



The Research Bureau

Benchmarking Public Education in Worcester: 2006

March 2006

CCPM: 06-01



Center for Community Performance Measurement



The Research Bureau

Dear Citizen,

This is the fourth annual report on the status of public education in Worcester prepared by the Research Bureau's Center for Community Performance Measurement (CCPM). The CCPM was established with support from the Alfred P. Sloan Foundation to measure and benchmark municipal and community performance in the areas of economic development, municipal and neighborhood services, public safety, youth services, and public education.

This report provides updated information for the same five performance indicators presented in previous reports: attendance and dropout rates, student mobility, family involvement, post-graduate placement, and MCAS scores. We measure performance by asking "What has changed since last year, what have we accomplished, and what challenges remain?"

Performance measures come in many different forms, including inputs (such as financial resources), outputs (the number of students served), and outcomes (the quantifiable results of a program). Regardless of their form, performance measures should relate to a particular initiative or strategy of an organization. Many of the indicators contained in this report are discussed in relation to the Federal No Child Left Behind (NCLB) education reform legislation signed into law in 2002 aimed at closing the achievement gap between subgroups of students (e.g., racial and ethnic minorities, students with limited English proficiency, and students with disabilities). NCLB requires states to implement statewide accountability systems covering all public schools and students to ensure that the groups of students named above reach proficiency in reading 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 5).

We wish to thank the Alfred P. Sloan Foundation for its continued support of the CCPM as well as 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,

Eric H. Schultz, President

Roberta R. Schaefer, PhD, Executive Director

Kimberly A. Hood, MPA, Manager, CCPM

- Between FY01 and FY05 the inflation-adjusted budget of the WPS increased by 6.2% while the cost of health insurance doubled from \$17 million to \$34 million representing almost 15% of the total budget.
- During the 2003-2004 school year, about 395 students in grades 9 through 12 dropped out of the WPS.
- Student mobility (transfers in and out of schools) increased at both the elementary and high school levels during the past year. From October, 2004 to October, 2005, there were more than 1,000 intra-district transfers at the high school level.
- More than two-thirds of WPS 8th and 10th grade students reported that their parents/guardians usually attend school programs for parents/guardians.
- A higher percentage of WPS graduates (87%) intended to enroll in college compared to graduates statewide (78%) in 2004.
- Approximately one-third of all students in Worcester attained proficiency on the 2005 English and math MCAS tests, significantly lower than the statewide averages.
- Worcester is one of ten districts that the state identified as in need of improvement for not making adequate yearly progress (AYP) for two or more consecutive years.



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In the Fall of 2004, more than 24,500 students were enrolled in the 47 Worcester Public Schools (WPS) serving grades pre-K through 12. In addition, about 1,750 students were enrolled in the two public charter schools located in Worcester.¹ The demographic make-up of WPS students is as follows: 47% White, 32% Hispanic, 13% African-American, and 8% Asian; 61% of students are from low-income families; 36% of students' first language is not English; and 19% of students have an Individualized Education Program (IEP), qualifying them for special education services.

Since the passage of the Massachusetts Education Reform Act of 1993, the WPS inflation-adjusted budget has increased by more than \$88 million, from \$148 million in FY94 to \$236.5 million in FY05, or an increase of 60%. **Table 1** examines budget data for the past five years, during which time the WPS budget increased by 6% after adjusting for inflation. At the same time, however, student enrollment decreased. After increasing from FY01 to FY02, the district has experienced three consecutive years of decreases, with 1,279 (5%) fewer students enrolled in FY05 compared to FY02 (24,538 students vs. 25,817 students, respectively). Inflation-adjusted per pupil expenditures have steadily increased, from \$8,148 in FY01 to \$8,634 in FY04 (the most recent year for which data are available), rising by 6% during this four year period.² At the same time that per pupil expenditures increased, Chapter 70 state aid to the district increased annually, from \$137 million in FY01 to \$158 million in FY05, or 16%. From FY01 to FY05, the district received more than \$751 million in state aid. Additionally, charter school payments from the state exceeded \$13 million in FY05 (about double the FY01 amount when adjusted for inflation). The number of Worcester students enrolled in the two charter schools increased by 31% from FY01 to FY05. WPS is partially reimbursed by the state for students attending charter schools.³

Between FY01 and FY05 staffing levels declined by about 13%, while total salaries decreased by only 4.5% (adjusted for inflation), and the average salary (adjusted for inflation) increased by more than \$4,400. Additionally, the district has been faced with soaring health insurance costs. In FY01, health insurance expenses represented about 9% of the budget. By FY05, when the district had 404 fewer staff compared to FY01, health insurance costs had nearly doubled to more than \$34 million and represented about 15% of the total WPS budget. About 25% of the WPS health insurance costs cover WPS retirees.



¹ Charter schools are state-funded public schools that are not operated by the Worcester Public Schools Administration or governed by the Worcester School Committee. Admission is by lottery.

² Per-pupil expenditures are calculated by the Massachusetts Department of Education based on expenditure and enrollment reports submitted by each district at the end of each school year.

³ The charter school funding formula was amended by the State Legislature September, 8, 2004. The reimbursement formula is based on the type of student (e.g., regular, special, or bilingual education). In addition, the new formula adds a capital facilities component paid to the school as part of the tuition rate. For additional information, see <http://finance1.doe.mass.edu/>

Introduction and Financial Indicators, continued

Table 1: Input Indicators for the Worcester Public Schools

	FY01	FY02	FY03	FY04	FY05	% Change FY01-FY05
WPS Budget (Actual)	\$202,961,736	\$215,001,079	\$224,454,032	\$228,861,500	\$236,557,443	16.6%
WPS Budget (Inflation Adjusted)	\$222,788,038	\$232,330,238	\$237,140,564	\$235,525,016	\$236,557,443	6.2%
WPS Student Enrollment	25,633	25,817	25,733	25,055	24,538	-4.3%
WPS per pupil expenditures (Actual)	\$7,423	\$7,731	\$7,962	\$8,390	N/A	NA
WPS per pupil expenditures (Inflation Adjusted)	\$8,148	\$8,354	\$8,412	\$8,634	N/A	NA
Chapter 70 State Aid (Actual)	\$137,131,721	\$147,939,972	\$153,103,294	\$154,518,307	\$158,861,691	15.8%
Chapter 70 State Aid (Inflation Adjusted)	\$150,527,423	\$159,863,983	\$161,756,958	\$159,017,252	\$158,861,691	5.5%
City Contribution (Actual)	\$65,830,015	\$67,061,107	\$71,350,738	\$73,843,193	\$75,954,193	15.4%
City Contribution (Inflation Adjusted)	\$72,260,615	\$72,466,255	\$75,383,606	\$75,993,207	\$75,954,193	5.1%
Total Staff	3,212	3,332	3,031	2,816	2,808	-12.6%
District Administrators	25	25	21	17	17	-32.0%
School Administrators	82	82	81	77	78	-4.9%
Teachers	2,083	2,132	2,076	1,942	1,913	-8.2%
Other	1,022	863	853	780	800	-21.7%
Salaries	\$141,164,206	\$146,661,084	\$148,081,689	\$146,099,282	\$147,919,229	4.8%
Salaries as % of Budget	69.6%	68.2%	66.0%	63.8%	62.5%	
Salaries Adjusted for Inflation	154,953,821	158,482,016	156,451,524	150,353,099	147,919,229	-4.5%
Avg Salary (Adjusted for Inflation)	\$48,242	\$47,564	\$51,617	\$53,392	\$52,678	9.2%
Health Insurance Costs	\$17,208,967	\$19,140,964	\$24,659,152	\$30,128,161	\$34,364,865	99.7%
Health Insurance as % of Budget	8.5%	8.9%	11.0%	13.2%	14.5%	
Retirement	\$5,912,161	\$6,820,169	\$7,970,080	\$8,463,564	\$9,428,242	59.5%
Charter School Payments (Actual)	\$6,281,971	\$7,913,300	\$11,678,807	\$12,351,948	\$13,689,279	117.9%
Charter School Payments (Inflation Adjusted)	\$6,895,625	\$8,551,115	\$12,338,913	\$12,711,587	\$13,689,279	98.5%
Charter School per pupil expenditures (Actual)	\$4,529	\$5,450	\$7,683	\$8,042	\$7,805	72.3%
Charter School per pupil expenditures (Inflation Adjusted)	\$4,972	\$5,889	\$8,118	\$8,276	\$7,805	57.0%
Number of Worcester students in charter schools*	1,155	1,236	1,287	1,338	1,513	31.0%
Total number of students in charter schools	1,387	1,452	1,520	1,536	1,754	26.5%
Per student tuition rate (Actual)	\$7,569	\$8,395	\$8,253	\$8,324	NA	NA
Per student tuition rate (Inflation Adjusted)	\$8,308	\$9,072	\$8,719	\$8,566	NA	NA
Reimbursement to WPS (Actual)	\$2,489,723	\$2,324,844	\$0	\$395,008	\$765,492	-69.3%
Reimbursement to WPS (Inflation Adjusted)	\$2,732,931	\$2,512,227	\$0	\$406,509	\$765,492	-72.0%

*FY05 number of Worcester students in Charter Schools is as of May 1, 2005
Source: Worcester Public Schools and MA Department of Education.



