

**Town of Hanover**

***Hanover Public Schools:  
Review of School Administrative & Staffing  
Structure and Educational Performance***

**The Abrahams Group**

**April 2013**

# THE ABRAHAMS GROUP

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FOR BETTER GOVERNMENTS

April 29, 2013

Mr. Troy B.G. Clarkson  
Town Manager  
Town Hall  
550 Hanover Street  
Hanover, Massachusetts 02339

Dear Mr. Clarkson:

I am pleased to submit the attached Report – *Hanover Public Schools: Review School Administrative & Staffing Structure and Educational Performance*. This report evaluates the existing organizational structure and staffing, including operational relationships between administration officials, principals and department heads and suggests for operational efficiencies and empowerment of staff.

This report also addresses educational performance outcomes, and efficiencies and costs of professional development.

We submitted our Focus on Finance Report on April 9, 2013.

We are pleased to serve the Hanover Public Schools on this most important project. We look forward to discussing our reports with you on April 30, 2013.

Sincerely yours,



Mark D. Abrahams, CPA  
President

Attachment

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Note, the TELL Surveys and the Job Analysis Questionnaire have been submitted under separate cover

## **I. INTRODUCTION**

The Town of Hanover through its School Oversight Committee retained The Abrahams Group to conduct an external review of the efficiency of various departments and operations within the Hanover Public School District and to present a final report of the findings, recommendations, and projected costs and/or cost savings associated with the recommendations. Specifically, operational review is requested for the following components of the Hanover Public Schools:

### **I. Review School Administrative & Staffing Structure**

- Conduct an organizational overview and provide a detailed organizational snapshot with job descriptions for key personnel and staff. This will be achieved by conducting a thorough evaluation of existing organizational structure and staffing and suggest changes as deemed most efficient or productive.
- Review the operational relationships between administration officials, principals and department heads and make recommendations for operational efficiencies and empowerment of staff.
- Benchmark 3-4 comparable School Departments for staffing levels and operational practices
- Evaluate Teacher/student ratios and offer recommendations

### **II. Educational Performance**

- Establish matrix of current Town of Hanover educational performance outcomes, i.e., evaluate results from educational tests: MCAS, PSATs, SATs and others as suggested by the consultant and determined by the Town
- Review and make recommendations for efficiencies and costs of professional development

### **III. Focus on Finances**

- Review current budget and make recommendations for opportunities for improvement or streamlining of budget and internal financial processes
- Review acceptance, operations, and accounting for grants and gifts and make recommendations on improving and/or documenting procedures
- Benchmark 3-4 comparable School Departments for spending trends and level of Town funding
- Review current budget and make recommendations for appropriate staffing to achieve educational goals as well as keeping class sizes consistent throughout the district

We have submitted this report relative to the Review School Administrative & Staffing Structure and Educational Performance including staffing recommendations for keeping class sizes consistent throughout the district. We have previously submitted the Focus on Finances Report.

**This report contains three additional parts:**

- II. In Perspective**
- III. Review School Administrative & Staffing Structure and Educational Performance**
- IV. Information Technology.**

**The In Perspective section appears in the Part 1 Focus on Finance Report and is repeated here for convenience.**

## **II. HANOVER PUBLIC SCHOOLS: IN PERSPECTIVE**

The operational audit focuses on the education and financial areas of the School Department. We believe it is important to provide some overall perspective on the Hanover Public Schools. The Department of Elementary and Secondary Education (DESE) maintains extensive information on all of the Commonwealth's school districts through DESE's DART (District Analysis, Review & Assistance Tools) system, generally 2011 data. Hanover desired to compare itself to two local communities (Norwell and Scituate) and two DART communities (Holliston and Wayland) as comparable peer districts. The comparison is presented in Appendix II.1. Appendix II.2 presents Per Pupil Spending by function and by in-district student and out-of-district student. Appendix II.2a presents summary per pupil data and Appendix II.2b presents detail per pupil data. Appendices II.3 - II.8 provide additional comparative data and Hanover five-year data.

### **Enrollment**

The Hanover Public Schools enrollment is 2,735 students. 6.3% of the student population are low income, 15.9% have disabilities and 0.6% are English Language Learners. These three percentage components of the enrollment fall within the ranges of the four peer districts and all are less than the State average. 94% of all Hanover's school aged children are enrolled in the public schools compared to the 91% State average.

### **Spending**

Hanover's overall per pupil spending is \$10,965 which is lower than the State average of \$13,361 and lower than all four peer communities. Of the 242 municipal reporting districts for the FY 2011 EOYR, Hanover ranked 213th lowest spending on a per pupil basis. For FY 2012, only ten (10) municipal districts reported lower per pupil expenditures.

Hanover's average teacher salary was \$68,747, lower than the other two peer communities that reported this indicator and lower than the \$70,304 State average.

Hanover's professional development expenditures as per teacher FTE was \$1,708, falling within the ranges of the two peer districts reporting and less than the State average of \$3,200.

Out-of-district per pupil spending represents the spending for students who are tuitioned out to other schools because of special needs and other requirements. Hanover's out-of-district spending per pupil for 2011 was \$21,144 which was significantly less than the four peer districts, and close to the State average of \$21,457.

Hanover's actual net school spending is 14% above what is required by the Commonwealth. This spending is lower than all four peer districts and it is lower than the State average of 16%. Hanover's Chapter 70 aid as a percent of foundation was

27.8% which is within the range of the four peer districts and was less than the State average of 44.8%.

## **Performance**

In terms of performance which is commonly measured by the percent of students who are proficient or higher in MCAS performance for ELA, math and science, Hanover is the lowest in performance of all the peer districts and significantly higher than the State average. MCAS tests are tied to the Massachusetts curriculum frameworks and thus they provide a good indicator of grade level attainment. They may be good indicators of the effectiveness of the literacy and numeracy programming in a school district. Eighty-three percent of Hanover students were proficient or higher in English Language Arts, 68% were proficient or higher in Math and 72% were proficient or higher in Science. While each of these proficiency ratings was lower than the four peer districts in all three subjects, Hanover has increased its proficiency in each of these three subjects over the last five years.

The U. S. Department of Education requires Massachusetts to determine which districts have specific needs for technical assistance or intervention in the area of special education based on five levels of need which are determined based on compliance and performance indications. The State has a *Level 1 to Level 5* ranking for each school in the Commonwealth. *Level 1 Schools* meet all requirements; *Level 2* meet requirements but are at risk; *Level 3* need technical assistance; *Level 4* need intervention; and *Level 5* need substantial intervention. Three (3) of Hanover's schools are *Level 1 Schools* (Cedar, Sylvester, High School) (the highest possible ranking) and one (1) is a *Level 2 School* (Middle School). One of Hanover's schools had insufficient data (Center) with limited test groups. Center/Sylvester is considered one school in Hanover; however, DESE considers them as two schools.

Hanover's schools had the best Level rankings of the peer group with the exception of Norwell. Other performance indicators include:

- CPI Achievement Gap – ELA – Hanover (94%) fell within the range of the peer districts and higher than the State average of 87%.
- CPI Achievement Gap – Mathematics – Hanover (86%) was the lowest of the peer districts and higher than the State average of 80%.
- CPI Achievement Gap – Science – Hanover (89%) fell within the range of the peer districts and higher than the State average of 79%.
- Annual Drop Out Rate – Hanover (0.1%) was the lowest of the peer districts and lower than the State average of 2.7%.
- Graduation Rate – Hanover (96%) fell within the range of the peer districts and higher than the State average of 85%
- % Students Absent <10 Days – Hanover (79%) was the highest of the peer districts and higher than the State average of 68%.

## **Summary**

We found a culture of frustration, alienation, mistrust, poor communication, and a system that lost 25 teachers in six (6) years. Our initial workplan distributed job analysis questionnaires to 23 administrators and a survey to all teachers in the system. These instruments were designed to help structure the focus groups and fact finding tasks of our workplan. The lack of responses particularly with the teacher surveys dictated a change of approach. We then conducted in depth all-day focus groups, one at each school. We were struck by the passion of the teachers expressed through their frustration, alienation, and mistrust of the system.

We were also impressed with the achievements of the district especially when Hanover's overall per pupil spending (FY 2011) is lower than the State Average, lower than all four comparable communities and 213<sup>th</sup> lowest in the State. Only ten municipal districts reported lower FY 2012 per pupil expenditures.

The school system spends substantially less than average per pupil for all pupils, substantially less on a comparative basis for students who attend out-of-district schools based on their needs and placements, receives less Chapter 70 Education Aid than most school districts, is spending 14% more than required for net school spending and has good performance results as evidenced by several indicators as compared to the State average and peer districts.

Hanover has a great opportunity to develop their vision, restore credibility, restore culture, and build on the achievements they have made notwithstanding the findings contained in our report. We have seen through the Interim Superintendent a movement toward greater openness, communications and outreach. We believe our recommendations can help Hanover move forward to effectively work together and be positive to achieve greater results.

### **III. Review School Administrative & Staffing Structure and Educational Performance**

Student learning is a complex task that requires the integration of all school resources, both human and financial. There are many indicators of school success, both quantitative and qualitative, each of which can be looked at as significant on their own. They are clearly interconnected and, when taken as a whole, define whether a school district is providing high quality education for all children.

There are six indicators identified by the Department of Education regulations 603 CMR 2.03 which are based on standards of effective policy and practice and help define whether a district is providing high quality education for all children. They are the standards “upon which district reviews, improvement planning and other forms of accountability and assistance are based.” (Massachusetts Department of Elementary and Secondary Education website, April 2013). Thus, it makes sense to look at subsets within these indicators when examining and determining recommendations for the Hanover School Department. The indicators are:

1. Leadership and governance
2. Curriculum and instruction
3. Assessment
4. Human resources and professional development
5. Student support
6. Financial and asset management

It is important to remember that each indicator is individually important but separately is not the criteria to base a school district’s success and accountability. They are interrelated and, when in place and functioning well, create a clear impact on student learning and school district effectiveness.

Data was gathered by:

1. Conducting Focus Groups at each school
2. Interviewing Administrators (A list of interviewees appears in Appendix III.1)
3. Gathering information from Job Analysis Questionnaires (JAQ) that were given to all Administrative and additional staff within Central Administration. The Job Analysis Questionnaire has been submitted under separate cover.

4. Reviewing the results of the TELL (Teaching, Empowering, Leading and Learning) Survey which was completed by 136 teachers or 58.12% of the teaching staff. The State Department of Elementary and Secondary Education conducted this online survey last spring. The TELL surveys (one per school) have been submitted under separate cover.
5. Results of a follow up survey that was posted online using Survey Monkey. (Refer to this survey in Appendix III.2).
6. Reviewing the material available on the Hanover Schools Website and/or reported information on the Department of Elementary and Secondary Education (DESE) website:
  - School Improvement Plans for each school
  - MCAS, Results and Report Cards, including a power point presentation of the Overview of 2012 MCAS Results
  - Mission, Beliefs and Core Values
  - Enrollment Information for April 2013
  - School Year Information
  - K-12 Professional Development Plan
  - Class size

Our findings and recommendations are reported under the headings of the Massachusetts Department of Education indicators listed above.

## **LEADERSHIP AND GOVERNANCE**

### **1. Establish a District Wide Vision**

#### **Finding**

We were not able establish that the School Department has a vision although Mission Statements are posted, in the view of staff, “for show” and do not provide any guidance. Almost all teachers and administrators spoke about the lack of a vision. There is a great divide between teachers and administrators in many areas as evidenced by several TELL survey results (Appendix III.3), including a lack of a shared vision. The lack of a shared vision contributes to organizational inefficiencies and ineffectiveness.

## **Recommendations**

A committee should be established to write a Vision Statement. A vision would help to establish cohesive objectives for the system as a whole and within each school.

The statement should contain goals of the system for the improvement of student learning and instruction. It should encapsulate future plans with aims and/or objectives, which would clarify and emphasize Hanover's goals. This should be a short paragraph of 3 to 5 sentences. If a shared vision is developed, every person within the Hanover school system and the community will see the big picture of learning and the next steps in mind. There should be teacher representation from all levels on this committee. The Vision Statement and the committee with teachers would be beneficial for establishing a Professional Learning Community.

The District's Professional Development Plan should follow the vision statement, as should each School Improvement Plan. The vision statement is the driving principle for each school to develop their strategic plan (School Improvement Plan) around.

Moreover, the process to establish the vision will enhance communication between the administration and the teachers, a subject that is further addressed in this report.

## **2. Job Descriptions**

### **Findings**

There is no constancy in jobs and/or job descriptions. When administrators were asked if their job description accurately reflected their job responsibilities and the work they do, the answers were no.

### **Recommendation**

When discussing the job descriptions with the Interim Superintendent, it came to our attention that he was in the process of revising a number of them. Those that are not being revised should be given to each individual that holds the position and they should be asked to edit the description. The edited descriptions should be carefully reviewed to see if any duties are not being addressed and if they need to be part of the actual job. Job descriptions should be reviewed with the objective of (1) alignment to actual responsibilities and (2) updated periodically as job responsibilities change.

## **3. Administration**

### **Findings**

The Elementary Schools staff does not have the opportunity to work together on grade level issues. This is necessary in establishing a Professional Learning Community. In

addition, we were told that teachers at each school are held to different accountability standards.

