



The Research Bureau

Benchmarking Public Education in Worcester: 2009

Report 09-05

August 2009

Dear Citizen,

This is the seventh annual report on the status of public education in Worcester prepared by The Research Bureau. Much of the discussion in this report examines student, school, and district performance in relation to the standards implemented under the Massachusetts Education Reform Act of 1993 and the Federal No Child Left Behind (NCLB) education reform legislation, which was signed into law in 2002 in an effort to close the achievement gap between minority and low-income students on the one hand and their more-advantaged counterparts on the other. NCLB requires states to implement statewide accountability systems covering all public schools and students to ensure that all students, including subgroups such as racial and ethnic minorities, students with limited English proficiency, and students with disabilities reach proficiency in English language arts and mathematics by 2014.

*It is important to bear in mind that no single indicator should be considered in isolation. In other words, context is important, and the indicators discussed in this report are interrelated. For example, students with high rates of absenteeism (**Indicator 1**) may show lower levels of academic achievement as measured by MCAS tests (**Indicator 3**).*

We wish to thank the George I. Alden Trust for its sponsorship of this report. We hope that this report will encourage widespread discussion about the future of public education in Worcester.

Sincerely,



Sandra Dunn, Chairman of the Board



Roberta R. Schaefer, Ph.D., President & CEO



Laura M. Swanson, Project Manager

OVERVIEW OF INPUTS

Table 1 highlights the five-year trend in the Worcester Public School District's (WPS) budget, staffing levels, and student enrollment, as well as enrollment in the two public charter schools located in Worcester. (FY05 through FY09 corresponds to the years for which performance data are available and discussed in later sections of this report.) On October 1, 2008, the District's 44 schools serving grades pre-K through 12 enrolled 23,109 students, while Worcester's two charter schools enrolled an additional 2,105 students. (As discussed further in **Indicator 5**, these charter schools are state-funded public schools that are not operated by the Worcester Public Schools District or governed by the Worcester School Committee.)

As in other urban districts, students in the WPS are demographically diverse. Over one-third (36%) of the students enrolled in 2007-08 were Hispanic, 12.9% were African American, 7.8% were Asian and 40.7% were Caucasian. Almost 40% of students spoke a first language other than English, and 21% of all students could not perform ordinary classroom work in English (limited English proficient). Nearly two-thirds of WPS students are from low-income families, and 20% of students have an Individualized Education Program (IEP), qualifying them for special-education services.

From FY05 to FY09, the WPS approved budget increased by 15%, or almost \$34 million, from \$222.9 million in FY05 to \$256.6 million in FY09. When adjusting for inflation over this period, however, the budget increased by 2.9%. In FY09, the WPS budget represented over 50% of expenditures for the city of Worcester. The City's annual funding contribution to the WPS rose by 23% from FY05 to FY09, from \$76 million to \$94 million. When adjusted for inflation, the City's contribution increased by 10% from FY05 to FY09. At the same time, enrollment has declined, with 1,429 (6%) fewer students enrolled on October 1, 2008, compared to just four years earlier. When adjusted for inflation, per pupil spending actually rose by more than 9% during that period, from \$10,168 to \$11,105.

Despite a 4% reduction in overall staffing levels during this period, the budget allocation for employee salaries and benefits grew by more than \$20 million, or about 11%. According to data from the Massachusetts Department of Education, the average salary for teachers in Worcester has increased by more than 28% from FY04 to FY08, from \$54,528 to \$70,106. Among select urban districts in the state, just Boston (\$76,108) and New Bedford (\$71,638) had average teacher salaries that were more than Worcester's in FY08. However, over the past two years, as a result of negotiated increases in the employee contribution, the proportion of the WPS budget allocated to health insurance costs has decreased, from 18% in FY07 (\$42.6 million) to 14% in FY09 (\$36.2 million).

Enrollment in Worcester's two public charter schools increased by 31% from FY05 to FY09.¹ The 6% decline in students enrolled in the WPS (as noted above) can be partially explained by

¹ AKFCS's first high school graduating class was in 2006.

students transferring to these charter schools. Like the Worcester Public Schools, the two charter schools are ethnically diverse. Forty-eight percent of the students enrolled at the Seven Hills Charter School in 2007-08 were Hispanic, 31% were African American and 14% were Caucasian. Three-quarters of the school's students were from low-income families, about 9% were students whose first language was not English and who could not perform ordinary classroom work in English, and 12.7% of the school's students qualified for special education services. At Abby Kelley Foster Charter School, 26% of the students were African American, about 25% were Hispanic, and 41% were Caucasian. More than half (53%) of the school's students were from low-income families, about 4% did not speak English well enough to perform ordinary classroom work in English, and 6.6% of students qualified for special education services.

Payments made by the state to Charter schools enrolling students whose home district is the WPS have increased by more than 50% from FY05 to FY09, or about 37% when adjusted for inflation. The WPS district is partially reimbursed by the State for students attending charter schools instead of district schools. (See <http://www.doe.mass.edu/charter/> for additional information about charter school funding regulations.)

Table 1: Input Indicators for the Worcester Public School District and Abby Kelley Foster Regional and Seven Hills Charter Schools

	FY05	FY06	FY07	FY08	FY09	% Change FY05-FY09
Student Enrollment						
WPS October 1 Enrollment	24,538	24,023	23,603	22,876	23,109	-5.82%
Approved Budget						
WPS Budget (Approved)	\$222,868,164	\$230,478,935	\$237,047,827	\$248,210,740	\$256,626,552	15.15%
WPS Budget (Inflation Adjusted)	\$249,502,281	\$248,557,039	\$249,196,647	\$251,610,887	\$256,626,552	2.86%
Salaries	\$148,342,903	\$147,654,076	\$146,955,036	\$157,610,541	\$166,179,943	12.02%
Salaries as % of Budget	67%	64%	62%	63%	65%	
Average Salary (All Positions)	\$52,829	\$54,185	\$54,998	\$59,996	\$61,639	16.68%
Health Insurance Costs	\$34,364,865	\$37,442,442	\$42,555,528	\$39,797,167	\$36,235,209	5.44%
Health Insurance as % of Budget	15%	16%	18%	16%	14%	
Retirement	\$9,428,242	\$9,893,271	\$10,292,369	\$10,304,470	\$10,230,553	8.51%
Total Salaries and Benefits	\$192,136,010	\$194,989,789	\$199,802,933	\$207,712,178	\$212,645,705	10.67%
Total Salaries and Benefits as % of Budget	86%	85%	84%	84%	83%	
Tuition (Special Education Placements)	\$10,117,544	\$12,234,722	\$12,234,722	\$13,109,355	\$14,133,404	39.69%
Staffing						
Total Staff (FTE)	2,808	2,725	2,672	2,627	2,696	-3.99%
School and District Administrators	95.25	96.25	94.25	97.00	96.00	0.79%
Teachers	1,913	1,876	1,864	1,822	1,844	-3.61%
Other	800	753	714	708	756	-5.47%
Funding/Reimbursement						
Chapter 70 State Aid (Actual)	\$158,861,691	\$161,059,359	\$167,480,913	\$174,025,314	\$180,493,947	13.62%
Chapter 70 State Aid (Inflation Adjusted)	\$177,846,640	\$173,692,391	\$176,064,394	\$176,409,222	\$180,493,947	1.49%
City Contribution (Actual)	\$75,954,193	\$80,015,430	\$79,337,953	\$89,097,892	\$93,686,137	23.35%
City Contribution (Inflation Adjusted)	\$85,031,186	\$86,291,610	\$83,404,063	\$90,318,411	\$93,686,137	10.18%
Charter Schools						
AKFCS Enrollment, October 1	1,087	1,175	1,176	1,426	1,425	31.09%
Seven Hills Enrollment, October 1	667	661	686	678	680	1.95%
Total Charter Enrollment (Worcester), October 1	1,754	1,836	1,862	2,104	2,105	20.01%
Charter School Payments (Actual) *	\$13,689,279	\$15,682,993	\$16,173,909	\$18,812,670	\$20,989,623	53.33%
Charter School Payments (Inflation Adjusted)*	\$15,325,232	\$16,913,122	\$17,002,830	\$19,070,378	\$20,989,623	36.96%

Data Sources: (1) October 1 Enrollment Data: Mass DOE Enrollment By Grade Reports for the years 2004-05 through 2008-09, available at <http://www.doe.mass.edu>

(2) Budget Data, Staffing, and Funding: Worcester Public Schools Annual Budgets

Salaries line does not include grant-funded positions.

*In FY07, charter school payments made to the City were moved from the Worcester Public Schools budget to the City of Worcester budget.

INDICATOR 1: ATTENDANCE RATES AND DROPOUT RATES

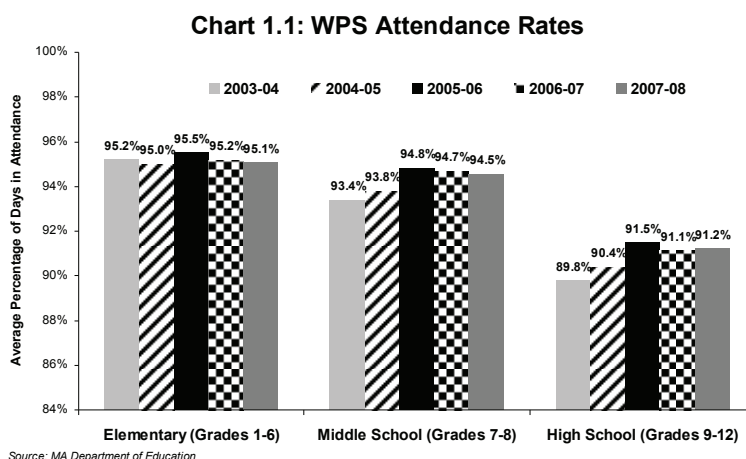
Why are they important?

While teacher effectiveness, quality of school buildings, and the availability of textbooks and computers are important elements that contribute to student academic achievement, students must consistently attend classes in order to receive maximum benefit from these resources. Students who are frequently absent from school are at higher risk for poor academic performance, repeating a grade, and dropping out of school.

Students who drop out of high school can expect lower lifetime earnings and fewer opportunities in today’s labor market. According to the Bureau of Labor Statistics, during 2008, among full-time workers age 25 and over nationwide, median weekly earnings for high school graduates (no college) were 36% higher than those of high school dropouts (\$618 per week versus \$453).²

What are the trends in Worcester?

As shown in **Chart 1.1**, during the 2007-08 school year, on average, WPS elementary students attended school 95.1% of the days they were enrolled, WPS middle school students attended slightly less often (on average, 94.5% of the days enrolled), and high school students had the poorest attendance rate (91.2%).^{3,4} Attendance rates at each of these levels were very similar to those for the previous year. **Appendix B** (pp. 31-32), shows attendance rates and average number of days absent per pupil for each school in the WPS District. During the 2007-08 school year, the average number of days absent per pupil varied substantially, from 5 days at the Midland Street School to 17.6 days at South High Community School. The district-wide average during this period was 10.1 days.



² <http://www.bls.gov>

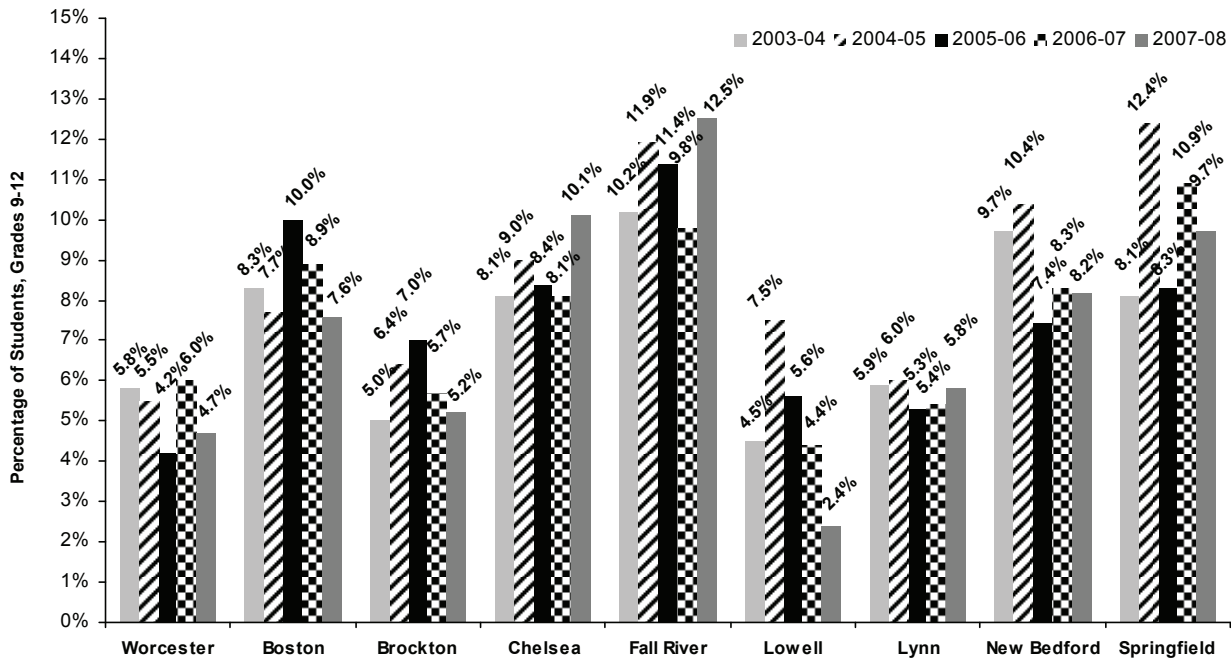
³ The Massachusetts Department of Education calculates attendance rates for students in grades 1 – 12 only. Therefore, attendance rates at the elementary school level do not include pre-K or kindergarten students.

⁴ Because Claremont Academy and University Park Campus School include grade spans beyond the traditional categories of elementary, middle, and high school, they are not included in **Chart 1.1**.