Why is it 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 have lower lifetime earnings and fewer opportunities in today’s labor market. According to the Bureau of Labor Statistics, during the second quarter of 2005, nationwide, median weekly earnings for high school graduates (no college) were almost 42% higher than those of high school dropouts (\$584 per week versus \$412).¹

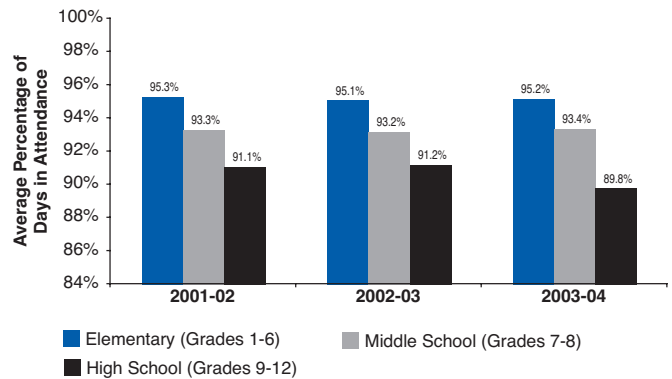
What is the trend in Worcester?

As shown in **Chart 1.1**, elementary and middle school attendance rates (the average percentage of days in attendance for students enrolled in the specified grades) have been fairly constant in each of the past three years, while rates for high school students showed a slight decline from 2002-03 to 2003-04.² During the 2003-04 school year, on average, WPS high school students attended school about 90% of the days they were enrolled. Because the Accelerated Learning Lab 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**; however, attendance rates at both schools have been above the district average in each of the past three years. As shown in **Appendix Table A**, the average number of days absent per pupil ranged from 4.9 days at the New Ludlow Elementary School to 18.5 days at the South High Community School during the 2003-04 school year. The district wide average was 10.6 days.

Attendance rates at the Seven Hills Charter School declined slightly from 95.8% in 2002-03 to 94.9% in 2003-04 while rates at the Abby Kelley Foster Regional Charter School increased from 92.9% to 94.8% during the same period.³ Both charter schools reported average number of days absent per pupil below the district level: at Seven Hills, pupils were absent 9.1 days on average, and at Abby Kelley Foster, 8.8 days.

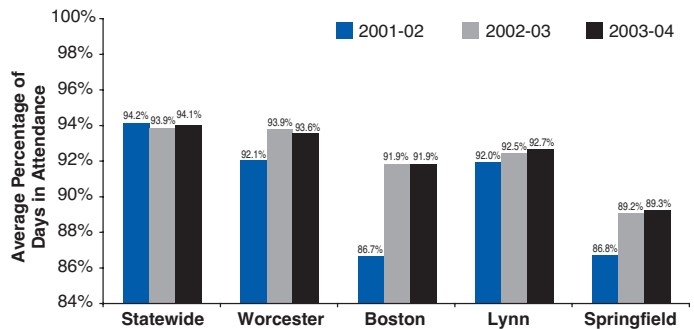
Chart 1.2 shows that Worcester’s district-wide attendance rates consistently compare favorably to those of Boston, Lynn, and Springfield. In addition, the WPS continues to exceed its attendance goal of 92%.

Chart 1.1: WPS Attendance Rates



Source: MA Department of Education

Chart 1.2: Attendance Rates in Comparable Districts, 2001-02 to 2003-04



Source: MA Department of Education.

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 1.⁴ The most current data available are for 2003-04, and show the WPS dropout rate rising to 5.8% (representing about 395 students), an increase from 2002-03 when the rate was 5.1%. **Chart 1.3** shows dropout trend data for the comparison districts mentioned above. While Worcester’s rate was

¹ <http://www.bls.gov>

² 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 preK or kindergarten students.

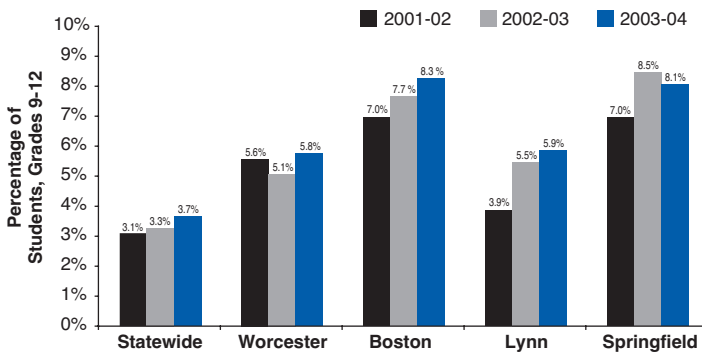
³ Abby Kelley Foster is a regional charter school. Approximately 82% of its students are Worcester residents.

⁴ 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.



higher than the statewide average of 3.7% in 2003-04, it was below those of comparable districts. In fact, ungraphed data reveal that of the ten urban districts in Massachusetts, only one- Brockton- had a dropout rate below (better than) Worcester's. Statewide, the dropout rate increased from 3.3% in 2002-03 to 3.7% in 2003-04, prompting the State Education Commissioner to renew his call for educators to do more to keep students engaged in their learning and to develop a set of statewide strategies to address the problem.

Chart 1.3: High School Dropouts, 2001-02 to 2003-04



Source: MA Department of Education.

As shown in **Table 1.1**, in 2003-04, the University Park Campus School again had the lowest dropout rate among Worcester schools at 1.5% (2 students). North High School's dropout rate of 8.8% (109 students) in 2003-04 represented a 2.8 percentage point increase from the prior year, and was the highest in the WPS district.

Table 1.1: High School Dropouts, WPS

School	2001-02		2002-03		2003-04	
	Number	Percent	Number	Percent	Number	Percent
University Park Campus School	0	0.0%	2	1.6%	2	1.5%
Accelerated Learning Lab	9	3.6%	7	4.4%	3	1.9%
Doherty Memorial High School	74	4.7%	56	3.9%	56	3.8%
Worcester Vocational High School	52	4.5%	38	3.8%	48	4.7%
Burncoat Senior High School	88	5.6%	70	5.5%	77	5.9%
South High Community School	67	6.4%	91	6.6%	100	7.0%
North High School	99	7.5%	71	6.0%	109	8.8%
District Total	389	5.6%	335	5.1%	395	5.8%

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. Attendance rates among high school students at Worcester's four comprehensive high schools (Burncoat, Doherty, North, and South High Schools) have declined in each of the past two years, and the average number of days absent per pupil ranged from 15.7 to 18.5 days in 2003-04. In other words, in each of these schools, on average, students missed 3 weeks of school per year. Students with high rates of absenteeism are not only missing out on instruction, which may contribute to their low academic achievement, but their absences may be disruptive to classmates whose attendance is more regular if teachers must repeat material each time a student returns from an absence.

In the past three years, more than 1,100 WPS students have dropped out of grades 9-12. Some of these individuals 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. Those who do not face diminished job prospects and earnings potential in today's knowledge economy. The data show an increase in the dropout rate from 2002-03 to 2003-04, and the class of 2003 was the first to be required to pass both the English and math MCAS exams in order to graduate. We urge the district to examine the increase, and in particular, whether or not it may have been the result of the graduation requirement. We will continue to monitor this trend in future reports as well as track the incidence of students repeating a grade.



