

{ Building  
for the  
Future. }

# 2009 ANNUAL SCHOOL CONSTRUCTION REPORT

A SUPPLEMENT TO  
SCHOOL PLANNING &  
MANAGEMENT MAGAZINE

# Hard Economy Hits Construction Planning

Construction remains high, but declines are on the horizon.

BY PAUL ABRAMSON

Over the last few months, I fielded at least a dozen calls, all asking the same question: Given the state of the national economy, what do you think is going to happen to school construction? Will it remain strong or decline significantly?

My response, prior to receiving data for this 14th annual report on school construction, was that I thought school construction fell slightly in 2008, as I had projected, but that it would remain quite high despite the difficult economic times. I pointed out that most construction is done with capital funds voted on by the public or provided by the state. Today's construction money has been in the pipeline for a number of years, and even projects scheduled to start in 2009 are based on capital funds already available. While school budgets may be in difficulty, construction should be okay.

That was my response prior to receiving and having a chance to review the data for this year's construction report. With that data now in hand, my response to the question must be modified. Yes, school construction remains high, but not as high as it has been over the last eight years. More important, projections for the future (projects expected to be completed and/or started in 2009) show a significant decline. Capital budgets may be in place, but the economic hard times are having an effect on construction planning. How much, and to some extent where and why, is the focus of this report.

*School Planning & Management* received reports on school construction completed and underway during 2008 and planned to start in 2009 from Market Data Retrieval (MDR), a company of Dun and Bradstreet (D&B). MDR contacts school districts throughout the United States seeking information on their construction plans — new buildings, additions to existing buildings, and major retrofit projects. We take that project information and use it to estimate construction on a national and regional basis, and to report on how dollars are being spent on new schools.

All of the figures published are "annual in nature." That is, they do not accumulate ongoing construction, but rather

compile information on what was completed, expected to be completed, or started in a given calendar year. School districts may be involved in more construction, but work started or completed outside the targeted years is not included.

## THE NATIONAL SCENE

School districts in the United States spent just over \$19.5B on construction projects completed during the 2008 calendar year, including almost \$13B on new schools (accounting for 66.5 percent of the construction dollars), \$3.2B (16.6 percent) on additions to existing buildings, and just under \$3.3B (16.9 percent) on retrofit and modernization of existing structures (see **Table 1**).

The percentage of construction dollars spent on new buildings was the highest since 1979. Prior to 1979, and especially during the Baby Boom years, school districts spent 70 percent or more of their construction dollars on providing new buildings. More than 90 percent of the funds went to providing new space (a combination of new buildings and additions to old ones).

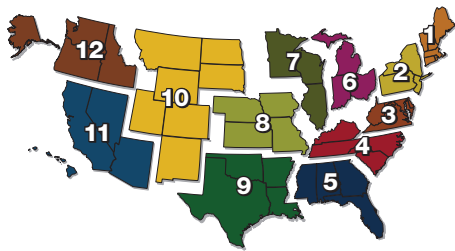
But starting in 1979, when school districts began to realize that the Baby Boom had ended and smaller cohorts of children were entering the schools, the emphasis shifted. Total spending on construction dropped, and the dollars that were spent were shifted to upgrading and enlarging existing buildings.

From 1979 through 2001, a period of 23 years, school districts spent almost \$226B on construction projects, less than half of it (\$104B) on new buildings. The balance enlarged and improved existing buildings.

That trend reversed itself, starting in 2002. In the last seven years, of the \$144B spent on school construction, \$87B (more than 60 percent) went to entirely new school buildings. In 2008, more than 66 percent of the school construction dollar went into new buildings, the highest percentage since 1978.

**Table 2** shows the national construction picture in 2008.

### School Construction Regions



**Table 1 School Construction in the U.S. (\$000's)**

	2008 Completed	2009 Projected to be Completed	2009 Projected to Start
<b>New Schools</b>	\$12,964,234	\$12,381,396	\$10,889,752
<b>Additions</b>	\$3,240,805	\$3,062,392	\$3,248,689
<b>Renovations</b>	\$3,297,002	\$3,260,771	\$2,933,971
<b>Total</b>	<b>\$19,502,041</b>	<b>\$18,704,559</b>	<b>\$17,072,412</b>

**TABLE 2 School Construction Completed in 2008 (\$000's)**

Region	New Schools	Additions	Renovation	Total	% of Spending for			% Reg Is of Nation
					New	Addition	Renovation	
1	\$345,299	\$147,722	\$266,386	\$759,407	45.5%	19.5%	35.1%	3.9%
2	\$700,030	\$665,898	\$774,842	\$2,140,769	32.7%	31.1%	36.2%	11.0%
3	\$986,584	\$141,478	\$163,667	\$1,291,729	76.4%	11.0%	12.7%	6.6%
4	\$1,678,139	\$180,254	\$177,579	\$2,035,972	82.4%	8.9%	8.7%	10.4%
5	\$2,081,462	\$247,872	\$230,415	\$2,559,748	81.3%	9.7%	9.0%	13.1%
6	\$885,474	\$443,266	\$249,018	\$1,577,758	56.1%	28.1%	15.8%	8.1%
7	\$572,455	\$85,514	\$322,672	\$980,640	58.4%	8.7%	32.9%	5.0%
8	\$212,028	\$245,621	\$261,161	\$718,810	29.5%	34.2%	36.3%	3.7%
9	\$1,782,703	\$612,162	\$292,562	\$2,687,428	66.3%	22.8%	10.9%	13.8%
10	\$756,807	\$102,889	\$113,472	\$973,167	77.8%	10.6%	11.7%	5.0%
11	\$2,501,840	\$270,562	\$228,944	\$3,001,346	83.4%	9.0%	7.6%	15.4%
12	\$461,415	\$97,567	\$216,286	\$775,268	59.5%	12.6%	27.9%	4.0%
<b>Nat'l</b>	<b>\$12,964,234</b>	<b>\$3,240,805</b>	<b>\$3,297,002</b>	<b>\$19,502,041</b>	<b>66.5%</b>	<b>16.6%</b>	<b>16.9%</b>	<b>100.0%</b>

**To read this table:** Public schools in Region 1 (New England) completed new buildings worth more than \$345M in 2008. They also put in place \$147M in additions to existing buildings and spent \$266M on renovations. School districts in Region 1 completed more than \$759M of school construction in 2008 with 45.5 percent of those dollars spent on new buildings, the balance on adding to and upgrading existing buildings. Region 1 accounted for 3.9 percent of all school construction dollars spent on projects completed in the United States in 2008.

It also shows how much school districts in each of 12 regions of the nation spent on construction and how they spent it. (A more detailed account of regional activity begins on page CR9.) Seven of the 12 regions spent more than \$1B on construction completed in 2008, and districts in five regions completed construction worth more than \$2B.

Region 11, including Arizona, California, Hawaii, and Nevada, was the highest spending region, with just over \$3B worth of construction put in place. The region was responsible for 15.4 percent of all school construction spending in the United States last year.

Region 9, including Texas, Louisiana, Oklahoma, and Arkansas, was responsible for 13.8 percent of the nation's construction spending, with almost

\$2.7B put in place. While Region 9 remains the second highest spending region, this is the second year in a row that construction spending declined.

Region 5, encompassing Florida, Georgia, Alabama, and Mississippi, is the third region where spending exceeded \$2.5B. The need for space to accommodate additional students is always a driving force in Region 5, which spent better than \$2B on new schools.