Dropout Rate

The dropout rate reflects the percentage of students in grades 9-12 who dropped out of school between July 1 and June 30 prior to the listed year and did not return to school or transfer to another school by the following October 1.⁵ During the 2007-08 school year the WPS dropout rate was 4.7% (representing about 327 students), a decrease from the 2006-07 school year when the rate was 6.0%, but slightly higher than the 2005-06 rate of 4.2%. While Worcester’s rate was higher than the statewide average of 3.4% in 2007-08, it was below those of several other urban districts in Massachusetts. **Chart 1.2** shows dropout trend data for a number of such districts. Statewide, the dropout rate also decreased from 2006-07 to 2007-08 (from 3.8% to 3.4%).

Chart 1.2: High School Dropouts, 2003-04 to 2007-08



Source: MA Department of Education.

As shown in **Table 1.1**, in 2007-08, Worcester Technical High School had the lowest dropout rate among Worcester schools at 1.3% (16 students); this was the school’s lowest rate during the past five years. In prior years, University Park Campus School had the lowest dropout rate among Worcester schools. During the 2007-08 school year its rate increased slightly (1.4%) owing to 2 students dropping out. Burncoat Senior High School experienced an increase in its dropout rate from 2006-07 to 2007-08 (from 7.3% to 8%), and in 2007-08 had the highest dropout rate in the district. However, dropout rates at Claremont Academy and Doherty, North, and South High Schools all declined from 2006-07 to the 2007-08 school year. From 2006-07 to 2007-08, South High School experienced the largest decrease in its dropout rate, from 8.2% to

⁵ The Massachusetts Department of Education requires districts to count a student as a dropout if the district is unable to determine that the student re-enrolled in another district.

5.4%. Doherty High School’s rate of 2.9% during the 2007-08 school year was its lowest over the past five years.

Table 1.1: High School Dropouts, WPS

School	2003-04		2004-05		2005-06		2006-07		2007-08	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Worcester Technical High School*	48	4.7%	35	3.4%	19	1.8%	25	2.1%	16	1.3%
University Park Campus School	2	1.5%	1	0.7%	1	0.7%	0	0.0%	2	1.4%
Doherty Memorial High School	56	3.8%	64	4.2%	67	4.3%	76	4.9%	44	2.9%
Claremont Academy**	3	1.9%	5	2.4%	2	1.0%	8	3.9%	7	3.2%
South High Community School	100	7.0%	103	6.8%	82	5.3%	117	8.2%	76	5.4%
North High School	109	8.8%	97	7.6%	61	4.9%	84	7.0%	70	6.1%
Burncoat Senior High School	77	5.9%	79	5.6%	71	5.0%	100	7.3%	102	8.0%
<i>District Total</i>	<i>347</i>	<i>5.8%</i>	<i>392</i>	<i>5.5%</i>	<i>303</i>	<i>4.2%</i>	<i>424</i>	<i>6.0%</i>	<i>327</i>	<i>4.7%</i>

* Formerly known as Worcester Vocational High School ** Formerly known as Accelerated Learning Lab
 Source: MA Department of Education.

What does this mean for Worcester?

Research has documented that regular attendance is an important factor in student academic performance. The WPS district has shown the greatest improvement at the high school level over the past five years, where attendance rates have increased by 1.4 percentage points. However, attendance rates remain the lowest among students at Worcester’s four comprehensive high schools (Burncoat, Doherty, North, and South High Schools) with the average number of absences per pupil at these schools ranging from 13.7 to 17.6 days in 2007-08. In other words, students in these schools missed an average of about three weeks of school per year. According to the WPS, improved school attendance is largely due to the district’s use of Connect-ED™ to improve school-to-home communication. Connect-ED™ enables administrators to record, schedule, send, and track personalized voice messages to thousands of parents in minutes, including messages to inform parents that their child is absent from school on a given day. In the past three years, more than 1,000 WPS students have dropped out of grades 9-12. However, the dropout rate has been decreasing or staying the same in most high schools in the district. Some of these dropouts may have re-enrolled in schools outside of Massachusetts or the US, and some will ultimately earn a high school degree and may even pursue further education. However, those who do not complete high school face diminished job prospects and earnings potential in today’s knowledge-based economy.

Worcester’s Comprehensive Skills Center has proved to be a successful model for attracting former dropouts back into the public school system. It provides high school dropouts an opportunity to return to school and earn their high school diploma; it also assists students who are currently enrolled in one of the comprehensive high schools but have been identified as being “at risk” of dropping out of school. In 2007, the program provided services for approximately 250 students, and approximately 80 dropouts served by the program graduated with a regular diploma.

INDICATOR 2: STUDENT MOBILITY AND STABILITY RATES

Why are they important?

Student mobility (also referred to as student turnover or transience) refers to the practice of students changing schools during the school year or between school years.⁶ While there are many and varied causes of student mobility, researchers have found that high student mobility can have significant adverse effects on student achievement among both the mobile students and their non-mobile peers.⁷ A student who transfers from one school to another during the academic year may be exposed to different curricula, textbooks, and instructional styles, and may also experience difficulty adjusting to a new peer group. Non-mobile students in high-turnover settings may also lose out if their teachers are forced to repeat lessons or take time away from instruction to familiarize new students with the classroom routine. Schools facing high turnover may experience low teacher morale, a slower instructional pace, and added administrative burdens.

Stability rates describe the percentage of students who remain in a classroom from the beginning to the end of a school year. It is possible for a school with a high mobility rate (many students entering and exiting) to also have a high proportion of students who have stable enrollment throughout the year. Additionally, two schools with similar stability rates may have dissimilar mobility rates if one experiences a higher rate of students entering and/or leaving the school over the course of a year than the other.

What are the trends in Worcester?

Mobility

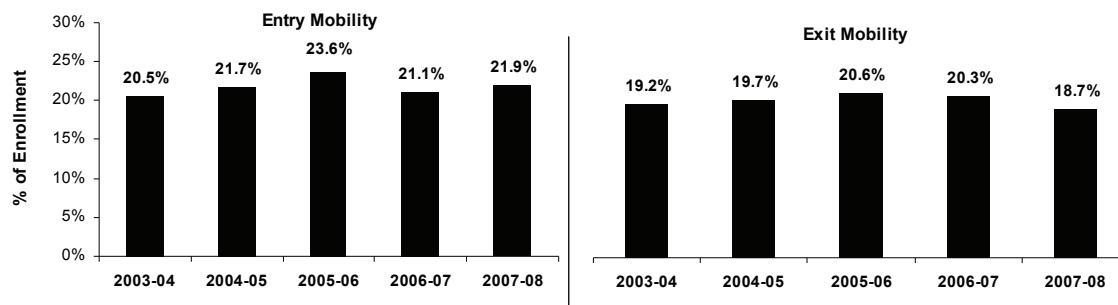
As calculated by the WPS, a school's mobility rate reflects the number of student transfers into or out of (entries and exits) the school during a 12-month period (October 1 of the initial year to October 1 of the following year), expressed as a percentage of total school enrollment on October 1 of the initial year. Because some students may experience multiple moves during a school year, mobility rates do not necessarily provide an unduplicated count of students transferring during a year. Mobility calculations include both transfers occurring within the district and transfers into or out of the district. As shown in **Chart 2.1**, from October 1, 2007 to October 1, 2008, the district-wide entry mobility rate was 21.9%, while the exit mobility rate was 18.7%.⁸

⁶ Mobility rates exclude "normal promotions" when students are promoted from elementary to middle or middle to high school.

⁷ David Kerbow, "Patterns of Urban Student Mobility and Local School Reform." *Journal of Education for Students Placed at Risk 1(2)* (1996): 147-169.

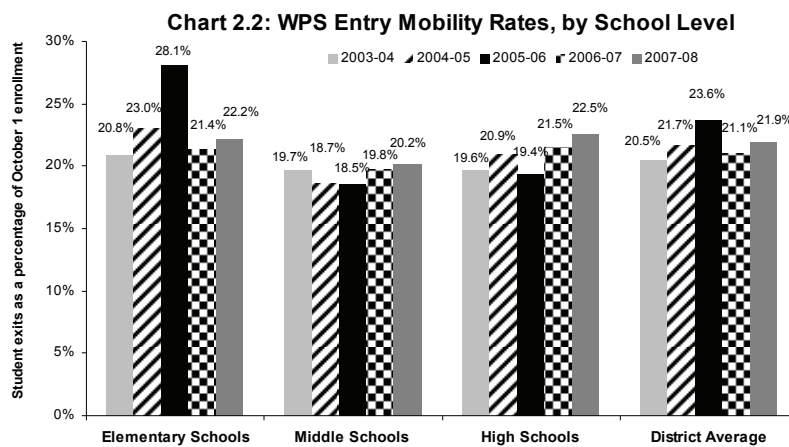
⁸ During this 12-month period, the district's 44 schools reported a total of 4,853 student transfers in (entry); the mobility rate is calculated by dividing this number by the October 1, 2007 enrollment figure of 22,154 students. Similarly, the exit mobility rate reflects 4,135 transfers out of the 44 schools.

Chart 2.1: WPS Student Mobility Rates



Source: Worcester Public Schools
 *Includes transfers within the district as well as in-and-out of the district

Charts 2.2 and 2.3 show average entry and exit mobility rates for WPS elementary, middle, and high schools, as well as the district-wide averages for the past five years.^{9,10} (Mobility rates for individual schools are listed in Appendix B.) During the 2007-08 period, 745 transfers among Worcester’s four comprehensive high schools involved students moving within the district (from one WPS to another). Additionally, 681 entries into these high schools involved a student arriving from outside the district. Although students who arrive at a school after October 1 are required to participate in MCAS testing, their scores are not included in most school-level MCAS and accountability reports. However, their performance is included in district-level adequate yearly progress (AYP) determinations and performance summaries.¹¹



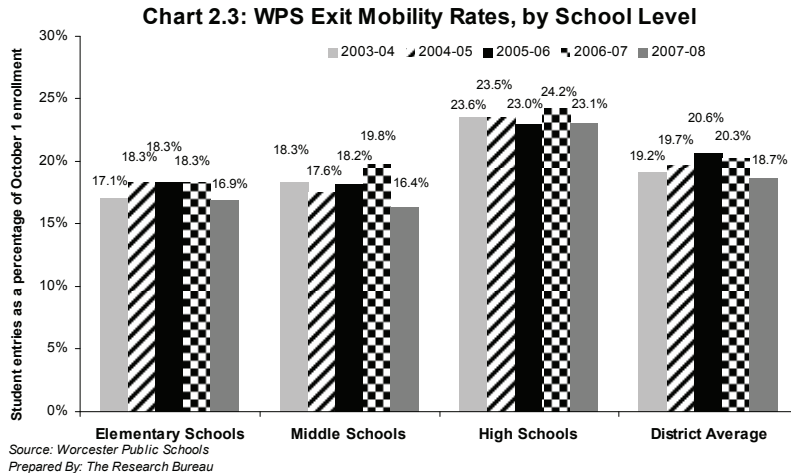
Source: Worcester Public Schools
 Prepared By: The Research Bureau

District-wide average combined mobility rates (the number of times students enter and exit schools as a percentage of October 1 enrollment) had slightly increased from 2003-04 (40%) through 2005-06 (44%); however, the 2005-06 combined mobility rate includes students from four closed elementary schools who transferred to another school. The past two years, the combined mobility rate has remained steady at about 41%.

⁹ Middle School and High School mobility rates in Charts 2.2 and 2.3 do not include Claremont Academy and University Park Campus School, as these schools enroll students in both the middle and high school grades (7-12).

¹⁰ The average elementary school entry mobility rate for the October 1, 2005 to October 1, 2006 period included students who were forced to transfer to other schools following the closure of four elementary schools in June 2006.

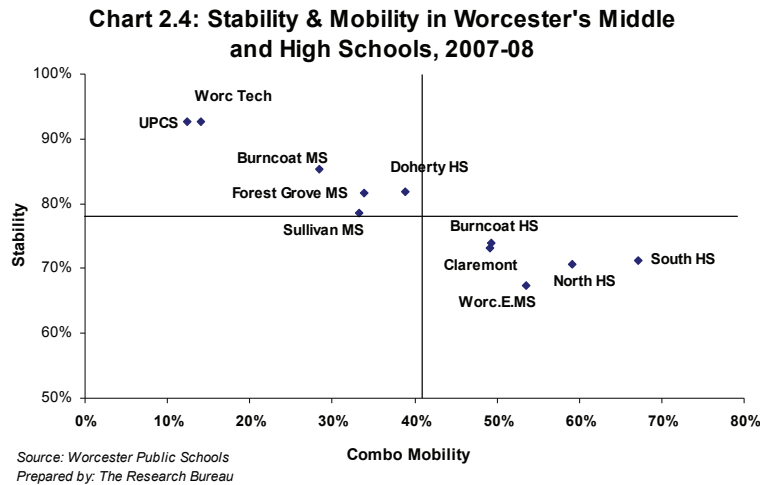
¹¹ See Indicator 3: MCAS Scores and School and District Accountability for further explanation of student performance and school and district accountability standards in Massachusetts.



Stability

As calculated by the WPS, the stability rate reflects the number of students who were enrolled in a school for 175 or more days during a school year (180 days), divided by total enrollments.¹² Stability shows consistent enrollment, whereas mobility tracks the rate of movement in and out of a school.

As calculated by the WPS, during the 2007-08 school year, slightly more than three-quarters of students (77.5%) in the district enrolled at one school remained in that same school through the end of the year. This is slightly higher than the rate for the last two school years, 2006-07 (76.8%) and 2005-06 (76.3%). School-level mobility and stability rates, included in **Appendix B**, reveal that schools with higher stability rates tend to have lower mobility rates, and vice versa. Among Worcester’s middle and high schools, University Park Campus School had both the highest stability rate (92.7%) and the lowest mobility rate (12.33%), while Worcester Technical High School had both the second-highest stability rate (92.6%) and the second-lowest mobility rate (14.13%): see **Chart 2.4**.¹³ At the elementary level, Flagg Street, Jacob Hiatt, and Worcester Arts Magnet had high stability rates and low mobility. At the other extreme, Chandler Elementary experienced the highest mobility in the district (78.2%) and the third-lowest stability (60.7%), while Union Hill had the lowest stability (just over half, 59%, of students enrolled at the beginning of the year remained there through the end of the school year) and the second-highest mobility (74.73%).



