



**Massachusetts Title II-D Technology Enhancement
Competitive Grants (Fund Code 170A)
Cumulative Summary Report for 2004-
2006**

Prepared for the Massachusetts Department of Education

November 2006



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Introduction

Purpose, eligibility and awards

Funded through Title II-D of the No Child Left Behind Act, the Massachusetts Department of Education's Technology Enhancement Competitive grant program (fund code 170¹) supports school districts in the development of two-year sustainable projects that use technology to:

- Improve student academic achievement;
- Assist every student in becoming technologically literate;
- Provide high quality professional development that uses research-based instructional strategies to integrate technology effectively into instruction;
- Provide for assessment, data gathering, and analysis to inform and enhance teaching; and
- Provide specialized or rigorous courses through online distance learning.

Eligibility is limited to "high-need local educational agencies" or partnerships including one or more high-need districts. (See appendix for the FY 2005 Title II-D high need criteria and a list of high need districts.) The Department received 69 proposals for projects to begin in the 2004-05 school year. Total requests exceeded \$6.7 million. Of the proposals received, 19 were funded to support 39 districts, including 24 classified as high-need. Total awards were in excess of \$2 million with individual awards ranging from \$99,840 to \$118,300. Table 1 provides an overview of the awards. Brief descriptions of each grant can be found at <http://www.doe.mass.edu/edtech/grants/fy05/fc170b.html>

Table 1: FY 2005 and 2006 Awards for Fund Code 170A

Recipient	Amount	Recipient	Amount
Amherst-Pelham Regional School District	\$200,000	Mohawk Trail Regional School District	\$200,000
Barnstable Horace Mann Charter School	\$200,000	Narragansett Regional School District	\$199,941
Boston Public Schools	\$236,434	New Bedford Global Horace Mann Charter	\$199,949
Clarksburg Public Schools	\$200,000	North Central Charter Essential School	\$198,884
Fall River Public Schools	\$228,300	Northampton Public Schools	\$224,462
Framingham Public Schools	\$228,892	Pittsfield Public Schools	\$224,452
Gateway Regional School District	\$200,000	Springfield Public Schools	\$223,122
Gloucester Public Schools	\$213,720	Westfield Public Schools	\$215,286
Harwich Public Schools	\$218,394	Winchendon Public Schools	\$222,674
Lower Pioneer Valley Educational Collaborative	\$200,000		

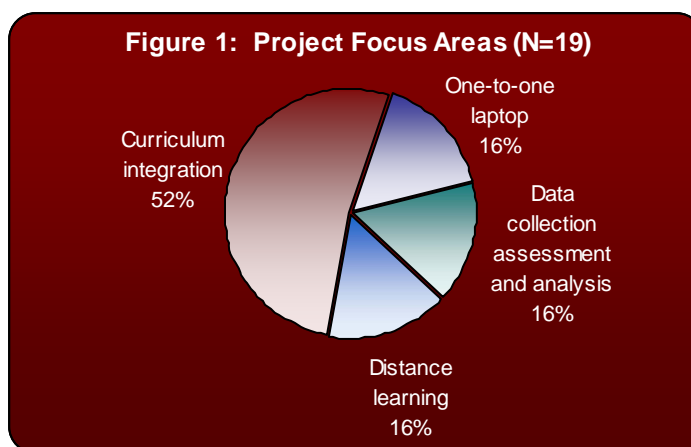
¹ In their first year, projects are funded under Fund Code 170B. Continuation grants for projects' second year are funded under Fund Code 170A. A copy of the FY 2005 RFP for Fund Code 170B can be found at <http://finance1.doe.mass.edu/Grants/grants05/rfp/170B.html>

Project focus areas

Each grant addressed one of the following four focus areas.