Region 2, including New York, New Jersey, and Pennsylvania, was the fourth region to exceed \$2B worth of construction. School districts in these states, which are not gaining in population, spent just one-third of the construction dollars going into new buildings and the balance being split among renovations (36 percent) and

additions (31 percent). Because construction costs in Region 2 are higher than in most other parts of the nation, districts often spend more but get less.

Districts in Region 4 (North Carolina, South Carolina, Kentucky, and Tennessee) also spent more than \$2B in 2008, with the emphasis heavily on providing new schools.

Other high-spending regions included Region 6 (Indiana, Michigan, and Ohio) spending almost \$1.6B and Region 3 (Delaware, District of Columbia, Maryland, Virginia, and West Virginia) where almost \$1.3B was reported.

Region 7 (Illinois, Minnesota, and Wisconsin), with spending at \$981M, and Region 10 (Colorado, Montana, New Mexico, North Dakota, South Dakota, Utah, and Wyoming) at \$973M,

TABLE 3

## School Construction Expected to be Completed in 2009 (\$000's)

Region	New Schools	Additions	Renovation	Total	New	% of Spending for			% Reg Is of Nation
						Addition	Renovation		
1	\$524,245	\$115,097	\$199,741	\$839,083	62.5%	13.7%	23.8%	4.5%	
2	\$700,812	\$652,289	\$548,814	\$1,901,915	36.8%	34.3%	28.9%	10.2%	
3	\$753,150	\$373,546	\$312,818	\$1,439,515	52.3%	25.9%	21.7%	7.7%	
4	\$1,745,407	\$131,088	\$101,877	\$1,978,371	88.2%	6.6%	5.1%	10.6%	
5	\$2,118,660	\$270,392	\$218,638	\$2,607,690	81.2%	10.4%	8.4%	13.9%	
6	\$961,592	\$370,453	\$277,815	\$1,609,859	59.7%	23.0%	17.3%	8.6%	
7	\$516,671	\$180,339	\$241,364	\$938,374	55.1%	19.2%	25.7%	5.0%	
8	\$230,763	\$256,528	\$263,039	\$750,330	30.8%	34.2%	35.1%	4.0%	
9	\$1,731,712	\$280,408	\$559,962	\$2,572,082	67.3%	10.9%	21.8%	13.8%	
10	\$746,884	\$86,171	\$57,576	\$890,630	83.9%	9.7%	6.5%	4.8%	
11	\$1,815,723	\$252,893	\$297,970	\$2,366,586	76.7%	10.7%	12.6%	12.7%	
12	\$535,776	\$93,189	\$181,159	\$810,125	66.1%	11.5%	22.4%	4.3%	
Nat'l	\$12,381,396	\$3,062,392	\$3,260,772	\$18,704,559	66.2%	16.4%	17.4%	100.0%	

**To read this table:** In 2009, public schools in Region 1 (New England) are expecting to complete new buildings worth \$524M. They also expect to complete additions worth \$115M and renovations valued at \$199M. Total spending in Region 1 is projected at \$839M, with 62.5 percent of the dollars for new buildings, the balance for additions and renovations. New England is projected to account for 4.5 percent of all school construction dollars spent in the nation on schools completed in 2009.

were also very active. Region 12 (Alaska, Idaho, Oregon, and Washington) reported \$775M in spending — a significant increase from previous years.

Iowa, Kansas, Missouri, and Nebraska make up Region 8. Districts there spent a total of \$719M, a sharp decline from the year before. More than 70 percent of the money went to additions and retrofit. Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont) also spent far less (\$759M) in 2008 than in recent years, possibly a result of cuts in state funding in Massachusetts, usually the region's most active state.

### WHAT'S UNDERWAY NOW?

Table 3 examines construction that school districts say they will complete in calendar year 2009. If these projections are accurate, total construction this year will fall below \$19B. How much this decline is the result of current economic conditions is difficult to say. But as I examined individual reports, there were signs of concern, indications that costs might still be cut

or projects delayed. Construction of new schools is projected to total less than \$12.4B, almost \$600M less than was completed in 2008, and spending on additions and renovations is also projected to be down.

Districts in Region 11 are showing a large drop in spending, and those in Region 2 are also expecting to complete less construction. Regions 1 and 3 project a slight rebound in construction completions, and Regions 10 and 12 expect continued strong construction activity, but the overall picture is one of caution.

### LOOKING AHEAD

Table 4, reporting on construction that is projected to start this year, brings the probable effects of the economy into sharp focus. The total shown (\$17B) suggests that construction activity may be starting a long-term decline. That may or may not be true. School districts that are planning construction but have not yet received the funding always hesitate to announce their plans, so there is a lag between the reporting of construction

starts and actual starts. Experience shows that actual starts usually exceed what is projected.

The hope, of course, is that some kind of federal stimulus will be available — school districts have projects ready to go — but whether the economic stimulus package results in an increase in construction starts in 2009 is yet to be seen. The numbers shown here are based on what school districts considered likely before the Presidential election results were known.

### NEW SCHOOLS CURRENTLY UNDERWAY

Table 5 provides a profile, on a national basis, of new schools currently under construction. The figures shown in Table 5 are medians. That means, for example, that among elementary schools being built in the nation today, half of them will cost \$178.77 per sq. ft. or more, and half will cost \$178.77 per sq. ft. or less. By using medians rather than averages, we are able to minimize the influence of special case schools that may be extremely expensive or inexpensive, or cases where reporting is faulty.

**Table 4 School Construction Projected to Start in 2009 (\$000's)**

Region	New Schools	Additions	Renovation	Total	% of Spending for			% Reg Is
					New	Addition	Renovation	Of Nation
1	\$525,072	\$96,841	\$137,180	\$759,093	69.2%	12.8%	18.1%	4.4%
2	\$564,998	\$537,227	\$534,509	\$1,636,733	34.5%	32.8%	32.7%	9.6%
3	\$504,440	\$266,017	\$279,266	\$1,049,723	48.1%	25.3%	26.6%	6.1%
4	\$1,452,594	\$228,556	\$169,352	\$1,850,501	78.5%	12.4%	9.2%	10.8%
5	\$1,761,697	\$260,535	\$365,931	\$2,388,163	73.8%	10.9%	15.3%	14.0%
6	\$828,493	\$346,760	\$270,400	\$1,445,652	57.3%	24.0%	18.7%	8.5%
7	\$428,235	\$180,236	\$156,854	\$765,325	56.0%	23.6%	20.5%	4.5%
8	\$218,301	\$214,790	\$191,995	\$625,086	34.9%	34.4%	30.7%	3.7%
9	\$1,750,091	\$456,514	\$332,493	\$2,539,097	68.9%	18.0%	13.1%	14.9%
10	\$441,572	\$176,628	\$144,396	\$762,596	57.9%	23.2%	18.9%	4.5%
11	\$1,831,540	\$356,665	\$245,247	\$2,433,451	75.3%	14.7%	10.1%	14.3%
12	\$582,720	\$127,922	\$106,350	\$816,991	71.3%	15.7%	13.0%	4.8%
<b>Nat'l</b>	<b>\$10,889,752</b>	<b>\$3,248,689</b>	<b>\$2,933,972</b>	<b>\$17,072,412</b>	<b>63.8%</b>	<b>19.0%</b>	<b>17.2%</b>	<b>100.0%</b>

**To read this table:** In the year 2009, school districts in Region 1 (New England) expect to start construction on new buildings worth more than \$525M. They will also start work on \$97M in additions to existing buildings and on renovations valued at \$137M. Altogether, school districts in Region 1 predict they will start just over \$759M worth of school construction in 2009, with 69.2 percent of the dollars devoted to new schools, the balance to additions and renovations. Region 1's spending will be about 4.4 percent of all school construction spending projected to start in 2009.