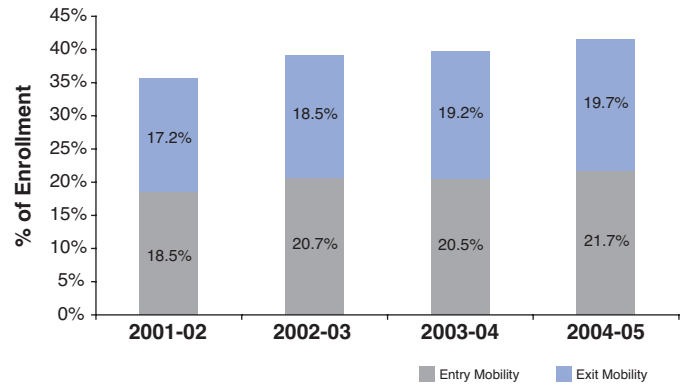
Why is it important?

High student mobility rates, the rates at which students transfer in or out of schools during the school year, adversely affect student achievement among students who change schools as well as their “non-mobile” classmates. A student who transfers from one school to another during the academic year may experience different teaching approaches, different text books, different curricula, and may also experience difficulty adjusting to a new peer group, all of which may contribute to lower academic performance. High student turnover can also be disruptive to those students who don’t transfer if teachers must repeat lessons or take time to familiarize new students with the classroom routine. While research has shown that highly mobile students frequently perform below their peers on the MCAS, bringing down district achievement levels, and that these students may be more likely to repeat a grade, schools can adopt policies and procedures to minimize the impact of student mobility. Specifically, transfers within a district should be less disruptive to the learner if the district has a uniform curriculum and if instructional expectations and policies are similar throughout the district.

What is the trend in Worcester?

As calculated by the WPS, a school’s mobility rate reflects the number of students transferring in (entry mobility) or out (exit mobility) of the school during a 12-month period, expressed as a percentage of total school enrollment at the beginning of the 12-month period. A school’s overall mobility rate includes both transfers within the district (intra-district mobility) as well as transfers in or out of the district (inter-district mobility). From October 1, 2004 to October 1, 2005, the average mobility rate for WPS high schools was 44%, compared to 38% three years earlier.¹ As shown in **Chart 2.1**, almost 22% of students enrolled in one of the district’s 47 schools on October 1, 2004 had transferred out of that school by October 1, 2005. But during this period, schools in the district did not just lose students, they also gained students (transfers in). By October 2005, about 20% of students enrolled in a school were students who had not been enrolled in that school 12 months earlier.

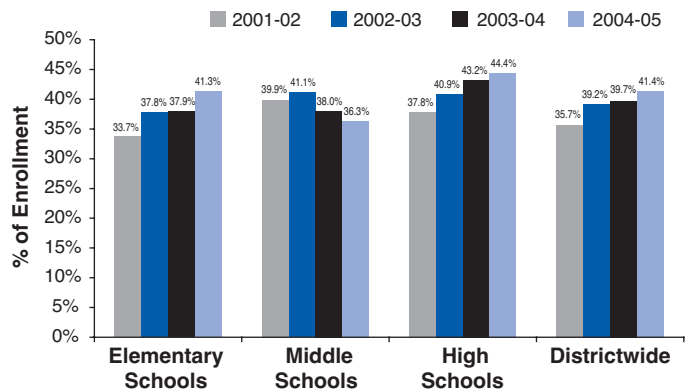
Chart 2.1: WPS Student Mobility Rates



Source: Worcester Public Schools

A substantial number of transfers among high school students are intra-district transfers, or students leaving one WPS high school for another within the district. From October, 2004 to October, 2005, there were more than 1,000 such transfers in the WPS. During the same period, more than 700 students transferred *into* the district’s high schools from schools outside the district. While these students may have received much of their education elsewhere, a district is held accountable for all students who take the MCAS tests while enrolled there, regardless of whether a student moved from one school to another, or into the district, during the school year.²

Chart 2.2: WPS Student Mobility Rates



Source: Worcester Public Schools

¹ Only the district’s grade 9-12 high schools were included in the calculation (Burncoat, Doherty, North, South, and the Vocational High Schools). The University Park Campus School and Accelerated Learning Lab enroll students in grades 7-12; therefore they were not included.

² Currently, we are not tracking the performance of mobile students separately from their non-mobile peers to measure the impact, if any, mobility appears to have on performance among this cohort.



Chart 2.2 shows average mobility rates for WPS elementary, middle, and high schools, as well as the district-wide average for past four October 1 to October 1 twelve-month periods. Middle school students were the least mobile group from October 2004 to October 2005, with about one in three changing schools. Prior to this point, in each of the years 2001-02 to 2003-04, elementary schools experienced the lowest mobility rates. However, between 2003-04 and 2004-05, 34 of the 36 elementary schools in the district reported increases in student mobility, with 15 of these increasing by more than half.

From October 1, 2004 to October 1, 2005, 184 students (about 17% of the October 1, 2004 enrollment) transferred out of the Abby Kelley Foster Regional Charter School (exit mobility). During the same twelve-month period, 226 students in grades K-5 transferred into the school for an entry mobility rate of about 21%.³

What does this mean for Worcester?

While the staffs at individual schools have less influence over this indicator than other indicators presented in this report, there are ways to minimize classroom disruption caused by high student turnover.

Data for the 2004-05 period reveal that about half of the transfers occurring district-wide are intra-district transfers, or students moving from one school to another within the district. To mitigate the effects of mobility on student achievement, the district has implemented coordinated curricula and teaching methods to ensure that students who move within the district will continue to study academic material under the same instructional format. The Everyday Mathematics (EDM) program was fully implemented in grades pre-k – 6 during the 2003-04 school year, and the district has adopted the Connected Math Program at the middle school level, as well as the Houghton-Mifflin reading curriculum. However, since schools are being held accountable for the performance of students who may have received much of their education elsewhere, districts may find it more difficult to identify strategies to strengthen performance among students transferring into the WPS from outside the district.

As shown in **Appendix Table A**, generally, schools with high mobility rates also had 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.⁴

Schools of choice – schools in which parents and students choose to enroll – such as the Vocational High School, district magnet schools, and charter schools have lower mobility rates than most other schools. For example, the University Park Campus School (UPCS) and the Jacob Hiatt Magnet School – both schools of choice – are located in two of the most economically disadvantaged neighborhoods in the City. In spite of this, they had the two lowest mobility rates during the 2004-05 school year. One possible reason for these low mobility rates may be the degree to which parents are involved with each school.

Appendix Table A also shows a correlation between mobility and MCAS scores (discussed in greater depth in **Indicator 5: MCAS Scores**). Schools with high mobility rates had, in general, lower MCAS English and math scores than schools with lower mobility rates. However, based on the analysis presented here, we don't know that the scores of the mobile students in these schools are poorer than the scores of their non-mobile peers. Furthermore, because the state Department of Education has not required districts to report mobility rates in a uniform manner, we are unable to compare Worcester's mobility rates with those of other large urban districts in the state.

³ Data provided by the Abby Kelley Foster Regional Charter School. The school's enrollment policy allows it to accept only students in grades K-5 during the academic year.

⁴ 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.



Why is it important?

Extensive research by psychologist, Laurence Steinberg among others, has shown that parental involvement in a child’s education is positively related to achievement at all grade levels and for all types of students. The need for parental involvement is especially great as children enter high school due to the number and nature of forces competing with school for a child’s time and energy; however, in the United States parental involvement tends to decrease as a child gets older.^{1,2} Researchers have identified several characteristics of high school students that highlight the need for more parent involvement at that level, including the tendency not to take school seriously and to be influenced by peer pressure that disparages academic success.³ Parents and families have the opportunity to counteract this pressure by demonstrating to their children the importance and value of academic success.

What is the trend in Worcester?

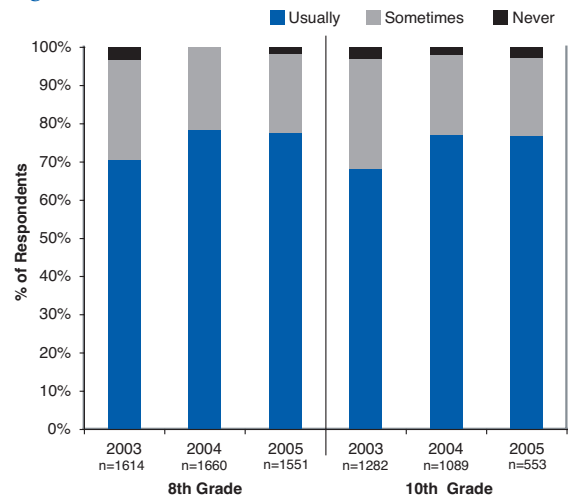
In 2002, the Center for Community Performance Measurement began collaborating with the Worcester Public Schools to ask students in the 4th, 8th, and 10th grades how often their parents/guardians knew how they were doing in school, attended school programs for parents, watched them participate in extracurricular activities, and helped them with homework when asked. Additionally, students in the 10th grade were asked how often their parents/guardians helped them choose their courses. The data presented here for 2003, 2004, and 2005 are for the 8th and 10th grade students only; the 2003 data for 4th graders presented in last year’s *Benchmarking Public Education* reflect the last time the MCAS format allowed the district to collect these data at the 4th grade level. Also, the reader is cautioned that response rates for 10th graders in 2005 were substantially lower than in previous years (on average, about 30% of 10th graders responded to each question), therefore conclusions based on the 2005 data are tentative at best.⁴

As shown in **Chart 3.1**, a vast majority of students indicated that their parents usually knew how they were doing in school, and from 2003 to 2005 these percentages increased among both 8th and 10th grade respondents (+ 6.8 and + 8.7 percentage points, respectively). In each

of the three years, the proportions of 8th and 10th graders reporting the highest level of parental involvement (that their parent/guardian *usually* knew how the child was doing in school) were fairly comparable.