Principals at all levels need to make sure that they develop a mutual respect for all staff and follow through with them on any student disciplinary action that may occur as a result of behavior in their class.

### **Recommendation**

There should be no reason why two schools cannot work together for the good of the school system, the children, and the teachers. The Superintendent needs to work with both the Principals to assure that both schools are functioning on the same accountability standards and criteria. The creation of collaborative learning culture would help with morale; help with resources on instructional improvement and student learning. In addition, the vertical alignment of the curriculum could happen in a more effective and efficient manner.

The Principals need to make sure that the disciplinary code is followed and that one student is not treated different from another over the same issue. They should post to the teachers email or better yet discuss with the teacher what action was taken.

## **4. Organization**

### **Findings**

There seems to be confusion within the administrative staff as to the line of authority with regard to curriculum and instruction. If the administrators are confused we can only image how the teachers perceive the organization structure around this essential area of education. If there is a curriculum team, with representation from all schools in place and this team makes curriculum and/or professional development decisions then for continuity the decision should be implemented. If one member of this administrative team finds it difficult to attend, thus input from one school is missing.

Within the School System no one was able to produce an organizational chart that clearly delineates the structure and relationship between administrators within the Hanover School System. This contributes to a lack of a clear chain of command and inhibits good organizational communication. There is no line authority between the Pupil Personnel Services Administrator (especially in the area of Special Education), K-8 Director of Teaching and Learning, and the Principals.

### **Recommendations**

Overall, if the administrative positions are to remain the same then the high school curriculum coordinators should be full-time so they can devote more time to staff and their needs with regard to effective instruction and academic support. Another option is to eliminate the position of K-8 Director of Teaching and Learning and replace that

position with an Assistant Superintendent of Curriculum and Instruction. If this were to be done, then the individuals would definitely have more authority.

Knowing that a number of teaching positions have been cut over the past three years (Appendix II.5) and that the needs for teaching positions have been expressed by all, adding to the administrative level may not be a possibility. In that case, all the administrators should be brought together and clearly delineate who does what and how they can work together especially with regard to curriculum and professional development. This in turn should be communicated to staff.

The School Department also needs to clarify the line authority between the Pupil Personnel Services Administrator (especially in the area of Special Education), K-8 Director of Teaching and Learning, and the Principals. Their current roles seem to be more of a consultant and manager rather than an administrator involved with staff. The Pupil Personnel Services Administrator should be involved in the evaluation of Special Education staff and in hiring. Having the expertise in the area of Special Education and not using it is foolish.

An organizational chart would help to facilitate better communication and provide clear guidance to staff that may want to seek assistance in specific areas.

## **5. Class Size**

### **Findings**

Members of the Focus Groups reported a number of classes in the Middle and High Schools were in the 27 to 30-student range for one (1) teacher. The average student to teacher ratio as reported to the State Department of Elementary and Secondary Education is 15.7 to 1. In looking at the comparable communities Hanover reports the second highest student to teacher ratio (Appendix II.2a).

There is a need to look at some of the Special Education Programs on the Elementary Level, as there may be a way to combine programs and make them stronger and more effective.

### **Recommendations**

Scheduling classes as soon as possible would help to avoid high-class numbers. The School Department should plan for 58 additional students in the High School next year. The current 12<sup>th</sup> grade class is smaller than the potential incoming 9<sup>th</sup> grade class by 58 students (April 2013 Student Enrollment Data on Hanover website). That number of students should be planned for as their impact could require extra staff. By scheduling early the high school would be able to know what classes, if any, are large and bring that to the attention of the Superintendent for appropriate teacher increase. The increase would be in place prior to the opening of school. This also provides stability; teachers do

not feel overwhelmed and have to waste valuable instructional time seeking out desk and/or chairs for students.

Part of the course selection process at the High School is to make sure that all honors and advanced placement courses have guides developed so students and parents are aware of what prerequisites are necessary to succeed. This was discussed with the high school principal. He informed us that they are in the process of doing this.

If the Middle School can schedule before the school year is over, they too will be able to see where their large classes are and rectify the problem before the school year begins. It would be expected that there is a contingency in the budget for adding necessary teaching positions.

Breaking down the needs of all the Special Education students at the Elementary Level may result in an ability to restructure the programs. This would mean that specific programs like a Language Based Program would be only in one building but serve both schools.

## **CURRICULUM AND INSTRUCTION**

### **6. Align Curriculum**

#### **Findings**

Based on information received at Focus Groups and in discussions with School and District Administrator, it is clear that both STEM (is Science, Technology, Engineering, and Math) and Humanities (English Language Arts, Social Studies, Foreign Language and Specialist) curriculum areas need to be aligned both vertically and horizontally across the District.

The Curriculum Mapping is a method of documentation that will ultimately achieve curriculum alignment but staff does not see the relevance of mapping at this time especially were the mapping tool is due to change. The Curriculum Coordinators at the Middle and High Schools, who are in charge of this at their levels, have other duties so it is difficult for them to communicate with each other on a regular basis.

On the Elementary Level, the teachers received some training in Collins Writing Program, which is a program to improve student' thinking and writing skills. The program was dropped without communication to teachers.

#### **Recommendations**

The curriculum alignment process began at the Middle and High School to make sure that the content and skills needed in each subject area aligned with what the students are actually being taught. The ability to collegially collaborate across grade levels at the Middle School is hindered by the fact that they have two different time schedules in one

building: 5<sup>th</sup> and 6<sup>th</sup> grades can work together but not with 7<sup>th</sup> and 8<sup>th</sup> grades. At all counts the curriculum alignment process is sporadic at the Elementary Level. The Elementary teachers need to be able to work together across the grade levels to better accomplish this task. On Tuesday early release days, the elementary teachers at the same grade level should be brought together to work on alignment subject areas within their grade. After all, the teachers are the curriculum experts and are essential to achieving this goal.

Vertical alignment helps to insure that appropriate skills and curriculum content are addressed each year between grades. Horizontal alignment helps to ensure that appropriate skills and curriculum content are addressed across the same grade and across sections of the same course. It can include district made assessments that match the content standards for a subject area in a particular grade level. In turn, this helps to strengthen the teaching and learning by determining what a specific content needs should be addressed and how it will be measured.

On the elementary level, this would ensure that the curriculum requirements are the same in both schools across the grade levels and classrooms. The assessments would be useful tools in their new reports card. This should increase teacher collaboration and help determine teacher needs in professional development. It would also help with the articulation of the Common Core. On all levels an articulated curriculum guide (map) helps to ensure all subject areas/ courses and assessments are streamlined, integrated and structured.

Copies of the mapping that has been done should be provided to teachers and they should be given some time to reflect on specific areas while they are provided with content area professional development to help rejuvenate the long process of alignment. Priority should continue to be given to mathematics and English language arts.

The communication of Curriculum Coordinators at the Middle and High School is essential in aligning the curriculum vertically. They should not only have time to communicate but also have the ability to work together in assuring a continuum of curriculum areas.

One of the Elementary Schools has adopted a new writing program this year since there was no further training in Collins Writing. Prior to this adoption, both schools should have decided if this new program was the best program for Hanover. If the other school does not adopt the new program then you have no horizontal or vertical alignment with the writing curriculum on the Elementary Level.

## **ASSESSMENT**

### **7. Data Analysis to Improve Instruction and Test Outcome**

#### **Findings**

At the High School, Data Teams have begun to look at the PSAT results, since all students take this test and they want to improve results. PSAT is given in math, writing skills and critical reading. The Data Teams have identified problems in critical reading and finding the main idea in text. As a result, the teams are developing a graphic organizer to improve student performance in these areas. Graphic organizers help students visualize and clarify what they are working on. This graphic representation would help students of all learning levels see the main idea and supporting information, which in turn, improves their level of understanding and knowledge in this area. Graphic organizers are tools that can be developed to fit specific areas of need. The Data Teams at all other levels should continue to use MCAS data as part of their practice to continuously improve.

#### **Recommendations**

We recommend that the School Department continue with this process in all areas tested in the PSAT for the High School and MCAS for all other levels. This should result in an increase in scores in PSAT and hopefully SAT. At the High School, the process should also enhance the overall instruction of the teachers across the board for teacher will be able to use the graphic organizers in their classes. This type of learning tool is likely to provide added support to students who are struggling and are visual learners. In addition, the graphic organizers developed should become part of the curriculum material in the alignment process at specific grade levels. Data Teams at the Middle and Elementary levels work to analyze MCAS scores and determine if any performance decline falls in a specific type of test question (multiple choice, short answer, open response, or writing prompts) and/or with in a specific subgroup (students with disabilities, low income students, and English language learners/former English language learners). This analysis helps to examine teaching practices and areas that may need different or more emphasis.

Data Teams at all levels should begin to expand by using walk through data (classroom practices) to help enhance learning beyond the data driven approach. In addition, the walk through data would help to identify teachers that should be observed by their peers as part of a professional development initiative.

We recommend hiring Math coaches on the elementary level. The coach would be a professional development specialist in Math. The individual would provide ongoing support and modeling to teachers.

Taking MCAS data, analyzing it by looking at the questions and seeing what specific categories within the area of Math that need attention: operations and algebraic thinking; numbers and operations in base ten; numbers and operations - fractions; geometry, or

measurement and data. See the MCAS Mathematics Reporting Categories located in Appendix III.5. As soon as MCAS test data is received, this type of analysis should be done in all areas tested on MCAS, English Language Arts, Mathematics, Science and Technology/Engineering, and History and Social Science. Professional development can also be designed in the areas of weakness.

## **HUMAN RESOURCES AND PROFESSIONAL DEVELOPMENT**

### **8. Planning and Involvement Effectiveness**

#### **Findings**

Of the 105 teachers who participated in the Focus Groups, it was difficult to find any who spoke favorably about Professional Development (PD) in the Hanover School System. This was reinforced by the results of the TELL Survey. It was constantly expressed that there is little to no communication to staff as to the professional development offering on early release days, other than the professional development calendar. All professional development has been determined from the top as an edict. The dedicated and concerned teachers of this system know how knowledge and skill are at the core of good practice yet, there is no communication of what kind of knowledge and skill is required to promote improvement in student learning and guide professional development.

Teachers expressed their frustration, lack of input, lack of follow through, lack of sustainability, feelings of no rhyme or reason for the Professional Development, and not having Professional Development for specialists or non-classroom teachers in their fields. The teachers are asked to do work but are not even asked to complete an assessment on the professional development activities they partake in. Staff had indicated that the district professional development plan is not always followed on early release days and again the material does not always have relevancy to their work.

Of the 15 administrators interviewed, most voiced they have a difficult time communicating the goals of the professional development to teachers when they themselves are not clear. They felt there is a loss of credibility for professional development as an activity in the school system. The early release days are on a calendar but many time are not planned enough in advance. The administrators regularly stated that they were not able to receive their contractual allotted professional development.

Finally, the School Department spends considerably less than the state wide average for professional development. Hanover's professional development expenditures as per teacher FTE was \$1,708, falling within the ranges of the two peer districts reporting and less than the State average of \$3,200. (Appendix II.4).

#### **Recommendations**

Professional Development for staff is necessary and should be more than just sitting and listening or writing. Effective professional development should be focused on the

improvement of student learning through the improvement of the skill and knowledge of educators. Research by Elizabeth City and Richard Elmore et. Al (2009) showed that in a school or school system, specific professional development activities would follow from a well-articulated vision. It should be evaluated continuously and primarily on the basis of the value it adds to student learning, as well as on the basis of how well educators think it supports their practice. Teachers should be informed as to how the professional development activities are expected to raise their capacity and improve their practice and performance. An opportunity for teachers to observe experts, to be observed by and to receive feedback from experts, and to engage in analysis of their own practice results is a practice that should be implemented. Good professional development is a necessity to improve student performance

There is no doubt that within the Hanover School System there are a good number of teachers that would be considered experts at what they do. Teachers can learn from each other in powerful ways and can learn from others who are not a part of their immediate circle of colleagues. The School Department should allow teachers who have developed strong expertise in a particular aspect of instruction to lead the improvement of instruction in that area by working as mentors, observers, teacher leaders, coaches, and professional developers. This allows teachers to engage in continuous and sustained learning about their practice in the setting in which they actually work – in their classrooms, with their colleagues in their classrooms, and in the classrooms of other teachers in the same or another school or district. This can be done by periodically rearranging time for teachers to observe other teachers and in the school system or outside the system, hiring outside experts to consult with teachers or creating coaching positions within the system.

The administrative staff should be able to identify teachers who create a strong environment around teaching and their ability to muster and manage their resources in raising the level of learning. Within the administrators, there may be some who can model new instructional ideas and practices. Based on the current professional development budget at this point in time having \$45,533.63 unexpended would indicate that there is money to implement these suggestions.

In a time when assessment/data collection is in the forefront of teaching and learning, it only makes sense to put into practice what is preached. It is absolutely necessary to informally assess professional development through a simple questionnaire. This would only strengthen the program and give feedback to better know the needs of the teachers and lead to a stronger program. We use data to improve instruction, why not to improve professional development?

This being said, this is not a recommendation to give up work related to the Common Core and to new Teacher Evaluations but to provide a balance that will improve the implementation of the curriculum and instructional practice and encompass both the Common Core and new Teacher Evaluation indirectly.