Table 5 shows that the median elementary school in the United States costs \$178.77 per sq. ft. to build. The median spending is \$21,477 per pupil, and the median school provides 115.4 sq. ft. for each student. The median elementary school was designed for 700 students and provides 80,500 sq. ft. at a total cost of \$14.6M.

Looking at middle schools, the median cost is \$178.29 per sq. ft. Median spending per pupil reached \$24,667, and the median middle school is providing 136 sq. ft. per student. The median number of students in middle schools currently being constructed is 900, and the building size is 120,000 sq. ft. The cost is \$22M.

The median high school costs \$43M and provides 225,000 sq. ft. It was designed to accommodate 1,500 students. The median high school provides 155 sq. ft. per student at \$29,167 for each student. The cost per sq. ft. is \$187.27.

Construction costs for schools completed in 2008 were significantly higher than costs for schools completed in 2007. Costs per sq. ft. increased by about 10 percent.

**Table 5 Profile of New Schools Currently Underway**

<b>National Medians</b>	\$/Sq. Ft.	\$/Student	Sq. Ft./ Student	No. of Students	Building Size (Sq. Ft.)	Building Cost (\$000's)
Elementary Schools	\$178.77	\$21,477	115.4	700	80,500	\$14,600
Middle Schools	\$178.29	\$24,667	136.0	900	120,000	\$22,000
High Schools	\$187.27	\$29,167	155.0	1,500	225,000	\$43,000
<b>Low Quartile</b>	\$/Sq. Ft.	\$/Student	Sq. Ft./ Student	No. of Students	Building Size (Sq. Ft.)	Building Cost (\$000's)
Elementary Schools	\$144.44	\$16,206	100.0	550	65,000	\$10,550
Middle Schools	\$147.99	\$18,820	120.2	700	90,000	\$15,000
High Schools	\$154.49	\$22,727	138.3	900	150,000	\$25,000
<b>High Quartile</b>	\$/Sq. Ft.	\$/Student	Sq. Ft./ Student	No. of Students	Building Size (Sq. Ft.)	Building Cost (\$000's)
Elementary Schools	\$233.63	\$30,000	139.2	800	92,100	\$19,000
Middle Schools	\$214.71	\$31,181	153.0	1,106	154,350	\$27,870
High Schools	\$229.03	\$38,417	181.7	2,000	300,000	\$63,500
<b>Top 10 Percent</b>	\$/Sq. Ft.	\$/Student	Sq. Ft./ Student	No. of Students	Building Size (Sq. Ft.)	Building Cost (\$000's)
Elementary Schools	\$299.80	\$43,218	163.6	900	108,000	\$23,755
Middle Schools	\$268.07	\$40,118	174.5	1,300	182,000	\$40,370
High Schools	\$395.00	\$64,286	228.9	2,600	425,000	\$94,000

**To read this table:** The national median cost per square foot for construction of an elementary school currently underway is \$178.77. Cost per student is \$21,477 and the median school provides 115.4 sq. ft. per student. One quarter of all school districts (the low 25 percent) is spending \$144.44 per sq. ft. or less for its elementary school construction while one quarter of all districts spends \$233.63 per sq. ft. or more. One in ten school districts estimated cost for a new elementary school at almost \$300 per sq. ft.

Based on data from 601 Elementary Schools; 258 Middle Schools; 335 High Schools

**FINDING YOUR FIT**

The median figures found in the first section of Table 5 may be significant to your district. But depending on your location, your district's aspira-

tions, the labor market in your area, and many other factors, the median may not apply to you.

If your district is in a high-cost area, or feels that it is a high quality district in

**TABLE 6**

**School Construction: Where the Money Goes, by Building Type (\$000's)**

<b>2008 Completions</b>	<b>Elementary</b>	<b>Middle</b>	<b>High</b>	<b>District</b>	<b>Total</b>
<b>New</b>	\$5,393,931	\$2,173,495	\$5,327,027	\$69,781	\$12,964,234
<b>Additions</b>	\$755,870	\$592,749	\$1,782,337	\$109,850	\$3,240,805
<b>Renovation</b>	\$1,129,079	\$675,506	\$1,209,567	\$282,849	\$3,297,002
<b>Total</b>	\$7,278,880	\$3,441,750	\$8,318,931	\$462,480	\$19,502,041
<b>% of Year's Dollars</b>	37.3%	17.6%	42.7%	2.4%	
<b>2009 Expected Completions</b>	<b>Elementary</b>	<b>Middle</b>	<b>High</b>	<b>District</b>	<b>Total</b>
<b>New</b>	\$4,353,580	\$2,814,036	\$5,211,295	\$2,485	\$12,381,396
<b>Additions</b>	\$830,004	\$424,265	\$1,675,047	\$133,075	\$3,062,392
<b>Renovation</b>	\$1,079,141	\$703,244	\$1,393,620	\$84,767	\$3,260,772
<b>Total</b>	\$6,262,726	\$3,941,545	\$8,279,962	\$220,327	\$18,704,559
<b>% of Year's Dollars</b>	33.5%	21.1%	44.3%	1.2%	
<b>2009 Projected Starts</b>	<b>Elementary</b>	<b>Middle</b>	<b>High</b>	<b>District</b>	<b>Total</b>
<b>New</b>	\$3,333,011	\$2,067,109	\$5,477,666	\$11,966	\$10,889,752
<b>Additions</b>	\$1,073,971	\$515,478	\$1,486,561	\$172,679	\$3,248,689
<b>Renovation</b>	\$1,094,344	\$547,458	\$1,212,560	\$79,609	\$2,933,972
<b>Total</b>	\$5,501,326	\$3,130,045	\$8,176,787	\$264,254	\$17,072,412
<b>% of Year's Dollars</b>	32.2%	18.3%	47.9%	1.5%	
<b>Total</b>	<b>Elementary</b>	<b>Middle</b>	<b>High</b>	<b>District</b>	<b>Total</b>
<b>New</b>	\$13,080,522	\$7,054,641	\$16,015,988	\$84,232	\$36,235,382
<b>Additions</b>	\$2,659,845	\$1,532,491	\$4,943,945	\$415,605	\$9,551,885
<b>Renovation</b>	\$3,302,564	\$1,926,208	\$3,815,747	\$447,225	\$9,491,745
<b>Total</b>	\$19,042,931	\$10,513,340	\$24,775,680	\$947,061	\$55,279,013
<b>% of Identified Dollars</b>	34.4%	19.0%	44.8%	1.7%	

To read this table: Of the \$13.126B spent on new buildings in 2007, \$5.26B went into elementary schools, \$3.1B was spent on middle schools, and \$4.7B on high schools. Almost \$152M was spent on district buildings encompassing special programs or administrative functions.

terms of how it spends its money and how it builds its buildings, you may want to look at the high quartile numbers in terms of costs and space per student. They show that 25 percent of new elementary schools being built cost \$233 per sq. ft. or more. At the high school level, 25 percent of the districts will spend \$229 per sq. ft. or more, and one-quarter of all the new high schools under construction will cost more than \$63M.