- *Curriculum integration*: Developing and implementing effective technology-integrated courses and curricula that align with the Massachusetts Curriculum Frameworks. These content-specific courses and curricula must be designed to help students reach challenging academic standards and become technologically literate.
- *One-to-one laptop*: Curriculum integration projects may include a one-to-one ratio of wireless laptop computers to students for the teaching and learning of English language arts or mathematics in the 7th and/or 8th grade.
- *Data collection, assessment and analysis*: Using appropriate technology for assessment, data gathering, and analysis to inform and enhance teaching and school improvement.
- *Online distance learning*: Using appropriate online distance learning technologies for the delivery of specialized or rigorous courses and curricula for students and teachers, particularly in areas that would not otherwise have access to such courses or curricula due to geographical distances or insufficient resources.

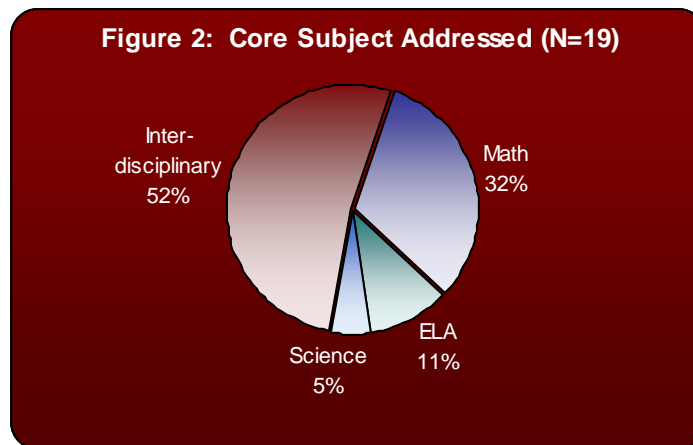
Figure 1 shows the distribution of focus areas among the awarded grants. By far the most prevalent focus area was curriculum integration which was addressed by 10 of the 19 funded projects (52%). The one-to-one laptop, data collection, assessment and analysis, and online distance learning focus areas were each addressed by three projects (16%).



Core subject areas and grade-levels

Grantees were also asked to identify the core subject area(s) that would be addressed by their projects. Figure 2 shows the distribution of subject areas among the awarded grants. Projects in the data collection, assessment and analysis focus area may have involved all subject areas or none. Ten of the projects (53%) were interdisciplinary in nature with six addressing all subject areas, three focused on both English language arts and mathematics, and one science, technology, engineering and math. Six of the projects (32%) addressed mathematics, two (11%) English language arts, and one (5%) science. Looking at the core subject areas addressed by project focus area reveals that:

- Interdisciplinary and math projects each accounted for 36% of the curriculum integration grants followed by 18% English language arts. The one project addressing science was a curriculum integration project.
- All of the assessment, data collection and analysis projects and online distance learning projects were interdisciplinary in nature.
- Two of the three one-to-one laptop projects were focused exclusively on mathematics and the third focused on both English language arts and mathematics



There is a wide variation in the grade-levels impacted by each project. Table 2 shows the number and percentage of projects impacting each of the following grade-level categories: elementary (PreK-5), middle (6-8), and high school (9-12). These groupings are consistent with those generally used by the US Department of Education for reporting related to No Child Left Behind. The reader should note that many projects impacted students at multiple grade-levels, thus the percentages shown sum to more than 100 percent.

Table 2: Grade-levels Impacted		(N=19)
Grade-level	Number of projects	Percentage of projects
Elementary School (PreK-5)	8	42%
Middle School (6-8)	12	63%
High School (9-12)	6	32%

Looking at the grade-levels impacted by project focus area reveals that:

- Nearly three-quarters of the curriculum integration projects addressed middle school grades, more than half impacted elementary and about one-quarter impacted high school students.
- Two of the three one-to-one laptop projects impacted all grade-levels. The third was aimed at middle school students.
- Two of the three assessment, data collection and analysis projects addressed all grade-levels. The third was focused on 5th and 6th grades.
- The online distance learning projects impacted middle and high school students (grades 8-9 and 9-12).