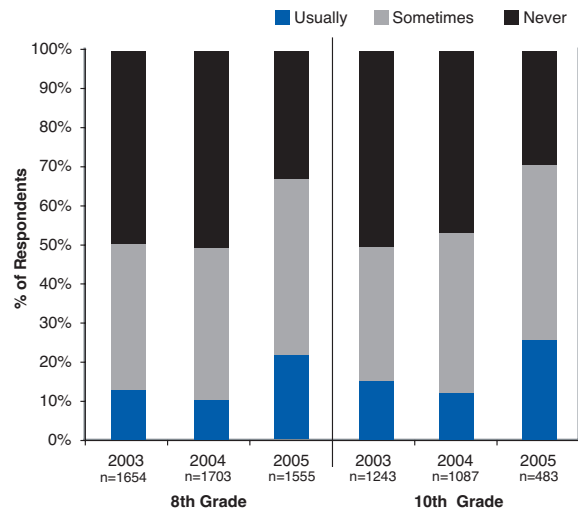
In 2005, about 67% of 8th grade respondents and about 71% of 10th grade respondents reported that their parent/guardian *usually* or *sometimes* attends school functions such as parent-teacher conferences or open houses (**Chart 3.2**), an increase of 17 and 21 percentage points respectively, since 2003.

Chart 3.1: Do your parents/guardians know how you are doing in school?



Source: Worcester Public Schools and MA Department of Education

Chart 3.2: Do your parents/guardians attend school functions for parents?



Source: Worcester Public Schools and MA Department of Education

¹ Laurence Steinberg, *Beyond the Classroom: Why School Reform Failed and What Parents Need To Do* (New York: Simon & Schuster, 1996).

² According to Steinberg, the drop-off in involvement does not occur in many Asian countries; in fact, parents become more involved in their children’s education as they get older (page 78-100).

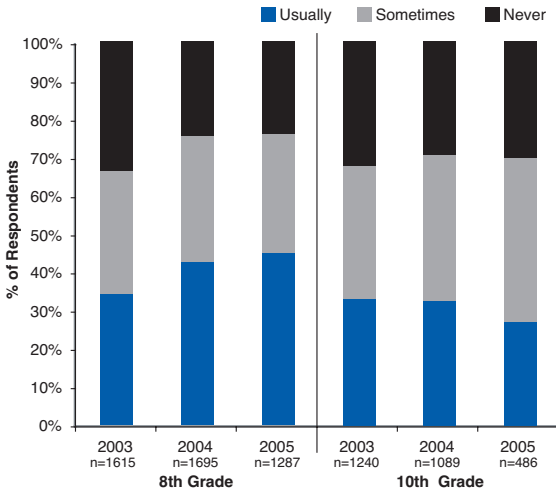
³ John McWhorter, *Losing the Race: Self-Sabotage in Black America* (New York: Free Press, 2000).

⁴ Among tenth graders, the lowest response was to the question “Do your parents/guardians help you choose your classes?” to which about 5% of students responded. The Research Bureau and the Worcester Public Schools are working together to identify ways to increase student response rates for all questions when they are next asked during the Spring 2006 MCAS exams.



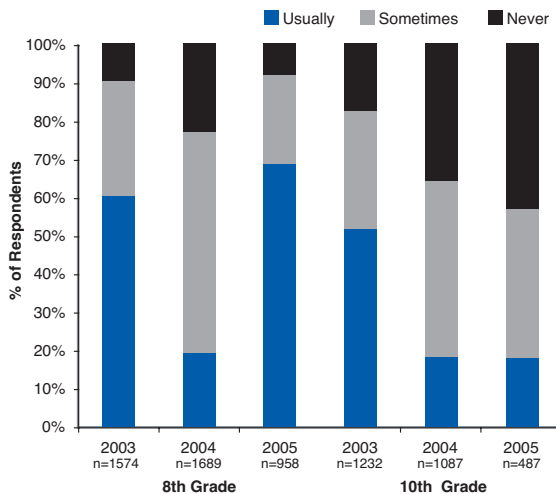
In 2005, about 76% of 8th grade respondents and about 70% of 10th grade respondents indicated that a parent or guardian *usually* or *sometimes* watches them participate in extracurricular activities (Chart 3.3).

Chart 3.3: Do your parents/guardians watch you participate in extracurricular activities?



Source: Worcester Public Schools and MA Department of Education

Chart 3.4: If asked, do your parents/guardians help you with your homework?



Source: Worcester Public Schools and MA Department of Education

In 2005, slightly more than two-thirds (69%) of 8th graders reported that a parent/guardian *usually* helps with homework when asked to do so, and 23% indicated that their parent/guardian *sometimes* helps when asked (Chart 3.4). In contrast, 18% of 10th grade respondents said that a

parent/guardian *usually* helps, 39% indicated that a parent/guardian *sometimes* helps, and 43% reported that they never receive homework help from a parent/guardian.

In 2005, a mere 5% of respondents (88 students) in the tenth grade indicated that their parent/guardian *usually* helps them choose their classes, however, due to an exceptionally low response rate, caution is urged in interpreting these findings as representative of all tenth graders, and no comparisons to prior years are being made.

What does this mean for Worcester?

The data for this indicator have been updated to include both 2004 and 2005 student responses (last year's report provided data through 2003 only). Since 2003, substantial gains have been made in the percentages of students reporting that a parent/guardian *sometimes* or *usually* attends school functions for parents/guardians. At both the 8th and 10th grade levels, about half of all respondents in 2003 reported that a parent/guardian *never* attended such function, but by 2005, the proportions had declined to 33% and 29% among 8th and 10th graders respectively. These improvements coincide with increased efforts by the district to strengthen family involvement.

Our previous analysis of 2002 student data showed, for the most part, higher student achievement on the MCAS in schools where students reported high levels of family involvement. This information, presented in the *Benchmarking Public Education in Worcester: 2003* report, was a baseline, against which we intended to measure future trends. However, the data presented here describe the level of family involvement only in the aggregate (district wide vs. school level).⁵ The ability to reliably examine these data disaggregated by school, and to monitor the relationship between these data and MCAS scores, is something we think would be helpful to the district as it strives to raise students' academic performance. We also expected that the district and individual schools would use the family involvement data to identify individual students who both performed poorly on the MCAS and reported low levels of family involvement, and then seek ways to enhance these families' involvement in their children's learning.

⁵ Due to the low response rate among 10th graders in 2005, data were not disaggregated due to concerns that small numbers for each school would not necessarily be representative or yield meaningful interpretation.



Why is it important?

Specialized training and education beyond high school have become increasingly important in ensuring an individual’s economic well-being. According to the Bureau of Labor Statistics, during the second quarter of 2005, median weekly earnings for college graduates with at least a bachelor’s degree were about 71 % higher than those of individuals who had only a high school diploma (\$996 per week versus \$584).¹ 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 jobs in Massachusetts are professional or technical jobs requiring an associate’s degree or higher.² Nationwide, the fastest growing fields of employment include computer software engineers, health care professionals and paraprofessionals, and preschool and postsecondary teachers, all of which typically require advanced training or a post-secondary degree for entry into the field.

In order to enhance graduates’ employment prospects and earnings potential, WPS has established a goal that 80% of its high school graduates will plan to pursue post-secondary education following graduation.