The low quartile, also shown in Table 5, is the point at which 75 percent of the reporting schools are higher and 25 percent are lower. Thus, 25 percent of elementary schools being completed or currently under construction will cost \$144.44 per sq. ft. or less. Twenty-five percent of all new elementary schools currently under construction provide just 100 sq. ft. or less per student. The low quarter of all reporting school districts expect to build their elementary schools for \$10.5M or less.

Being in the low quartile does not necessarily suggest that the school is behind others. It may simply indicate that it is in an area with lower con-

struction costs. Or, for example, in looking at the number of students in the school, the fact that one-quarter of all elementary schools are built for 550 or fewer students and one-quarter of all high schools for 900 or fewer students may be a mark of distinction.

Table 5 gives you an opportunity to compare your district with others around the nation or in your area that you think have your aspirations, your climate (if you are in a warm climate, you may not have to use interior space for corridors, so your space per pupil will be lower), and/or your ability to pay. Keep in mind that the figures shown in Table 5 are meant as comparison points, not as arbiters.

**WHERE TO PUT THE MONEY**

Most school districts have multiple construction needs. Whether caused by an expanding student population, need for technology, questions of safety and accessibility, or the need to upgrade schools built in another time, school boards are often faced with multiple demands for construction dollars.

Which is more important, to build a new elementary school to relieve overcrowding or to remodel an existing junior high school? Should a high school be expanded or a new one constructed? Can an existing building be changed from one grade level to another? How much space will be needed for full-day kindergarten, and how will that affect space needs? How much money can be spent and which projects are most likely to generate public support?

Table 6 takes a look, in terms of dollars, at how some of those questions are being answered. It shows the school level at which construction is taking place (money is being spent) and the type of construction that was undertaken. For example, among school construction projects completed in 2008, 37.3 percent was spent on elementary schools, while 17.6 percent went to middle schools. High schools received 42.7 percent. District buildings (2.4 percent of the dollars spent) generally were identified as administrative space, transportation, or maintenance space. It also fell into that category when it

**Table 7 Does School Size Matter?**

	Median Number of Students	Median Size of Building	Median Project Cost (\$000's)	Median Cost per sq. ft.	Median Cost per Student	Median Space per student (SF)
<b>Elementary Schools</b>						
smallest quarter (fewer than 550 students)	450	60,000	\$12,500	\$207.22	\$31,095	137.5
<b>National Median</b>	700	80,500	\$14,600	\$178.77	\$21,447	115.4
largest quarter (800 to 1,200 students)	850	90,100	\$16,000	\$170.50	\$18,422	105.9
<b>Middle Schools</b>						
smallest quarter (fewer than 700 students)	534	71,750	\$14,000	\$188.54	\$26,667	139.2
<b>National Median</b>	900	120,000	\$22,000	\$178.29	\$24,667	136.0
largest quarter (1,106 to 1,875 students)	1,200	170,000	\$28,000	\$173.53	\$22,665	133.3
<b>High Schools</b>						
smallest quarter (fewer than 900 students)	600	88,000	\$14,900	\$180.95	\$30,743	160.0
<b>National Median</b>	1,500	225,000	\$43,000	\$187.27	\$29,167	155.0
largest quarter (2,000 to 4,000 students)	2,311	350,000	\$64,544	\$188.05	\$28,258	150.0

To read this table: One quarter of all new elementary schools were constructed for fewer than 550 students. Among this group, the median number of students accommodated was 450. The median small elementary school was 60,000 sq. ft. and cost \$12.5M. Median cost per square foot for these smaller elementary schools was \$207.22 and cost per student was \$31,095. The median small elementary school provided 137.5 sq. ft. per student. By contrast, the median large elementary school (with 850 students) provided just 105.9 sq. ft. per student.

was spent for renovations or situations where the district was putting money in many different buildings at different levels and could not break it out.

Table 6 also shows the purpose for which construction dollars were spent at each level. For example, of the \$7.279B spent last year on elementary schools, almost \$5.4B was for new buildings. Another \$1.13B was for renovation of existing buildings, and \$756M was for additions. When it comes to middle schools, \$2.2B went into new buildings. More than \$5.3B was spent on new high schools in the United States, and \$1.8B on additions to existing high schools.

Table 6 also shows how districts are expecting to spend their dollars in projects being completed or starting in 2009.

**DOES SIZE MATTER?**

Students do better in smaller learning environments. There is ample

evidence for this statement and most educators accept it. But somewhere there appears to be a gap between educational understanding and educational construction. The majority of the schools that we build today continue to be large. The reason, of course, revolves around questions of efficiency and cost.

**Table 7** examines the question of the comparative cost of building schools by size. To do this, all of the new school buildings on which information was available were lined up by size and then were divided into four equal groups so that median costs and other information could be found among the smaller and larger buildings.

Looking at elementary schools, one-quarter of them were designed to house 550 or fewer students. Among that group of smaller elementary schools, the median building will house 450 students and will contain 60,000 sq. ft. The cost will be \$12.5M. The

median cost per sq. ft. among the smaller elementary schools was \$207.22 and cost per student was \$31,095.

By contrast, one of every four new elementary schools was designed for 800 or more students. The largest one reported was designed for 1,200 students. Among these larger elementary schools, the median student population was 850, the median size 90,100 sq. ft., and the median cost \$16M. In terms of cost per sq. ft., these larger buildings cost \$170.50, significantly less than the smaller elementary schools. The cost per student, \$18,422, was also significantly less than the \$31,095 being spent per pupil for the smaller schools.

On the other hand, the smaller schools provided more space per pupil (137.5 sq. ft. per student) than the larger schools (105.9). Of course, there are many other factors that are not considered, including where the larger and smaller schools were constructed, the aspirations of the districts, and even the future plans of the district.

One-quarter of the middle schools were constructed for 700 or fewer students. The median among them housed 534 students in 71,750 sq. ft. at a cost of \$14M. The median cost per sq. ft. for these smaller schools was \$188.54 and the cost per pupil \$26,667. The smaller middle schools provided 139 sq. ft. per student.

Among larger middle schools (with between 1,100 and 1,875 students) the median was 1,200 students, 170,000 sq. ft., and \$28M. In terms of cost per sq. ft. (\$173.53) and cost per pupil (\$22.665), the larger middle schools were less costly than the small ones. They provided somewhat less space per pupil.

The high school picture shows that while the median cost per student in larger schools (with 2,000 to 4,000 students) is less than for smaller ones

TABLE 8

### What New Schools Starting in 2009 Will Provide

(% of new schools that reported facility, by grade level)