About this report

The remainder of this report summarizes data gathered through year-end reports submitted by each NCLB Title IID Technology Enhancement Competitive Grant Program (Fund Code 170A) grantee using the Survey Tool the Department's Massachusetts Online Network for Education (MassONE)². The reporting template was available from August 1 through September 11, 2006. Reported expenditures are based on grantee estimates as the two year project cycle was coming to an end. At the time not all of the project accounting had been completed. As such, dollar figures in this report are generally rounded so as not to indicate inappropriate levels of accuracy.

² Formerly the Virtual Education Space (VES)

Budget and Expenditures

For fiscal years 2005 and 2006, a total of about \$3.8 million was awarded to the grantees. At the end of the two year program cycle, approximately \$3.5 million was spent, leaving less than 8% of the total FY 2005 and 2006 available funds unspent. Figure 3 and the accompanying table display the proportion of expenditure by category. At 40%, the largest expenditure category was professional development. This exceeds the federal guidelines that require at least 25% of Title II-D funds to be spent for professional development. At 34% and 18% respectively, hardware purchases and administrative costs (including evaluation) also accounted for a significant portion of the total expenditures. Only 8% of the funding was used to purchase software.

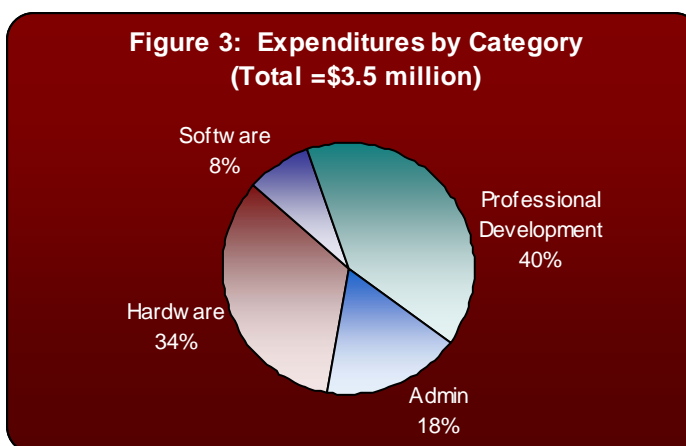


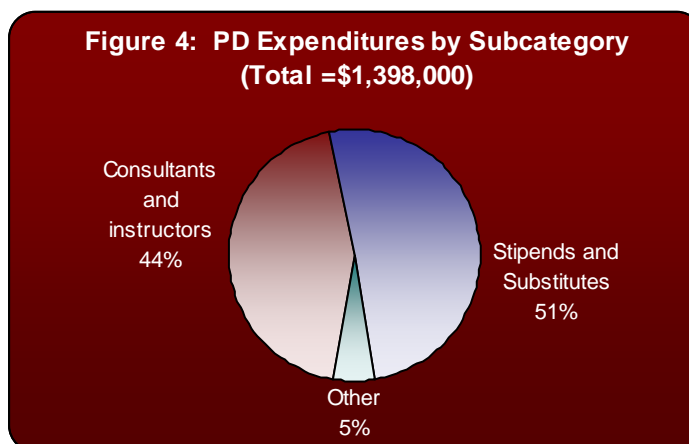
Table 3: Approximate Expenditures by Category

Category	Approximate Expenditure	Percent of Award
Professional Development	\$1,398,000	40%
Hardware	\$1,171,000	34%
Administrative	\$616,000	18%
Software	\$286,000	8%
TOTAL	\$3,471,000	

Professional Development Expenditures

Professional development expenditures were reported by all 20 grantees. On average, grantees spent almost \$70,000 on professional development. As illustrated by Figure 4, a further breakdown of total professional development expenditures reveals that:

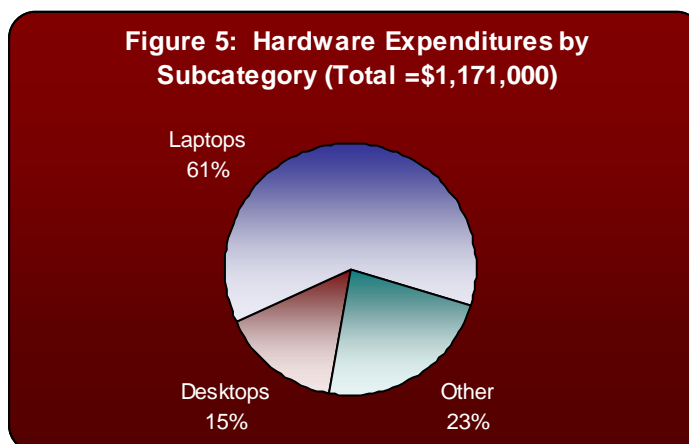
- 51% (\$711,000) was used for participant stipends or substitute teachers, which allowed teachers to participate in professional development during the regular school day.
- 44% (\$613,000) was used for consultant and instructor costs.
- 5% (\$74,000) was used for other expenditures including: room accommodations, online courses, and private school expenses.



Hardware Purchases

Hardware purchases were reported by all 20 of the grantees. On average, these grantees spent more than \$58,000. As illustrated by Figure 5, a further breakdown of total hardware expenditures reveals that:

- 61% (\$721,000) was used for purchasing laptop computers. Interestingly, only 23% (\$211,000) of the amount spent on laptops can be attributed to the three one-to-one laptop projects.
- 15% (\$180,000) was used for purchasing desktop computers.
- 23% (\$270,000) was used for other hardware purchases including networking hardware, assistive technology, printers, digital imaging equipment, projectors, equipment carts and flash drives.

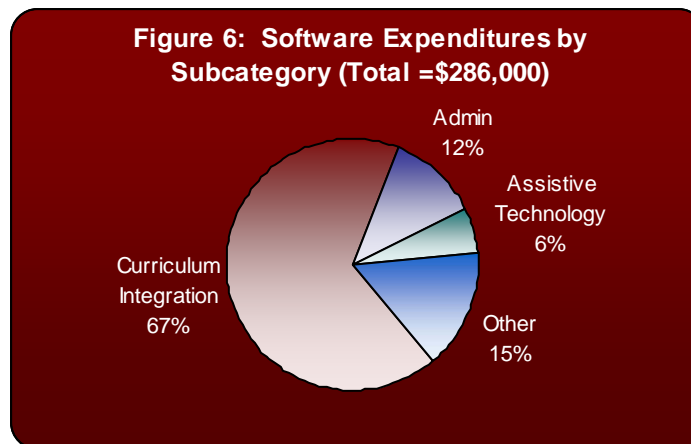


Software Purchases

Software purchases were reported by 18 grantees. Among them the average software purchase was about \$15,000. As illustrated by Figure 6, a further breakdown of total software expenditures reveals that:

- 67% (\$192,000) was used to purchase curriculum integration software.
- 12% (\$34,000) was used to purchase administrative software.
- 6% (\$16,000) was used to purchase assistive technology software.

- 15% (\$44,000) was used for other software purchases.



Administrative Expenditures

Remaining expenditures can be described as follows:

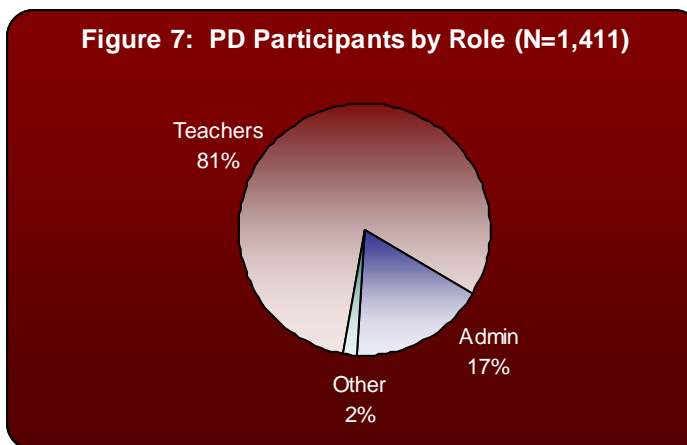
- 8% of total expenditures (\$262,000) are attributable to program evaluation costs. Expenses in this subcategory averaged about \$13,000.
- 4% of total expenditures (\$150,000) are attributable to project coordination and administrative costs. Expenses in this subcategory were reported by 12 grantees and averaged about \$13,000.
- 6% of total expenditures (\$204,000) are attributable to other costs such as supplies, maintenance and support and travel.