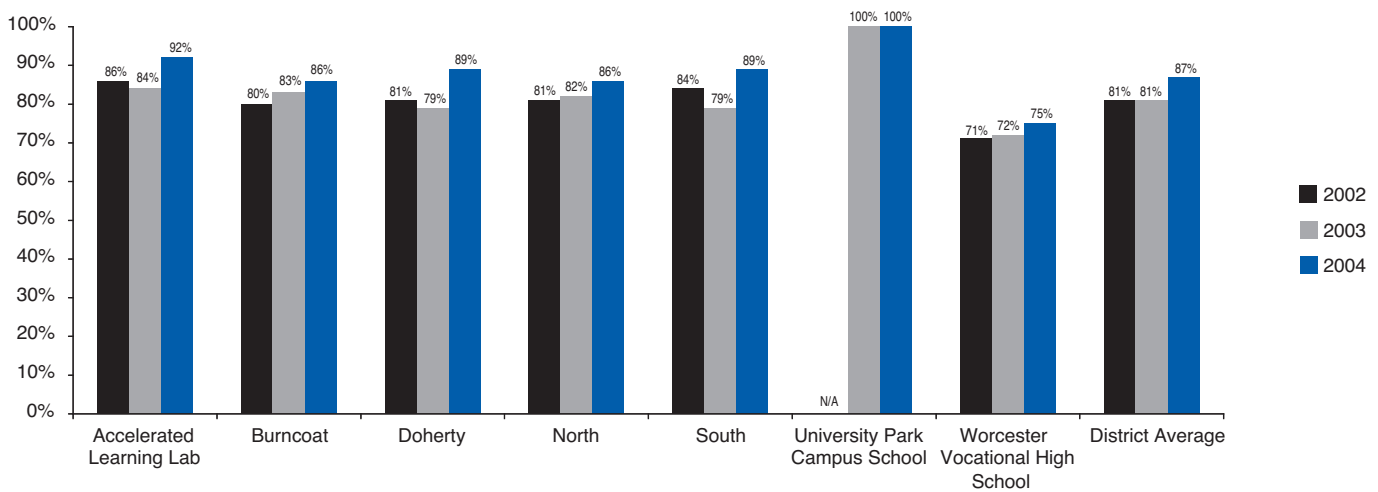
What is the trend in Worcester?

The Massachusetts Department of Education collects data annually from public high schools regarding the plans of their graduates.³ It is important to note that these data are self-reported by students and provide an indication of their *intentions* following graduation, and as such, may not necessarily 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, nor is it able to track whether a student completes a degree program.

In 2004, 87% 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 4.1**, between 2002 and 2004, the proportion of students planning to attend 2- or 4-year colleges rose from 81% in 2002 to 87% in 2004. In 2004, for the second year in a row, the University Park Campus School had the highest rate-100%-of students intending to go to college.⁴

Chart 4.2 shows that in 2004, a higher percentage of WPS graduates (87%) intended to enroll in college compared to graduates statewide (78%). In addition, Worcester’s rate was substantially higher than each of the comparison districts listed.

Chart 4.1: High School Graduates Planning to Attend 2- or 4-Year Colleges



Source: MA DOE Plans of High School Graduates reports for 2002-2004.

¹ <http://www.bls.gov>

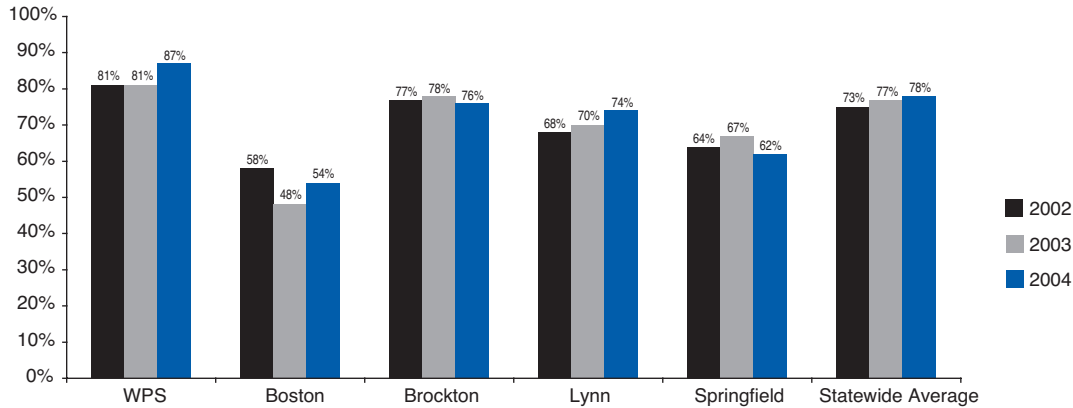
² Massachusetts Division of Unemployment Assistance, Economic Analysis Department, "The Massachusetts Job Outlook through 2010." <http://www.detma.org>

³ In 2001-02, Massachusetts changed its collection system and began collecting student-level data through the Student Information Management System (SIMS). As a result of this new collection method, any observed changes in trend data 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. Despite these limitations, student-level data collected through SIMS for this and the following years will ensure more accurate reporting by districts and will allow for more in-depth analysis of the plans of high school graduates in Massachusetts.

⁴ Students who graduate from the University Park Campus School may attend Clark University tuition-free.



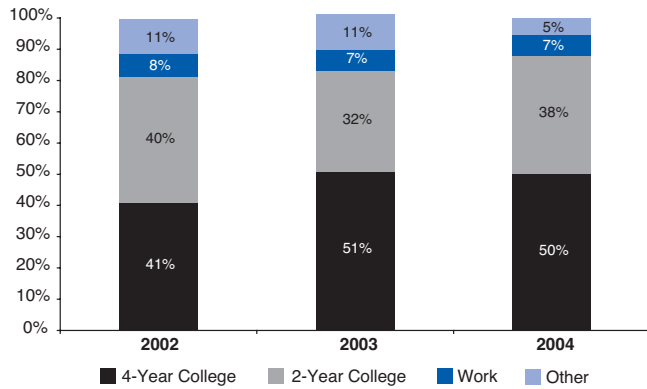
Chart 4.2: Graduates Planning to Attend 2- or 4-Year Colleges, WPS and Comparable Districts



Source: MA DOE Plans of High School Graduates reports for 2002-2004.

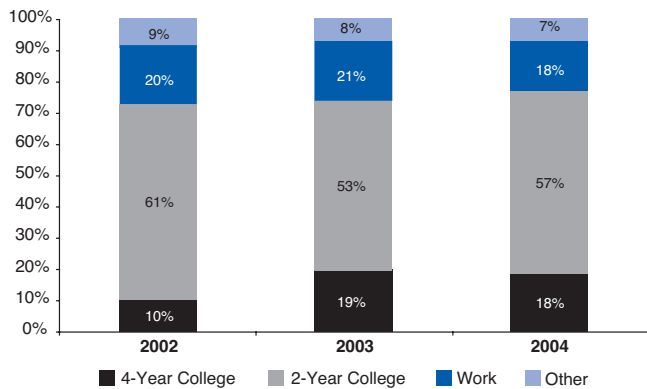
Charts 4.3 and 4.4 reflect trends in post-graduation plans for WPS’ non-vocational and vocational students. In 2004, 88% of non-vocational students intended to enroll in 2-year, 4-year, or other post-secondary institutions following graduation, up from 82% in 2002. In 2004, more than half WPS graduates intending to go on to college planned to attend a 4-year school.

Chart 4.3: Plans of WPS Graduates: Non-Vocational Students



Source: MA DOE Plans of High School Graduates reports for 2002-2004.

Chart 4.4: Plans of WPS Graduates: Vocational Students



Source: MA DOE Plans of High School Graduates reports for 2002-2004.

In 2004, 75% of graduates of Worcester’s Vocational High School intended to enroll in college (in less than a decade, this proportion has more than quadrupled). Among this college-bound group, the vast majority, about three out of four, planned to attend a 2-year or other post-secondary institution compared to a 4-year college. The substantial increase in the proportion of vocational high school graduates pursuing further education and training may be due in part to fewer employment opportunities for those without advanced education and training. Also, state standards—including the requirement that students pass MCAS tests to graduate—apply to vocational schools as well. Hence vocational students may be better prepared academically to enter college than in previous years.

What does this mean for Worcester?

From 2003 to 2004, the WPS saw the proportion of its seniors intending to enroll in college increase from 81% to 87%, with each school in the district reporting gains. WPS seniors again planned to attend college at a higher rate than students statewide, and at a higher rate than students in each of the comparison districts presented above.