		<u>Elementary</u>	<u>Middle/JHS</u>	<u>High School</u>	
<b>Core Facilities</b>	Classrooms	100.0%	100.0%	100.0%	
	Library	95.2%	94.7%	94.9%	
	Media Center	86.0%	89.7%	88.2%	
	Computer Lab	92.9%	100.0%	97.7%	
	Science Lab	43.1%	49.4%	53.7%	
	Music	96.4%	96.6%	97.2%	
	Arts/Crafts	99.1%	97.8%	91.0%	
	Gymnasium	96.7%	100.0%	100.0%	
	Multipurpose Room	11.0%	5.0%	8.8%	
	Stage	36.3%	34.7%	41.0%	
	Auditorium/Theater	6.6%	40.0%	75.7%	
	Special ed/resource	86.0%	94.7%	91.7%	
	Home Arts	11.2%	12.2%	15.7%	
	Industrial Tech.	5.8%	5.6%	5.1%	
<b>Support Facilities</b>	Vocational Shops	8.0%	11.6%	9.3%	
	Photo Lab	1.0%	0.9%	0.9%	
	TV/Radio Studio	2.8%	2.2%	3.0%	
	Offices	100.0%	100.0%	100.0%	
	Infirmary/Clinic	100.0%	100.0%	100.0%	
	Cafeteria	100.0%	100.0%	100.0%	
	Kitchen	100.0%	100.0%	100.0%	
	Hall Lockers	42.9%	49.1%	52.8%	
	<b>Technology Support</b>	LANs	100.0%	100.0%	100.0%
		Fiber Optics/Cable	100.0%	100.0%	100.0%
Technology Lab		0.0%	12.5%	10.4%	
Language Lab		3.7%	5.0%	6.0%	
WANs		96.1%	99.1%	97.9%	
<b>Athletic Support</b>	Locker Rooms	39.9%	47.5%	49.5%	
	Bleachers	14.6%	90.0%	93.1%	
	Track	8.5%	10.0%	4.9%	
	Field House	2.3%	1.9%	0.9%	
	Fitness Center	11.1%	14.7%	12.7%	
	Tennis	5.5%	4.1%	2.1%	
	Pool	1.5%	0.3%	0.7%	
	Stadium	4.0%	2.5%	2.1%	
	Athletic fields	14.5%	78.4%	84.7%	
	Playground	63.3%	49.7%	51.4%	
<b>Other facilities</b>	Day Care/nursery	13.0%	0.0%	1.4%	
	Elevators	4.5%	27.8%	22.7%	
	Security equipment	100.0%	100.0%	100.0%	

(fewer than 900 students), cost per sq. ft. is higher. The smaller high schools provide more space per student for the program.

The median “small” high school with 600 students costs \$14.9M while the median high school with 2,311 students costs \$64.5M. It would appear that four small schools, housing a total of 2,400 students, would cost about the same to build as one high school for about the same number of students.

The difference in cost per student between large and small high schools

is small as is the cost per sq. ft. The amount of space provided per student favors the smaller buildings. Considering the educational implications, and the usually higher administrative and security costs of large high schools, school districts may wish to look once again at the efficacy of putting 2,000 or more students into a single building.

#### PROVIDING FACILITIES

New school buildings have great similarities. All have classrooms and offices. Virtually all have facilities for physical education. Some kind of a

TABLE 9

### The Top Ten Additions By School Type

(% of school additions that are reported to contain facility)

<u>Elementary</u>		
1	Classrooms	70.8%
2	Lavatories	45.2%
3	Gymnasium	12.1%
4	Cafeteria	10.3%
5	Offices	7.4%
6	Library/Media Center	7.1%
7	Multipurpose	6.8%
8	Kitchen	5.2%
9	Music	4.7%
10	Arts/Crafts	3.9%
<u>Middle/JHS</u>		
1	Classrooms	54.0%
2	Lavatories	35.7%
3	Gymnasium	11.9%
4	Science Labs	11.5%
5	Cafeteria	8.5%
6	Offices	8.5%
7	Music	8.1%
8	Fitness Center	5.5%
9	Library	5.1%
10	Computer Labs	4.7%
<u>High School</u>		
1	Lavatories	48.0%
2	Classrooms	43.9%
3	Gymnasium	19.8%
4	Science Labs	18.8%
5	Stage	15.1%
6	Auditorium/Theater/Stage	15.1%
7	Offices	12.4%
8	Cafeteria	11.0%
9	Locker Rooms	9.8%
10	Music	8.0%

nurse’s station is a regular feature. Libraries are in all buildings, though in some they may be listed as media centers. In elementary schools, gymnasiums and cafeterias are provided, but some are listed as multi-purpose rooms. **Table 8** records the percentage of new schools planned to start in 2009 that will include specific facilities.

**Table 9** details information collected on additions to existing schools. It shows the facilities most often included by school type. Classrooms are included in a majority of all school additions, as are lavatories. No other single facility is in as many as 20 percent of any of the school types.

# A Closer Look at Regions

## What your neighbors are up to.

National figures are always instructive, but from the point of view of the local school administrator or school board, it may be more important to know what your neighbors are doing. *School Planning & Management's* regional figures are designed to help you do that.

On the following pages, figures are given for each of the 12 regions of the United States. They show the total amount of construction activity by year and how that money was spent on new schools, additions, or renovations. They also show by year what percentage of money in your region goes into elementary schools, middle schools, high schools, and district projects.

Finally, for new schools, you can see the median cost per sq. ft., cost per student, and sq. ft. per student for

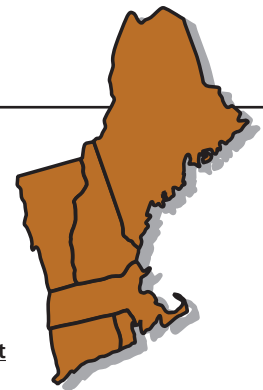
elementary schools, middle schools, and high schools in your region. Also shown is the median project size including overall cost, number of students accommodated, and size of the building.

**With this information, you will have the data necessary to make your own plans and, in many cases, to help the public understand what you are building, why you are doing it, and what it is likely to cost.**

The purpose of this report is to provide you with data that can help you understand not only what your own district needs, but also what others are doing, and how much their projects

cost. The regional tables allow you to measure yourself against your neighbors. The national tables, particularly Table 5, allow you to compare with districts with similar aspirations. Thus, if districts in your region on average tend to provide minimal space per student, but your district aspires to a variety of programs that need space, you may want to look at the amount of space per pupil provided in the high quarter or ten percent of the nation's schools.

With this information, you will have the data necessary to make your own plans and, in many cases, to help the public understand what you are building, why you are doing it, and what it is likely to cost. Remember, there is no right or wrong; these are guidelines that need to be applied to your own local needs.



### Region 1: CT, ME, MA, NH, RI, VT Construction Activity

#### HOW MUCH IS BEING SPENT (000's)?

	<u>New Schools</u>	<u>Additions</u>	<u>Renovations</u>	<u>Total</u>
Completions in 2008	\$345,299	\$147,722	\$266,386	\$759,407
Completions in 2009	\$524,245	\$115,097	\$199,741	\$839,083
Starting in 2009	\$525,072	\$96,841	\$137,180	\$759,093
Total Activity	\$1,394,616	\$359,660	\$603,307	\$2,357,583
% of Total	59.2%	15.3%	25.6%	

#### WHERE IS THE MONEY GOING?

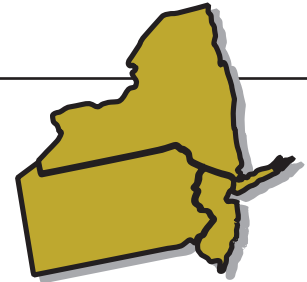
	<u>Total (000's)</u>	<u>Elementary</u>	<u>Middle</u>	<u>High</u>	<u>District</u>
Completions in 2008	\$759,407	23.8%	11.3%	63.5%	1.4%
Completions in 2009	\$839,083	37.1%	28.5%	34.2%	0.2%
Starting in 2009	\$759,093	16.2%	9.9%	73.4%	0.6%
Total Activity	\$2,357,583	26.1%	17.0%	56.3%	0.7%

#### NEW SCHOOLS ONLY

	<u>Cost/sq. ft.</u>	<u>Cost/student</u>	<u>Sq. ft./student</u>	<u>Median Cost (\$000's)</u>	<u>Median # Students</u>	<u>Median Size (Sq. ft.)</u>
Elementary	\$224.29	\$33,187	149.2	\$21,500	550	90,000
Middle/JHS	\$230.31	\$37,697	166.3	\$22,700	550	98,600
High School	\$346.67	\$65,833	200.5	\$80,000	1,400	270,000

Region 1 completed \$759M worth of construction in 2008, and expects to complete slightly more in 2009. Construction completed in 2008 was well below the previous year, probably a reflection of changes in funding in Massachusetts. The cost of school construction in Region 1 is among the highest in the nation. Region 1 schools also tend to provide more space per student than those in other parts of the nation. Based on total dollars spent on new schools and average cost, indications are that the \$345M spent on new construction in 2008 in New England resulted in 10 entirely new school buildings.