¹² Since a student could enroll, leave, and return within one year (2 enrollments), the number of enrollments does not necessarily represent unique students.

¹³ The lines on **Chart 2.4** represent the district average for each measure plotted.

What does this mean for Worcester?

Student mobility and student stability are important factors to consider when, under NCLB, districts are held accountable for the performance of all students, regardless of their enrollment history. While the performance of students entering a school after October 1 in a given year is not factored into that school's AYP calculation, these students' performance does count when determining the district's accountability status. Since districts are being held accountable for the performance of students who may have received much of their education elsewhere, it would be desirable to determine how these mobile students are performing, particularly as measured by MCAS and graduation rates. Doing so would require in-depth analysis of mobility and its relationship to student academic achievement as measured by the MCAS.

While **Appendix B** shows that a number of schools with high mobility also have poor MCAS results, this is not uniformly the case. Generally, schools with high mobility rates and low stability rates also have higher percentages of minority students, students with limited English proficiency, students eligible for free/reduced-price lunch, and special-education students, all of which have been shown to correlate with lower performance.¹⁴ Where schools with high mobility show low MCAS performance, we do not know which students – mobile or non-mobile – are among the poor performers. Additionally, there ought to be further analysis of those students moving within the district compared to those who enter from another district. (The WPS has adopted a district-wide curriculum under which students transferring from one school to another within the district should find their new classroom at approximately the same instructional point as the classroom they left.)

Another challenge in understanding the nature and extent of student mobility is the lack of standardized collection and reporting of mobility data, since schools and districts are not currently required to report such data to the MA Department of Education. Therefore it is difficult to compare Worcester's rates relative to other large urban districts. The ability to do so could be particularly useful if districts were then able to use the data to identify and share strategies schools might use to address the problem.

¹⁴ Based on data available from the MA Department of Education. Other factors that are not measured, such as neighborhood characteristics, housing availability and affordability, employment opportunities, parental educational attainment and income may also contribute to mobility.

INDICATOR 3: MCAS SCORES: SCHOOL AND DISTRICT ACCOUNTABILITY

Why is it important?

The Massachusetts Comprehensive Assessment System (MCAS) was established following passage of the Massachusetts Education Reform Act of 1993 (MERA) to measure student performance based on the Massachusetts Curriculum Frameworks learning standards. The subject-matter MCAS tests, which have been administered statewide since 1998, serve as the primary means by which schools and districts in Massachusetts are held accountable for student performance, as required by both MERA and the Federal No Child Left Behind Act (NCLB) of 2001. Schools and districts in which student performance does not improve sufficiently, as determined by specific state performance standards, are subject to review, and possible oversight by the Massachusetts Department of Education. Finally, in addition to meeting local graduation requirements, students must pass both the grade 10 English Language Arts (ELA) test and grade 10 Mathematics test to earn a high school diploma.¹⁵

Since NCLB requires that all students meet state-established proficiency standards in English Language Arts and Math by 2014, this indicator describes the proportion of students whose performance was at the “*Advanced*” or “*Proficient*” level on the ELA and Math MCAS tests.

MCAS Performance Level Definitions

As defined by the Massachusetts Department of Education, students scoring at the “*Advanced*” level demonstrate a comprehensive and in-depth understanding of rigorous subject matter, and provide sophisticated solutions to complex problems. Students scoring at the “*Proficient*” level demonstrate a solid understanding of challenging subject matter and solve a wide variety of problems. Students whose scores are at the “*Needs Improvement*” level demonstrate a partial understanding of subject matter and solve simple problems, while those performing at the “*Warning/Failing*” level demonstrate only a minimal understanding of the subject matter and cannot solve even simple problems.

What is the trend in Worcester?

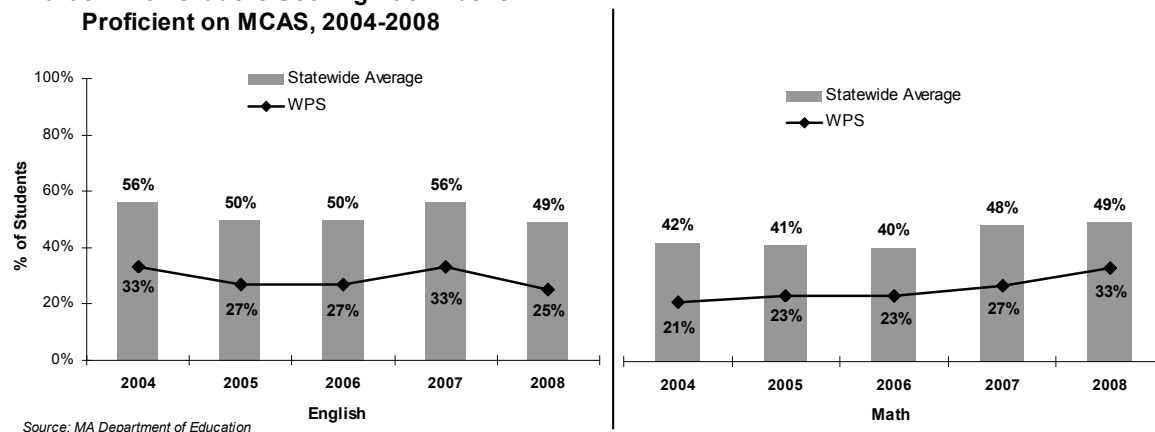
As shown in **Chart 3.1**, in each year during the five-year period from 2004 to 2008, the proportion of WPS fourth-graders scoring at or above proficiency on both the ELA and math MCAS exams has been well below the statewide averages. In 2008, 25% of WPS fourth graders scored at or above proficiency on the ELA exam compared to 49% of students statewide. For both the WPS and the state, 2008 had the lowest proportion of fourth-graders scoring at or above proficiency on the ELA exam during this five-year period. About 33% of Worcester fourth-graders scored in the proficient or advanced category in math, compared to 49% statewide.

¹⁵ Starting with the class of 2010, students need to score at the *Proficient* level or above on both the English Language Arts and Mathematics MCAS grade 10 tests to meet the State graduation requirement. Students that score at the *Needs Improvement* level must fulfill the requirements of an Educational Proficiency Plan as well. Passing one of the **Science and Technology/Engineering** MCAS exams will also be required by the class of 2010.

Although the proportion of WPS fourth-graders scoring at or above proficiency on the math exam has been climbing over the past two years, there still remains a considerable gap between the WPS and statewide proficiency averages.

In 2008, students at Burncoat Street, Clark Street Community, Thorndyke Road, and Flagg Street elementary schools scored at or above the statewide average on both the grade 4 ELA and math tests. Proficiency rates on the 2008 ELA and math MCAS test are provided for individual schools in **Appendix B**.

Chart 3.1: 4th Graders Scoring At or Above Proficient on MCAS, 2004-2008



While the above discussion highlights Worcester’s performance relative to that of all students statewide, the charts in **Appendix A** (pp. 28-30) show WPS student performance in comparison to the 23 other urban districts.¹⁶ On the 2008 fourth-grade ELA exam, 2 of the 24 urban districts reported student proficiency rates at or above the statewide average of 49% (see **Appendix A, Chart A.1**). Overall, 30% of urban fourth-grade students achieved proficiency on the 2008 ELA exam (in Worcester, the proportion was 25%). This urban average represents a six-percentage point decrease from 2007 when 36% of urban fourth-graders achieved proficiency on the ELA exam (while the WPS average decreased by eight percentage points from the previous year).

About 34.5% of urban fourth-graders statewide scored at the proficient or better level on the 2008 math MCAS exam (a slight increase from 2007 when 32% achieved proficiency); this proportion was 33% for the WPS. (See **Appendix A, Chart A.2**).

To comply with NCLB requirements, in 2006 for the first time Massachusetts tested all students in grades 3-8 in both English Language Arts/Reading and Math.¹⁷ New ELA tests were added in grades 5, 6 and 8, and new Math tests were added in grades 3, 5 and 7. **Table 3.1** shows the

¹⁶ These 24 districts, enrolling 29% of students statewide, represent the state’s most demographically disadvantaged urban communities; they enroll higher percentages of low-income and limited English proficient students than their suburban and rural counterparts.

¹⁷ Third graders are tested in Reading while the remaining grades are tested in ELA.

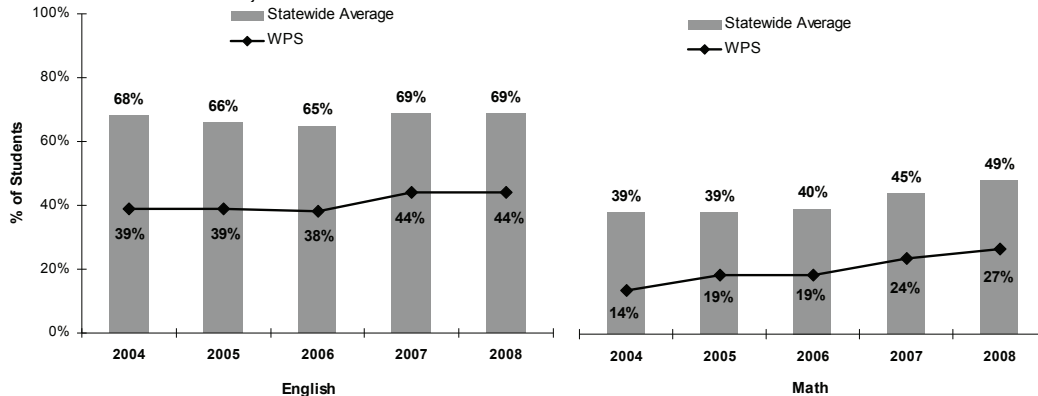
percentages of Worcester students in 2008 who achieved proficiency in these subjects for each of these grades.

Table 3.1 Grade and Subject	Proficiency		Needs Improvement		Warning/Failing	
	District	State	District	State	District	State
Grade 3- Reading	30%	56%	45%	33%	25%	11%
Grade 3- Math	38%	61%	29%	25%	33%	14%
Grade 4- English Language Arts	25%	49%	46%	39%	29%	13%
Grade 4- Math	33%	49%	41%	38%	26%	13%
Grade 5- English Language Arts	38%	61%	42%	30%	20%	8%
Grade 5- Math	36%	52%	33%	30%	31%	17%
Grade 6- English Language Arts	52%	67%	33%	24%	16%	8%
Grade 6- Math	44%	56%	28%	26%	28%	18%
Grade 7- English Language Arts	44%	69%	36%	23%	20%	8%
Grade 7- Math	24%	47%	26%	29%	50%	24%
Grade 8- English Language Arts	57%	75%	28%	18%	15%	7%
Grade 8- Math	27%	49%	26%	27%	48%	24%
Grade 10- English Language Arts	57%	74%	34%	21%	9%	4%
Grade 10- Math	51%	72%	29%	19%	20%	9%

Source: MA Department of Education.

Chart 3.2 shows the proportion of Worcester’s middle school students scoring at the proficient or advanced levels on the ELA and math MCAS tests as well as the statewide average.¹⁸ In 2008, less than half (44%) of WPS seventh-graders scored in the proficient or advanced categories on the ELA portion of the MCAS (the same proportion as the prior year), while 27% of WPS eighth-graders scored in the advanced or proficient categories on the 2008 math test. Additionally, on both the ELA and the math tests, the proportion of WPS students performing at the proficient or advanced levels was substantially below the statewide average: 25 percentage points lower in English, and 22 percentage points lower in math.

Chart 3.2: 7th Graders (ELA) and 8th Graders (Math) Scoring At or Above Proficient on MCAS, 2004-2008



¹⁸ From 2002 to 2005, the middle school ELA test was administered only to grade 7 students; in 2006, 2007, and 2008 students in grades 7 and 8 were tested in ELA. The middle school Math MCAS test has consistently been administered in the eighth grade. Therefore, in order to present trend data, the ELA performance data reflect the scores of seventh-graders while the math scores reflect the performance of eighth-graders.

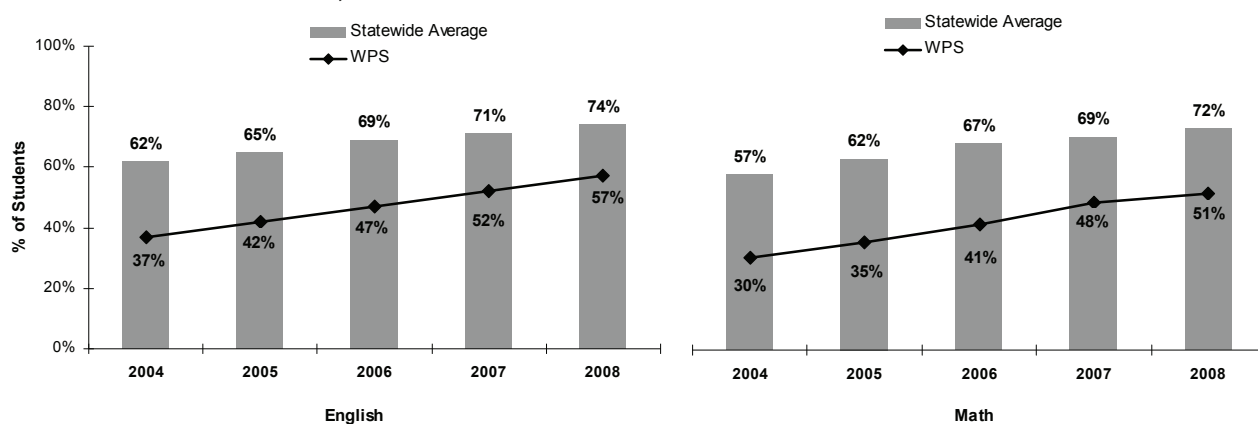
Students in grades 4-8 and 10 performed better on the ELA exam than on the math exam, with the greatest disparity in scores occurring at the middle-school level. The proportion of eighth-graders performing at the proficient or advanced level on the 2008 ELA test – 57% - was more than double the 27% who scored at this level on the 2008 math test.

