	District
Percentage of students economically disadvantaged, mapped against the percentage of total revenue supported by federal funds	District
School Management	
Pupil-teacher ratio, by school	Campus
Pupil-aide ratio, by school	Campus
Special education student population as a percent of total enrollment	District
Percentage of schools meeting staffing standards for principals, assistant principals, counselors, library/media specialists	Campus
Average teacher class load per term by secondary schools	Campus
Number of secondary class periods with < 5 students enrolled by school	Secondary Campus
Number of secondary class periods with < 10 students enrolled by school	Secondary Campus
Finance	
Number of total employees per finance department employee	District
Number of invoices and direct payments made per accounts payable personnel (FTE)	District
Number of AP checks processed per AP department FTE	District
Average age of accounts payable	District

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Performance Measure	Level
Number of accounts payable check voids and reissues	District
Number of purchase orders processed per purchasing FTE	District
Average dollar value of purchase orders processed	District
Number of payroll checks processed per number of payroll FTE	District
Number of payroll check/advice voids and reissues	District
Human Resources and Benefits	
Number of district employees per FTE human resources employee	District
Number of employment applications processed	District
Average days from position vacancy to recommendation by hiring manager	District
Average days from recommendation by hiring manager to start date	District
Non-certified teachers as a percentage of total teachers	District
Total overtime cost	District
Turnover rate for teachers	District
New teacher turnover rate (one year or less)	District
Turnover rate for non-teachers	District
Low income/high minority campuses compared to teachers experience	Campus
Percentage of teachers by ethnicity, compared to percentage of students by ethnicity	Campus
Teacher absentee days per year, by campus	Campus
Substitute costs per year, by campus	Campus
Benefits cost as a percentage of total salaries and wages	District
Technology	
Students (enrollment) per instructional computer (in classrooms and labs, plus laptops)	District
Average age of PCs	District
Average age of Apple computers	District
Number of computers per maintenance, repair, installation FTEs	District

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Performance Measure	Level
Ratio of total students to total technology staff	District
Ratio of total students to total instructional technology staff (including campus liaisons)	District
Ratio of total employees to total technology staff	District
Ratio of total employees to technical support staff	District
Ratio of total computers to technical support staff	District
Ratio of instructional computers to instructional technology staff	District
Average turnaround time for computer work orders (days)	District
Facilities	
Average annual salary of skilled trades/maintenance FTE	District
Maintenance expenditures per gross square foot (Including portables)	District
Maintenance expenditures as a percent of total expenditures	District
Total maintenance expenditures per student	District
Gross square feet per maintenance FTE	District
Average turnaround time (days) for maintenance work orders to be closed	District
Percentage of work orders that were preventative	District
Average salary of all building and grounds FTE	District
Average annual salary of custodial FTE	District
Custodial salaries per gross square foot (Including portables)	District
Gross square feet per FTE custodian	District
Acres per grounds FTE	District
Facility capacity (permanent only) versus occupancy by school (TEA standards for capacity, room size)	Campus
Facility capacity (including portables) versus occupancy by school (TEA standards for capacity, room size)	Campus
Percentage of square footage that is portable classrooms	Campus
Percentage of district portable classrooms by school	Campus
Electricity cost (kwh) per square foot	Campus

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Performance Measure	Level
Water cost (kgal) per square foot	Campus
Natural gas cost (ccf) per square foot	Campus
Nutrition	
Meals per labor hour (MPLH), by school	Campus
Participation Rates (breakfast/lunch), by school:	Campus
Free (percentage participating)	Campus
Reduced price (percentage participating)	Campus
Paid (number of paid meals per year)	Campus
Net profit (loss) of food services operation	District
Net profit (loss), by school	Campus
Indirect costs allocated to food service (amount and type) - (from gen. fund only)	District
Cash in lieu of commodities	District
Food cost as a percent of total cost	Both
Transportation	
Total cost per mile driven	District
Total cost per average daily rider	District
Average fuel cost per gallon (gasoline and diesel)	District
Annual transportation cost per student rider	District
Annual maintenance cost per bus	District
Accidents every 100,000 miles of service	District
Student incidents every 1,000 students transported	District
Maximum length of student time on school bus (minute)	District
Annual turnover rate for bus drivers	District
Annual turnover rate for bus monitors	District

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Appendix D – HCPS Utilization and Capacity

Table D.1. is a summary of capacity and utilization by school, focusing on 2010, 2015.