## Region 2: NJ, NY, PA Construction Activity



### HOW MUCH IS BEING SPENT (000's)?

	<u>New Schools</u>	<u>Additions</u>	<u>Renovations</u>	<u>Total</u>
Completions in 2008	\$700,030	\$665,898	\$774,842	\$2,140,770
Completions in 2009	\$700,812	\$652,289	\$548,814	\$1,901,915
Starting in 2009	\$564,998	\$537,227	\$534,509	\$1,636,734
Total Activity	\$1,965,840	\$1,855,414	\$1,858,165	\$5,679,419
% of Total	34.6%	32.7%	32.7%	

### WHERE IS THE MONEY GOING?

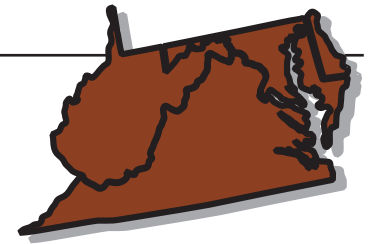
	<u>Total (000's)</u>	<u>Elementary</u>	<u>Middle</u>	<u>High</u>	<u>District</u>
Completions in 2008	\$2,140,770	39.4%	15.1%	41.3%	4.2%
Completions in 2009	\$1,901,915	28.5%	26.9%	44.6%	0.0%
Starting in 2009	\$1,636,734	36.7%	22.9%	40.1%	0.3%
Total Activity	\$5,679,419	35.0%	21.3%	42.1%	1.7%

### NEW SCHOOLS ONLY

	<u>Cost/sq. ft.</u>	<u>Cost/student</u>	<u>Sq. ft./student</u>	<u>Median Cost (\$000's)</u>	<u>Median # Students</u>	<u>Median Size (Sq. ft.)</u>
Elementary	\$241.57	\$41,190	148.9	\$21,500	550	90,000
Middle/JHS	\$207.69	\$33,929	145.0	\$25,000	890	130,000
High School	\$273.33	\$46,667	194.0	\$40,000	1,100	201,000

Costs in most parts of these industrialized states tend to be higher than elsewhere in the nation. In 2008, school districts in Region 2 put \$2.1B worth of construction in place, somewhat less than the previous year. Construction completed in 2009 is expected to be slightly lower, though an economic stimulus plan that allows retrofit projects to get going could change that picture since school districts in Region 2 spend most of their construction dollars on upgrading and enlarging existing buildings. Based on total dollars spent on new schools and average cost, indications are that about 30 new schools were completed in 2008.

## Region 3: DC, DE, MD, VA, WV Construction Activity



### HOW MUCH IS BEING SPENT (000's)?

	<u>New Schools</u>	<u>Additions</u>	<u>Renovations</u>	<u>Total</u>
Completions in 2008	\$986,584	\$141,478	\$163,667	\$1,291,729
Completions in 2009	\$753,150	\$373,546	\$312,818	\$1,439,514
Starting in 2009	\$504,440	\$266,017	\$279,266	\$1,049,723
Total Activity	\$2,244,174	\$781,041	\$755,751	\$3,780,966
% of Total	59.4%	20.7%	20.0%	

### WHERE IS THE MONEY GOING?

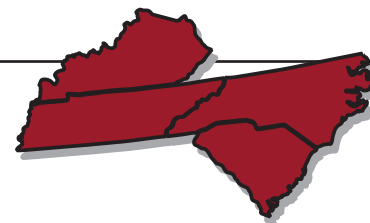
	<u>Total (000's)</u>	<u>Elementary</u>	<u>Middle</u>	<u>High</u>	<u>District</u>
Completions in 2008	\$1,291,729	54.5%	14.1%	28.8%	2.6%
Completions in 2009	\$1,439,514	36.4%	17.7%	43.5%	2.5%
Starting in 2009	\$1,049,723	36.9%	17.8%	39.7%	5.6%
Total Activity	\$3,780,966	42.7%	16.5%	37.4%	3.4%

### NEW SCHOOLS ONLY

	<u>Cost/sq. ft.</u>	<u>Cost/student</u>	<u>Sq. ft./student</u>	<u>Median Cost (\$000's)</u>	<u>Median # Students</u>	<u>Median Size (Sq. ft.)</u>
Elementary	\$189.45	\$21,111	106.7	\$16,510	790	85,000
Middle/JHS	\$232.41	\$33,587	138.3	\$33,044	900	140,000
High School	\$205.83	\$28,889	144.4	\$48,128	1,600	235,000

Over the last seven years, school districts in this region have tended to spend about \$1B annually on school construction put in place. Based on projections of 2009 completions and starts, the region should continue to build at about that pace. Construction costs in Region 3 are consistently above national averages, but this is a region with wide variations between the suburbs of Washington, D.C. and the hills of western Virginia and West Virginia. While districts in Region 3 are spending more on school construction, they provide less than the national median in terms of space allocated per child. Based on total dollars spent on new schools and average costs, indications are that about 45 new schools were completed in 2008.

## Region 4: KY, NC, SC, TN Construction Activity



### HOW MUCH IS BEING SPENT (000's)?

	<u>New Schools</u>	<u>Additions</u>	<u>Renovations</u>	<u>Total</u>
Completions in 2008	\$1,678,139	\$180,254	\$177,579	\$2,035,972
Completions in 2009	\$1,745,407	\$131,088	\$101,876	\$1,978,371
Starting in 2009	\$1,452,594	\$228,556	\$169,352	\$1,850,502
Total Activity	\$4,876,140	\$539,898	\$448,807	\$5,864,845
% of Total	83.1%	9.2%	7.7%	

### WHERE IS THE MONEY GOING?

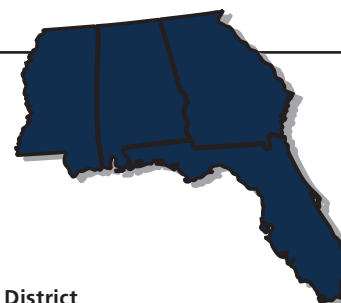
	<u>Total (000's)</u>	<u>Elementary</u>	<u>Middle</u>	<u>High</u>	<u>District</u>
Completions in 2008	\$2,035,972	43.4%	9.4%	45.7%	1.4%
Completions in 2009	\$1,978,371	44.1%	34.6%	21.1%	0.1%
Starting in 2009	\$1,850,502	30.9%	23.4%	45.7%	0.1%
Total Activity	\$5,864,845	39.7%	22.3%	37.4%	0.6%

### NEW SCHOOLS ONLY

	<u>Cost/sq. ft.</u>	<u>Cost/student</u>	<u>Sq. ft./student</u>	<u>Median Cost (\$000's)</u>	<u>Median # Students</u>	<u>Median Size (Sq. ft.)</u>
Elementary	\$156.25	\$18,767	120.6	\$13,700	700	84,600
Middle/JHS	\$181.82	\$25,465	133.3	\$22,331	900	120,000
High School	\$160.27	\$27,494	160.7	\$34,500	1,200	210,000

Together, school districts in this growing region put more than \$2B worth of construction in place in 2008. Projections for completions in 2009 indicate that construction will remain high despite the tough economics. School districts in Region 4 devote more than 83 percent of their construction dollars to new buildings. Less than eight percent of the region's spending is for retrofitting and upgrading existing buildings — a pattern that may catch up with them one day. Based on total dollars spent on new schools and average costs, indications are that about 85 new schools were completed in 2008.