With regard to administrative contractual professional development concerns, the Interim Superintendent may want to discuss with the administrators what professional development they feel they need to better address the demands of their job and help improve instruction/learning.

## **STUDENT SUPPORT**

### **9. School Improvement Plans**

#### **Findings**

The School Improvement Plans have no consistent format. In a School Improvement Plan, goals are set and each goal has a rationale for that specific goal, the activities to complete the goal, the timeline to accomplish the goal, the evaluation or evidence of accomplishment, resources needed, and the budget cost. The Middle and High School added a review status. This provides the opportunity to indicate the progress of each item cited in the evaluation or evidence completed section.

#### **Recommendations**

The School Improvement Plans (strategic plans) should be working documents that address goals set by each school and/or the district. They should clearly document how the school plans on improving instruction and raise achievement for all students. It is recommended to follow the guidelines of DSAC (District and School Assistance Center) and have each school address how they would strengthen curriculum and instruction; improve educator effectiveness; and use data to support student achievement. In addition, the High School should address how they prepare students for college and careers. The School Improvement Plans would have a tie to professional development if this guide were used. If a goal is met, it should be discussed in the next plan in the review status section so that staff and parents are aware of the school's accomplishments and how they came about. All Plans should add and use the review status section.

### **10. Technology**

#### **Findings**

Training on how to use all the technology that is available to the teachers is essential if they are to use the technology in an appropriate way to enhance learning. Needs for additional technology (hardware) at the Middle and Elementary levels were reported.

#### **Recommendation**

We recommend that technology training be included in professional development. A three-to-five year technology plan should be development for new hardware purchases. Refer to the Information Technology (next) section of this report for additional issues.

## **FINANCIAL AND ASSET MANAGEMENT**

Please refer to the Focus on Finance Report for complete findings and recommendations pertaining to this category.

### **SUMMARY**

All of the issues address above can be a part of a cohesive plan – they all work together and should. The teachers and administrators in this system with whom we spoke all want to strengthen the professional culture of this school system and want to work to improve their professional skills and abilities. To have everyone (teachers and administrators) on the same page, communication must improve and the organization need to better define roles and responsibilities. All administrators must be more than managers; they must be integral participants in instruction/ learning and good communicators.

It was disheartening to hear from staff in all the Focus Groups that they did not feel the school culture was supportive. This lack of trust and respect as noted when teachers were ask why so few responded to the Online Survey we asked that them to complete. The constant answer was why complete another survey when in the results of the TELL was never discussed. A number of Principals had informed staff that they would address the result of the TELL survey with them, but they are still waiting. In turn, the JAQs (Job Analysis Questionnaires) that were sent out by the former Business Manager to Administrators were not well-received do to a lack of trust on their part. The Hanover School System must address this issue as a priority. The way to begin is through communication.

The new report card at the Elementary Level is an example of moving forward on something too fast, which leads to great frustration. The teachers concerns of a lack of training and not having a rubric and/or guidelines for grading; now the district is dealing with a stressful situation. The report card seemed to have been implemented before it was piloted and all issues were worked out. It is recommended that the Elementary Report Card be a priority on the elementary level. Putting together a complete product will abate in part the high level of frustration and anxiety. There may be money in the budget to pay teachers and administrators to put together all the missing pieces during the summer; it would be beneficial to all elementary teachers for the 2013-2014 school year.

As stated in the In Perspective section of this report, “overall per pupil spending (FY 2011) is lower than the State Average, lower than all four comparable communities and 213<sup>th</sup> lowest in the State. Only ten municipal districts reported lower FY 2012 per pupil expenditures.” One would not expect the Hanover to achieve as well on the MCAS as they do. That being said, the district cannot rest on its laurels. In order to move forward, Hanover must address some, if not all, of the recommendations in this report. Developing a learning community where the teachers feel they are being heard and they share in the district’s vision will only enhance what is a very capable school district.

The School Department is very much aware of what is needed for school improvement as stated in the District Beliefs and they posted on their website Dr. Daggart's "Preparing U.S. Schools for the 21<sup>st</sup> Century", which is a detailed report on school reform. Hanover's awareness and implementation of change needs to slow down and become manageable. Carefully look at three key components Daggart suggests:

- "Why? This first question is key to identifying the issues so we can build consensus around solutions."
- "What? The second question allows us to suggest a plan based on data, research-based models, and successful practices."
- "How? This final question addresses solutions by looking at proven and reliable models."

Using these, as Hanover's guiding principles will insure that the district establishes a vision, aligns curriculum, uses data as a source of instructional improvement, and professional development and ultimately provide high quality education for all students.

## **Reference**

City, E. A., Elmore, R. F., Lee, T., & Flarman, S.E. (2009). *Instructional Rounds in Education: A Network Approach to Improving Teaching and Learning*. Cambridge: Harvard Education Publishing Group.

## **IV. TECHNOLOGY**

The Town of Hanover and the Hanover School Department operate separate technology departments to provide various technology services including system operation, network administration, data processing, email, internet access and other tasks. In addition, the School Department operation also oversees Instructional Technology, including classroom instruction, teacher training in technology as well as other classroom oriented technology functions which are beyond the scope of this study, but is sometimes addressed as it relates to the provision of the non-classroom functions. It should also be noted that "IT" refers to Information Technology, not the Schools' instructional technology function. The purpose of this analysis is to determine if the two operations are operating efficiently and effectively and if it would be desirable to consolidate them into one department. Our analysis is intended to assist both Town and School collaboratively improve their services in a cost effective way.

### **1. Staffing**

Current administrative technology staffing is presented in Appendix IV.1. We have interviewed the current School Department Computer Technician and the Town IT manager for the purpose of analyzing their duties and functions in the overall technology environment of the Town and School Department. We also interviewed the Interim Superintendent. School Instructional Technology Specialists and the various IT support staff in various Town departments (i.e., DPW, Police) are beyond the scope of this study.

### **Findings**

The School Department's budget for FY 2013 includes four (4) positions: a Director, a Data Manager, a Network Administrator and a Computer Technician. The Director's position and the Network Administrator position are currently vacant. For the FY 2014 budget, the Director's position has been eliminated with technology curriculum alignment being assigned to the K-8 Curriculum Director. The Network Administrator and Computer Technician's job descriptions have been amended with the Administrator assuming some of the Director's network responsibilities and the Technician's position gaining more responsibility.

The current FY 2014 School IT staff of 3.0 FTE staff members is low compared to comparable districts. Appendix IV.2 presents the results from a recent study done by The Abrahams Group. Appendix IV.3 presents the results of a study conducted by the Ashland Public Schools. Almost all of the comparable size districts employ more technology staff than Hanover. Hanover Schools also use the consultant Lighthouse Computer Services to assist them in various technical tasks.

The one (1) Town IT administrator seems low, but given that each major town department has their own networks and staff, it may be sufficient. The Town also uses the consultants MX Consulting Services, Always On Computer Services, and Rackspace, US Inc.

Neither the Town nor the School Department has a dedicated Help Desk administrator. The Schools use an open source, license free, help desk software, OTRS. The Town does not use help desk software.

While they were not interviewed, we considered the role of other various positions in the School Department (Instructional Technology Specialists) and Town staff in various departments. These staff members have an important role in the overall technology operations of the Town and Schools.

## **Recommendations**

We recommend that the Town and School reorganize their various staff members into a single department under the direction of a Chief Information Officer (CIO). This is more fully described below in our consolidation recommendation. The School's Network Administrator, and the Computer Technician along with the Town's IT manager would serve the whole Town including Schools. The School Database Manager in all likelihood would not have time to take on more databases, but her expertise could help the Town data managers (in departments) better manage their data.

We recommend that the consolidated department use the OTRS help desk system and that one of the staff members be designated as the help desk coordinator. With this increased level of staffing on the Town side, the library, police and fire professionals who are providing IT services could reduce their IT duties. These departments will still need staff members with IT expertise, but the reduced role may allow for small staff savings in these departments and the ability to deploy these "line" staff for the real purpose of their department.

The School Instructional Technology Specialists would continue to be in the forefront of maintaining the School's computer operation by fixing minor problems, training staff and interfacing their knowledge with the help desk.

## **2. Software**

This section focuses on the deployment and support of software that is used to manage the Town and Schools. It is important that this software be appropriate, up to date, and supported by the technology staff. We are primarily interested in the School Department's various databases and the use of office software such as MS Office. We have made our own specific recommendations on the use of SoftRight, the Town's financial management, accounting and reporting software, separately.

## **Findings**

The School Department has a student database, Aspen X2 for the DESE's Student Information Management System. This database is also used for attendance, grading and several other functions.

The Special Needs Department uses ESped for Individual Education Plans (IEPs).

In general, the Town and Schools use MS Office for day to day office tasks. The School Department has the ability to use OpenOffice or Google Docs Office Suite.

### **Recommendations**

Many school districts have started using Aspen X2 in the last few years and seem to be happy with it. Most of those districts use the Aspen Special Education module for writing IEPs. We recommend that Hanover investigate converting their eSped records to Aspen. This would avoid the problem of integrating Special Needs data with Student Information Data for DESE reporting.

MS Office is very expensive software to provide to all of the Town's users, particularly the students. OpenOffice and Google Docs Office Suite are free to the School Department and inexpensive for the Town. Experts in the field agree that OpenOffice and Google Docs Office Suite are excellent office suites that exceed the needs of all but the savviest users. Both the Town and the School Department should investigate the possibility of using these office suites in the future.

### **3. eSped**

#### **Findings**

Whether Hanover continues to use eSped or switches to Aspen Special Education, the district needs to improve their usage of IEP software. We have found that many stakeholders, particularly classroom teachers do not have online access to their students' IEPs.

Teachers do not have access to the online reports. eSped is used in the system but regular education teachers cannot view the IEP on eSped. The SPED Coordinators review the materials on each student with teachers at the beginning of the year and with teachers as new students come into SPED. IEPs are filed electronically but there is no electronic access to all teachers. Teachers have access to student documents but they must go to the offices to access the plans. The Secretary to the PPS Administrator works to control the IEP procedures electronically with regard to timelines and making sure all sections are completed.

#### **Recommendations**

The School Department can set up who has access for specific students and then who specifically could enter/edit information, data on that particular student. Security can be established to set rights as to who could view. All users would have a User ID and password, with the User ID there is an audit trail of who accessed the system and did what, or who even viewed the records. The School Department can achieve higher effectiveness by allowing electronic access to these plans. It is a web based system which

allows writing and updating IEPs and preparing invitations for meetings with parents. That also feeds the formats for reporting to the State. The goal would be to have all the teachers and specialists entering, updating and accessing data on their specific students.

#### **4. Network, Email and Internet Connection**

The actual network, servers and network software, the email system and the internet access are extremely important. The network needs to provide reliable connectivity between users on the network and the outside world. The Email system must provide efficient messaging both within and outside the organization. The Internet system needs to be fast and reliable especially as more software becomes internet or “cloud” based.

#### **Findings**

Hanover currently operates at least five different networks from four or more different locations. The Town’s network is located in the Town Building and the School Department’s is located in the High School building. There are additional networks for Police, Fire, DPW and others housed at their individual sites. The Town uses Microsoft Exchange for E mail through a third party host, Rackspace. The Schools use Google Aps for Education. The Town uses Comcast as an internet provider. The Schools connect to the internet over Verizon high speed fiber. We also understand that the Schools and Town have two different phone systems.

#### **Recommendations**

We believe that it would be efficient to run all networks out of the same server room (see Facilities below) and believe that this location could be the new High School’s network room. The two networks should be interconnected to allow Town wide communication. Proper firewalls should be in place to protect both networks, and in particular to protect Town data from student hacking.

We further believe that the Schools and Town should have one VOIP phone system such as the Town’s Net Tel One system.

We understand that the Town is considering contracting with Comcast to provide a high speed fiber optic network between Town buildings. We recommend that this interconnectivity be extended to the schools. Such a network would be necessary to successfully implement the network and phone recommendations above. In addition, it would provide the basis for a state of the art school security system that could be continually monitored by the Police, Fire and ECC (911) Center.

Google Aps for Education provides an excellent, free, email system for the Schools along with other included features. It also allows the schools to easily be CIPA (Child Internet Pornography Act) compliant. The Town should investigate with Google how they can efficiently use Google Aps for their (the Town’s) Email. This should be less expensive than the Microsoft Exchange / Rackspace system. Google Aps includes Postini, a security

and archiving service. With both networks using similar Email systems, maintenance of the systems will be easier. Google estimates that a government facility such as Hanover will save around \$30,000 by switching to Google Apps for Government.

## **5. Professional Development**

The technical end of running a municipal network changes on a day-to-day basis. It is therefore important that the technical staff be properly trained and certified and that regular professional development opportunities are scheduled.

### **Finding**

We have noted elsewhere in the report that professional development in technology is extremely important for the teachers and should be included in their Professional Development program. It is also very important for the technical staff and often ignored.

### **Recommendations**

The Town and School should allocate professional development funds for technology to assure that all of the professional and technical staff is properly trained to do their jobs. They should also aggressively schedule this training and insist that employees advance in their knowledge if they are to advance in their job.