Recent trends in the post-secondary planning of Worcester vocational school students, in conjunction with the increase in educational requirements to a college-level certificate or 2-year degree for some trade areas, suggest that the role of this institution has shifted from preparing students for immediate employment in their chosen trade to preparing students for further education and training.



Why is it important?

The Massachusetts Comprehensive Assessment System (MCAS) was implemented following passage of the Education Reform Act of 1993 to measure student performance based on the Massachusetts Curriculum Frameworks' learning standards. The MCAS is a standards-based test, which means it measures how well students are mastering specific skills and knowledge needed to progress through school. The subject-matter tests serve as one basis by which students, schools, and districts are held accountable for student performance. Starting with the class of 2003, all students are required to pass the grade 10 MCAS tests in English language arts and mathematics in order to graduate.

Teachers, principals, and superintendents use MCAS results to identify programs and schools in need of improvement, to diagnose student strengths and weaknesses, and to identify students who need tutoring. The Massachusetts Department of Education (DOE) also uses the results to determine high-performing schools and to identify those that require DOE oversight. Progress on school and district-wide MCAS results are used to comply with the Federal No Child Left Behind Act which requires schools to make Adequate Yearly Progress (AYP) toward all students achieving proficiency in reading and math by 2014.

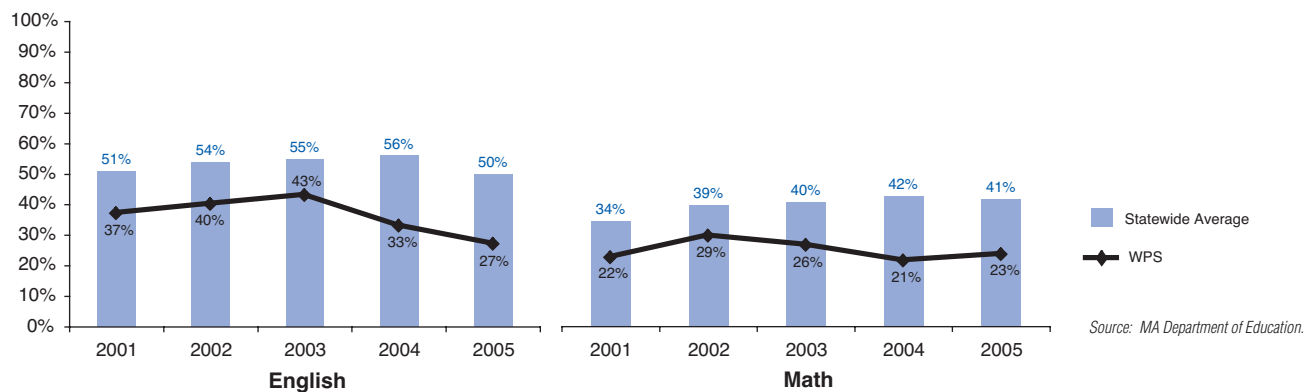
What is the trend in Worcester?

Previous Benchmarking Public Education reports described MCAS passing rates for WPS, comparison districts, and the state as a whole. Because the standard that all students must achieve by 2014 is proficiency, this year's report will instead discuss the proportion of students scoring at or above proficiency in English and math.¹

As shown in **Chart 5.1**, the proportion of WPS fourth graders scoring at or above proficiency on both the English and math MCAS tests has consistently been well below the state average during the entire 2001 through 2005 period. On the 2005 English MCAS, 27% of WPS fourth graders scored in the advanced and proficient categories compared to 50% of students statewide. Since 2003, fourth graders' scores on the English test have steadily worsened, falling from 43% at or above proficiency, to 27%. Less than one in four fourth graders (23%) scored in the proficient or advanced category in math in 2005, compared to 41% statewide. None of the students at the Chandler Community and Harlow Street Magnet schools scored in the proficient or advanced categories on either the English or math tests in 2005. In other words, none of the students in these two schools met the standard that all students will be required to meet by 2014. There were only two other elementary schools statewide- one in Springfield and one in Boston- where none of the students attained proficiency on either test.

In 2005, only students at the Abby Kelley Foster Regional Charter School and Lake View Elementary School

Chart 5.1: 4th Graders Scoring At or Above Proficient on MCAS



¹ As defined by the Massachusetts Department of Education, students scoring at the Proficient level demonstrate a solid understanding of challenging subject matter and solve a wide variety of problems. Students scoring at the Advanced level demonstrate a comprehensive and in-depth understanding of rigorous subject matter, and provide sophisticated solutions to complex problems.



Chart 5.2: 7th & 8th Graders Scoring At or Above Proficient on MCAS

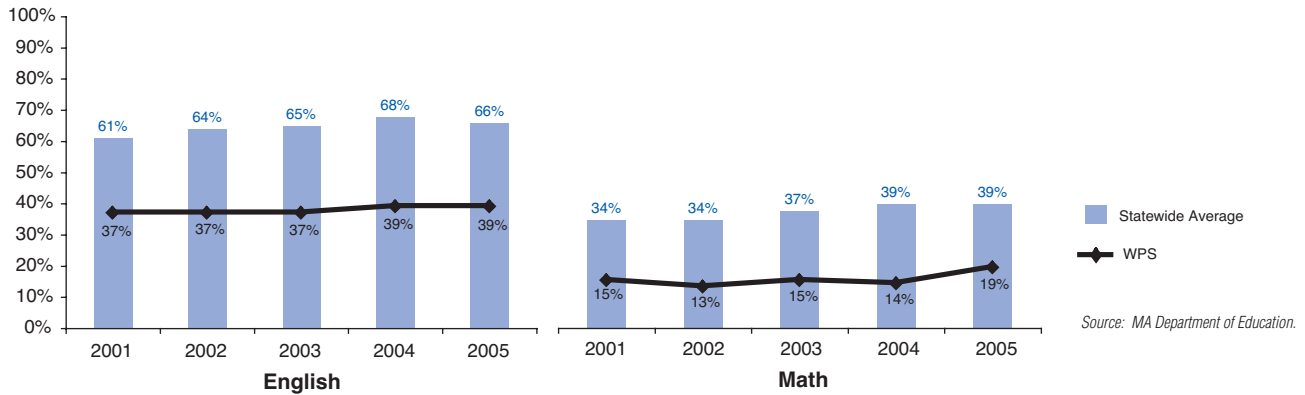
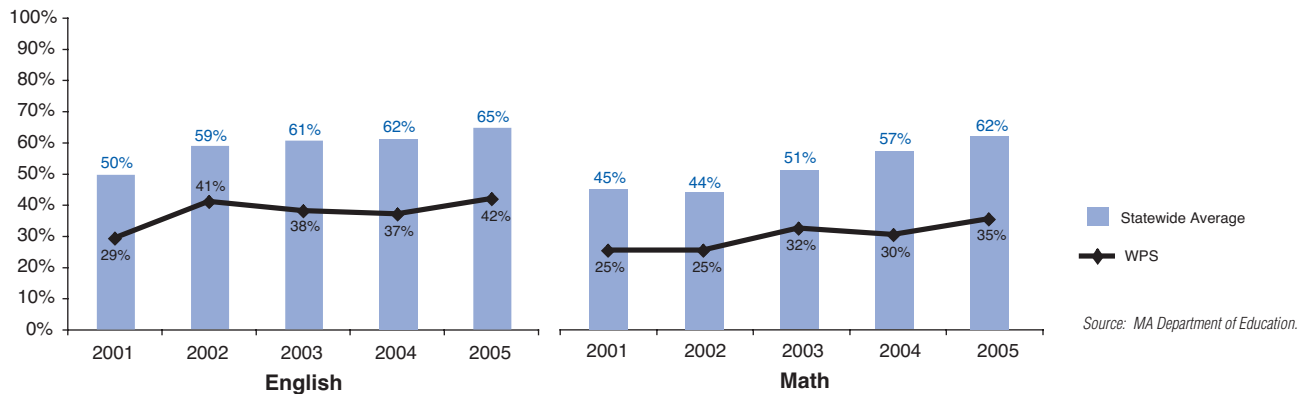


Chart 5.3: 10th Graders Scoring At or Above Proficient on MCAS



scored at or above the *statewide* average on both the fourth grade English and math tests. **Table 5.1** lists schools (elementary, middle, and high) in which the percentage of students scoring proficient and advanced exceeded the *district* average for both the English and math tests. Proficiency rates on the 2005 English and math MCAS test are provided for individual schools in **Appendix Table A**.