2008 middle school ELA and math MCAS scores for the state’s 24 urban districts are shown in **Appendix A, Charts A.3 and A.4** (p.29). Fifty-eight percent of eighth graders in these urban districts achieved proficiency on the ELA MCAS exam, while a substantially lower percentage—30%—achieved proficiency on the eighth-grade math exam. Worcester was slightly below the urban average, at 57% and 27% proficiency in ELA and math, respectively. The 2008 urban average is a slight improvement from 2007, when 56% of urban students were proficient in ELA and 25% in math.

Among middle schools within the WPS District, Forest Grove Middle School, Burncoat Middle School, and University Park Campus School (middle grades) either outperformed or had an average equal to the urban-district averages in each of the subject areas.

Chart 3.3 shows that the percentage of WPS tenth-graders scoring proficient or better on the ELA exam increased from 52% in 2007 to 57% in 2008, although this remains well below the statewide rate of 74%. Student performance on the math exam improved as well, from 48% in 2007 to 51% in 2008. However, the district average was 21 percentage points below the statewide average of 72% in 2008.

Chart 3.3: 10th Graders Scoring At or Above Proficient on MCAS, 2004-2008



Source: MA Department of Education

Appendix A, Charts A.5 and A.6 show tenth-grade performance on the 2008 ELA and math MCAS exams for the WPS and 23 other urban districts in the Commonwealth. More than half of the urban district tenth graders (57%) scored in the proficient or advanced categories on the ELA exam, the same figure as Worcester’s. In 2007, the urban average on the 10th grade ELA exam was 52% proficient.

On the tenth-grade math exam, the 22-district average was 54.5%, an increase from 51% in 2007. As noted above, the rate for Worcester was 51%. As is the case at each grade level for each subject area (ELA and math), the range in the proportion of students achieving proficiency among the 24 urban districts is substantial. In Lawrence, only 30% of tenth-graders scored proficient or better on the math exam, while in Framingham, about four out of five (79%) did so.

Sub-Group Performance

The goal of NCLB is explicit: every child must achieve proficiency in English Language Arts (ELA) and Mathematics by 2014. In seeking to ensure that all students meet this goal, every state monitors the progress being made by its students in the aggregate as well as by student subgroups, at both the school and district level. Subgroups include the following: students with disabilities, students with limited English proficiency, economically disadvantaged students, and African American/Black, Hispanic, Asian, White, and Native American students.¹⁹ **Table 3.2** shows the proportion of WPS students in each subgroup who performed at or above proficiency on the grades 4, 8, and 10 ELA and Math tests.

Subgroup	Proportion of Students Tested Scoring at the Advanced or Proficient Level (%)					
	Grade 4		Grade 8		Grade 10	
	ELA	Math	ELA	Math	ELA	Math
Special Education	5	10	21	2	18	13
LEP/FLEP	13	27	22	8	22	22
Low-Income	16	23	49	18	50	43
African-American/Black	20	24	46	20	46	39
Asian	32	53	76	54	63	69
Hispanic	13	20	43	12	46	35
White	37	43	69	36	68	67
WPS Average	25	33	57	27	57	51

* Performance level percentages are not calculated if student group is less than 10.
 Source: Massachusetts Department of Education

Adequate Yearly Progress (AYP)

Under NCLB, districts, schools, and student subgroups must demonstrate that they are making *adequate yearly progress (AYP)* that puts them “on target” for all students to reach proficiency by 2014. AYP determinations are based on a combination of student attendance and MCAS participation, performance, and improvement over time. A school or district that fails to make AYP for two or more consecutive years in the same subject area, for students in the aggregate or subgroups, is identified for improvement, corrective action, or restructuring status. Schools or districts that make AYP in a subject for all student groups for two or more consecutive years are assigned to the “No Status” category. Schools in need of improvement, corrective action, or restructuring all face specific consequences that grow in severity each year that they do not make AYP.

¹⁹ Students belonging to multiple subgroups are counted in each subgroup to which they belong (i.e., one student can be represented in multiple groups).

In 2008, 37 Worcester schools (84% of district schools) enrolling 86% of the district’s students were identified for improvement, corrective action, or restructuring in math, ELA, or both, either in the aggregate or for subgroup performance (see **Table 3.3**). Twenty schools in Worcester are implementing restructuring plans that were approved by the Massachusetts Board of Education, including all four of Worcester’s middle schools (Burncoat, Forest Grove, Sullivan, and Worcester East Middle). All four of Worcester’s comprehensive high schools were identified either for improvement, corrective action, or restructuring. The district as a whole was identified for corrective action for subgroup performance in both ELA and math for the second year in a row.

Table 3.3: School Accountability Status Summary, WPS 2008

Accountability Status (Total Schools: 44)	Subject Area Identified					
	ELA Only		Math Only		Both ELA & Math	
	#	%	#	%	#	%
Identified for Improvement	7	16	3	7	5	11
Corrective Action	4	9	3	7	2	5
Restructuring	7	16	2	5	11	25
<i>Subtotal (Accountability Status)</i>	18	41	8	18	18	41
No Status	1	2	11	25	7	16

Prepared By: The Research Bureau

Source: Massachusetts Department of Education

AYP Accountability Status Definitions

As defined by the Massachusetts Department of Education, a school or district that has not made AYP for two consecutive years in ELA or math, in the aggregate or in any subgroup, is labeled as *Identified for Improvement – Year 1*. If the same school or district does not make AYP in the same subject (ELA or math; aggregate or subgroup) in the following year its status will become *Identified for Improvement - Year 2*. Responsibilities for schools that are identified for improvement include: notifying parents/guardians of their children’s school’s status, revising the school’s improvement plan, and receiving technical assistance from the district. Additionally, schools receiving Title I (Title I is a federal program that distributes funds to schools and districts that have a large proportion of low-income students) funding must provide their students with the option of attending another school, a portion of the Title I funds must be put towards professional development, and supplemental educational services must be offered to low-income students in the school.

If AYP is not met again in the subsequent year, the school or district will move into the *Corrective Action* category. Along with the responsibilities stated above, the district must take at least one corrective action, such as extending the length of the school day or year or replacing certain school staff. Another year of failure to make AYP will result in the school moving into *Restructuring* status. The district must develop and implement a plan for fundamental reforms at the school while in Restructuring. Reforms include major changes in the school’s governance, structure and staffing. A *No Status* school or district is one that has made AYP for at least two consecutive years in all subjects in all grades and subgroups.

Measures of Academic Progress

Recent regulations promulgated by the Massachusetts Board of Education for schools and districts in need of improvement require that school improvement plans include ten specific elements. Two of these required elements entail implementing a program of interim formative assessments (given several times during the academic year) of student performance relative to the school curriculum and State frameworks and using the results to “inform curriculum, instruction, and individual interventions.” In the fall of 2005, the WPS adopted the Measures of Academic Progress (MAP) as an interim formative assessment program in reading, language arts, and math for students in grades two through ten. The assessments measure individual students’ progress in reading, language usage, and mathematics. In the MAP system, the difficulty of the test is adjusted to the student's performance. The goal is a more precise and timely identification of students’ abilities so that targeted remedial help (i.e., additional instruction during the day, after-school, and in the summer) can be given to students who need it. The final score is an estimate of the student's optimal instructional level, and this information is used by teachers to determine how to format their lesson plans and where they may need to differentiate instruction so that all students are learning at an appropriate level.

When MAP is administered at regular intervals over time (in Worcester, students may be tested three times a year), schools can determine the rate of progress of an individual student or an entire class or grade level in basic skills. In addition to identifying a student’s current instructional level, the test also produces a target growth score for each student based on the typical growth experienced by students nationwide who were at the same grade level with the same starting score.

According to the WPS, the desired goal for each grade was that 50% or more of the students tested in the fall of 2008 would meet or exceed their individual growth targets by the spring of 2009. Baseline student data for this period show that in Math, students in grades 3, 4, 5, 6, 8, and 10 met the 50% benchmark, while students in grades 2, 7, and 9 did not do so. In Reading, only at grades 3, 4, 5 and 6 were growth targets met by 50% or more of the students tested; students in grades 2, 7, 8, 9, and 10 did not meet their growth targets (this is the same general result as the 2007-08 tests). **Table 3.4** also shows the percentage of students who met their growth targets the previous three years.²⁰

²⁰ Achieving a student’s growth target should not be confused with the student demonstrating grade-level proficiency in subject-matter content (as determined by the Mass DOE and measured by the MCAS). The level of growth a student achieves to meet his or her MAP growth target may not move that child far enough along the continuum of learning to reach proficiency on the MCAS exam. However, meeting the MAP growth target does show that the child is making academic progress.

Grade	Reading				Math			
	2005-06	2006-07	2007-08	2008-09	2005-06	2006-07	2007-08	2008-09
2	na	41.7%	49.0%	46.0%	na	43.7%	48.9%	43.5%
3	na	49.4%	53.8%	50.4%	na	54.0%	59.0%	59.2%
4	54.4%	48.6%	50.3%	52.6%	51.1%	60.7%	66.6%	63.6%
5	51.5%	52.3%	51.1%	52.2%	59.5%	50.4%	64.5%	61.0%
6	49.9%	48.4%	52.6%	54.2%	52.2%	57.3%	69.4%	64.9%
7	48.6%	49.2%	45.9%	42.9%	49.7%	46.3%	48.2%	43.0%
8	45.9%	53.0%	48.7%	44.1%	42.7%	51.6%	56.0%	56.4%
9	46.5%	51.6%	49.8%	43.9%	48.9%	50.0%	56.9%	48.5%
10	47.2%	53.8%	47.8%	49.9%	52.6%	56.6%	61.3%	53.8%

Source: Worcester Public Schools Prepared by: The Research Bureau

There are several important benefits of having MAP administered in the schools. Test results are available within days and provide teachers with “real-time” assessments of the specific skills that a child knows and those that the child needs to learn. Also, the ability to test students at several points during the year allows teachers to gauge a student’s progress toward meeting his or her goals, and to adjust strategies as needed. Schools could use data to group students with their academic peers; this could entail grouping students into instructional settings for particular subjects within or across grade levels. MAP assessments can be administered when a new student transfers into a classroom, providing an immediate assessment of the student’s knowledge and skills. Since the tests are aligned with the Massachusetts Curriculum Frameworks, they provide WPS students, teachers, and administrators with an interim measure of progress toward meeting the state’s proficiency standards. Finally, schools and the district can use the MAP assessment information to analyze the effectiveness of the curriculum, instructional programs, and resources.

What does this mean for Worcester?

While WPS MCAS scores have shown some improvement, the district is still lagging far behind the state. Statewide, MCAS scores have also been improving, meaning that the gap between WPS scores and the state has not been narrowing. Worcester is either at or slightly below the average proficiency rate for the 24 urban districts in the state.

As noted above, thirty-seven of the district’s 44 schools students have an AYP accountability status of improvement, corrective action, or restructuring in math, ELA, or both. All four middle schools are undergoing restructuring, while all four comprehensive high schools were either identified for improvement, corrective action, or restructuring. In the coming years, it will be important to monitor the implementation of these plans and the results. If improvement in academic performance is inadequate, additional changes will have to be made. The Governor is requesting legislative approval to take over the 30 lowest-performing schools in the state and bring in new leadership and regulations that supersede negotiated labor agreements.

INDICATOR 4: GRADUATION RATE, POST-GRADUATE PLACEMENT, AND ADVANCED PLACEMENT

Why are they important?

High school graduation rates are a significant indicator of overall school performance. As required by the No Child Left Behind Act, schools, districts, and states must now report their graduation rates, or the percentage of students who earn a high school diploma in four years (the standard period for completion).²¹ High schools are held accountable for their students graduating on time as part of the AYP (Adequate Yearly Progress) determination.

Specialized training and education beyond high school graduation have also become increasingly important in ensuring an individual's economic success. According to the Bureau of Labor Statistics, during the first quarter of 2009, median weekly earnings for college graduates with at least a bachelor's degree were about 84% higher than those of individuals who had only a high school diploma (\$1,138 per week versus \$620, for adults 25 years or older).²² In turn, over their lifetime, high school graduates stand to earn more than \$500,000 more than high school dropouts; 67 percent of employed workers with college degrees have health insurance, as compared to 48 percent of high school graduates and just 36 percent of dropouts.²³

Additionally, because Massachusetts has a higher-than-average concentration of high-tech, finance, and health-care firms compared to the US as a whole, a greater proportion of available and projected jobs in Massachusetts are professional or technical jobs requiring more highly educated workers.²⁴ In fact, fourteen of the 20 fastest-growing occupations in Massachusetts require an associate's degree or higher. Nationwide, the following occupations will be experiencing high rates of job growth in the future: computer software engineers, health care professionals and paraprofessionals, and preschool and post-secondary teachers, all of which typically require advanced training or a post-secondary degree.²⁵

One way to improve the preparation of high school students for college is through enrollment in Advanced Placement (AP) courses- rigorous, college-level classes available in many different subject areas- through which students can earn college credit by passing the end-of-year AP exam. According to studies by the College Board, students who took AP classes and AP tests in

²¹ In Massachusetts, students must pass the grade 10 ELA and Math MCAS tests and meet all local graduation requirements to be awarded a diploma.

²² <http://www.bls.gov>

²³ Andrew Sum, et al., "An Assessment of the Labor Market, Income, Health, Social, Civic and Fiscal Consequences of Dropping out of High School: Findings for Massachusetts Adults in the 21st Century." Prepared for the Boston Youth Transition Funders Group, January 2007.