## **6. Facilities and Equipment**

Proper facilities are required for the stable operation of an IT network. Up to date computer equipment and adequate student stations are also a necessity.

### **Findings**

The new high school has a state of the art facility; there may be room in the new High School for both the Town and the School network equipment. The new High School network facility should be properly climate controlled and secure. We have found that while the High School is up-to-date and has an appropriate number of computers. We have been advised that the elementary schools and the middle school are short of computers and other technology equipment and much of the existing equipment is out of date. We note that substantial funds were spent at the Middle School the last two years and there are funds scheduled for the Center School for this year.

### **Recommendations**

The Town should investigate the possibility of relocating its network hardware to the new High School network room. This would make it easier for the consolidated network manager to manage all networks. It should not affect the operation of the High School. A side benefit would be freeing up space in the Municipal Office Building.

The Town and Schools must continue to make significant allocations for technology equipment and infrastructure upgrades in order to keep up with advances. It is essential that a five-year capital improvement plan for technology be developed to overcome the current deficiencies. Many school districts are moving toward one-to-one computing for students. For Hanover to move in that direction, they must upgrade their network systems, wireless capabilities, and other parts of the infrastructure to have the capacity needed.

## **7. Consolidation**

One key to this study is whether the Town and School Technology Departments can be merged into a single department. One important consideration is the Instructional Technology function, which is important to the School Department, but is not part of the Town's operations at all. Other than this particular area, we are looking at non-educational support services such as network administration, systems administration, data base management, e-mail, internet and other related areas.

### **Findings**

The current School Director of Technology position is vacant and not funded in the FY 2014 budget, but there is an expressed desire to fill the position in the future. There is no single person in charge of all Town technology.

The findings on Network, Email, and internet connection indicate that there is a duplication of services in this area. The School Department has the more up to date system using Google Apps along with a Verizon internet connection.

Alternatives to consider include:

- The Town of Brookline, a much larger municipality, has merged its technology operation exclusive of instructional technology.
- The Town of Andover has recently implemented a similar system, <http://andoverma.gov/publish/strategicit.pdf>.
- The Town of Weston has a system where the Town IT operation is operated by the School Department's Director of Technology and Libraries.

The School Department has spent approximately \$15,000 per year for Lighthouse the last two years and has budgeted \$10,000 for next year. The Town has spent additional funds on MX, Always On and Rackspace.

### **Recommendations**

Based on our findings above, there is a need to consolidate the various Hanover technology operations. Given that we have seen no drawbacks to consolidation and

many savings, we recommend that the Town and School Department Technology Departments be merged into one. We recommend that the current vacant and unfunded School Technology Director be replaced with a Chief Information Officer (CIO). The existing staff would continue with their similar duties under the direction of the CIO. The plans are detailed in Appendix IV.4.

- **Brookline Plan:** Instructional Technology would be under the direction of the School's K-8 Curriculum Director as currently planned. Several other school systems follow this organization. A consolidated municipal department would run the network operations. A new Chief Information Officer (CIO) could be hired replacing the former School Technology Director.
- **Weston Plan:** Instructional Technology, Libraries and Town and School IT operations are under the School Department's Technology Director.

We further recommend that the use of outside consultants be consolidated and reduced. The consolidation of departments should reduce the need for consultants. MX and Lighthouse provide similar services. We suggest using only one of these companies would be more efficient and cheaper. It has been noted that MX has a State procurement contract. If the Town switches its email to Google and a fiber network is established, the need for Rackspace will be greatly reduced or eliminated.

## **Summary**

In summary, we recommend that the Town and School Department adopt a consolidation plan that suits their needs and eliminates the current duplication of services and redundancy of consultant services. The consolidation of the network and email systems should generate substantial savings. As IT service needs expand on the Town side, it is imperative that staff be added to cover the needs. The Town cannot reasonably expect one person to provide the expanded services. By consolidating the Town and School Departments, new service needs of both Town and Schools could be met with minimal new staff. Individuals handling technology in individual Town departments would continue to be the experts within their department, but would not have technical responsibilities for the network.

## **APPENDICES**

- II.1 Hanover Public Schools: In Perspective
- II.2a 2011 Per Pupil Spending Summary
- II.2b 2009 – 2011 Per Pupil Spending Detail
- II.3 Hanover 5-Year
- II.4 Professional Development
- II.5 2010 – 2012 Teachers
- II.6 Proficiency
- II.7 Staffing
- II.8 SPED Staffing
  
- III.1 List of Interviewees and Focus Groups
- III.2 Survey Monkey Survey
- III.3 Math MCAS
  
- IV.1 Technology Staff Levels
- IV.2 Comparative Staffing
- IV.3 Survey of Information Technology Staff
- IV.4 Consolidation Proposals

## **APPENDIX II**

- II.1 Hanover Public Schools: In Perspective
- II.2a 2011 Per Pupil Spending Summary
- II.2b 2009 – 2011 Per Pupil Spending Detail
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- II.4 Professional Development
- II.5 2010 – 2012 Teachers
- II.6 Proficiency
- II.7 Staffing
- II.8 SPED Staffing

# Hanover Public Schools: In Perspective

## Appendix II.1

	Hanover	Holliston	Norwell	Scituate	Wayland	State Average
<b>I Enrollment Composition (2011-2012 October 1st)</b>						
All Students	2,735	2,842	2,336	3,275	2,684	
Low Income	6.3%		3.3%	8.5%	6.3%	35.2%
Students with Disabilities	15.9%		14.3%	12.9%	19.6%	16.9%
English Language Learner	0.6%		0.3%	0.9%	1.2%	7.2%
% of School Aged Children Enrolled in Public School	94%	95%	94%	86%	92%	91%
<b>II Spending</b>						
Per Pupil Spending (In District)	\$10,834	\$12,089	\$12,074	\$12,746	\$15,902	\$13,658
Per Pupil Spending (Out of District)	\$21,144	\$41,170	\$83,958	\$62,289	\$47,733	\$21,457
% NSS above Foundation Budget	14%	28%	19%	16%	40%	16%
% Actual NSS above Required NSS	12%	25%	17%	14%	35%	13%
Chapter 70 Percent of Foundation	27.8%	30.3%	17.5%	17.5%	17.5%	44.8%
Average Teachers Salaries	\$ 68,747			\$ 74,936	\$ 84,238	\$70,340
Professional Development \$/Teacher FTE	\$ 1,708	\$ 871	\$ 2,914			\$ 3,200
<b>III Assessment</b>						
2012 % of Students scoring Proficient or Higher in ELA	83%	87%	90%	87%	87%	69%
2011 % of Students scoring Proficient or Higher in ELA	82%	84%	90%	88%	89%	69%
2012 % of Students scoring Proficient or Higher in Math	68%	77%	79%	81%	80%	59%
2011 % of Students scoring Proficient or Higher in Math	68%	76%	81%	81%	80%	58%
2012 % of Students scoring Proficient or Higher in Science	72%	75%		75%	84%	54%
2011 % of Students scoring Proficient or Higher in Science	71%	70%		70%	81%	52%
2012 % of High School Graduates who completed MassCore	100%	93%		93%	100%	69%
2011 % of High School Graduates who completed MassCore	100%	83%		83%	100%	70%

## Hanover Public Schools: In Perspective

## Appendix II.1

	Hanover	Holliston	Norwell	Scituate	Wayland	State Average
<b>III Assessment (Continued)</b>						
CPI Achievement Gap - ELA	94%	95%	96%	95%		87%
CPI Achievement Gap - Mathematics	86%	91%	92%	92%		80%
CPI Achievement Gap - Science	89%	92%	83%	91%		79%
Annual Drop Out Rate	0.1%	0.2%	0.3%	1.3%		2.7%
Graduation Rate	96%	95%	98%	95%		85%
Teacher Turnover Rate	12%	6%	10%	6%		12%
% Students Absent <10 Days	79%	78%	75%	70%		68%
9th to 10th Grade Promotion Rate	100%		99%	95%		91%
% ELL Students Who Attained EL Proficiency	56%	62%		44%	32%	41%
% Jr/Sr Enrolled in at least 1 AP Course	40	8	53			24
<b>IV Schools by Level</b>						
<b>Total Schools in District</b>	<b>5</b>	<b>4</b>	<b>4</b>	<b>6</b>	<b>5</b>	
Number of Level 1 Schools	3	3	2	4	2	
Number Level 2 Schools	1		2	2	2	
Number Level 3 Schools						
Number Level 4 Schools						
Number Level 5 Schools						
Number of Schools with Insufficient Data	1	1			1	

Data represent FY 2012 DART, FY 2011 Per Pupil Expenditures, and FY 2014 (preliminary) Chapter 70 and Net School Spending data per DESE. Holliston, Norwell and Wayland did not report certain data.

### Summary of Per Pupil Expenditure in 2011

All funding sources included	Hanover			Holliston			Norwell			Scituate			Wayland			State		
	2009	2010	2011	2009	2010	2011	2009	2010	2011	2009	2010	2011	2009	2010	2011	2009	2010	2011
<b>FTE Pupils</b>																		
<i>In-district residents, choice-in, tuitioned in</i>	2,736	2,712	2,704	2,921	2,869	2,864	2,326	2,338	2,326	3,267	3,218	3,242	2,778	2,735	2,697	928,997	928,556	924,978
<i>Out-of-district SPED, charter, choice-out, tuitioned out</i>	45	46	53	84	73	63	31	32	24	59	63	54	40	43	49	56,168	57,652	59,604
<i>All Pupils</i>	2,782	2,759	2,757	3,005	2,942	2,927	2,357	2,369	2,350	3,326	3,281	3,296	2,817	2,778	2,746	985,165	986,208	984,582
<b>Expenditures</b>																		
Administration	487	464	464	360	362	371	410	437	418	566	515	460	602	656	550	437	446	447
Instructional Leadership	582	614	681	941	978	1,083	620	640	610	807	762	801	919	849	932	826	821	832
Teachers	4,662	4,928	5,006	4,855	5,130	5,286	4,049	4,181	4,260	4,922	4,875	4,979	5,736	5,974	5,962	4,907	4,953	5,027
<i>Student/Teacher Ratio</i>	13.3 :1	13.5 :1	15.7 :1	13.3 :1	13.5 :1	13.3 :1	16.3 :1	16.8 :1	16.5 :1	14.2 :1	15.2 :1	14.7 :1	14.0 :1	13.9 :1	14.2 :1	13.7 :1	13.9 :1	13.7 :1
Other Teaching Services	581	599	618	1,105	1,027	1,029	710	776	822	707	687	571	1,111	1,155	1,218	938	958	992
Professional Development	139	135	126	194	188	65	171	186	175	37	31	141	136	148	269	224	226	238
Instructional Mat/Equip/Technology	300	248	244	150	263	148	151	384	227	240	220	316	334	433	453	357	393	424
Guidance, Counseling, Testing	359	332	358	332	401	463	256	265	270	313	325	329	452	489	486	353	363	372
Pupil Services	1,131	1,174	1,159	885	913	851	986	1,018	964	854	825	829	1,219	1,280	1,089	1,170	1,161	1,200
Operations and Maintenance	944	908	882	921	934	938	1,113	941	979	744	728	821	1,505	1,507	1,206	1,100	1,046	1,067
Insurance, Retirement Programs, Other	1,054	1,014	1,188	1,007	1,343	1,212	1,898	1,889	2,026	1,426	1,350	1,616	1,858	2,228	2,461	2,214	2,197	2,296
Expenditure per in-district pupil	10,238	10,416	10,726	10,750	11,540	11,446	10,363	10,717	10,751	10,617	10,317	10,863	13,872	14,718	14,626	12,527	12,565	12,895
Expenditure per out-of-district pupil	23,791	22,180	23,144	34,393	37,752	41,170	62,734	60,560	87,482	38,481	45,528	42,453	47,425	47,363	46,425	20,928	20,822	20,605
Expenditure per pupil	10,458	10,613	10,965	11,413	12,186	12,089	11,043	11,380	11,524	11,113	10,992	11,381	14,342	15,219	15,198	13,006	13,048	13,361
<b>Comparison to similar type/size districts *</b>																		
<i>Median per in-district pupil</i>			11,258			11,258			11,258			11,608			11,258			
<i>Median per out-of-district pupil</i>			29,782			29,782			29,782			40,647			29,782			
<i>Median per pupil</i>			11,848			11,848			11,848			12,298			11,848			