## Region 5: AL, FL, GA, MS Construction Activity



### HOW MUCH IS BEING SPENT (000's)?

	<u>New Schools</u>	<u>Additions</u>	<u>Renovations</u>	<u>Total</u>
Completions in 2008	\$2,081,462	\$247,872	\$230,415	\$2,559,749
Completions in 2009	\$2,118,660	\$270,392	\$218,638	\$2,607,690
Starting in 2009	\$1,761,697	\$260,535	\$365,931	\$2,388,163
Total Activity	\$5,961,819	\$778,799	\$814,984	\$7,555,602
% of Total	78.9%	10.3%	10.8%	

### WHERE IS THE MONEY GOING?

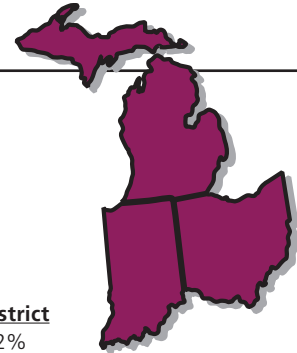
	<u>Total (000's)</u>	<u>Elementary</u>	<u>Middle</u>	<u>High</u>	<u>District</u>
Completions in 2008	\$2,559,749	45.0%	23.9%	28.5%	2.6%
Completions in 2009	\$2,607,690	22.9%	16.9%	59.3%	1.0%
Starting in 2009	\$2,388,163	24.6%	29.2%	45.3%	0.9%
Total Activity	\$7,555,602	30.9%	23.1%	44.4%	1.5%

### NEW SCHOOLS ONLY

	<u>Cost/sq. ft.</u>	<u>Cost/student</u>	<u>Sq. ft./student</u>	<u>Median Cost (\$000's)</u>	<u>Median # Students</u>	<u>Median Size (Sq. ft.)</u>
Elementary	\$155.10	\$18,778	117.9	\$14,033	800	95,000
Middle/JHS	\$138.85	\$16,552	128.0	\$18,600	1,000	133,000
High School	\$149.15	\$24,394	153.0	\$42,000	1,800	275,600

Led by Florida and Georgia, this region has produced an unbroken record of high construction activity. The year 2008 was no exception, with more than \$2.5B worth of construction put in place. School districts in Region 5 spend most of their money on constructing new schools. Construction costs are creeping up in Region 5 but are below national medians. The region tends to build large schools and load them with many, many students. Based on total dollars spent on new schools and average cost, indications are that as many as 105 new schools were put in place in Region 5 in 2008.

## Region 6: IN, OH, MI Construction Activity



### HOW MUCH IS BEING SPENT (000's)?

	<u>New Schools</u>	<u>Additions</u>	<u>Renovations</u>	<u>Total</u>
Completions in 2008	\$885,474	\$443,266	\$249,018	\$1,577,758
Completions in 2009	\$961,592	\$370,453	\$277,815	\$1,609,860
Starting in 2009	\$828,493	\$346,760	\$270,399	\$1,445,652
<b>Total Activity</b>	<b>\$2,675,559</b>	<b>\$1,160,479</b>	<b>\$797,232</b>	<b>\$4,633,270</b>
% of Total	57.7%	25.0%	17.2%	

### WHERE IS THE MONEY GOING?

	<u>Total (000's)</u>	<u>Elementary</u>	<u>Middle</u>	<u>High</u>	<u>District</u>
Completions in 2008	\$1,577,758	35.2%	23.3%	39.3%	2.2%
Completions in 2009	\$1,609,860	33.3%	19.3%	45.3%	2.2%
Starting in 2009	\$1,445,652	34.7%	7.8%	57.3%	0.1%
<b>Total Activity</b>	<b>\$4,633,270</b>	<b>34.4%</b>	<b>17.1%</b>	<b>47.0%</b>	<b>1.6%</b>

### NEW SCHOOLS ONLY

	<u>Cost/sq. ft.</u>	<u>Cost/student</u>	<u>Sq. ft./student</u>	<u>Median Cost (\$000's)</u>	<u>Median # Students</u>	<u>Median Size (Sq. ft.)</u>
Elementary	\$195.44	\$23,006	120.0	\$14,000	550	75,310
Middle/JHS	\$176.73	\$26,891	145.2	\$20,600	775	121,000
High School	\$176.74	\$32,719	180.0	\$35,270	1,200	200,661

Region 6 put almost \$1.6B into its school buildings in 2008 and expects to complete almost as much work this year. Somewhat less money is slated for projects to start in 2009, but this remains a very active construction region. Construction costs tend to be above national medians, and new schools provide more space per student. This is a region that has always prided itself on the quality of its schools, and people are apparently willing to make an investment in education despite an overall economic downturn that has hit these three states quite hard. Based on total dollars spent on new schools and average cost, indications are that about 45 new schools were completed in 2008.

## Region 7: IL, MN, WI Construction Activity



### HOW MUCH IS BEING SPENT (000's)?

	<u>New Schools</u>	<u>Additions</u>	<u>Renovations</u>	<u>Total</u>
Completions in 2008	\$572,455	\$85,514	\$322,672	\$980,641
Completions in 2009	\$516,671	\$180,339	\$241,364	\$938,374
Starting in 2009	\$428,235	\$180,236	\$156,854	\$765,325
<b>Total Activity</b>	<b>\$1,517,361</b>	<b>\$446,089</b>	<b>\$720,890</b>	<b>\$2,684,340</b>
% of Total	56.5%	16.6%	26.9%	

### WHERE IS THE MONEY GOING?

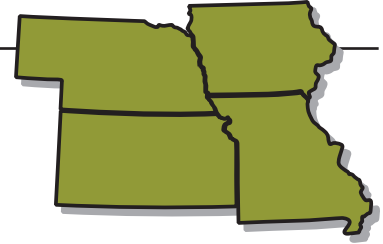
	<u>Total (000's)</u>	<u>Elementary</u>	<u>Middle</u>	<u>High</u>	<u>District</u>
Completions in 2008	\$980,641	53.5%	9.9%	34.7%	1.9%
Completions in 2009	\$938,374	33.2%	20.1%	45.3%	1.5%
Starting in 2009	\$765,325	32.5%	13.6%	49.8%	4.1%
<b>Total Activity</b>	<b>\$2,684,340</b>	<b>40.4%</b>	<b>14.5%</b>	<b>42.7%</b>	<b>2.4%</b>

### NEW SCHOOLS ONLY

	<u>Cost/sq. ft.</u>	<u>Cost/student</u>	<u>Sq. ft./student</u>	<u>Median Cost (\$000's)</u>	<u>Median # Students</u>	<u>Median Size (Sq. ft.)</u>
Elementary	\$223.17	\$26,667	113.3	\$17,400	660	84,400
Middle/JHS	\$188.83	\$26,000	148.4	\$24,849	1,000	125,000
High School	\$200.43	\$35,400	163.3	\$60,000	2,000	283,100

States in Region 7 have been less and less active in terms of school construction over the last few years. In 2008, construction slipped under \$1B, and indications are that construction will remain at that level in 2009. Construction projected to start in 2009 is even lower. Construction costs in Region 7 are well above the national median, so the drop in funding results in a major slowing of construction activity. Based on total dollars spent on new schools and average cost, indications are that about 20 new schools were completed by districts in Region 7 during 2008.