Table D.1. HCPS capacity and utilization by school

School	Capacity	Enrollment						Utilization			
		2010	2011	2012	2013	2014	2015	2010	Surplus	2015	Surplus
Battlefield Park	670	563	554	558	534	525	533	84%	107	80%	137
Beaverdam	485	409	419	436	426	412	416	84%	76	86%	69
Henry Clay	345	297	296	292	279	273	276	86%	48	80%	69
John Gandy	385	281	283	276	284	282	278	73%	104	72%	107
Cold Harbor	725	586	572	567	567	548	555	81%	139	77%	170
Cool Spring	835	708	717	695	699	684	668	85%	127	80%	167
Elmont	540	373	362	355	330	326	323	69%	167	60%	217
Kersey Creek	765	624	611	582	578	561	560	82%	141	73%	205
Laurel Meadow	775	735	719	699	702	708	683	95%	40	88%	92
Mechanicsville	560	607	614	586	589	579	570	108%	(47)	102%	(10)
Pearson's Corner	720	462	447	430	427	436	420	64%	258	58%	300
Pole Green	850	569	560	555	559	548	543	67%	281	64%	307
Rural Point	720	548	545	517	504	518	507	76%	172	70%	213
South Anna	730	676	666	646	643	642	635	93%	54	87%	95
Washington-Henry	500	500	520	528	520	515	506	100%	-	101%	(6)

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School	Capacity	Enrollment						Utilization			
		2010	2011	2012	2013	2014	2015	2010	Surplus	2015	Surplus
Elementary	**9,605**	**7,938**	**7,885**	**7,722**	**7,641**	**7,557**	**7,473**	**83%**		**78%**	
								Surplus Capacity	**1,667**		**2,132**
Chickahominy	1,280	**1,234**	1,214	1,209	1,132	1,141	**1,145**	96%	46	89%	135
Liberty	1,235	**1,088**	1,110	1,061	1,050	1,045	**1,039**	88%	147	84%	196
Oak Knoll	1,255	**847**	853	887	865	838	**808**	67%	408	64%	447
Stonewall	1,235	**1,143**	1,188	1,182	1,158	1,127	**1,114**	93%	92	90%	121
Middle	**5,005**	**4,312**	**4,365**	**4,339**	**4,205**	**4,151**	**4,106**	**86%**		**82%**	
								Surplus Capacity	**693**		**899**
Atlee	1,725	**1,526**	1,515	1,549	1,560	1,574	**1,582**	88%	199	92%	143
Hanover	1,650	**1,296**	1,281	1,238	1,269	1,247	**1,268**	79%	354	77%	382
Lee-Davis	1,650	**1,599**	1,544	1,524	1,539	1,524	**1,539**	97%	51	93%	111
Patrick Henry	1,650	**1,520**	1,475	1,456	1,473	1,435	**1,433**	92%	130	87%	217
High	**6,675**	**5,941**	**5,815**	**5,767**	**5,841**	**5,780**	**5,822**	**89%**		**87%**	
								Surplus Capacity	**734**		**853**
Division Total	**21,285**	**18,191**	**18,065**	**17,828**	**17,687**	**17,488**	**17,401**	**85%**		**82%**	
								Surplus Capacity	**3,094**		**3,884**

Source: HCPS FY 2011-2012 operating budget enrollment history and forecast summary

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