Hanover Pubic Schools  
Benchmarking Comparative



Funding sources include	Hanover			Holliston			Norwell			Scituate			Wayland			State			
	2009	2010	2011	2009	2010	2011	2009	2010	2011	2009	2010	2011	2009	2010	2011	2009	2010	2011	
<b>FTE Pupils</b>																			
In-district	2,736.4	2,712.2	2,704.0	2,921.0	2,869.4	2,863.5	2,326.5	2,337.6	2,326.1	3,267.4	3,218.4	3,241.8	2,777.9	2,734.9	2,696.5	928,996.9	928,555.5	924,977.9	
Out-of-district	45.2	46.3	53.0	84.3	72.5	63.3	30.6	31.5	23.7	59.1	62.9	54.1	39.5	42.6	49.4	56,168.4	57,652.4	59,604.0	
All pupils	2,781.6	2,758.5	2,757.0	3,005.3	2,941.9	2,926.8	2,357.1	2,369.1	2,349.8	3,326.5	3,281.3	3,295.9	2,817.4	2,777.5	2,745.9	985,165.3	986,207.9	984,581.9	
<b>Expenditures</b>																			
Per in-district pupil	10,238	10,416	10,726	10,750	11,540	11,446	10,363	10,717	10,751	10,617	10,317	10,863	13,872	14,718	14,626	12,527	12,572	12,907	
Per out-of-district pupil	23,791	22,180	23,144	34,393	37,752	41,170	62,734	60,560	87,482	38,481	45,528	42,453	47,425	47,363	46,425	20,928	20,838	20,459	
Per pupil	10,458	10,613	10,965	11,413	12,186	12,089	11,043	11,380	11,524	11,113	10,992	11,381	14,342	15,219	15,198	13,006		13,369	
	2009	2010	2011	2009	2010	2011	2009	2010	2011	2009	2010	2011	2009	2010	2011	2009	2010	2011	
<b>In-district expenditures</b>																			
School Committee		2	4	3	3	2	2	5	5	4	20	32	23	85	93	20	20	25	22
Superintendent	88	100	111	86	86	88	91	89	94	230	255	242	112	119	113	77	77	79	
Assistant Superintendent	--	--	--	49	52	53	--	--	--	182	71	58	58	51	53	25	24	27	
Other District-Wide	--	--	< 1	--	--	--	--	--	--	5	< 1	< 1	2	40	5	28	34	28	
Business and Finance	142	138	172	178	184	184	234	238	232	82	108	86	182	190	196	159	154	159	
Human Resources	30	39	42	6	6	7	19	19	20	--	--	--	35	31	57	35	33	35	
Legal Service for Schools	47	48	32	2	2	9	25	36	16	19	24	21	73	50	15	18	18	19	
Legal Settlements	--	--	--	2	--	--	--	11	11	--	--	--	--	--	--	3	3	3	
District-wide Information	178	135	103	34	31	27	36	39	40	28	25	29	54	82	90	71	78	76	
Total Administrative	487	464	464	360	362	371	410	437	418	566	515	460	602	656	550	437	446	448	
Curriculum Director	83	92	120	206	216	243	94	93	98	99	56	71	248	211	240	170	173	164	
Dept Heads (Non-School)	12	11	3	153	143	122	73	45	44	164	160	162	3	3	19	21	22	23	
School Leadership	486	508	491	468	498	491	438	484	443	497	515	551	462	479	479	486	480	482	
Curriculum Leaders	--	2	67	2	2	2	7	9	15	2	24	< 1	54	56	83	72	71	71	
Admin. Technology	--	--	--	82	92	197	--	--	--	8	6	7	--	--	--	32	31	39	
Instructional Coordination	--	< 1	--	29	27	28	8	8	9	38	< 1	8	153	100	111	45	44	50	
<b>Total Instructional Personnel</b>	<b>582</b>	<b>614</b>	<b>681</b>	<b>941</b>	<b>978</b>	<b>1,083</b>	<b>620</b>	<b>640</b>	<b>610</b>	<b>807</b>	<b>762</b>	<b>801</b>	<b>919</b>	<b>849</b>	<b>932</b>	<b>826</b>	<b>821</b>	<b>828</b>	
Teachers, Classroom	4,662	4,887	5,006	4,337	4,559	4,700	3,527	3,631	3,695	4,680	4,861	4,945	4,867	5,119	4,940	4,411	4,429	4,469	
Teachers, Specialists	--	41	--	518	570	586	522	550	565	242	14	34	869	855	1,022	497	529	553	
<b>Total Teachers</b>	<b>4,662</b>	<b>4,928</b>	<b>5,006</b>	<b>4,855</b>	<b>5,130</b>	<b>5,286</b>	<b>4,049</b>	<b>4,181</b>	<b>4,260</b>	<b>4,922</b>	<b>4,875</b>	<b>4,979</b>	<b>5,736</b>	<b>5,974</b>	<b>5,962</b>	<b>4,907</b>	<b>4,958</b>	<b>5,023</b>	
Medical/Therapeutic Services	--	--	--	331	222	273	252	251	249	100	190	30	244	259	273	213	222	221	
Substitute Teachers	146	121	145	198	123	138	57	86	103	64	98	69	120	98	70	104	107	114	
Paraprofessionals	366	411	402	502	610	543	366	402	437	507	359	421	591	676	708	542	551	582	
Librarians/Media Center Directors	69	67	71	74	73	76	35	38	32	36	40	52	155	122	167	80	79	76	

Hanover Pubic Schools  
Benchmarking Comparative

Funding sources included	Hanover			Holliston			Norwell			Scituate			Wayland			State		
	2009	2010	2011	2009	2010	2011	2009	2010	2011	2009	2010	2011	2009	2010	2011	2009	2010	2011
<b>Total Other Teaching</b>	581	599	618	1,105	1,027	1,029	710	776	822	707	687	571	1,111	1,155	1,218	938	958	993
Professional Development Leaders	--	--	--	7	4	11	--	--	--	26	23	17	36	31	27	25	19	16
Professional Days Substitutes for Prof. Development	49	51	50	124	133	1	97	99	100	--	--	--	24	25	67	63	64	66
Professional Development Costs	8	6	7	--	--	--	10	12	10	--	--	--	--	--	--	5	6	6
<b>Total Professional Development</b>	139	135	126	194	188	65	171	186	175	37	31	141	136	148	269	224	226	241
Textbooks, Software/Media/Materials	89	63	61	13	26	19	36	106	52	38	24	33	62	86	37	72	83	76
Instructional Materials (Libraries)	22	22	17	43	60	62	9	9	14	56	97	60	24	30	36	49	57	63
Instructional Equipment	8	9	8	14	< 1	3	15	14	25	6	4	5	71	87	80	30	32	29
General Classroom Supplies	92	80	84	24	34	29	46	43	80	75	54	59	89	150	145	73	72	85
Other Instructional Services	18	17	13	17	11	6	4	3	5	33	11	123	18	40	20	85	79	100
Classroom Technology	59	33	30	39	129	28	41	207	50	29	29	30	63	17	124	33	49	56
Technology (Libraries)	--	--	--	< 1	1	--	--	2	--	2	< 1	6	< 1	8	< 1	8	14	10
Instructional Software	12	23	31	< 1	1	< 1	--	--	--	--	--	--	7	16	11	7	8	11
<b>Total Instructional Materials</b>	300	248	244	150	263	148	151	384	227	240	220	316	334	433	453	357	394	430
Guidance/Adjustment Counselors	279	252	272	271	337	322	207	217	221	214	224	214	246	272	239	242	249	251
Testing and Assessment	--	--	--	2	8	28	< 1	--	--	--	--	--	2	< 1	< 1	13	12	14
Psychological Services	80	79	86	59	57	112	48	48	49	99	102	115	205	216	247	99	102	106
<b>Total Guidance, Counseling, and Assessment</b>	359	332	358	332	401	463	256	265	270	313	325	329	452	489	486	353	363	371
Attendance and Parent Liaisons	2	2	2	< 1	< 1	< 1	--	--	--	--	--	--	< 1	3	1	17	16	17
Medical/Health Services	120	122	120	113	112	110	130	137	143	146	139	148	135	149	91	131	137	141
Transportation Services	343	378	354	295	294	311	287	296	320	315	301	258	284	332	356	465	451	479
Food Services	273	277	267	230	225	175	313	324	231	214	203	207	359	347	284	342	337	352
Athletics	169	159	153	180	207	176	221	225	234	133	148	168	355	340	285	127	131	133
Other Student Activities	225	235	263	66	74	78	34	36	37	46	34	47	71	94	71	59	60	64
School Security	--	--	--	< 1	--	--	--	--	--	--	--	--	13	15	1	29	29	31

Hanover Pubic Schools  
Benchmarking Comparative

Funding sources included	Hanover			Holliston			Norwell			Scituate			Wayland			State		
	2009	2010	2011	2009	2010	2011	2009	2010	2011	2009	2010	2011	2009	2010	2011	2009	2010	2011
<b>Total Pupil Services</b>	<b>1,131</b>	<b>1,174</b>	<b>1,159</b>	<b>885</b>	<b>913</b>	<b>851</b>	<b>986</b>	<b>1,018</b>	<b>964</b>	<b>854</b>	<b>825</b>	<b>829</b>	<b>1,219</b>	<b>1,280</b>	<b>1,089</b>	<b>1,170</b>	<b>1,160</b>	<b>1,217</b>
Custodial Services	331	322	325	357	346	351	333	337	325	356	343	334	411	413	427	361	360	362
Heating of Buildings	121	122	127	107	104	107	112	105	109	--	--	126	161	138	159	151	118	127
Utility Services	149	138	143	271	276	267	223	221	206	257	269	207	298	271	228	247	238	237
Maintenance of Grounds	25	30	17	42	45	46	105	85	92	33	34	32	235	168	78	45	47	51
Maintenance of Buildings	257	231	193	108	134	134	117	115	95	97	66	71	229	350	188	215	207	205
Building Security System	2	2	2	--	--	--	< 1	--	--	--	--	--	--	--	--	3	2	2
Maintenance of Equipment	58	63	75	34	27	31	8	7	7	< 1	< 1	< 1	4	8	5	24	23	23
Extraordinary Maintenance	--	--	--	--	--	--	22	1	29	--	--	--	--	--	--	26	25	25
Networking/Telecommunications	--	--	--	--	--	--	31	28	30	--	--	--	63	68	70	15	15	16
Technology Maintenance	--	--	--	2	1	3	161	41	86	--	15	51	106	91	50	15	13	12
<b>Total Operations and Employer</b>	<b>944</b>	<b>908</b>	<b>882</b>	<b>921</b>	<b>934</b>	<b>938</b>	<b>1,113</b>	<b>941</b>	<b>979</b>	<b>744</b>	<b>728</b>	<b>821</b>	<b>1,505</b>	<b>1,507</b>	<b>1,206</b>	<b>1,100</b>	<b>1,048</b>	<b>1,061</b>
Retirement Contributions	240	253	301	202	206	255	301	264	272	431	418	462	533	561	675	426	358	375
Insurance for Active Employees	608	541	650	743	918	712	1,141	1,182	1,268	749	632	818	854	1,139	1,308	1,321	1,343	1,407
Insurance for Retired Employees	151	180	192	--	156	184	391	384	416	193	251	285	359	404	407	371	394	409
Other Non-Employee Insurance	56	42	45	45	40	40	46	44	50	38	30	33	111	125	56	49	53	50
Rental Lease of Equipment	--	--	--	8	14	12	--	--	--	--	--	--	--	--	--	5	6	7
Rental Lease of Buildings	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7	6	5
Short Term Interest RANs	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 1	<1	<1
Other Fixed Charges	--	--	--	9	8	9	18	16	19	15	17	20	--	--	15	35	38	41
School Crossing Guards	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	(in above)	(in above)	(in above)
<b>Total Insurances, Rentals, and Other</b>	<b>1,054</b>	<b>1,014</b>	<b>1,188</b>	<b>1,007</b>	<b>1,343</b>	<b>1,212</b>	<b>1,898</b>	<b>1,889</b>	<b>2,026</b>	<b>1,426</b>	<b>1,350</b>	<b>1,616</b>	<b>1,858</b>	<b>2,228</b>	<b>2,461</b>	<b>2,214</b>	<b>2,199</b>	<b>2,295</b>
<b>Expenditure/in-district</b>	<b>10,238</b>	<b>10,416</b>	<b>10,726</b>	<b>10,750</b>	<b>11,540</b>	<b>11,446</b>	<b>10,363</b>	<b>10,717</b>	<b>10,751</b>	<b>10,617</b>	<b>10,317</b>	<b>10,863</b>	<b>13,872</b>	<b>14,718</b>	<b>14,626</b>	<b>12,527</b>	<b>12,572</b>	<b>12,907</b>
<b>Out-of-district expenditures</b>																		
Tuitions	18,889	18,721	19,705	31,150	34,471	37,797	54,593	53,684	75,037	35,821	43,530	36,880	39,327	41,387	40,560	19,156	18,942	18,729
Transportation	4,902	3,459	3,439	3,243	3,281	3,373	8,141	6,876	12,445	2,660	1,997	5,573	8,098	5,977	5,865	1,772	1,896	1,730
<b>Expenditure/out-of-district</b>	<b>23,791</b>	<b>22,180</b>	<b>23,144</b>	<b>34,393</b>	<b>37,752</b>	<b>41,170</b>	<b>62,734</b>	<b>60,560</b>	<b>87,482</b>	<b>38,481</b>	<b>45,528</b>	<b>42,453</b>	<b>47,425</b>	<b>47,363</b>	<b>46,425</b>	<b>20,928</b>	<b>20,838</b>	<b>20,459</b>
<b>Expenditure/pupil</b>	<b>10,458</b>	<b>10,613</b>	<b>10,965</b>	<b>11,413</b>	<b>12,186</b>	<b>12,089</b>	<b>11,043</b>	<b>11,380</b>	<b>11,524</b>	<b>11,113</b>	<b>10,992</b>	<b>11,381</b>	<b>14,342</b>	<b>15,219</b>	<b>15,198</b>	<b>13,006</b>		<b>13,369</b>