Program Activities

Professional Development Activities

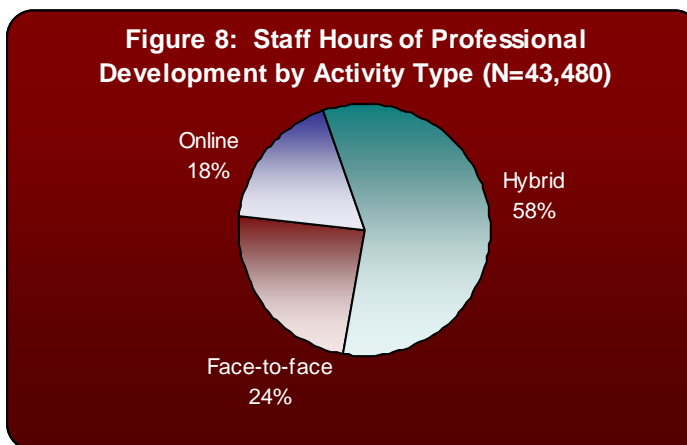
During FY 2005 and 2006, Fund Code 170A supported more than 1,220 professional development events. The average number of events was 61 per project with actual numbers ranging as high as 200 events. Overall the grants provided professional development to 2,760 individuals. The average number of professional development participants was 138 per project with actual participation ranging from as few as three to as many as 328 individuals. Grantees report a total of 1,402 individuals completing at least 45 hours of grant-funded professional development. On average each grant had 70 participants completing 45 hours or more with actual figures ranging from 12 to 328 individuals. As shown in figure 7, 81% of the 170B professional development participants were teachers and 17% were administrators.

Figure 7: PD Participants by Role (N=1,411)



Grantees were also asked to report on the number of staff hours of professional development provided for three distinct types of professional development: face-to-face activities such as workshops, seminars and study groups; embedded activities such as coaching or mentoring; and online training. In total, the grantees provided more than 43,000 staff hours of training. As shown in figure 8, 24% of the hours were provided through face-to-face activities, 18% through online professional development, and 58% through hybrid activities.

Figure 8: Staff Hours of Professional Development by Activity Type (N=43,480)

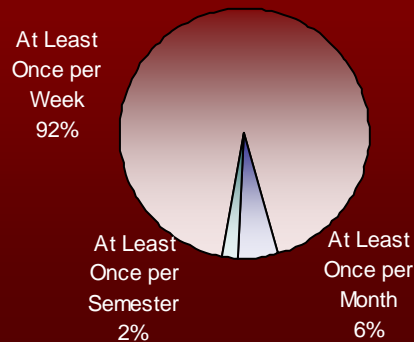


Other Implementation Activities

One open-ended question asked grantees to describe how their programs were utilizing MassONE. Four grantees reported that they only used MassONE for grant-oriented communication and reporting with the DOE. Six grantees reported that they used MassONE for administering the TSAT. Eight grantees have used MassONE for general research, communication and/or survey purposes such as creating lesson plans, posting meeting materials, and intra-group communication via forums. Three grantees reported using MassONE for online training sessions, workshops, and/or graduate courses. Among the three grantees that fell into the “online distance learning” focus area, one reported that they had completed their migration over to MassONE, one reported that they are in the process of migrating, and one reported that they will not be migrating over to MassONE.

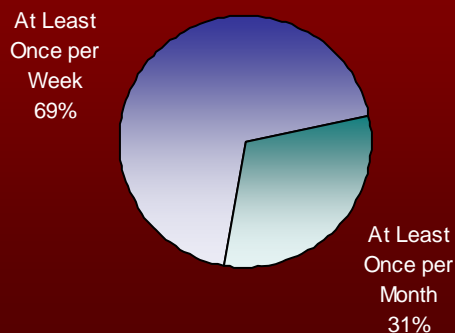
The three grantees that fell into the one-to-one-laptop focus area reported on the extent to which their teachers had applied the professional development in their classrooms. All 109 teachers for which data were reported had applied the professional development: 92% at least once per week, 6% at least once per month, and 2% at least once per semester.