²⁴ Massachusetts Department of Workforce Development, "Commonwealth of Massachusetts Employment Projections 2006-2016," <http://www.detma.org>.

²⁵ Bureau of Labor Statistics, "Table 5. The 30 Occupations with the Largest Employment Growth, 2006-2016," <http://www.bls.gov>.

high school experience long-term benefits in college, including higher GPAs and higher four-year graduation rates.²⁶

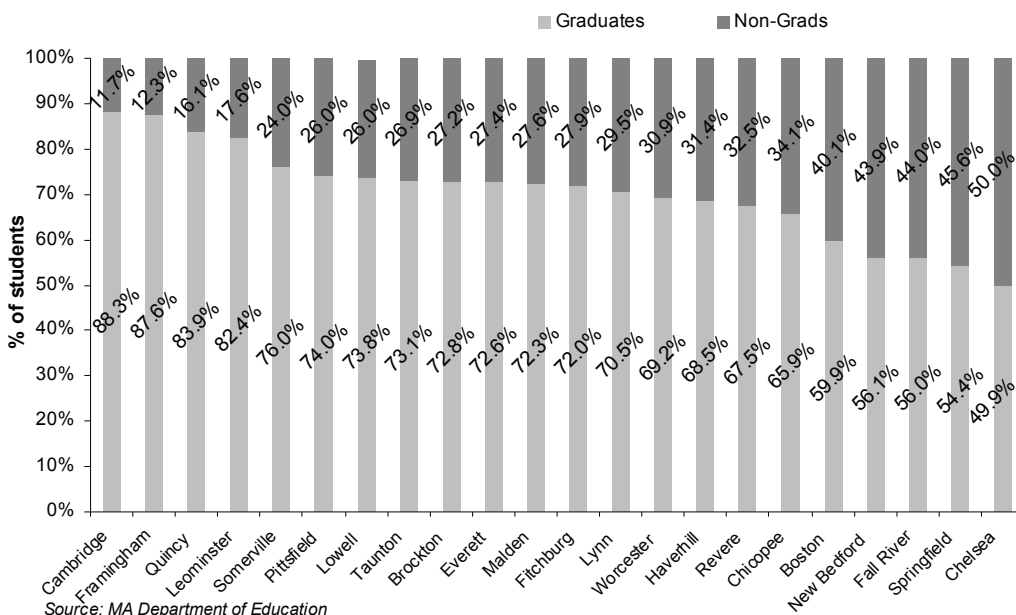
What is the trend in Worcester?

Graduation Rates

Reported by the Massachusetts Department of Education for the first time for the class of 2006, the graduation rate indicates the percentage of students starting high school in the ninth grade who graduate within the standard four years and receive a high school diploma.²⁷ Students are not counted as “on-time” graduates if they have either dropped out, have not passed the MCAS exam, are still enrolled in school, have been expelled, or obtained a GED instead of a regular diploma. Graduation rates are calculated on a different basis from dropout rates because the graduation rate represents a particular cohort that starts in ninth grade and completes twelfth grade, while the dropout rate is calculated for a particular school year.

Statewide, 81.2% of students in the class of 2008 who entered ninth grade in the fall of 2004 graduated from high school in four years. This rate has risen slightly since it was first reported: 79.9% in 2006 and 80.9% in 2007. Among urban districts, 65% of this cohort graduated in four years. **Chart 4.1** shows four-year graduation rates for 24 urban districts in Massachusetts, and indicates that Worcester’s rate was above the average.

Chart 4.1: Graduation Rates of Urban Districts, 2008

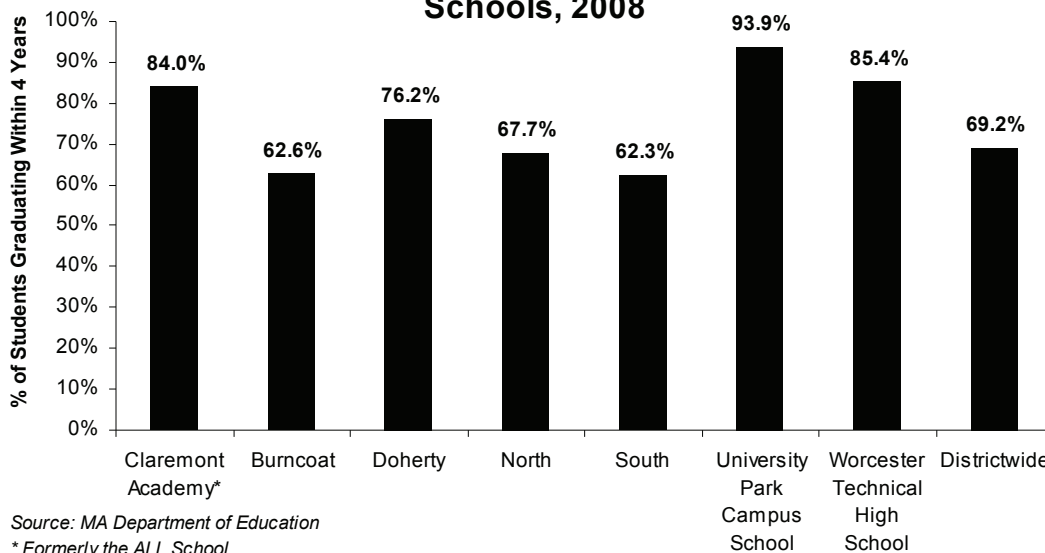


²⁶ College Board, “Advanced Placement Report to the Nation 2007.” <http://www.collegeboard.com>.

²⁷ For federal accountability purposes under No Child Left Behind, all states are required to produce data describing the percentage of students who graduate with a diploma “within the standard number of years.” See <http://www.doe.mass.edu> for further description of the methodology adopted by the Mass DOE to calculate graduation rates.

About 69% of students in the WPS graduated in four years, while 11% are still enrolled in school; 14.8% dropped out; 3.8% earned a GED; 1% either completed their course work but did not pass the MCAS exam, or were special-education students who had reached the maximum age for remaining in school; and .3% were expelled. In 2007, about 70% of WPS students graduated in four years, while 67% graduated in this same timeframe in 2006. **Chart 4.2** shows the graduation rates for each of Worcester’s schools with a graduating class in 2008.

Chart 4.2: Graduation Rates of the Worcester Public Schools, 2008



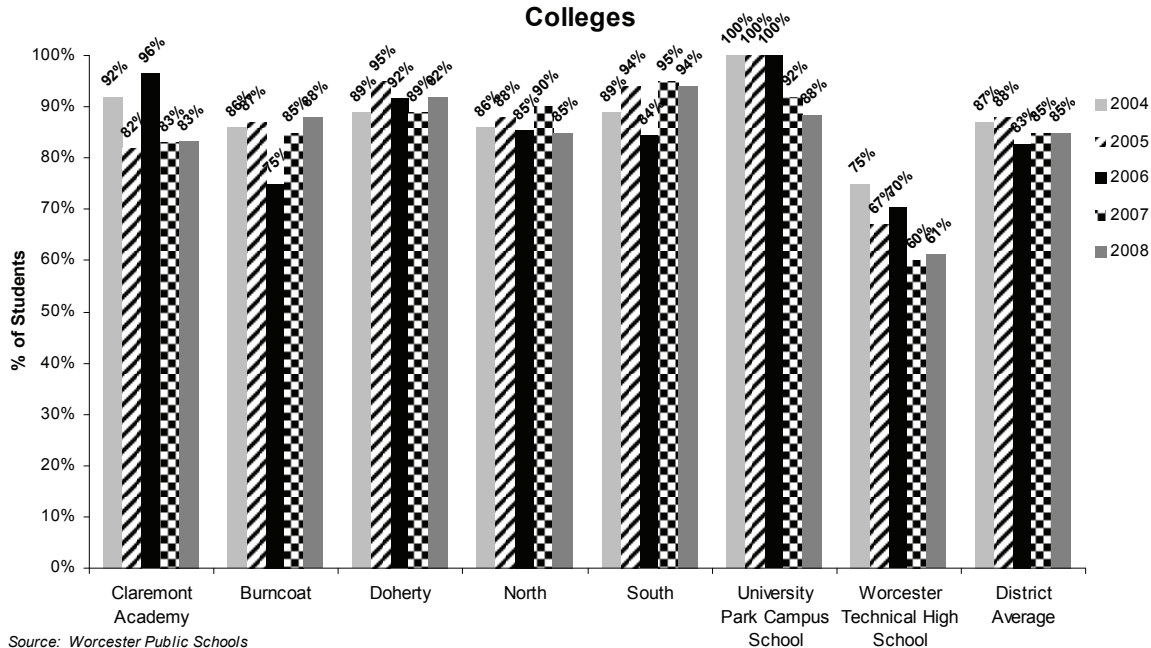
Post-Graduation Placement

The Massachusetts Department of Education collects data annually from public high schools regarding the plans of their graduates.²⁸ Since these data are self-reported by students and provide only an indication of their intentions, they do not always reflect what students ultimately do after graduating from high school. Currently, there is no mechanism to allow the district to track whether students actually enroll in a college, whether a student completes a degree program, and the time that it may take him or her to do so.

In 2008, 85% of WPS graduates indicated that they planned to attend a 2- or 4-year college or pursue other post-secondary education, as shown in **Chart 4.3**. About 38% of WPS students graduating in 2008 intended to enroll in a public or private four-year college or university, while 44% planned to enroll in a two-year school. (An additional 2.8% of students had plans for other post-secondary education.)

²⁸ In 2001-02, Massachusetts changed its collection system and began collecting student-level data through the Student Information Management System (SIMS). Any observed changes in trend data before and after this point in time may not fully represent actual changes in the plans of high school graduates from previous years, but rather may be representative of changes in data collection and in reporting requirements.

Chart 4.3: High School Graduates Planning to Attend 2- or 4-year Colleges



In 2008, for the second year in a row, South High Community School had the highest proportion (94%) of students intending to enroll in college. Eighty-eight percent of University Park Campus School graduates planned to attend post-secondary schools, while the postgraduate plans of the remaining 12% of the cohort were “unknown.” Worcester Technical High School had the highest proportion of students planning to enter the workforce upon graduation (34%) since their training enables them to enter the workforce immediately.

Advanced Placement: Participation and Performance

During the 2007-08 school year, students in the Worcester Public Schools were enrolled in 29 Advanced Placement courses, ranging in subject area from the sciences to foreign languages, social sciences and fine arts.²⁹ In 2008, 626 WPS students who completed one or more AP courses took a total of 1004 AP exams, an increase of about 45% from 2003, when more than 500 tests were administered.³⁰ A majority (95%) of WPS students enrolled in AP courses took the AP exam at the completion of the course (33 students did not take 57 exams in 2008).

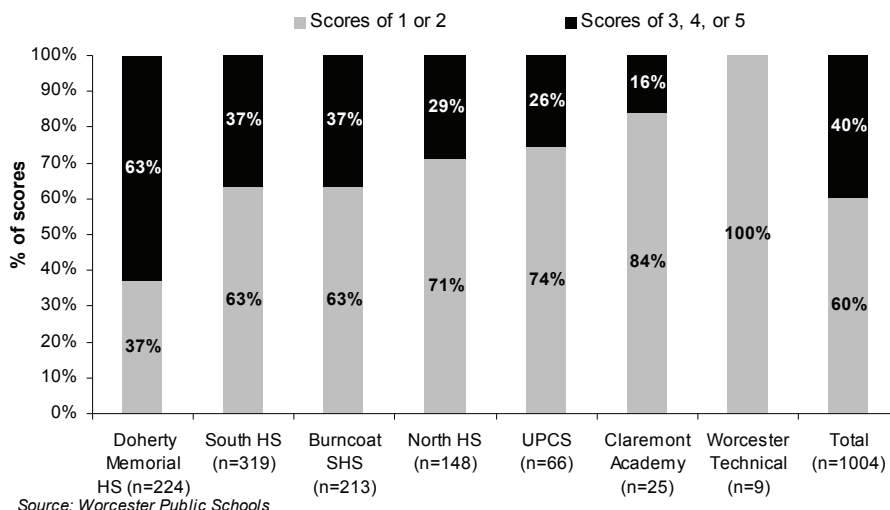
Exam grades are reported on the following five-point scale: (5) extremely well qualified to receive college credit or advanced placement, (4) well qualified, (3) qualified, (2) possibly qualified, and (1) no recommendation to receive college credit or advanced placement. According to the College Board, which administers the tests, exam grades of 3 or above are considered equivalent to a college course grade of “middle C” or above. In 2008, less than half

²⁹ 2007 and 2008 courses include VHS (Virtual High School) courses.

³⁰ Course offering, enrollment, and AP exam data were obtained from *Worcester Public Schools: Report on Advanced Placement Trends: 1996-2008*. Of the AP exams administered to WPS students in 2008, the largest percentage (32%) were English Language and Composition or English Literature and Composition, 12% were US History, 8% were Spanish Language, and 7% were Calculus.

of Worcester’s AP scores (40%) were 3’s, 4’s, or 5’s; the remaining 60% of scores were 1 or 2. In 2007, 47% of scores were at a 3 or above; in 2006, 49% of scores were at this level. **Chart 4.5** shows the distribution of AP exam scores by school for 2008. Doherty Memorial High School had the greatest percentage of exam scores of 3 or above (63%).

Chart 4.4: AP Exam Scores by School: WPS, 2008



What does this mean for Worcester?

The Massachusetts Department of Education has established a target graduation rate of 60% for 2008. Although Worcester performed well compared to other urban districts in the state, exceeding the urban-district average and the DOE target, a significant number- about thirty percent of Worcester students who entered the ninth grade in the fall of 2004 - failed to graduate four years later.

While WPS seniors stated their intention to attend college at a higher rate than students statewide, there is currently no comprehensive system in place to track post-secondary enrollment and/or students’ performance once they get to college. A longitudinal report that followed Boston Public Schools class of 2000 graduates for seven years found that of those who enrolled in college at some point during these 7 years, 35% completed a degree as of the summer of 2007.³¹ Recent reports and news articles have also highlighted the increase in the number of college freshmen required to take remedial courses. In February 2008, the School-to-College report, released by the Massachusetts Department of Education, showed that among Worcester Public School students of the class of 2005 who enrolled in a Massachusetts public postsecondary institution, 55% enrolled in one or more remedial course in the fall of 2005.