Hanover Pubic Schools  
Benchmarking Comparative

<b>Hanover</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>
English Language Arts Proficiency		80%	82%	81%	82%	83%
Mathematics Proficiency		67%	68%	67%	68%	68%
Science Proficiency		62%	64%	68%	71%	72%
Completed MassCore		100%	100%	100%	100%	100%
% Residents in Public Schools		96%	92%	92%	91%	94%
Annual Drop Out Rate	0.6%	0.5%	0.2%	0.3%	0.1%	
Graduation Rate	97.0%	95.8%	94.3%	95.7%	96.2%	
Professional Develoment \$/Teacher	\$1,502	\$1,742	\$1,828	\$1,800	\$1,708	
Teacher Turnover Rate			14.3%	7.2%	12.2%	12.2%
% Students Absent < 10 Days	77.0%	77.8%	78.9%	74.7%	78.8%	
9th to 10th Grade Promotion Rate	93.3%	97.5%	96.3%	94.2%	100.0%	
% ELL Who Attained EL Proficiency		0.0%	40.0%	50.0%	55.6%	
% Jr/Sr Enrolled in At Least One AP Course		35%	35%	32%	33%	40%

Hanover Pubic Schools  
Benchmarking Comparative

<b>Town</b>	<b>FY07</b>	<b>FY08</b>	<b>FY09</b>	<b>FY10</b>	<b>FY11</b>
Hanover	\$1,502	\$1,742	\$1,828	\$1,800	\$1,708
Holliston	\$2,560	\$2,771	\$2,621	\$2,514	\$871
Norwell	\$2,361	\$2,463	\$2,800	\$3,025	\$2,914
Scituate	\$428	\$446	\$492	\$430	\$2,121
Wayland					
State	\$2,860	\$2,860	\$2,966	\$3,003	\$3,200

## Teachers 2010-2012

all funding sources included FTEs (full-time equivalents)	Hanover			Holliston			Norwell			Scituate			Wayland			State*		
	2010	2011	2012	2010	2011	2012	2010	2011	2012	2010	2011	2012	2010	2011	2012	2010	2011	2012
<a href="#">Data Definitions</a>																		
<i>All students</i>	2,698	2,685	2,735	2,864	2,870	2,842	2,345	2,343	2,336	3,278	3,276	3,275	2,738	2,686	2,684	957,053	955,563	953,369
<b>Teachers (FTEs)</b>																		
Teachers	203.1	198.9	174.6	215.1	212.8	213.7	143.7	139.9	141.9	231.2	215.4	222.9	195.6	193.0	189.6	69,908.6	68,754.2	69,341.9
<i>All students:all teachers</i>	13.3 :1	13.5 :1	15.7 :1	13.3 :1	13.5 :1	13.3 :1	16.3 :1	16.8 :1	16.5 :1	14.2 :1	15.2 :1	14.7 :1	14.0 :1	13.9 :1	14.2 :1	13.7 :1	13.9 :1	13.7 :1
Long-term subs	--	--	2.5	0.2	1.7	1.0	--	--	1.0	--	--	1.0	--	--	--	486.8	485.7	434.2
Teachers plus long-term subs	203.1	198.9	177.1	215.3	214.5	214.7	143.7	139.9	142.9	231.2	215.4	223.9	195.6	193.0	189.6	70,395.3	69,239.9	69,776.1
<i>All students:teachers plus subs</i>	13.3 :1	13.5 :1	15.4 :1	13.3 :1	13.4 :1	13.2 :1	16.3 :1	16.8 :1	16.3 :1	14.2 :1	15.2 :1	14.6 :1	14.0 :1	13.9 :1	14.2 :1	13.6 :1	13.8 :1	13.7 :1
<b>General Education</b>																		
Social Studies	122.1	117.7	101.0	136.5	134.2	105.0	97.4	93.5	53.2	144.6	149.8	53.9	123.1	116.0	65.2	42,689.1	41,854.9	30,018.2
<i>All students:subject teachers</i>	22.1 :1	22.8 :1	27.1 :1	21.0 :1	21.4 :1	27.1 :1	24.1 :1	25.1 :1	43.9 :1	22.7 :1	21.9 :1	60.8 :1	22.2 :1	23.2 :1	41.2 :1	22.4 :1	22.8 :1	31.8 :1
Arts/Languages	23.1	20.3	21.3	27.6	28.5	30.0	19.2	18.9	19.5	28.9	23.7	24.6	28.0	29.8	27.0	6,454.3	6,447.2	6,639.8
<i>All students:subject teachers</i>	116.8 :1	132.4 :1	128.7 :1	103.7 :1	100.6 :1	94.7 :1	122.4 :1	124.0 :1	120.1 :1	113.4 :1	138.0 :1	133.0 :1	97.9 :1	90.1 :1	99.4 :1	148.3 :1	148.2 :1	143.6 :1
Other subjects	28.3	22.5	24.5	15.8	17.2	47.4	10.3	9.7	51.5	23.6	17.6	117.7	15.3	18.9	68.9	6,768.7	7,430.3	20,070.9
<i>All students:subject teachers</i>	95.3 :1	119.5 :1	111.9 :1	181.4 :1	167.1 :1	59.9 :1	227.7 :1	242.0 :1	45.4 :1	138.8 :1	186.2 :1	27.8 :1	179.3 :1	142.1 :1	39.0 :1	141.4 :1	128.6 :1	47.5 :1
All general education teachers	173.5	160.4	146.7	179.9	180.0	182.4	126.9	122.1	124.1	197.2	191.2	196.2	166.4	164.7	161.0	55,912.1	55,732.4	56,728.8
<i>All students:general ed teachers</i>	15.5 :1	16.7 :1	18.6 :1	15.9 :1	15.9 :1	15.6 :1	18.5 :1	19.2 :1	18.8 :1	16.6 :1	17.1 :1	16.7 :1	16.5 :1	16.3 :1	16.7 :1	17.1 :1	17.1 :1	16.8 :1
<b>Students:</b>																		
Vocational-technical	--	--	--	--	--	--	--	--	--	--	--	--				58,612	58,793	57,641
SPED in-district	416	404	425	439	439	430	304	318	317	357	381	394	507	487	494	153,949	153,879	152,850
English language learners (ELLs)	8	14	16	37	40	39	3	4	7	14	25	28	15	15	21	59,158	67,567	69,856
<b>Vocational-technical</b>																		
Voc-tech teachers	--	--	--	--	--	--	--	--	--	--	--	--	1.0	--	0.1	2,064.9	2,107.5	2,011.6
<i>Voc-tech students:voc-tech teachers</i>	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	28.4 :1	27.9 :1	28.7 :1
<b>Special education</b>																		
Special education teachers	29.6	38.5	27.4	34.9	32.3	30.8	16.8	17.8	17.8	34.0	23.6	26.1	27.6	27.8	28.0	10,288.6	9,342.6	8,839.4
<i>SPED students:SPED teachers</i>	14.1 :1	10.5 :1	15.5 :1	12.6 :1	13.6 :1	14.0 :1	18.1 :1	17.9 :1	17.8 :1	10.5 :1	16.1 :1	15.1 :1	18.4 :1	17.5 :1	17.7 :1	15.0 :1	16.5 :1	17.3 :1
<b>Limited English proficiency</b>																		
English as second language (ESL)	--	--	0.5	0.3	0.5	0.5	--	--	--	--	0.6	0.6	0.7	0.5	0.5	872.3	796.8	1,010.3
Sheltered content and bilingual	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	770.6	774.9	751.8
All teachers of ELLs	--	--	0.5	0.3	0.5	0.5	--	--	--	--	0.6	0.6	0.7	0.5	0.5	1,643.0	1,571.7	1,762.1
<i>ELL students:ELL teachers</i>	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	36.0 :1	43.0 :1	39.6 :1

Hanover Public Schools  
Benchmarking Comparative

Comparable Districts	Grade Span	2012 Enrollment & Subgroup Percentages				2012 Percentage Proficient/Advanced			2012 Median Student Growth Percentile (SGP)	
		Total Enrolled	Low Income	SPED	ELL	ELA	Math	Science	ELA	Math
*Hanover	PK - 12	2,735	6.3	15.9	0.6	83%	68%	72%	48.0	44.0
*Holliston	PK - 12	2,842	4.3	15.9	1.4	87%	77%	80%	63.0	57.0
*Norwell	PK - 12	2,336	3.3	14.2	0.3	90%	79%	81%	58.0	49.5
*Scituate	PK - 12	3,275	8.5	12.8	0.9	87%	81%	75%	54.0	56.0
*Wayland	PK - 12	2,684	6.3	19.4	0.8	87%	80%	84%	57.0	57.0
*Westwood	PK - 12	3,204	4.7	16.8	0.9	90%	83%	78%	58.0	58.0



### District Staffing 2010-2012

all funding sources included FTEs (full-time equivalents) <a href="#">Data Definitions</a>	Hanover			Holliston			Norwell			Scituate			Wayland			State*		
	2010	2011	2012	2010	2011	2012	2010	2011	2012	2010	2011	2012	2010	2011	2012	2010	2011	2012
Number of schools	5	5	5	4	4	4	4	4	4	6	6	6	5	5	5			
All students	2,698	2,685	2,735	2,864	2,870	2,842	2,345	2,343	2,336	3,278	3,276	3,275	2,738	2,686	2,684	957,053	955,563	953,369
District administrators	3.0	3.0	5.0	4.0	4.0	4.0	2.5	2.5	2.0	4.0	4.0	4.0	6.7	7.3	7.3	1,862.6	2,151.9	2,138.8
Students:staff	899:1	895:1	547:1	716:1	718:1	711:1	938:1	937:1	1,168:1	820:1	819:1	819:1	409:1	368:1	368:1	514:1	444:1	446:1
Other district instructional leaders	1.0	1.0	1.0	2.0	2.0	2.0	2.5	2.3	3.0	5.9	5.9	5.4	6.4	5.9	7.4	1,134.8	1,101.5	1,080.7
Students:staff	2,698:1	2,685:1	2,735:1	1,432:1	1,435:1	1,421:1	938:1	1,019:1	779:1	556:1	555:1	606:1	431:1	459:1	363:1	843:1	868:1	882:1
School administrators	14.0	12.5	12.6	18.6	17.3	18.4	8.5	7.5	7.5	11.4	10.6	9.8	14.2	13.5	13.4	4,161.6	4,196.9	4,353.6
Students:staff	193:1	215:1	216:1	154:1	166:1	155:1	276:1	312:1	311:1	288:1	309:1	334:1	193:1	199:1	200:1	230:1	228:1	219:1
Instructional coaches	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.5	898.6	995.5	1,018.7
Students:staff	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1,074:1	1,065:1	960:1	936:1
Teachers	203.1	198.9	174.6	215.1	212.8	213.7	143.7	139.9	141.9	231.2	215.4	222.9	195.6	193.0	189.6	69,908.6	68,754.2	69,341.9
Students:staff	13.3 :1	13.5 :1	15.7 :1	13.3 :1	13.5 :1	13.3 :1	16.3 :1	16.8 :1	16.5 :1	14.2 :1	15.2 :1	14.7 :1	14.0 :1	13.9 :1	14.2 :1	13.7 :1	13.9 :1	13.7 :1
Long-term subs	--	--	2.5	0.2	1.7	1.0	--	--	1.0	--	--	1.0	--	--	--	486.8	485.7	434.2
Students:staff	--	--	1,077:1	--	1,698:1	2,733:1	--	--	2,336:1	--	--	3,275:1	--	--	--	1,966:1	1,967:1	2,196:1
Paraprofessionals	30.3	21.0	18.0	78.9	81.6	81.3	32.1	33.0	36.9	74.2	66.6	73.3	81.2	84.1	83.7	22,325.6	22,515.1	22,832.4
Students:staff	89:1	128:1	152:1	36:1	35:1	35:1	73:1	71:1	63:1	44:1	49:1	45:1	34:1	32:1	32:1	43:1	42:1	42:1
Tutors	7.0	6.6	11.5	6.7	7.8	8.2	10.0	12.0	12.0	--	--	--	1.0	--	3.0	925.4	969.0	839.8
Students:staff	385:1	405:1	238:1	430:1	369:1	347:1	235:1	195:1	195:1	--	--	--	2,738:1	--	895:1	1,034:1	986:1	1,135:1
Instructional support	12.0	13.0	12.0	16.9	16.9	17.8	7.2	6.7	8.9	17.9	17.9	18.2	12.3	11.5	12.8	4,526.7	4,288.2	4,419.0
Students:staff	225:1	207:1	228:1	170:1	170:1	160:1	326:1	350:1	262:1	183:1	183:1	180:1	223:1	234:1	211:1	211:1	223:1	216:1
SPED instructional support	3.0	1.0	1.0	2.0	2.9	3.0	2.0	2.0	2.0	--	--	--	5.1	5.0	5.4	1,206.9	1,252.7	1,249.1
Students:staff	899:1	2,685:1	2,735:1	1,432:1	997:1	947:1	1,173:1	1,172:1	1,168:1	--	--	--	537:1	537:1	502:1	793:1	763:1	763:1
SPED related staff	8.9	12.0	11.0	15.5	14.4	16.6	9.9	9.0	8.9	9.7	15.5	14.1	8.6	8.6	7.9	3,716.8	4,001.1	4,076.7
Students:staff	304:1	224:1	249:1	185:1	199:1	171:1	237:1	260:1	262:1	338:1	211:1	233:1	318:1	312:1	341:1	257:1	239:1	234:1
Medical/health	5.0	5.0	5.0	4.0	4.0	3.6	4.0	4.0	4.0	7.0	7.0	6.0	1.0	1.0	--	1,872.7	1,864.6	1,894.2
Students:staff	540:1	537:1	547:1	716:1	718:1	789:1	586:1	586:1	584:1	468:1	468:1	546:1	2,738:1	2,686:1	--	511:1	512:1	503:1
Clerks/secretaries	21.5	22.5	20.0	15.5	15.5	17.5	19.1	19.4	21.5	26.3	22.0	21.5	35.7	28.6	31.9	9,056.2	8,331.5	8,038.8
Students:staff	125:1	119:1	137:1	185:1	185:1	162:1	123:1	121:1	109:1	125:1	149:1	152:1	77:1	94:1	84:1	106:1	115:1	119:1
Technology support	2.0	2.0	3.0	6.0	6.0	6.8	1.0	1.0	2.0	--	--	--	7.6	7.6	7.7	1,080.1	1,144.1	1,161.4
Students:staff	1,349:1	1,343:1	912:1	477:1	478:1	421:1	2,345:1	2,343:1	1,168:1	--	--	--	360:1	353:1	349:1	886:1	835:1	821:1