Chart 5.2 compares the proportions of middle school students attaining proficient or advanced status on the English and math MCAS tests in the WPS and statewide.² In 2005, 39% of WPS seventh graders scored in the proficient or advanced categories on the English portion of the MCAS. As is the trend at each grade level, student achievement is higher on the English test than the math; however, the disparity between the two scores is greatest at the middle school level (39% vs. 19% in 2005). Additionally, WPS scores at the proficient and advanced levels on both tests were substantially below the statewide average: 27 percentage points lower for English, and 20

percentage points lower for math. Among middle schools, the top performers in 2005 were the University Park Campus School and the Seven Hills Charter School where student scores *exceeded both the district and statewide averages* for both English and math. The Abby Kelley Foster Regional Charter and Forest Grove Middle schools, while below the statewide averages, *exceeded the district averages* for both the English and math portions of the MCAS.

Chart 5.3 shows that the percentage of tenth graders attaining proficiency increased from 29% in 2001 to 42% in 2005, although this remains well below the statewide rate of 65%. Proficiency rates in math have increased as well, from 25% in 2001 to 35% in 2005; however, the district average was well below- 27 percentage points below- the statewide average in 2005. The University Park Campus School was the only school in Worcester in which tenth graders outperformed both the district and statewide averages in 2005 with 81% attaining proficiency on the English test and 90% on the math test.

² From 1998 to 2000 the English portion of the middle school MCAS test was administered in the 8th grade. In 2001 it was administered in both the 7th and 8th grades (charts include the 7th grade score). Since 2002 it has been administered in the 7th grade. The math portion of the test has always been administered in the 8th grade.



What does this mean for Worcester?

Over the past five years, at each and every grade level, the proportion of Worcester students at or above proficiency in English and math has been significantly lower than the statewide averages. Approximately one-third of all students in Worcester scored in the proficient or advanced levels on the 2005 English and math MCAS tests. These proportions were significantly lower than those of students statewide.

Worcester is one of ten districts that the state identified as in need of improvement for not making adequate yearly progress (AYP) for two or more consecutive years. Under the No Child Left Behind Act, schools and school districts that fail to make AYP toward statewide proficiency goals will, over time, be subject to improvement, corrective action, and restructuring measures aimed at getting them back on course to meet standards. The Educational Management Audit Council placed the WPS System on ‘Watch’ at their June 14, 2005 meeting. Based on the 2004 MCAS results, Worcester was among the low performing academic school districts in the Commonwealth. The Council’s report cited the following as evidence of the district’s failure to make AYP: approximately one-third of all students in Worcester attained proficiency on the 2003 and 2004 MCAS tests, and these proportions were significantly lower than those of students statewide, and the percentage of all Worcester students attaining proficiency was not significantly different in 2004 than in 2001. Once a district is placed on watch, it is subject to regular monitoring by the Office of Educational Quality and Accountability (EQA).

The first EQA Monitoring report issued for the period July 1, 2005 to October 31, 2005 indicated that progress has been made toward rectifying district problems that may be obstacles to improving student achievement. Specifically, the evaluator noted “In sum the district’s gains in the percentages of students attaining proficiency/advanced status exceeded the State’s gain on eight out of ten exams.”

However, while lauding the district for some “hard won” progress in the past year, the evaluator cautioned “No rest for the weary...the district still has a long way to go.”

Worcester’s educators will have to continue to analyze the reasons for past lack of adequate progress. Is it the result of financial constraints where any new revenues have had to be spent on increases in employee health insurance, which have no affect on student instruction? Have MCAS tutoring programs been cut? Do poorly performing schools have appropriate leadership? Does the current collective bargaining agreement give sufficient authority to principals over who teaches in their schools? Do limited-English-proficient students perform better in English language immersion classes (approved by statewide referenda in 2002) or in bilingual education classes (which are still mandated in Worcester by a 20-year old Federal consent decree for Hispanic students)?³ Are professional development programs adequately addressing the gaps in student performance? Is the district making appropriate use of available data to drive instructional change and promote family involvement? These and many other more difficult issues will have to be addressed if the district is to have any hope of meeting the requirement of NCLB by 2014.

³ In order to modify the consent decree, the Worcester Public Schools would have to take the issue back to Federal Court which is what Boston and Holyoke have done.



Table 5.1: Schools Scoring At or Above the WPS Average, 2004-05

	MCAS Proficiency/Advanced Rate	
	English	Math
Elementary School Level		
Abby Kelley Foster RCS Elementary	63%	56%
Lake View	62%	41%
Thorndyke Road	58%	40%
Clark Street Community	44%	38%
Worcester Arts Magnet	43%	43%
May Street	43%	41%
Flagg Street	43%	40%
West Tatnuck	41%	48%
Nelson Place	41%	36%
Jacob Hiatt Magnet	38%	28%
McGrath	36%	30%
Seven Hills CS Elementary School	36%	23%
Tatnuck Magnet	30%	35%
Columbus Park	29%	35%
Wawecus Road	29%	33%
City View	28%	39%
Rice Square	28%	32%
Roosevelt	28%	25%
Mill Swan	27%	27%
District Average- Elementary School	27%	23%
Middle School Level		
University Park Middle School	72%	53%
Seven Hills CS Middle School	69%	44%
Abby Kelley Foster RCS Middle	58%	34%
Forest Grove Middle	46%	26%
District Average- Middle School	39%	19%
High School Level		
University Park High School	81%	90%
Abby Kelley Foster RCS High School	71%	58%
Doherty	54%	48%
Burncoat	47%	37%
North	44%	39%
District Average- High School	42%	35%
Source: MA Department of Education.		



Appendix A – Worcester Public Schools and Charter Schools

School Name	Spring 2005					Minority Student Population (%)	Low Income (%)	Limited English Proficiency (%)
	Enrollment	Students Proficient/Advanced in English MCAS (%)	Number of Students Tested (English)	Students Proficient/Advanced in Math MCAS (%)	Number of Students Tested (Math)			
Belmont Street Community	453	18.0%	45	15.0%	45	69.2%	87.6%	18.5%
Burncoat Prep	230	17.0%	35	9.0%	35	68.2%	80.4%	22.6%
Canterbury Street Magnet	381	27.0%	48	12.0%	48	66.9%	88.2%	22.0%
Chandler Community	301	0.0%	29	0.0%	29	69.1%	89.7%	24.6%
Chandler Magnet	434	20.0%	44	9.0%	44	65.7%	83.4%	47.5%
City View	462	28.0%	46	39.0%	46	56.0%	78.4%	14.9%
Clark Street Community	292	44.0%	32	38.0%	32	49.4%	54.1%	12.7%
Columbus Park	353	29.0%	31	35.0%	31	68.8%	89.0%	33.7%
Elm Park Community	399	15.0%	56	7.0%	57	68.4%	86.7%	30.1%
Flagg Street	438	43.0%	63	40.0%	63	40.2%	17.8%	4.6%
Gates Lane	651	24.0%	92	21.0%	92	47.6%	53.5%	10.8%
Goddard School/Science Tech	591	18.0%	71	18.0%	72	68.9%	92.7%	42.3%
Grafton Street	361	18.0%	43	32.0%	43	58.7%	79.2%	17.2%
Harlow Street Magnet	191	0.0%	29	0.0%	29	62.3%	93.2%	15.7%
Heard Street	221	25.0%	36	14.0%	36	40.3%	48.0%	9.5%
Jacob Hiatt Magnet	510	38.0%	62	28.0%	62	62.2%	56.1%	16.5%
Lake View	322	62.0%	34	41.0%	34	39.4%	44.7%	12.4%
Lincoln Street	246	15.0%	20	0.0%	20	68.7%	82.5%	26.8%
May Street	249	43.0%	37	41.0%	37	39.4%	36.5%	10.8%
McGrath	204	36.0%	33	30.0%	33	49.6%	67.2%	7.4%
Midland Street	216	21.0%	34	24.0%	34	41.3%	45.4%	8.8%
Mill Swan	202	27.0%	26	27.0%	26	62.9%	68.3%	24.8%
Multiple Intelligences	210	31.0%	39	18.0%	39	50.0%	66.7%	23.3%
Nelson Place	454	41.0%	68	36.0%	68	40.3%	28.4%	4.4%
New Ludlow	206	38.0%	34	18.0%	34	46.7%	50.5%	8.7%
Norrback Avenue	616	28.0%	73	22.0%	73	48.4%	51.5%	23.7%
Quinsigamond	754	17.0%	102	9.0%	102	53.1%	72.3%	24.1%
Rice Square	417	28.0%	50	32.0%	50	41.0%	54.9%	12.5%
Roosevelt	647	28.0%	79	25.0%	79	44.4%	49.1%	20.1%
Tatnuck Magnet	404	30.0%	62	35.0%	62	39.9%	35.1%	7.9%
Thorndyke Road	353	58.0%	50	40.0%	50	40.5%	39.4%	11.9%
Union Hill	258	11.0%	37	25.0%	37	60.1%	96.1%	16.3%
Vernon Hill	421	17.0%	48	15.0%	48	58.5%	79.3%	21.6%
Wawecus Road	159	29.0%	24	33.0%	24	44.0%	45.9%	9.4%
West Tatnuck	300	41.0%	31	48.0%	31	39.9%	20.0%	10.0%
Worcester Arts Magnet	350	43.0%	38	43.0%	38	40.3%	42.0%	6.0%
Burncoat Middle	709	40.0%	344	17.0%	327	53.4%	61.1%	10.0%
Forest Grove Middle	961	46.0%	483	26.0%	461	44.1%	50.5%	5.5%
Sullivan Middle	1031	36.0%	488	16.0%	520	58.4%	71.3%	12.2%
Worcester East Middle	751	29.0%	334	13.0%	387	59.0%	75.9%	6.8%
Burncoat High	1412	47.0%	274	37.0%	275	48.6%	46.2%	8.1%
Doherty High	1535	54.0%	364	48.0%	364	45.4%	34.8%	5.3%
North High	1270	44.0%	255	39.0%	256	56.3%	58.5%	4.6%
South High Community	1542	34.0%	332	24.0%	334	61.2%	67.8%	13.7%
Worcester Vocational HS	1030	29.0%	259	23.0%	258	45.6%	62.8%	1.5%
ALL School -- ES Scores	343	18.0%	57	9.0%	59	68.8%	82.8%	19.1%
ALL School -- MS Scores	273	42.0%	82	14.0%	65			
ALL School -- HS Scores	205	42.0%	52	36.0%	52			
University Park -- MS Scores	84	72.0%	39	53.0%	44	61.3%	72.7%	0.9%
University Park -- HS Scores	136	81.0%	38	90.0%	38			
Abby Kelley Foster RCS -- ES	684	63.0%	94	56.0%	94	44.0%	48.6%	1.2%
Abby Kelley Foster RCS -- MS	335	58.0%	61	34.0%	49			
Abby Kelley Foster RCS -- HS	48	71.0%	17	58.0%	17			
Seven Hills CS -- ES	384	36.0%	78	23.0%	78	70.6%	63.7%	9.6%
Seven Hills CS -- MS	283	69.0%	49	44.0%	76			