Figure 9: To What Extent Have Teachers Applied PD in Their Classrooms (N=109)



Grantees that fell into the technology for assessment and data focus area were asked to report to what extent participants had used the system. One of the three grantees in this area reported information for 128 participants, all of whom had used their system. Of these, 69% used the system at least once per week and 31% at least once per month.

Figure 10: Participant Use of System (N=128)



Program Impact

Impact on Staff

Technology Use Survey

Each grantee was asked to administer the “Title II-D Technology Use Survey” to each of its participating teachers and administrators for their year-end report. Participants were asked to answer the same series of questions related to their activities during both the 2004-2005 and 2005-2006 school years. While the nature of different grant types (i.e., data collection as opposed to curriculum integration projects) may have effected some changes in technology use, the differences presented below are not directly attributable to grant activities. However, comparing responses for the two points in time may provide some insight into how participants’ technology usage changed from the first to second years of the grant. Table 4 summarizes responses from both points in time.

Table 4: Technology Use Survey Responses			
Item		2004-2005 Response (N=377)	2005-2006 Response (N=467)
How often do you use technology for professional activities such as lesson planning, administrative tasks, communications and collaboration?			
	Nearly every day	77%	64%
	About once a week	10%	27%
	About once a month	3%	6%
	Rarely or never	2%	2%
	No response	8%	1%
How often do you use instructional technology with students for activities such as research, multimedia, simulations, data interpretation, communications and collaboration?			
	Nearly every day	28%	28%
	About once a week	44%	39%
	About once a month	11%	22%
	Rarely or never	8%	10%
	No response	9%	1%
How often do your students use technology at school for activities such as research, multimedia, simulations, data interpretation, communications and collaboration?			
	Nearly every day	32%	25%
	About once a week	36%	43%
	About once a month	12%	13%
	Rarely or never	7%	5%
	No response	13%	13%
How often do you use technology to support data-driven decision making?			
	Nearly every day	12%	14%
	About once a week	15%	16%
	About once a month	29%	31%
	Rarely or never	29%	28%
	No response	15%	10%

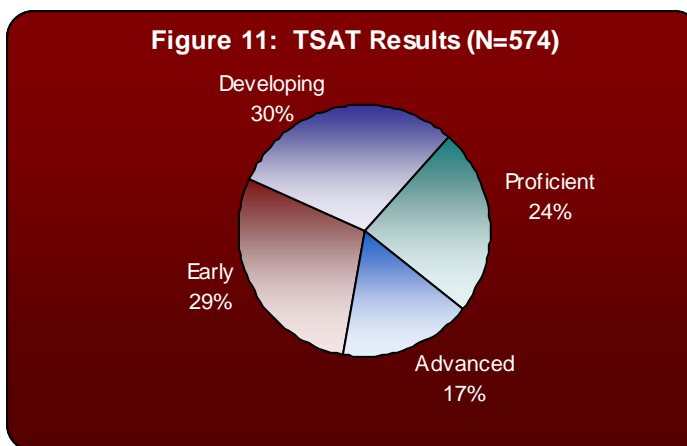
In the second year of the grant, at least weekly:

- 91% of respondents reported using technology for professional activities.
- 67% reported using instructional technology with their students.
- 68% have students using technology for school related activities.
- 30% reported that they use technology to support data-driven decision making.

Technology Self-Assessment Tool (TSAT)

In total, 18 of the 19 grantees reported that 690 teachers had completed the TSAT³. Results were reported for 574 teachers⁴. As displayed in figure 11:

- 29% were at the early technology level – 16 percentage points less than in the previous year.
- 30% were at the developing technology level – 7 percentage points higher than in the previous year.
- 24% were at the proficient level – 8 percentage points higher than in the previous year.
- 17% were at the advanced level – one percentage point higher than in the previous year.