## Special Education Staff 2010-2012

<i>all funding sources included FTEs (full-time equivalents)</i>	Hanover			Holliston			Norwell			Scituate			Wayland			State*		
	2010	2011	2012	2010	2011	2012	2010	2011	2012	2010	2011	2012	2010	2011	2012	2010	2011	2012
<i>SPED students in-district</i>	416	404	425	439	439	430	304	318	317	357	381	394	507	487	494	153,949	153,879	152,850
Special education teachers	29.6	38.5	27.4	34.9	32.3	30.8	16.8	17.8	17.8	34.0	23.6	26.1	27.6	27.8	28.0	10,288.6	9,342.6	8,839.4
<i>SPED students:SPED</i>	<i>14.1: 1</i>	<i>10.5: 1</i>	<i>15.5: 1</i>	<i>12.6: 1</i>	<i>13.6: 1</i>	<i>14.0: 1</i>	<i>18.1: 1</i>	<i>17.9: 1</i>	<i>17.8: 1</i>	<i>10.5: 1</i>	<i>16.1: 1</i>	<i>15.1: 1</i>	<i>18.4: 1</i>	<i>17.5: 1</i>	<i>17.7: 1</i>	<i>15.0: 1</i>	<i>16.5: 1</i>	<i>17.3: 1</i>
SPED paraprofessionals	22.8	17.5	13.0	67.4	72.7	70.1	32.1	32.0	35.9	71.4	54.6	59.6	60.4	63.1	64.1	15,510.8	15,914.5	16,233.2
<i>SPED students:SPED</i>	<i>18.3: 1</i>	<i>23.1: 1</i>	<i>32.7: 1</i>	<i>6.5: 1</i>	<i>6.0: 1</i>	<i>6.1: 1</i>	<i>9.5: 1</i>	<i>9.9: 1</i>	<i>8.8: 1</i>	<i>5.0: 1</i>	<i>7.0: 1</i>	<i>6.6: 1</i>	<i>8.4: 1</i>	<i>7.7: 1</i>	<i>7.7: 1</i>	<i>9.9: 1</i>	<i>9.7: 1</i>	<i>9.4: 1</i>
SPED instructional support	3.0	1.0	1.0	2.0	2.9	3.0	2.0	2.0	2.0	--	--	--	5.1	5.0	5.4	1,206.9	1,252.7	1,249.1
<i>SPED students:SPED</i>	<i>139:1</i>	<i>404:1</i>	<i>425:1</i>	<i>220:1</i>	<i>152:1</i>	<i>143:1</i>	<i>152:1</i>	<i>159:1</i>	<i>159:1</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>99:1</i>	<i>97:1</i>	<i>92:1</i>	<i>128:1</i>	<i>123:1</i>	<i>122:1</i>
SPED related staff	8.9	12.0	11.0	15.5	14.4	16.6	9.9	9.0	8.9	9.7	15.5	14.1	8.6	8.6	7.9	3,716.8	4,001.1	4,076.7
<i>SPED students:SPED</i>	<i>47:1</i>	<i>34:1</i>	<i>39:1</i>	<i>28:1</i>	<i>30:1</i>	<i>26:1</i>	<i>31:1</i>	<i>35:1</i>	<i>36:1</i>	<i>37:1</i>	<i>25:1</i>	<i>28:1</i>	<i>59:1</i>	<i>57:1</i>	<i>63:1</i>	<i>41:1</i>	<i>38:1</i>	<i>37:1</i>

## **APPENDIX III**

- III.1 List of Interviewees and Focus Groups**
- III.2 Survey Monkey Survey**
- III.3 Math MCAS**

## **APPENDIX III.1**

### **ADMINISTRATORS AND CENTRAL OFFICE STAFF INTERVIEWED**

Carl Batchelder - Interim Superintendent of Schools

Thomas Raab - High School Principal

Charles Egan - Middle School Principal

Jane DeGrenier - Center/Sylvester Principal

Susan Kustka - K-8 Director of Teaching and Learning

Marilyn Bisbicos – Interim Pupil Personnel Services Administrator (PPS)

Hugh Galligan – High School Assistant Principal

Matt Paquette – High School Coordinator of Humanities

Kathy Elich – High School Coordinator of STEM

Susan Egan – Director of Guidance and School Psychologist for the High School

Martha Zuther - Middle School Assistant Principal Humanities

Jannell Pearson – Middle School Assistant Principal STEM

Emily Baird – Center/Sylvester Assistant Principal

Kelly Lawrence – Director of Extended School Programs

Tricia Smith – Health Services Coordinator

Lynn Petrowski - Director of Food Services

Dawn Nunnally – Secretary to PPS Administrator

Joanne McDonough – Former Business Manager

Janine Smith – Finance Director

Skip Finnell – Interim Business Manager

**APPENDIX III.2**

**SURVEY MONKEY SURVEY**

**Professional Development**

In this survey, professional development is defined as activities that develop an individual's skills, knowledge, expertise and other characteristics as a teacher. Please only consider professional development you have taken after your initial teacher training/education.

1. During the last 18 months, did you participate in any of the following kinds of professional development activities, and what was the impact of these activities on your development as a teacher? For each question below, please mark one choice in part (A). If you answer 'Yes' in part (A) then please mark one choice in part (B) to indicate how much impact it had upon your development as a teacher.

(A) Participation (B) Impact  
Yes No (1) No impact (2) A small impact (3) A moderate impact (4) A large impact

- a) Courses/workshops (e.g. on subject matter or methods and/or other education-related topics)
- b) Education conferences or seminars (where teachers and/or researchers present their research results and discuss educational problems)
- c) College Course
- d) Observation visits to other schools
- e) Participation in a network of teachers formed specifically for the professional development of teachers
- f) Individual or collaborative research on a topic of interest to you professionally
- g) Mentoring and/or peer observation and coaching, as part of a formal school arrangement

2. In all, how many days of professional development did you attend during the last 18 months?

3. Of these, how many days were compulsory for you to attend as part of your job as a teacher?

4. For the professional development in which you participated in the last 18 months, how much did you personally have to pay for? Please mark one choice. None Some All

5. For the professional development in which you participated in the last 18 months, did you receive scheduled time for undertaking the professional development that took place during regular work hours? Please mark one choice. Yes No  Did not take place during regular work hours

6. For the professional development in which you participated in the last 18 months, did you receive a salary supplement for undertaking the professional development activities that took place outside regular work hours?

Please mark one choice.  Yes No  Did not take place outside of regular work hours

7. Thinking about less formal professional development, during the last 18 months, did you participate in any of the following activities, and what was the impact of these activities on your development as a teacher?

For each question below, please mark one choice in part (A). If you answer 'Yes' in part (A) then please mark one choice in part (B) to indicate how much impact it had upon your development as a teacher.

- a) Reading professional literature (e.g. journals, evidence-based papers, thesis papers)
- b) Engaging in informal dialogue with your colleagues on how to improve your teaching

8. Thinking of your own professional development needs, please indicate the extent to which you have such needs in each of the areas listed.

Please mark one choice in each row.

- a) Content and performance standards in my main subject field(s) .....
- b) Student assessment practices .....
- c) Classroom management .....

- d) Knowledge and understanding of my main subject field(s) .....
- e) Knowledge and understanding of instructional practices (knowledge mediation) in my main subject field(s) .....
- f) Teaching students with special learning needs .....
- h) Student discipline and behavior problems .....
- i) Teaching in a multicultural setting.....

Ratings: (A) Participation: 1) No need at all 2) Low level of need 3) Moderate level of need  
4) High level of need

(B) Impact: (1) No impact (2) A small impact (3) A moderate impact (4) A large impact

9. In the last 18 months, did you want to participate in more professional development than you did?  
 Yes  No

***Teacher Observation and Feedback***

10. From the following people, how often have you been observed and/or receive feedback about your work as a teacher in this school?

Please mark one choice in each row.

- a) From the Principal .....  Never Once per year Twice per year Three per year  
Four per year More than 4 per year
- b) Another member of the Administrative Staff
- c) Other instructional leader (e.g., coach, coordinator, or facilitator) .....
- d) Another teacher
- e) External individuals

11. In your opinion, how important were the following aspects considered to be when you received an observation and/or feedback?

Please mark one choice in each row.

- a) Student MCAS test scores .....
- b) Retention and pass rates of students ..
- c) Other student learning outcomes .....
- d) Student feedback on my teaching .....
- e) Feedback from parents .....
- f) How well I work with the principal and my colleagues .....
- g) Innovative teaching practices .....
- h) Relations with students .....
- i) Professional development I have undertaken .....
- j) Classroom management .....
- k) Knowledge and understanding of my main subject field(s) .....
- l) Knowledge and understanding of instructional practices in my main subject field(s).....
- m) Teaching students with special learning needs .....
- n) Student discipline and behavior .....
- o) Teaching in a multicultural setting .....
- p) Other (please specify below) .....

Ratings: (1) I do not know if it was considered (2) Not considered at all  
 (3) Considered with low importance (4) Considered with moderate importance  
 (5) Considered with high importance

12. Concerning the observations and/or feedback you have received at this school, to what extent have they directly led to or involved changes in any of the following?

Ratings: (1) A small change (2) A moderate change (3) A large change (4) No change

- a) Your classroom management practices .....  1
- b) Your knowledge and understanding of your main subject field(s) .....
- c) Your knowledge and understanding of instructional practices in you main subject field(s) .....
- d) A development or training plan to improve your teaching.....
- e) Your teaching of students with special learning needs .....
- f) Your handling of student discipline and behavior problems .....
- g) Your teaching of students in a multicultural setting .....
- h) The emphasis you place upon improving student MCAS test scores in your teaching \_\_\_\_\_

13. How would you describe the observations and/or feedback you received?

- a) The observations and/or feedback contained a judgment about the quality of my work.....
- b) The observations and/or feedback contained suggestions for improving certain aspects of my work.

14. Regarding the observations and/or feedback you received at this school, to what extent do you agree or disagree with the following statements?

- a) I think the observations of my work and/or feedback received was a fair assessment of my work as a teacher . .....
- b) I think the observations of my work and/or feedback received was helpful in the development of my work as a teacher .....
- c) I think the observations of my work and/or feedback received was helpful in improving my teaching techniques

15. We would like to ask you about observations and/or feedback to teachers in this school more generally. To what extent do you agree or disagree with the following statements?

- a) In my opinion, sustained poor performance of a teacher would be tolerated by the rest of the staff.
- b) In this school, teachers will be dismissed because of sustained poor performance. ....
- c) In my opinion, in this school the principal uses effective methods to determine whether teachers are performing well or badly. ....
- d) In my opinion, in this school a development or training plan is established for teachers to improve their work as a teacher. ....
- e) In my opinion, the most effective teachers in this school receive the greatest non- monetary rewards. ....
- f) In my opinion, in this school the review of teachers' work is largely done to fulfill administrative requirements. ....
- g) In my opinion, in this school the review of teachers' work has little impact upon the way teachers teach in the classroom. ....

***Teaching Practices, Beliefs and Attitudes***

16. We would like to ask about your personal beliefs on teaching and learning. Please indicate how much you disagree or agree with each of the following statements.

Please mark one choice in each row.

- a) Effective/good teachers demonstrate the correct way to solve a problem. ....
- b) When referring to a "poor performance", I mean a performance that lies below the previous achievement level of the student. ....
- c) It is better when the teacher – not the student – decides what activities are to be done. ....
- d) My role as a teacher is to facilitate students' own inquiry. ....
- e) Teachers know a lot more than students; they shouldn't let students develop answers that may be incorrect when they can just explain the answers directly. ....
- f) Students learn best by finding solutions to problems on their own. ....