One program that strives to get more students to attend college is AVID, or Advancement Via Individual Determination. This program is designed for youths who fall “in the middle” academically, and began in Worcester in 2001. The Hanover Insurance Group Foundation

³¹ “Getting to the Finish Line: College Enrollment and Graduation, A Seven Year Longitudinal Study of the Boston Public Schools Class of 2000,” November 2008, <http://www.bostonpublicschools.org>.

recently awarded \$500,000 to strengthen and expand the program in the city.³² AVID is offered as an elective to students in grades 7-12 and helps them develop skills such as note-taking, studying, critical thinking, writing, reading, and organization. Students are taught by trained teachers and local college students, and are also able to visit local college campuses. Of this year's seniors involved in the program, all graduated and 95% are expected to start college this fall.³³

While obtaining a college degree is important, there are well-rewarded occupations and skills that do not necessarily require such a degree. For occupations, such as welding, having on-the-job training and experience is what matters. Even in an economy approaching 10% unemployment, these types of jobs may be hard to fill.³⁴ The success of Worcester Technical High School in graduating students with both academic and technical training coupled with the availability of jobs requiring technical skills indicates that some students should be encouraged and assisted to obtain occupational skills and training.

Over the past several years, the WPS has seen growth in both the number of AP course offerings (from fifteen in 2001 to 29 in 2008) as well as a significant (more than double) increase in the number of AP exams administered. However during this period, performance has been relatively flat. In its 5th *Annual Advanced Placement Report to the Nation*, the College Board urges educators to track the quality of learning in AP courses as their AP programs expand and to ensure that students take the curriculum that will adequately prepare them, from middle school on, to succeed in these classes.³⁵ Poor scores may indicate that AP teachers and students are not receiving adequate preparation for the rigors of an AP course or that more weak students are being persuaded to take the exam. Adequate preparation in earlier grades is also an important factor in ensuring the success of students who enroll in AP courses.

In 2007, the Massachusetts Math & Science Initiative received a grant from the National Math and Science Initiative to provide Advanced Placement and Pre-AP teachers with extensive training and preparation, as well as performance-based incentives for teachers and students. The goal of the program is to “increase student enrollment in mathematics, science, and English AP courses, as well as to improve student performance as reflected by an increase in the number of qualifying scores.”³⁶ However, although the WPS has accepted this grant for some of the City's high schools, the teachers' union has filed a labor grievance, viewing it as a violation of collective bargaining agreements. Other teacher unions in local districts such as Leominster and Marlboro have opposed this grant as well.³⁷

³² “The Kids in the Middle,” *Telegram & Gazette*, Sunday June 28th, 2009.

³³ *Ibid.*

³⁴ Louis Uchitelle, “Now hiring, and desperately seeking, specially skilled workers.” *New York Times*, Wednesday, June 24th, 2009.

³⁵ College Board, “The 5th Annual Advanced Placement Report to the Nation,” <http://www.apcentral.collegeboard.com>.

³⁶ www.massinsight.org/initiatives

³⁷ “Failing the Test,” *Telegram & Gazette*, Thursday, July 2, 2009.

INDICATOR 5: CHARTER SCHOOLS

Why are they important?

A charter school is a public school that is governed by a board of trustees and operates independently of the local school committee. Charter schools have the freedom to establish their own mission, governance and leadership structure, to control their own budgets, and to hire and fire staff. However, they are accountable to the State Board of Education for results in each of the following areas: academic success, organizational viability, and faithfulness to the terms of the charter. Many of Massachusetts' charter schools have successfully met performance expectations.³⁸ Since 1994 the state Board of Education has granted 75 charters, and has revoked or not renewed only four of these due to poor performance.

There are two types of charter schools in Massachusetts: Commonwealth and Horace Mann. Commonwealth charter schools are completely independent of their local school district, while a Horace Mann charter school must have its charter approved by the local school committee and teachers' union as well as by the Board of Education.³⁹ In FY08, 61 charter schools operating throughout Massachusetts enrolled more than 25,000 students. Charter schools must admit students by lottery; they may not require an entrance examination nor may they establish other selection criteria. Students may transfer back to the regular public schools at any time.

Charter Schools in Worcester

Two Commonwealth charter schools operate in the City of Worcester: Abby Kelley Foster Regional Charter School (AKFCS) and Seven Hills Charter School (SHCS). Demographic and performance data for these schools are included in **Appendix B**.

Abby Kelley Foster Regional Charter School (AKFCS)

Founded in 1998, AKFCS enrolls students in grades K-12, and as specified in its charter gives preference to applicants from Worcester and eight surrounding towns. AKFCS enrolled 1,426 students during the 2007-08 school year, and has a waitlist of 1,006 students for the upcoming school year. About 85% of students are from Worcester. AKFCS emphasizes academic achievement and character development through a classical liberal arts education which is "grounded in the great works of Western civilization." The school has both an extended school year – 190 days compared to the WPS District's 180 days – and an extended school day (7:45 am to 3:00 pm, more than one hour longer than that of the district schools).

The attendance rate at AKFCS during the 2007-08 school year was 95%, meaning that, on average, students attended school 95% of the days they were enrolled. About one hundred forty students withdrew from the school during 2007-08. All members of the class of 2008, AKFCS's

³⁸ See *Massachusetts Charter School Common School Performance Criteria* (October 2006) at <http://www.doe.mass.edu/charter/acct.html> for a detailed outline and discussion of charter school accountability measures.

³⁹ For more information about charter schools in Massachusetts, see www.doe.mass.edu/charter/.

third graduating class, graduated within four years and were accepted to at least one postsecondary institution.

As shown in **Table 5.1**, the proportion of AKFCS fourth graders scoring in the advanced or proficient categories on the 2008 MCAS English test – 23% - reflects a marked decrease from the previous year, when 52% of fourth graders achieved proficiency or better. One-quarter of WPS students scored proficient or better on this exam. Twenty-six percent of AKFCS fourth-graders scored at the proficient or better level on the Math test, a 9 percentage point decrease from the previous year, compared to 33% of WPS students in 2008.

Nearly 50% of AKFCS’s seventh graders scored at or above proficiency on the 2008 MCAS English test, a proportion equal to 2007. More than one-third of eighth graders (35%) scored at the advanced or proficient level on the Math portion of the exam, a slightly smaller proportion than in 2007. A smaller proportion of WPS students in these grades scored proficient or better; 44% on the 7th-grade English exam and 27% on the 8th-grade math exam.

More than four out of five tenth-graders (82%) scored in the advanced or proficient categories on the 2008 MCAS English exam, while 67% achieved this score on the math portion of the test. While an almost equal proportion of tenth-graders scored proficient or better on the English exam in 2007 and 2008, the proportion proficient on the math exam dropped from 80% in 2007 to 67% in 2008.

Table 5.1: Abby Kelley Foster Charter School K-12

Indicator	2003-04		2004-05		2005-06		2006-07		2007-08	
	AKFCS	WPS	AKFCS	WPS	AKFCS	WPS	AKFCS	WPS	AKFCS	WPS
Attendance Rate	94.8%	93.6%	95.3%	93.5%	95.5%	94.3%	95.4%	94.0%	95.9%	93.9%
Dropout Rate	0.0%	5.8%	0.0%	5.5%	0.0%	4.2%	0.0%	6.0%	0.0%	4.7%
Graduation Rate*	na	na	na	na	100.0%	67.2%	100.0%	69.8%	100.0%	69.2%
% Students Advanced/Proficient ELA 4th Grade	29.0%	33.0%	63.0%	27.0%	41.0%	27.0%	52.0%	33.0%	23.0%	25.0%
% Students Advanced/Proficient Math 4th Grade	25.0%	21.0%	56.0%	23.0%	29.0%	23.0%	35.0%	27.0%	26.0%	33.0%
% Students Advanced/Proficient ELA 7th Grade	69.0%	39.0%	58.0%	39.0%	59.0%	38.0%	49.0%	44.0%	49.0%	44.0%
% Students Advanced/Proficient Math 8th Grade	15.0%	14.0%	34.0%	19.0%	33.0%	19.0%	37.0%	24.0%	35.0%	27.0%
% Students Advanced/Proficient ELA 10th Grade**	64.0%	37.0%	71.0%	42.0%	64.0%	47.0%	83.0%	52.0%	82.0%	57.0%
% Students Advanced/Proficient Math 10th Grade**	59.0%	31.0%	58.0%	35.0%	52.0%	41.0%	80.0%	48.0%	67.0%	51.0%

Source: MA Department of Education, AKFCS
 * Graduation rates were 1st reported for the class of 2006
 ** 2006 was the first graduating class at AKFCS

Under NCLB, schools and student subgroups must demonstrate that they are making *adequate yearly progress* (AYP) that puts them “on target” for all students to reach proficiency by 2014. In 2008, AKFCS was identified for improvement (subgroups) in both math and ELA.⁴⁰ This was the second year the school was identified for math and the first year for ELA. Since the school did not make AYP, some changes that are being implemented in the school include a new math curriculum, a new school administrator, and new classroom instructional methods.

⁴⁰ See **Indicator 3: MCAS Scores** for further discussion of NCLB and accountability measures.

Seven Hills Charter Public School (SHCS)

Seven Hills Charter Public School was founded in 1996 with a mission of “preparing a diverse cross section of Worcester children for success as students, workers, and citizens.” In the fall of 2007, SHCS enrolled 678 students from the City of Worcester in grades K-8, and had 315 students on the waitlist after the annual enrollment lottery. Its school year is 190 days, and its school day is 30 to 45 minutes longer than that of almost all in-district schools. Forty-two students left the school during the 2007-08 school year, and another 12 students who finished the year did not return for the 2008-09 school year. Of these 12 students, 3 moved out of the city and 9 enrolled in another public or private school in Worcester. During the 2007-08 school year, SHCS had an average attendance rate of 95.9%.⁴¹

Table 5.2: Seven Hills Charter School K-8

Indicator	2003-04		2004-05		2005-06		2006-07		2007-08	
	SHCS	WPS	SHCS	WPS	SHCS	WPS	SHCS	WPS	SHCS	WPS
Attendance Rate	94.9%	93.6%	95.4%	93.5%	95.4%	94.3%	95.6%	94.0%	95.9%	93.9%
% Students Advanced/Proficient ELA 4th Grade	35.0%	33.0%	36.0%	27.0%	29.0%	27.0%	29.0%	33.0%	13.0%	25.0%
% Students Advanced/Proficient Math 4th Grade	12.0%	21.0%	23.0%	23.0%	22.0%	23.0%	31.0%	27.0%	18.0%	33.0%
% Students Advanced/Proficient ELA 7th Grade	67.0%	39.0%	69.0%	39.0%	62.0%	38.0%	55.0%	44.0%	56.0%	44.0%
% Students Advanced/Proficient Math 8th Grade	22.0%	14.0%	44.0%	19.0%	20.0%	19.0%	27.0%	24.0%	32.0%	27.0%

Source: MA Department of Education

As shown in **Table 5.2**, the proportions of SHCS fourth graders scoring in the advanced or proficient categories on the 2008 English and math MCAS tests were 13% and 18%, respectively, a dramatic decline from 2007, when 29% and 31% scored proficient. These proportions are below those of the WPS, whose fourth-graders had an average proficiency of 25% on the ELA exam and 33% on the math exam.

Fifty-six percent of SHCS seventh-graders scored in the advanced or proficient category on the 2008 English MCAS exam compared to a WPS middle-school average of 44%. In the 8th grade math exam, 32% of SHCS eighth-graders scored proficient compared to 27% of WPS eighth graders. SHCS did not make AYP in 2008, and has been identified for restructuring in mathematics (subgroups) and for restructuring in English.

Seven Hills Charter School’s restructuring plan includes the following elements:

- Teachers and key personnel have been removed from positions where they were underperforming.
- Administrative and leadership roles to enhance collaboration, professional development and support were developed.
- A partnership was formed with Community Partners Initiative (CPI) to help with benchmarking and intervention planning.
- Core curricula at the primary and elementary academy levels were updated.

⁴¹ Because SHCS enrolls only students in grades K-8, dropout rates, graduation rates, and post high school plans are not available.

