



THE CITY OF NEW YORK  
INDEPENDENT BUDGET OFFICE

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July 31, 2006

Leonie Haimson  
Executive Director  
Class Size Matters  
124 Waverly Place  
New York, NY 10011

Dear Ms. Haimson,

In response to your request, the Independent Budget Office (IBO) has estimated the cost of reducing average class sizes in the sixth, seventh, and eighth grades. Using data supplied by the Department of Education (DOE), we determined how much average class sizes could be reduced given current space limitations in schools housing sixth, seventh, and eighth grades, how many new classes would be needed to achieve these lower average class sizes and the cost of teacher salaries and benefits for each of these new classes. In addition, we examined the number of new classes and the cost of teacher salaries required to achieve average class sizes of 22 in schools and districts where this was physically possible. Both cases were estimated for individual schools and for each district in the city. All data and estimates are for the 2004-2005 school year—the latest year for which all the necessary data are available.

### Results

IBO determined that average general education class size in grades six, seven, and eight was 27.4 students per class in 2004-2005. More than half of the schools have average class sizes in these grades in the 25-30 student range. However, many of the buildings currently housing these grades have enrollments below their rated capacity, which means that there are rooms available to create additional classes. Adding classes wherever it is possible to add them would result in the creation of an additional 771 classes in 217 schools (45 percent of the schools with sixth, seventh, and eighth graders used in the analysis). This would bring the overall average class size for the three grades to 25. The cost of teacher salaries and fringe benefits for the new classes would be \$59.3 million.

Assuming that only existing facilities are used, there is a smaller subset of schools where it would be possible to reduce the average class size to 22. IBO estimates that there are 135 such schools (about 28 percent of schools with sixth, seventh, and eighth graders). To achieve an average class size of 22 or lower *in those schools* would require the creation of 368 new classes and an expense of \$28.3 million for teachers.

If we shift the analysis to the district level, over 80 percent of the districts have average class sizes in the 25-30 student range. Again, assuming that only existing capacity is used, but that students could be shifted within districts to take advantage of existing space in buildings currently housing these grades by disregarding existing zoning, there is both need (i.e. the existing district average exceeds 22 students) and sufficient space in 25 districts to create an additional 1,075 new classes. These new classes would cost approximately \$82.6 million in teacher salaries and would reduce the overall average class size in the three grades to 24.1 students.

Again, assuming that only existing facilities are used, there are 14 districts with sufficient unused space in buildings currently housing sixth, seventh, and eighth grade classes to produce average class sizes of 22. It would require 460 classes and \$35.4 million in spending for teacher salaries and benefits to reduce average class sizes to 22 students or lower in the 14 districts where it is feasible.

## **Data and Method**

To conduct its analysis, IBO used the New York City Department of Education's Enrollment-Capacity-Utilization Report (ECU) and Official Audited October 31 Register. The analysis used data from the 2004-2005 school year, the most recent year for which the ECU report is available. Thus, our analysis could not consider developments since that time. For example, we cannot account for new schools where sixth, seventh, and eighth grade classes are being phased in or existing schools that are reorganizing those grades. It should also be noted that the number of students enrolled differs between the ECU and the audited register. DOE did not provide an explanation for this discrepancy, but the differences do not appear to be significant.

Only general education students were included in the analysis. Special education students were removed from the data by subtracting those students from the register and setting aside one classroom per school for each special education class in that school. Each special education class was assumed to have 12 seats because that is the number of seats DOE assumes when it calculates school capacity for the vast majority of the special education classes included in this analysis. Although the number of seats DOE uses in its estimate of capacity for certain types of special education classes varies, there were only a limited number of these types of special education classes in the analysis.

IBO examined schools with sixth, seventh, and eighth grade classes and computed the current average class sizes in these grades. We then estimated the number of classrooms in each school that are available for use by sixth, seventh, and eighth graders. The estimated number of classrooms was based on school capacity figures shown in the ECU reports. The ECU measures a school's capacity in terms of seats rather than classrooms with the rated capacity determined by the level of the school (elementary or middle), the grade of the students in each class, and whether the school qualifies for Federal Title I status. For example, in a Title I elementary school each kindergarten, first, second, or third grade class is assumed to require 20 seats. We multiplied the number of classes from the audited register by the number of seats DOE uses for each type of class to determine how much of the reported ECU capacity was being used by current classes. We then subtracted this number from the capacity of each school or district

according to the ECU and divided the result by 30 or 31—the number of seats DOE uses to calculate capacity in the sixth, seventh, and eighth grades in middle and elementary schools that do not receive Title I funding—to estimate the number of classrooms available to hold new classes. It should be noted that DOE assumes 28 or 29 seats as the capacity for a class in a Title I school, but we opted to use the non-Title I numbers to avoid overestimating the number of classes that could be created in each school or district.