- g) Instruction should be built around problems with clear, correct answers, and around ideas that most students can grasp quickly. ....
- h) How much students learn depends on how much background knowledge they have – that is why teaching facts is so necessary .....
- i) Students should be allowed to think of solutions to practical problems themselves before the teacher shows them how they are solved. ....
- j) When referring to a “good performance”, I mean a performance that lies above the previous achievement level of the student. ....
- k) A quiet classroom is generally needed for effective learning. ....
- l) Thinking and reasoning processes are more important than specific curriculum content. ....

17. How often do you do the following in this school?

Please mark one choice in each row.

- a) Attend staff meetings to discuss the vision and mission of the school .....
- b) Develop a school curriculum or part of it .....
- c) Discuss and decide on the selection of instructional media (e.g. textbooks, exercise books)
- d) Exchange teaching materials with colleagues .....
- e) Attend team conferences for the age group I teach .....
- f) Ensure common standards in evaluations for assessing student progress .....
- g) Engage in discussion about the learning development of specific students  
.....
- h) Teach jointly as a team in the same class .....
- i) Take part in professional learning activities (e.g. team supervision) ...
- j) Observe other teachers’ classes and provide feedback .....
- k) Engage in joint activities across different classes and age groups (e.g. projects) .....
- l) Discuss and coordinate homework practice across subjects .....

18. How strongly do you agree or disagree with the following statements. Please mark one choice in each row about yourself as a teacher in this school?

- a) All in all, I am satisfied with my job. ....  1
- b) I feel that I am making a significant educational difference in the lives of my students. ....
- c) If I try really hard, I can make progress with even the most difficult and unmotivated students.
- d) I am successful with the students in my class. ....
- e) I usually know how to get through to students
- f) Teachers in this local community are well respected. ....
- g) In this school, teachers and students usually get on well with each other. ....
- h) Most teachers in this school believe that students’ well being is important  
.....
- i) Most teachers in this school are interested in what students have to say.  
.....
- j) If a student from this school needs extra assistance, the school provides it.....

19. Below you can find statements about the management of your school. Please indicate your perceptions of the frequency with which these activities took place during the current school year. Please mark one choice in each row.

- a) In meetings, the principal discusses educational goals with teachers. ....
- b) The principal ensures that teachers work according to the school’s educational goals. ....
- c) The principal or someone else in the management team observes teaching in classes. ....
- d) The principal gives teachers suggestions as to how they can improve their teaching. ....
- e) When a teacher has problems in his/her classroom, the principal takes the initiative to discuss the matter. ....

- f) The principal ensures that teachers are informed about possibilities for updating their knowledge and skills. ....
- g) The principal compliments teachers for special effort or accomplishments. ....
- h) In this school, the principal and teachers work on a school development plan. ....
- i) The principal defines goals to be accomplished by the staff of this school. ....
- j) The principal ensures that a task-oriented atmosphere is fostered in this school. ....
- k) In this school, the principal and teachers act to ensure that education quality issues are a collective responsibility. ....

20. We would like to ask you about the main subjects that you teach in this school in this school year. Please indicate the subjects that you teach in this school (indicate only those that individually account for at least 20% of your teaching time in this school). The exact name of your subjects may not appear in the list below each category. If it does not, please mark the category you think best fits the subject.

- |   | Yes                        | No                         |
|---|----------------------------|----------------------------|
| a) Reading, writing and literature .....  | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| Includes reading and writing (and literature), reading and writing as a second language (for non-natives).  |                            |                            |
| b) Mathematics .....  | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| Includes mathematics, mathematics with statistics, geometry, algebra etc.   |                            |                            |
| c) Science .....  | 1                          | <input type="checkbox"/> 2 |
| Includes science, physics, physical science, chemistry, biology, environmental science.   |                            |                            |
| d) Social studies .....   | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| Includes social studies, economics, environmental studies, geography, history, humanities, legal studies, social sciences, philosophy.  |                            |                            |
| e) Modern foreign languages .....   | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| Includes languages different from the language of instruction.  |                            |                            |
| f) Technology .....   | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| Includes orientation in technology, including information technology, computer studies, construction/surveying, electronics, graphics and design, keyboard skills, word processing. |                            |                            |
| g) Arts .....   | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| Includes arts, music, visual arts, practical art, drama, performance music, photography, drawing, crafts.   |                            |                            |
| h) Physical education .....   | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| Includes physical education, gymnastics, dance, health.   |                            |                            |
| i) Practical and vocational skills .....  | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| Includes vocational skills (preparation for a specific occupation)  |                            |                            |

21. How often do each of the following activities happen in this throughout the school year? Please note that not all questions in this section are fully adapted to all sorts of teachers. Therefore, please just answer as best you can.

Please mark one choice in each row.

- a) I present new topics to the class (lecture-style presentation). ....
- b) I explicitly state learning goals. ....
- c) I review with the students the homework they have prepared. ....
- d) Students work in small groups to come up with a joint solution to a problem or task. ....
- e) I give different work to the students that have difficulties learning and/or to those who can advance faster. ....
- f) I ask my students to suggest or to help plan classroom activities or topics. ....
- g) I ask my students to remember every step in a procedure. ....
- h) At the beginning of the lesson I present a short summary of the previous lesson. ....
- i) I check my students' exercise books. ....
- j) Students work on projects that require at least one week to complete. ....
- k) I work with individual students. ....
- l) Students evaluate and reflect upon their own work. ....

- m) I check, by asking questions, whether or not the subject matter has been understood. ....
- n) Students work in groups based upon their abilities. ....
- o) Students make a product that will be used by someone else. ....
- p) I administer a test or quiz to assess student learning. ....
- q) I ask my students to write an essay in which they are expected to explain their thinking or reasoning at some length. ....
- r) Students work individually with the textbook or worksheets to practice newly taught subject matter.
- s) Students hold a debate and argue for a particular point of view which may not be their own .....

22. When teaching your class how often do you use the following approaches to instruction  
 Rating: (1) Rarely or never (2) A few times a month (3) A few times a week (4) Everyday

- a) Whole class (i.e. all students are taught the same thing at the same time)
- b) Ability or achievement grouping

APPENDIX III.3

MCAS Mathematics Test Design by Categories

**Mathematics Reporting Categories**

Grade	Reporting Category	% (+/- 5%)	Total # of Points
3	OPERATIONS & ALGEBRAIC THINKING	30%	12
	NUMBER & OPERATIONS IN BASE TEN	15%	6
	NUMBER & OPERATIONS-FRACTIONS	15%	6
	GEOMETRY	15%	6
	MEASUREMENT & DATA	25%	10
4	OPERATIONS & ALGEBRAIC THINKING	25%	13 - 14
	NUMBER & OPERATIONS IN BASE TEN	20%	10 - 11
	NUMBER & OPERATIONS-FRACTIONS	20%	10 - 11
	GEOMETRY	15%	8
	MEASUREMENT & DATA	20%	10 - 11
5	OPERATIONS & ALGEBRAIC THINKING	20%	10 - 11
	NUMBER & OPERATIONS IN BASE TEN	25%	13 - 14
	NUMBER & OPERATIONS-FRACTIONS	25%	13 - 14
	GEOMETRY	10%	5 - 6
	MEASUREMENT & DATA	20%	10 - 11
6	RATIOS & PROPORTIONAL RELATIONSHIPS	18%	9 - 10
	THE NUMBER SYSTEM	18%	9 - 10
	EXPRESSIONS & EQUATIONS	29%	16
	GEOMETRY	20%	10 - 11
	STATISTICS & PROBABILITY	15%	8
7	RATIOS & PROPORTIONAL RELATIONSHIPS	20%	10 - 11
	THE NUMBER SYSTEM	25%	13 - 14
	EXPRESSIONS & EQUATIONS	20%	10 - 11
	GEOMETRY	20%	10 - 11
	STATISTICS & PROBABILITY	15%	8
8	THE NUMBER SYSTEM	5%	3
	EXPRESSIONS & EQUATIONS	30%	16
	FUNCTIONS	25%	13 - 14
	GEOMETRY	30%	16
	STATISTICS & PROBABILITY	10%	5-6
10 *	NUMBER & QUANTITY	20%	12
	ALGEBRA & FUNCTIONS	30%	18
	GEOMETRY	30%	18
	STATISTICS & PROBABILITY	20%	12

\*Additional information on the reporting categories for the grade 10 mathematics MCAS can be found at:  
<http://www.doe.mass.edu/mcas/transition/2013-14g10math.html?section=list>

## **APPENDIX IV**

- IV.1 Technology Staff Levels
- IV.2 Comparative Staffing
- IV.3 Survey of Information Technology Staff
- IV.4 Consolidation Proposals

**Technology Staff Levels 2013-2014**

*Appendix IV.1*

<b>School Administrative Technology</b>	<b>FY13</b>	<b>FY14</b>	
Director	1.0	Eliminated	Instructional curriculum supervised by K-8 Curriculum Director
Data Analyst	1.0	1.0	
Network Administrator	1.0	1.0	Vacant, to be filled, new job description
Computer Technician/Network Administrator	1.0	1.0	New job description
<b><i>Sub-total Administrative Tech</i></b>	<b>4.0</b>	<b>3.0</b>	

**Town IT Department**

IT manager	1.0	1.0
	<u>5.0</u>	<u>4.0</u>

The IT manager only manages the Town Hall network

The Police, Fire, DPW and possibly other departments have separate networks and staff and/or consultants who manage the network.

**Comparative Staffing**

**Appendix IV.2**

**Administrative Technology**

	<b>Wayland</b>	<b>Weston</b>	<b>Medfield</b>	<b>Bedford</b>	<b>Hanover</b>
<b>Enrollment</b>	2,817	2,414	2,939	2,383	2,684
Director (of Curriculum, Assessment and Technology)			0.3		0.0
Director	1.0	1.0			
Network Manager				1.0	
Database Manager		1.0			1.0
Data Analyst	1.0				
Technology Secretary	0.7				
Systems Administrator-Help Desk	1.0	0.9			
Network Administrator	1.0	1.0	0.8		1.0
Assistant Network Manager		1.0			
Computer Technician	1.0		1.0	3.5	1.0
PC Systems Admin. School to School	1.0				
Technology Specialists at Schools		2.8			
Technology Aides located at School Sites			4.3		
<b>Sub-total</b>	<b>6.7</b>	<b>7.7</b>	<b>6.1</b>	<b>4.5</b>	<b>3.0</b>

Weston's Department also oversees Town IT with an additional two town employees.

+2 town

**Notes:**

All above staff are 12 month employees with the exception of Weston's Technology Specialists and Medfield's Technology Aide's who are 10 month.

10 month employee's FTE is entered as .8

Weston estimates the Technology Specialist to be .7 network administration, .3 instructional technology

Medfield Aides duties include monitoring of student computer labs

**SURVEY OF IT STAFF**

*Appendix IV.3*

<u>District</u>	<u># of Bldgs</u>	<u>Students</u>	<u>IT Staff</u>	
Pembroke	5	3,400	4	Director, Data Manager, 2 Techs
N. Attleboro	10	4,700	5	Director, Tech Specialist(Teacher), 3 Techs
Berkshire Hills	3	1,400	2	Tech/Network Supervisor, Tech
Shirley	2	800	2	Director (\$52,000) Tech Asst (\$37,000)
Nantucket	2	1,300	3.5	Director, Tech Specialist (2 @.50), Repair, Application Support (.75), Help Desk (.75)
Seekonk	4	2,142	5	Director, Network Administrator, 2 Techs, 1 Data Clerk
Woburn	11	4,800	6	Director, 1 Data, 1 Network Spec.,3 Techs
Swansea	6	2,051	4	1 Network Admin/Finance Dept., 2 Techs, 1 Data Manager
W. Bridgewater	4	1,300	0	IT Consultant, EPIMS/SIMS/SIF-school secretaries and Business Manager
Amesbury	5	2,400	3	Director, 2 staff @ 220 days, stipend to City Wide Administrator to assist w/networking issues, etc.
Medfield	5	2,888	2 (7.3)	Network Administrator, Media Tech (classroom= 1 Media Tech Integration Specialist and 4.3 Tech Aides)
Holliston	3	3,000	3+	Business Mgr is Tech Director, 3 Network Engineers

Source: Barbara Durand, Director of Finance & Services, Ashland Public Schools

## Consolidation Proposals

*Appendix IV.4*

### "Brookline" Consolidation

K-8 Curriculum Director	Directs Curriculum Alignment for Educational Technology	
Chief Information Officer	Replaces School Technology Director, oversees Town and School	1.0
Data Manager	Manages School Data, provides expertise to Town	1.0
Network Administrator	Town/School Network Administrator	1.0
Computer Technician	Town/School Computer Technician/Helpdesk	1.0
<b>Town IT Department</b>		
IT manager	Integrated with School Staff to serve Town and School	1.0
Consolidated Total		<u>5.0</u>

### "Weston" Consolidation

Chief Information Officer	Replaces School Technology Director, oversees Town and School, manages curriculum	1.0
Data Manager	Manages School Data, provides expertise to Town	1.0
Network Administrator	Town/School Network Administrator	1.0
Computer Technician	Town/School Computer Technician/Helpdesk	1.0
<b>Town IT Department</b>		
IT manager	Integrated with School Staff to serve Town and School	1.0
Consolidated Total		<u>5.0</u>