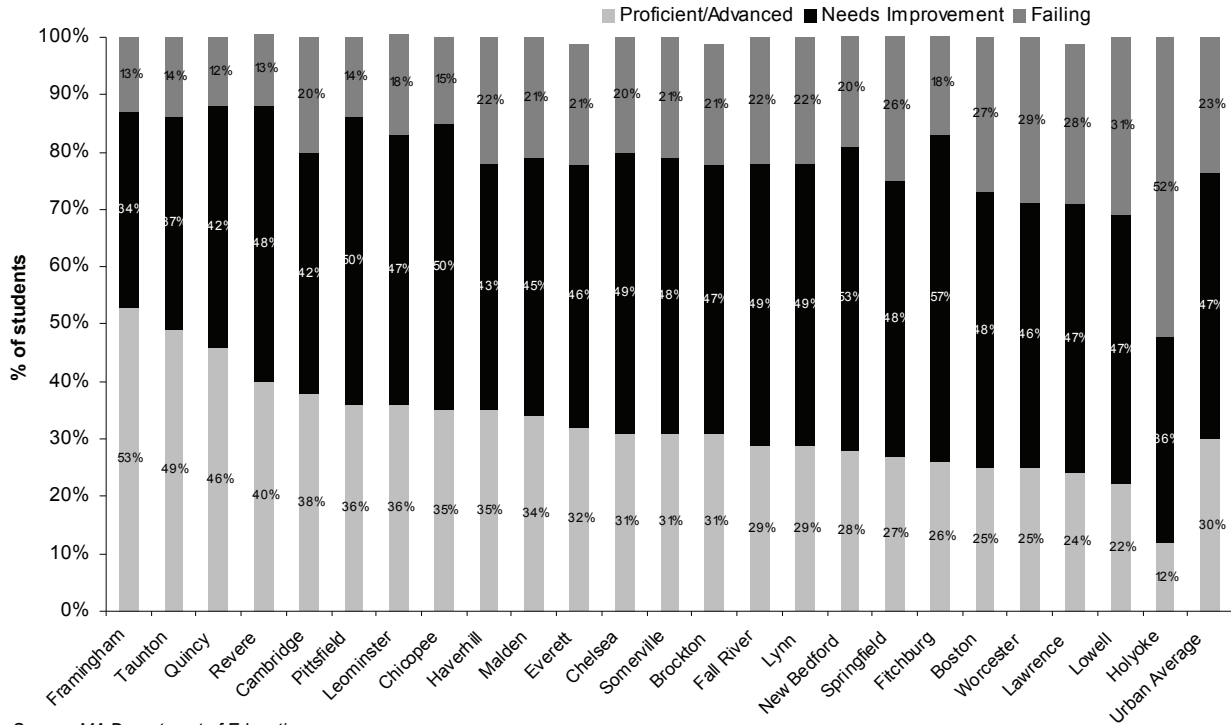
- Grades four and five were departmentalized; tutorial and enrichment block during the school day was enhanced; usage of integrated technology was broadened.
- Protocols were established to strengthen collaboration between classroom teachers and learning specialists (special education and English language learning staff).
- Learning time was extended to provide opportunities for students in need of MCAS remediation.
- Families qualifying for supplemental educational services (SES) through Title I will be informed of additional opportunities available to their children.

What does this mean for Worcester?

Both charter schools in Worcester are at full enrollment and maintain waiting lists, which indicate a demand for such alternatives. In future reports, perhaps we can determine what characteristics of charter schools attract parents and students to them. Also, if it is possible to obtain all the same data for the charter schools that the WPS is currently tracking, such as student mobility and stability rates, better comparisons can be made between the two different types of schools.

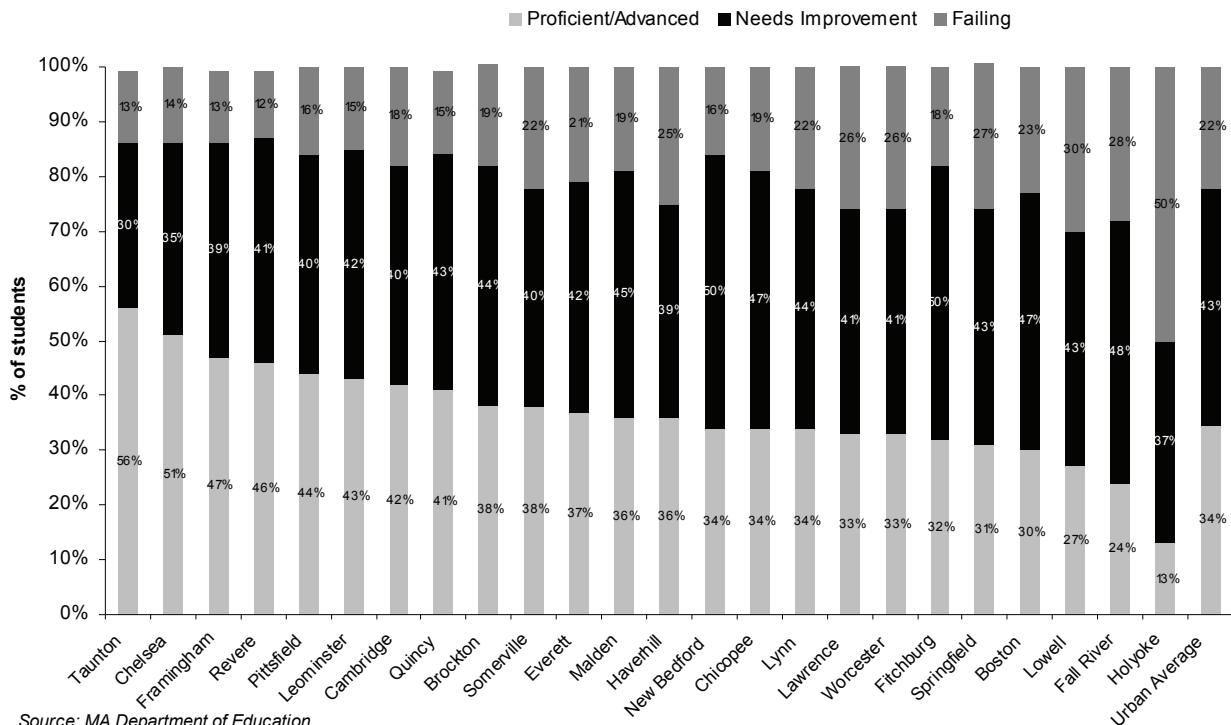
APPENDIX A – URBAN MCAS 2008

Chart A.1: 4th Grade ELA MCAS 2008: Urban Districts



Source: MA Department of Education

Chart A.2: 4th Grade Math MCAS 2008: Urban Districts



Source: MA Department of Education

Chart A.3: 8th Grade ELA MCAS 2008: Urban Districts

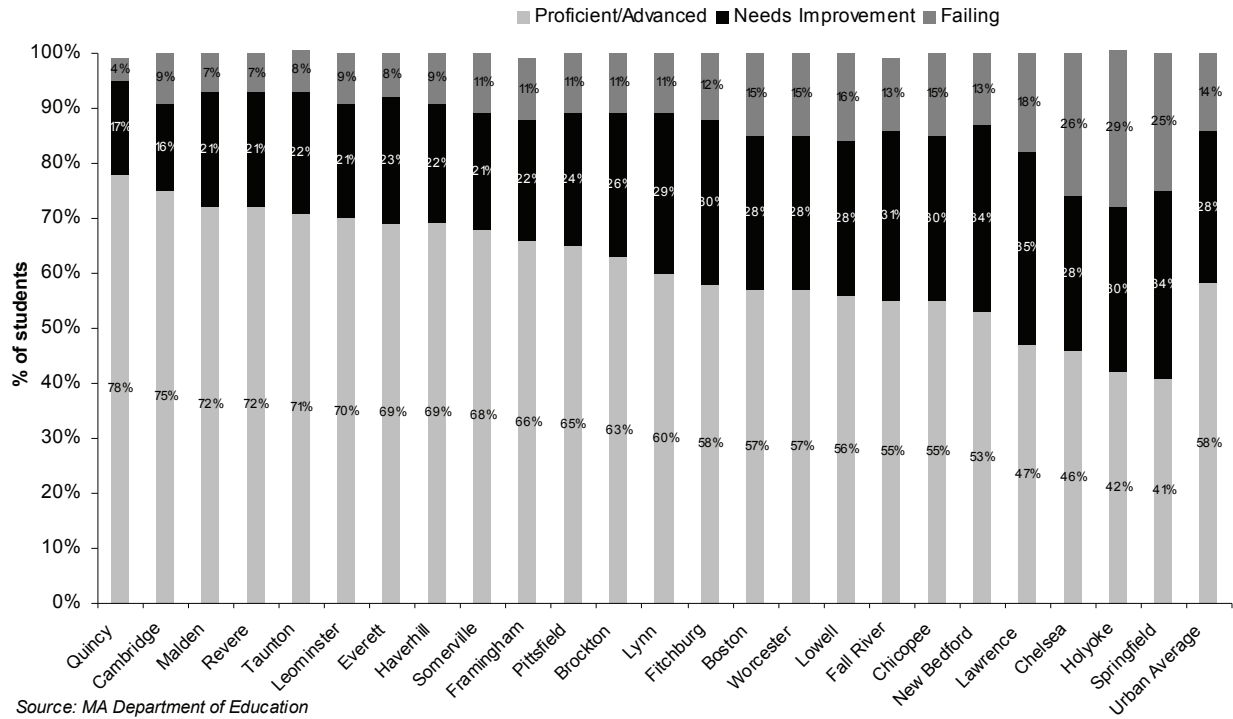


Chart A.4: 8th Grade Math MCAS 2008: Urban Districts

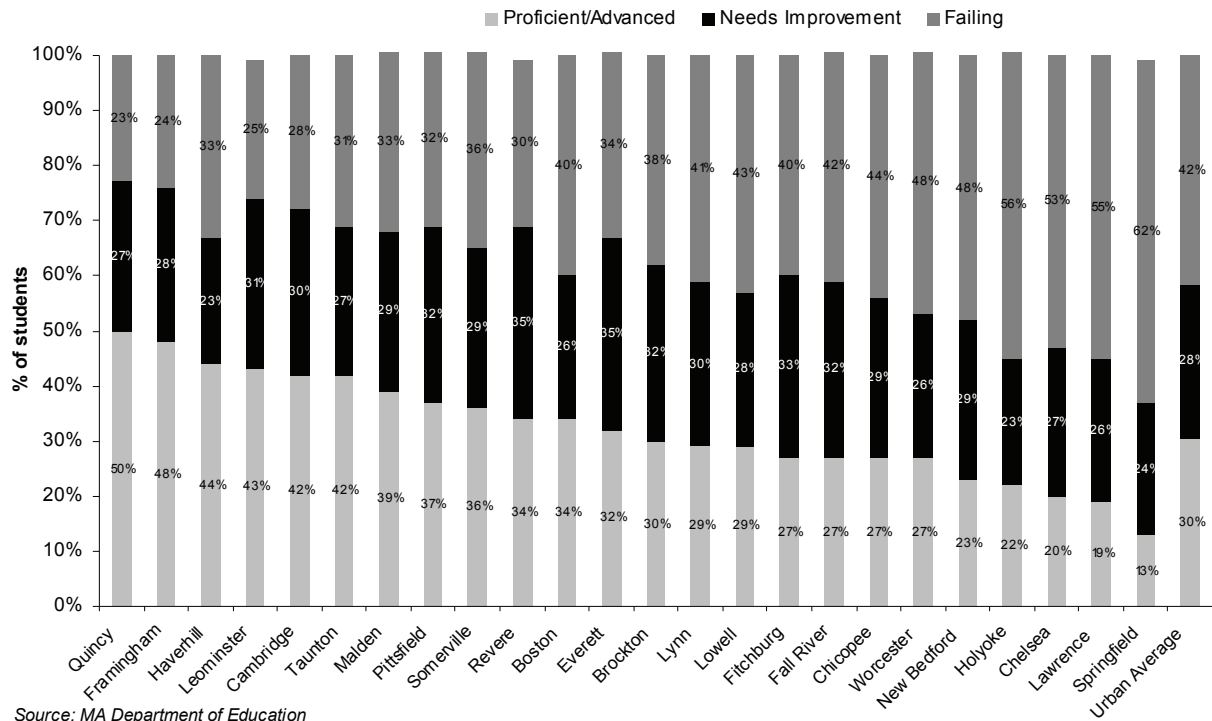


Chart A.5: 10th Grade ELA MCAS 2008: Urban Districts

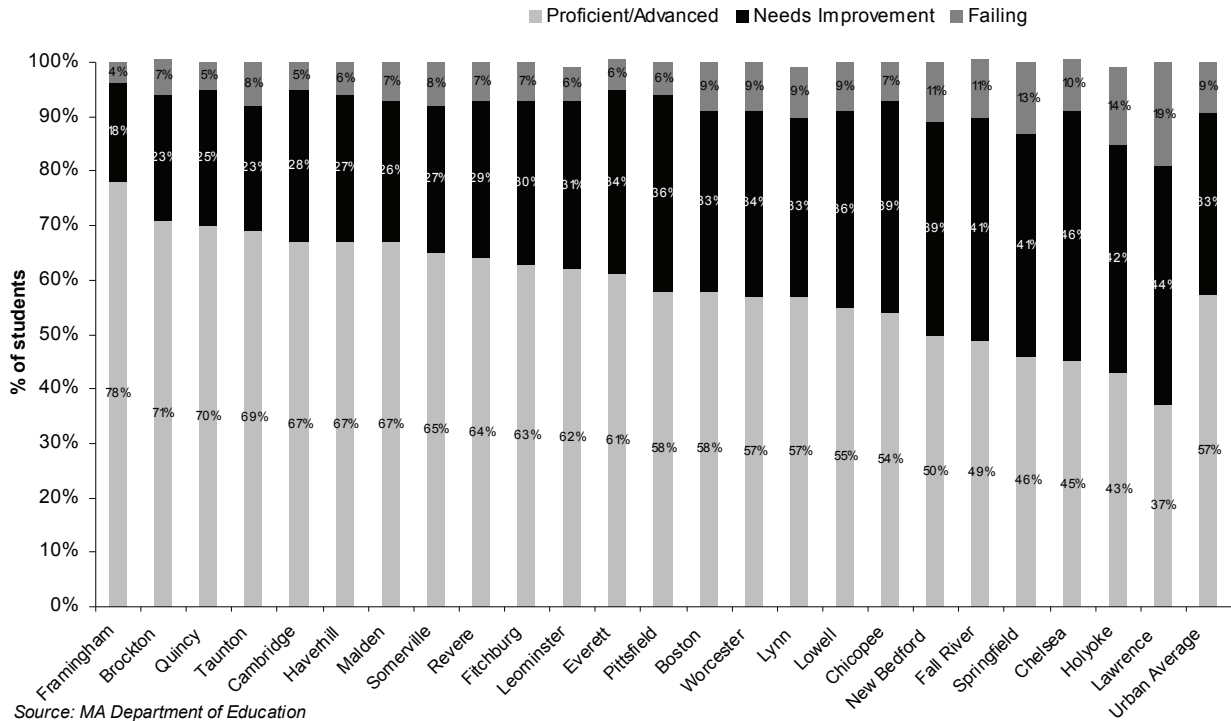
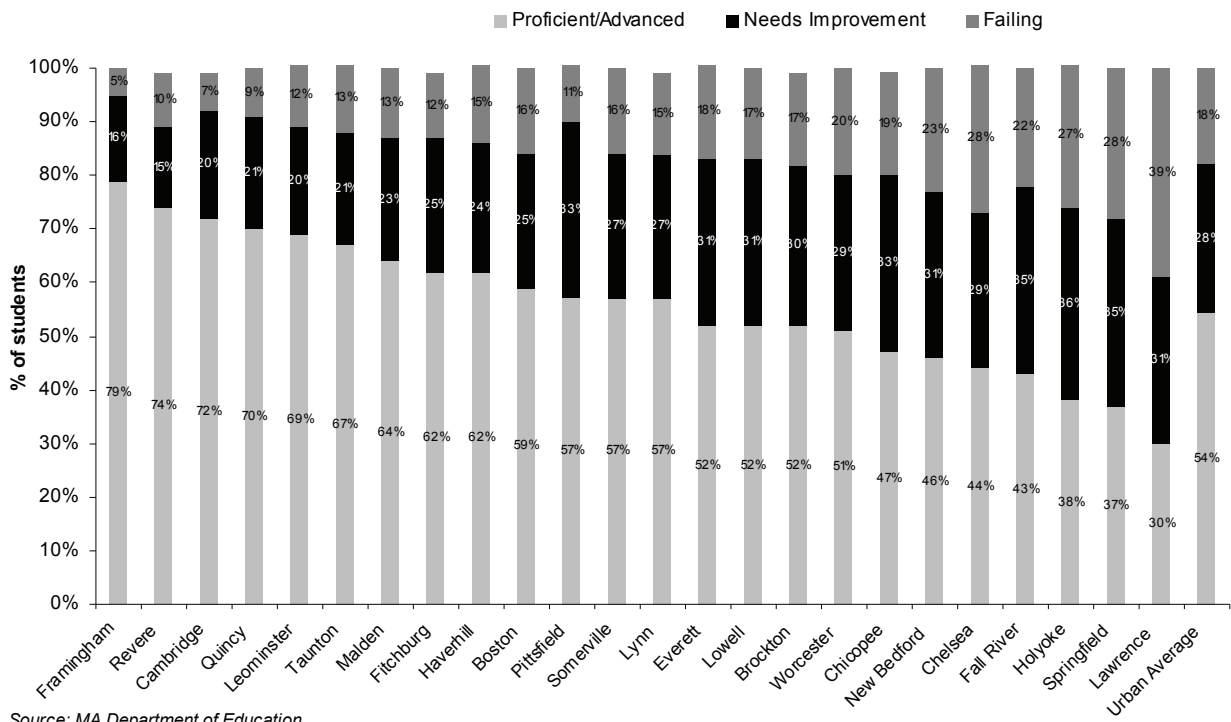