³ One grantee (Northampton) reported that none of their participating teachers had taken the TSAT.

⁴ Amherst-Pelham, Harwich, and North Central Charter Essential School reported that 116 teachers took the TSAT, but did not report any results.

Impact on Students

Fourteen of the nineteen grantees reported that their project directly involves students. Table 5 summarizes the available information on students directly involved by the projects. Each grantee was also asked to estimate the level of student technology literacy for the students involved in their project.

Table 5: Students Directly Involved

Grade-levels	Number of Grantees	Number of Students	% of Students Mastering 90 to 100% of Skills	% of Students Mastering 50 – 89% of Skills	% of Students Mastering 0 – 49% of Skills
PreK-4	5	958	39%	47%	14%
5-8	12	3,961*	26%	47%	27%
9-12	5	2,355**	28%	46%	25%

*The level of technology literacy was reported for 3,921 students.

**The level of technology literacy was reported for 1,480 students.

Appendix: FY 2005 Title II-D High Need School Districts

The term high-need school district means a school district that meets two conditions:

- (A) The district has at least 12% of the student population or at least 1000 children come from families with incomes below the poverty line (based on the U.S. Census)⁵.
- (B) The district operates one or more schools identified under section 1116 or the district has a substantial need for assistance in acquiring and using technology, based on the guidelines stated in the “Local Technology Benchmark Standards for 2003”.

Public Schools

Amherst	Easthampton	Haverhill	Marlborough	Provincetown	Tisbury
Avon	Everett	Holyoke	Methuen	Quincy	Ware
Barnstable	Fall River	Hull	Milford	Revere	Wareham
Boston	Falmouth	Ipswich	New Bedford	Salem	Watertown
Bourne	Fitchburg	Lenox	North Adams	Savoy	Webster
Brockton	Framingham	Lawrence	Northampton	Somerville	Wellfleet
Cambridge	Gardner	Leominster	Oak Bluffs	Southbridge	Westfield
Chelsea	Gloucester	Lowell	Oxford	Springfield	West Springfield
Chicopee	Greenfield	Lynn	Pittsfield	Sturbridge	Winchendon
Clarksburg	Harwich	Malden	Plymouth	Taunton	Worcester

Regional School Districts

Adams-Cheshire	Hawlemont	New Salem-Wendell
Athol-Royalston	Martha’s Vineyard	Northampton-Smith
Dennis-Yarmouth	Mohawk Trail	Quaboag Regional
Gill-Montague	Narragansett	

Agricultural/Vocational Technical School Districts

Bristol County Agr	Greater Lowell Voc Tec	So Middlesex Voc Tech Reg
Essex Agr Tech	Greater New Bedford Northern	Southeastern Reg Voc Tech
Franklin County	Berkshire Voc	Southern Worcester Cty VT
Greater Fall River	North Shore Reg Voc	Whittier Voc
Greater Lawrence RVT	Pathfinder Voc Tech	

Charter Schools

Abby Kelley Foster Regional CS	Community Day CS	North Central Charter ESS
Academy of Pacific Rim CS	Conservatory Lab CS	River Valley CS
Atlantis CS	Edward Brooke CS	Robert M. Hughes Academy CS
Barnstable Grade 5 HMCS	Health Careers Academy HMCS	Roxbury Prep CS
Benjamin Banneker CS	Lawrence Family Development CS	S.Boston Harbor Academy CS
Boston Evening Academy HMCS	Lowell Middlesex Academy CS	Sabis International CS
Boston Renaissance CS	Media & Tech CS	Seven Hills CS
Champion HMCS	Neighborhood House CS	Somerville CS
City On A Hill CS	New Bedford Global Learn. HMCS	Uphams Corner CS
Codman Academy CS	New Leadership HMCS	

⁵ The FY 2005 High Need School Districts list is the same as the FY 2004 list because the new U.S. Census data has not been published at the time the FY 2005 Request for Proposals were issued.