Source: MA Department of Education and Worcester Public Schools.

2004-2005						October 1, 2004 - October 1, 2005		
Students Qualifying for Special Education Services (%)	% of Teachers Licensed in Teaching Assignment	% of Core Academic Teachers Identified as Highly Qualified	Retention	Attendance Rate (%)	Average number of days absent	Combined Mobility Rate (Entry and Exit)	Entry Mobility Rate	Exit Mobility Rate
17.4%	100.0%	100.0%	2.3%	94.5%	9	60.4%	30.3%	30.1%
17.0%	95.0%	94.7%	1.9%	94.7%	9.2	48.3%	27.0%	21.3%
15.7%	100.0%	100.0%	2.0%	95.8%	6.9	60.2%	30.6%	29.6%
14.0%	98.5%	100.0%	2.3%	92.8%	11.1	87.2%	49.4%	37.7%
25.1%	100.0%	94.9%	3.3%	94.4%	9.3	32.3%	17.0%	15.3%
22.9%	100.0%	100.0%	4.9%	94.0%	9.8	48.3%	27.8%	20.5%
16.4%	98.2%	100.0%	2.8%	95.4%	7.8	44.3%	25.0%	19.3%
22.4%	100.0%	100.0%	2.7%	94.0%	9.9	56.0%	32.9%	23.1%
13.0%	100.0%	100.0%	2.6%	94.0%	9.5	69.5%	41.1%	28.4%
10.5%	100.0%	100.0%	1.5%	96.0%	6.6	13.5%	8.4%	5.0%
22.0%	100.0%	100.0%	4.2%	94.9%	8.6	29.4%	18.5%	11.0%
20.1%	100.0%	100.0%	3.7%	95.0%	8.2	52.6%	31.1%	21.5%
15.2%	92.0%	100.0%	2.6%	95.5%	7.6	40.8%	20.8%	19.9%
15.7%	100.0%	100.0%	1.3%	93.8%	9.9	84.8%	49.2%	35.6%
12.7%	100.0%	100.0%	2.0%	96.6%	5.9	42.5%	18.1%	24.4%
12.0%	100.0%	100.0%	1.7%	95.9%	7.1	11.7%	4.3%	7.4%
9.3%	99.5%	100.0%	3.2%	95.4%	7.9	23.6%	9.6%	14.0%
13.8%	100.0%	100.0%	1.4%	94.1%	9.9	71.9%	34.8%	37.1%
10.8%	100.0%	100.0%	0.0%	96.0%	7.1	23.3%	15.0%	8.4%
10.3%	93.3%	93.3%	1.5%	95.4%	7.3	44.9%	24.4%	20.5%
7.4%	100.0%	100.0%	1.1%	96.8%	5.5	22.7%	14.4%	8.3%
29.7%	100.0%	100.0%	6.6%	94.8%	8.9	30.2%	14.9%	15.3%
16.7%	96.0%	97.1%	0.4%	95.1%	8.1	53.8%	35.7%	18.1%
10.8%	100.0%	100.0%	1.8%	96.5%	6.1	29.5%	12.8%	16.7%
14.1%	100.0%	100.0%	0.5%	97.1%	4.9	35.4%	20.4%	15.0%
16.6%	97.9%	97.1%	2.2%	94.7%	8.9	41.5%	24.2%	17.3%
15.6%	10.0%	100.0%	1.1%	95.7%	7	48.6%	27.0%	21.6%
14.4%	96.6%	100.0%	2.1%	95.3%	7.6	39.3%	20.7%	18.6%
19.0%	100.0%	100.0%	0.9%	94.9%	8.5	34.2%	20.6%	13.5%
11.6%	100.0%	100.0%	1.8%	96.2%	6.6	19.3%	9.4%	9.9%
13.3%	100.0%	94.4%	1.3%	95.7%	7.5	33.2%	19.2%	14.0%
15.5%	88.9%	87.5%	0.4%	94.9%	8.6	56.5%	36.4%	20.1%
12.8%	100.0%	100.0%	5.0%	95.0%	8.3	43.9%	25.9%	18.1%
24.5%	100.0%	100.0%	0.7%	95.3%	8	40.9%	27.0%	13.8%
19.7%	98.9%	100.0%	2.0%	95.2%	8.3	27.4%	10.0%	17.4%
17.1%	100.0%	100.0%	1.9%	95.0%	8.8	27.6%	18.1%	9.5%
19.9%	92.0%	90.0%	5.1%	94.1%	10.1	33.4%	16.6%	16.8%
20.2%	90.7%	86.8%	3.1%	0.9%	9.2	30.4%	15.4%	15.0%
23.1%	91.6%	88.2%	5.1%	93.0%	11.8	35.5%	20.0%	15.5%
21.7%	84.1%	78.0%	4.0%	92.1%	12.8	47.7%	23.0%	24.6%
19.0%	85.7%	82.9%	7.1%	89.9%	16.4	43.3%	20.9%	22.3%
13.0%	92.9%	92.0%	4.4%	90.5%	15.7	34.3%	17.2%	17.1%
19.6%	100.0%	97.3%	8.7%	89.1%	17.1	59.1%	27.2%	31.8%
19.2%	88.6%	88.0%	6.8%	88.4%	18.5	58.4%	28.0%	30.4%
16.3%	91.8%	93.6%	4.7%	91.4%	14.5	22.6%	8.3%	14.3%
20.5%	93.0%	96.3%	3.3%	94.6%	9	49.2%	25.3%	23.9%
5.5%	100.0%	92.9%	1.9%	95.6%	7.8	8.6%	5.0%	3.6%
10.2%	66.3%	90.8%	1.8%	94.8%	8.8			
10.6%	83.5%	85.7%	1.9%	94.9%	9.1			

Mission Statement:

The Research Bureau serves the public interest of the Greater Worcester region by conducting independent, non-partisan research and analysis of public-policy issues to promote informed public debate and decision-making.



The Research Bureau

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