Chart A.6: 10th Grade Math MCAS 2008: Urban Districts



Appendix B – Worcester Public Schools and Charter Schools

School Name	2007-08		Spring 2008				Minority Student Population (%)	Low Income (%)
	Grades Offered	Student Enrollment	Students Proficient/Advanced in English MCAS (%)	NCLB Accountability Status* ELA	Students Proficient/Advanced in math MCAS (%)	NCLB Accountability Status* Math		
Belmont Street Community	Pre-K - 6	414	15%	NI	35%	NS	83.3%	90.1%
Burncoat Street	K - 6	213	62%	NI	67%	NS	70.9%	86.9%
Canterbury Street Magnet	Pre-K - 6	338	15%	R	19%	CA	75.7%	89.9%
Chandler Community	Pre-K - 6	312	0%	R	5%	R	90.1%	95.5%
Chandler Magnet	Pre-K - 6	349	28%	R	11%	R	73.1%	86.5%
City View	Pre-K - 6	563	11%	CA	13%	R	68.7%	82.2%
Clark Street Community	Pre-K - 6	295	60%	NS	77%	NS	53.6%	57.6%
Columbus Park	Pre-K - 6	342	28%	NI	49%	NI	78.1%	85.1%
Elm Park Community	Pre-K - 6	440	4%	CA	10%	CA	74.5%	84.8%
Flagg Street	K - 6	447	55%	NS	72%	NS	29.8%	13.9%
Gates Lane	Pre-K - 6	694	35%	CA	29%	NS	55.2%	56.2%
Goddard School/Science Tech	Pre-K - 6	649	15%	R	32%	CA	83.5%	95.5%
Grafton Street	Pre-K - 6	349	9%	CA	37%	NS	68.8%	85.1%
Heard Street	K - 6	272	23%	NI	57%	NS	49.6%	56.3%
Jacob Hiatt Magnet	Pre-K - 6	469	53%	R	39%	NS	72.3%	67.4%
Lake View	K - 6	268	34%	NS	45%	NS	43.7%	51.9%
Lincoln Street	Pre-K - 6	235	0%	R	14%	NI	76.6%	90.6%
May Street	K - 6	279	37%	NI	51%	NS	44.1%	44.4%
McGrath	K - 6	180	18%	NS	12%	NS	49.4%	70.0%
Midland Street	K - 6	213	20%	NI	51%	NS	22.5%	33.3%
Nelson Place	K - 6	361	46%	CA	35%	NS	32.7%	25.5%
Norrback Avenue	Pre-K - 6	602	20%	R	26%	NI	50.2%	51.7%
Quinsigamond	Pre-K - 6	684	18%	R	29%	CA	60.2%	81.3%
Rice Square	Pre-K - 6	459	25%	CA	25%	CA	51.6%	65.8%
Roosevelt	Pre-K - 6	719	27%	R	22%	R	54.1%	58.1%
Tatnuck Magnet	K - 6	445	22%	NI	43%	NI	42.5%	38.7%
Thorndyke Road	Pre-K - 6	369	58%	NI	61%	NS	45.8%	43.9%
Union Hill	K - 6	280	0%	NI	2%	NI	76.1%	93.6%
Vernon Hill	K - 6	351	16%	R	46%	NS	62.7%	84.0%
Wawecus Road	K - 6	170	23%	NI	32%	NI	43.5%	62.9%
West Tatnuck	Pre-K - 6	305	47%	NS	60%	NS	36.7%	25.2%
Worcester Arts Magnet	Pre-K - 6	340	32%	NS	40%	NS	39.7%	37.6%
Burncoat Middle	7 - 8	572	68%	R	36%	R	54.2%	60.7%
Forest Grove Middle	7 - 8	846	67%	NI	36%	R	51.4%	54.1%
Sullivan Middle	7 - 8	871	51%	R	22%	R	64.1%	79.2%
Worcester East Middle	7 - 8	571	62%	R	25%	R	65.8%	83.5%
Burncoat High	9 - 12	1,283	60%	R	56%	R	54.3%	54.6%
Doherty Memorial High	9 - 12	1,511	68%	R	63%	R	49.4%	41.4%
North High	9 - 12	1,139	58%	NI	47%	NI	66.6%	73.0%
South High Community	9 - 12	1,400	52%	R	41%	R	68.8%	72.4%
Worcester Technical High	9 - 12	1,269	56%	NS	57%	NS	47.7%	60.3%
Woodland Academy**	Pre-K - 6	417	3%	R	10%	R	86.1%	93.8%
Claremont Academy** -- MS		147	39%	R	11%	R		
Claremont Academy** -- HS	7 - 12	217	65%	R	44%	R	73.9%	82.4%
University Park -- MS		84	61%	NS	47%	NI		
University Park -- HS	7 - 12	143	84%	NS	87%	NI	67.8%	74.4%
Abby Kelley Foster RCS -- ES		826	23%	NI	26%	NI		
Abby Kelley Foster RCS -- MS	K - 12	418	69%	NI	35%	NI	58.8%	52.7%
Abby Kelley Foster RCS -- HS		182	82%	NI	67%	NI		
Seven Hills CS -- ES		463	13%	R	18%	R		
Seven Hills CS -- MS	K - 8	215	72%	R	32%	R	86.4%	75.4%

Source: MA Department of Education and Worcester Public Schools

*NI = In Need of Improvement

CA = Corrective Action

2007-2008						October 1, 2007 – October 1, 2008			2007-2008
Limited English Proficiency (%)	Students Qualifying for Special Education Services (%)	% of Teachers Licensed in Teaching Assignment	% of Core Academic Classes Taught by Teachers Who are Highly Qualified	Attendance Rate (%)	Average number of days absent	Combined Mobility Rate (Entry and Exit)	Entry Mobility Rate	Exit Mobility Rate	Stability Rate
37.7%	13.8%	100.0%	100.0%	94.1%	9.5	73.0%	39.7%	33.2%	64.1%
34.7%	23.5%	100.0%	100.0%	93.6%	10.6	58.2%	37.1%	21.1%	68.6%
33.1%	18.0%	100.0%	100.0%	94.9%	8.0	69.8%	40.9%	28.9%	59.2%
44.9%	20.8%	100.0%	100.0%	93.1%	10.8	78.2%	43.9%	34.3%	60.7%
56.2%	14.3%	97.2%	100.0%	94.2%	9.7	32.9%	19.3%	13.7%	81.4%
26.3%	19.7%	97.1%	100.0%	94.6%	9.1	38.6%	22.0%	16.6%	80.4%
19.0%	18.6%	100.0%	100.0%	95.1%	8.2	42.3%	29.4%	12.9%	73.1%
37.1%	24.9%	100.0%	100.0%	95.4%	7.6	57.5%	32.6%	24.9%	69.3%
39.1%	22.5%	96.8%	100.0%	93.4%	10.4	73.8%	41.8%	31.9%	62.2%
8.9%	6.0%	100.0%	100.0%	96.7%	5.6	11.2%	5.4%	5.8%	93.7%
19.2%	28.1%	95.8%	95.2%	95.1%	8.3	23.7%	14.5%	9.2%	82.5%
54.7%	15.7%	100.0%	100.0%	94.3%	9.3	53.0%	32.3%	20.8%	69.3%
28.1%	13.5%	100.0%	100.0%	95.6%	7.4	44.6%	25.7%	18.9%	73.8%
18.0%	14.7%	100.0%	100.0%	96.9%	5.2	21.7%	14.3%	7.4%	86.3%
24.5%	13.2%	96.4%	95.9%	95.7%	7.4	11.9%	4.1%	7.7%	92.7%
23.9%	11.9%	100.0%	100.0%	96.2%	6.1	42.9%	21.6%	21.3%	75.5%
30.6%	11.5%	100.0%	100.0%	94.4%	9.0	62.6%	39.3%	23.3%	70.6%
22.9%	9.7%	100.0%	100.0%	96.6%	5.7	18.6%	10.4%	8.2%	87.5%
19.4%	11.1%	100.0%	100.0%	95.5%	7.6	45.6%	31.7%	13.9%	78.4%
11.3%	8.0%	100.0%	91.9%	97.0%	5.0	18.8%	9.9%	8.9%	88.9%
13.9%	14.7%	100.0%	100.0%	96.2%	6.6	22.2%	11.6%	10.5%	93.9%
27.2%	14.1%	97.5%	100.0%	94.9%	8.4	32.0%	17.9%	14.1%	83.1%
28.2%	17.7%	97.6%	97.4%	94.6%	9.0	35.5%	19.0%	16.4%	77.7%
25.3%	11.3%	100.0%	100.0%	95.1%	7.8	35.0%	21.8%	13.2%	74.4%
33.5%	23.2%	97.7%	100.0%	95.0%	8.2	27.8%	13.3%	14.5%	81.1%
18.4%	14.8%	100.0%	100.0%	96.3%	6.4	18.2%	10.3%	7.9%	88.2%
19.0%	14.6%	100.0%	100.0%	95.8%	7.2	26.7%	10.5%	16.3%	82.8%
28.9%	26.1%	100.0%	100.0%	93.5%	10.7	74.7%	49.1%	25.6%	58.7%
27.6%	13.1%	100.0%	100.0%	95.2%	7.6	51.0%	24.2%	26.8%	68.0%
28.8%	25.9%	100.0%	100.0%	95.3%	7.7	44.1%	20.6%	23.5%	71.2%
14.1%	25.2%	94.8%	100.0%	94.2%	10.0	10.5%	5.9%	4.6%	87.4%
10.6%	13.2%	100.0%	100.0%	96.5%	6.1	10.7%	5.4%	5.4%	89.7%
13.5%	22.7%	97.9%	100.0%	94.9%	8.8	28.5%	14.7%	13.8%	85.3%
8.9%	23.9%	95.1%	93.7%	94.9%	8.5	33.8%	18.2%	15.6%	81.6%
14.2%	24.8%	95.5%	96.6%	94.0%	10.0	33.3%	19.4%	13.9%	78.6%
11.9%	25.0%	91.9%	92.9%	94.5%	8.9	53.5%	29.7%	23.8%	67.3%
11.9%	20.9%	94.1%	99.1%	90.9%	14.7	49.3%	22.9%	26.4%	74.0%
6.5%	13.6%	94.5%	94.2%	91.8%	13.7	38.9%	20.2%	18.7%	81.8%
10.2%	21.9%	97.2%	95.8%	90.1%	16.2	59.1%	29.9%	29.1%	70.7%
14.6%	21.3%	93.4%	100.0%	89.0%	17.6	67.1%	34.7%	32.4%	71.2%
3.2%	18.3%	95.1%	93.2%	94.3%	9.9	14.1%	4.8%	9.3%	92.6%
63.5%	13.4%	96.4%	95.5%	94.2%	9.6	64.4%	37.1%	27.3%	68.2%
12.1%	26.9%	96.8%	96.1%	93.1%	11.5	49.2%	25.5%	23.6%	73.2%
2.6%	7.0%	100.0%	100.0%	95.0%	8.8	12.3%	6.6%	5.7%	92.7%
3.8%	6.6%	74.2%	100.0%	95.9%	7.0	na	na	na	na
9.0%	12.7%	81.6%	95.6%	95.9%	7.2	na	na	na	na

R = Restructuring

NS = No Status

** Formerly the ALL School

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The Research Bureau

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