Since new classes cannot be created in schools that have reached or exceeded their capacities, IBO included only those schools that our analysis indicated had at least one classroom available for use by a new sixth, seventh, or eighth grade class. For our first case, we also included only those schools or districts where the current average class size was greater than 22. For these schools we computed the lowest possible average class size in each school or district. If the lowest possible class size was greater than or equal to 20, we calculated the number of classes that the school or district would need to create to achieve that average class size. Otherwise, we determined how many classes the city would have to create to achieve an average class size of 20.

It is important to understand that our results are estimates using reported data to which we applied system-wide space formulas and standards. There are no doubt school buildings where specific conditions preclude taking advantage of all of the reported space to make classrooms. However, identifying schools where such conditions exist would require walking through each of the several hundred schools with sixth, seventh, and eighth grade classes and inventorying unused space.

Finally, IBO calculated the cost of teacher salaries and benefits for all of the new classes. In determining the cost of teachers, we relied on DOE's assumption that 1.4 teachers are required to cover each middle school class. We also assumed that each new teacher would be hired at the lowest salary rate of \$41,172. Our total cost estimate also includes the cost of benefits for each new teacher. Teacher's salaries increase with experience and therefore these costs would gradually increase over time. There are also likely to be other personnel costs involved with recruiting, mentoring, and supervising the additional teachers needed. Finally, there would be some additional expenses such as the cost of teaching materials, classroom libraries, and other supplies needed for the newly established classrooms. Neither of these costs is included in our estimates, although they are likely to be significantly less than the direct salary and benefit expenses we did include.

Since you were particularly interested in creating average class sizes of 22, for our second case, IBO focused on those schools and districts where the lowest possible average class size was 22 or less. We then calculated how many new classes needed to be created to achieve that average and the cost of teacher salaries for those classes.

**Average Class Sizes in Sixth, Seventh, and Eighth Grades, by School**

Average Class Size	Current Average Class Size		Lowest Possible Average Class Size	
	Number of Schools	Percentage of Schools	Number of Schools	Percentage of Schools
<15	7	1.46%	7	1.46%
>15-20	28	5.85%	134	27.97%
>20-25	111	23.17%	135	28.18%
>25-30	262	54.70%	175	36.53%
>30-35	70	14.61%	27	5.64%
>35	1	0.21%	1	0.21%
<b>Total</b>	<b>479</b>	<b>100.00%</b>	<b>479</b>	<b>100.00%</b>

SOURCES: IBO; Department of Education register data and "Enrollment, Capacity, Utilization" data files, 2004/2005 school year.

**Average Class Sizes for Sixth, Seventh, and Eighth Grades, by District**

Average Class Size	Current Average Class Size		Lowest Possible Average Class Size	
	Number of Districts	Percentage of Districts	Number of Districts	Percentage of Districts
<15	0	0.00%	0	0.00%
>15-20	0	0.00%	12	37.50%
>20-25	3	9.38%	6	18.75%
>25-30	26	81.25%	14	43.75%
>30-35	3	9.38%	0	0.00%
<b>Total</b>	<b>32</b>	<b>100.00%</b>	<b>32</b>	<b>100.00%</b>

SOURCES: IBO; Department of Education register data and "Enrollment, Capacity, Utilization" data files, 2004/2005 school year.

**Cost of Teacher Salaries and Benefits for New Classes**

	Lowest Possible Average Class Size		Average Class Size of 22 or Lower*	
	Number of New Classes Needed	Cost of Teachers for New Classes	Number of New Classes Needed	Cost of Teachers for New Classes
By School	771	\$59,271,037	368	\$28,290,197
By District	1,075	\$82,641,200	460	\$35,362,746

SOURCES: IBO; Department of Education register data and "Enrollment, Capacity, Utilization" data files, 2004/2005 school year; School Budget Allocations, 2005/2006.

\* Create average class size of 22 or below only in those schools and districts where sufficient space currently exists; other schools and districts remain unchanged.

If you have any further questions regarding this matter, please feel free to call me or Adira Siman (212-442-0332, [adiras@ibo.nyc.ny.us](mailto:adiras@ibo.nyc.ny.us)), who carried out the analysis.

Sincerely,

George Sweeting  
Deputy Director