**Region 8: IA, KS, MO, NE Construction Activity**



**HOW MUCH IS BEING SPENT (000's)?**

	<u>New Schools</u>	<u>Additions</u>	<u>Renovations</u>	<u>Total</u>
Completions in 2008	\$212,028	\$245,621	\$261,161	\$718,810
Completions in 2009	\$230,763	\$256,528	\$263,039	\$750,330
Starting in 2009	\$218,301	\$214,790	\$191,995	\$625,086
Total Activity	\$661,092	\$716,939	\$716,195	\$2,094,226
% of Total	31.6%	34.2%	34.2%	

**WHERE IS THE MONEY GOING?**

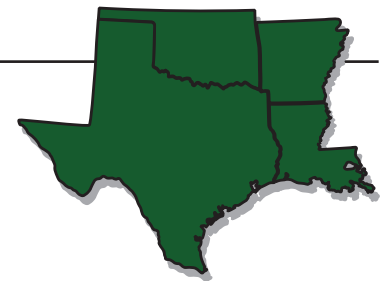
	<u>Total (000's)</u>	<u>Elementary</u>	<u>Middle</u>	<u>High</u>	<u>District</u>
Completions in 2008	\$718,810	31.0%	27.0%	40.8%	1.1%
Completions in 2009	\$750,330	34.1%	14.0%	48.2%	3.7%
Starting in 2009	\$625,086	41.3%	18.6%	39.8%	0.3%
Total Activity	\$2,094,226	35.2%	19.9%	43.2%	1.8%

**NEW SCHOOLS ONLY**

	<u>Cost/sq. ft.</u>	<u>Cost/student</u>	<u>Sq. ft./student</u>	<u>Median Cost (\$000's)</u>	<u>Median # Students</u>	<u>Median Size (Sq. ft.)</u>
Elementary	\$184.88	\$25,167	126.1	\$11,200	525	70,000
Middle/JHS	\$185.90	\$26,000	139.8	\$21,000	900	110,000
High School	\$159.45	\$25,474	160.6	\$15,950	700	109,000

School districts in these four states completed an unusually large amount of construction in 2007, but that surge in spending was not expected to last. It did not. In 2008, total construction spending fell 30 percent to \$719M. Projects expected to be completed in 2009 total about \$750M. These states have been putting the bulk of their money into enlarging and upgrading existing buildings, with less than one of three dollars being spent on new schools. As a result, based on total dollars spent on new schools and average cost, indications are that fewer than 20 new schools were completed in 2008, most of them for the elementary grades.

**Region 9: AR, LA, OK, TX Construction Activity**



**HOW MUCH IS BEING SPENT (000's)?**

	<u>New Schools</u>	<u>Additions</u>	<u>Renovations</u>	<u>Total</u>
Completions in 2008	\$1,782,703	\$612,162	\$292,562	\$2,687,427
Completions in 2009	\$1,731,712	\$280,408	\$559,962	\$2,572,082
Starting in 2009	\$1,750,091	\$456,514	\$332,493	\$2,539,098
Total Activity	\$5,264,506	\$1,349,084	\$1,185,017	\$7,798,607
% of Total	67.5%	17.3%	15.2%	

**WHERE IS THE MONEY GOING?**

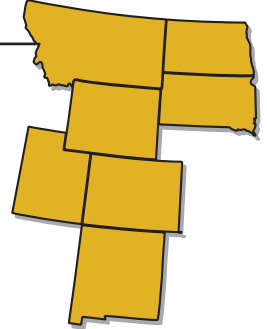
	<u>Total (000's)</u>	<u>Elementary</u>	<u>Middle</u>	<u>High</u>	<u>District</u>
Completions in 2008	\$2,687,427	31.1%	19.3%	45.8%	3.7%
Completions in 2009	\$2,572,082	35.3%	18.0%	45.3%	1.4%
Starting in 2009	\$2,539,098	33.9%	18.5%	43.0%	4.6%
Total Activity	\$7,798,607	33.4%	18.6%	44.7%	3.3%

**NEW SCHOOLS ONLY**

	<u>Cost/sq. ft.</u>	<u>Cost/student</u>	<u>Sq. ft./student</u>	<u>Median Cost (\$000's)</u>	<u>Median # Students</u>	<u>Median Size (Sq. ft.)</u>
Elementary	\$147.50	\$17,500	116.8	\$12,650	750	86,600
Middle/JHS	\$151.78	\$23,121	160.6	\$24,000	950	143,100
High School	\$160.00	\$27,352	170.8	\$52,000	1,800	317,900

While all of the states are normally involved in school construction of one kind or another, it is the activity in Texas that dominates the region and that makes it, year after year, one of the highest spending regions in terms of school construction. This year is no exception. Region 9 school districts put \$2.7B worth of school construction in place in 2008, and expectations are that it will do almost as much this year and in the years following. Construction costs in Region 9 are below the national median. Schools in the region tend to be quite large. Based on total dollars spent on new schools and average cost, indications are that about 90 new schools were completed in Region 9 in 2008.

**Region 10: CO, MT, ND, NM, SD, UT, WY Construction Activity**



**HOW MUCH IS BEING SPENT (000's)?**

	<u>New Schools</u>	<u>Additions</u>	<u>Renovations</u>	<u>Total</u>
Completions in 2008	\$756,807	\$102,889	\$113,472	\$973,168
Completions in 2009	\$746,884	\$86,171	\$57,576	\$890,631
Starting in 2009	\$441,572	\$176,628	\$144,396	\$762,596
<b>Total Activity</b>	<b>\$1,945,263</b>	<b>\$365,688</b>	<b>\$315,444</b>	<b>\$2,626,395</b>
% of Total	74.1%	13.9%	12.0%	

**WHERE IS THE MONEY GOING?**

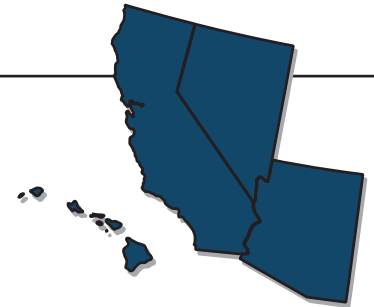
	<u>Total (000's)</u>	<u>Elementary</u>	<u>Middle</u>	<u>High</u>	<u>District</u>
Completions in 2008	\$973,168	25.6%	13.7%	58.2%	2.4%
Completions in 2009	\$890,631	39.0%	18.0%	42.2%	0.9%
Starting in 2009	\$762,596	61.3%	6.3%	32.0%	0.5%
<b>Total Activity</b>	<b>\$2,626,395</b>	<b>40.5%</b>	<b>13.0%</b>	<b>45.2%</b>	<b>1.3%</b>

**NEW SCHOOLS ONLY**

	<u>Cost/sq. ft.</u>	<u>Cost/student</u>	<u>Sq. ft./student</u>	<u>Median Cost (\$000's)</u>	<u>Median # Students</u>	<u>Median Size (Sq. ft.)</u>
Elementary	\$166.67	\$17,500	104.4	\$10,000	525	63,000
Middle/JHS	\$188.54	\$26,275	134.7	\$14,500	600	77,500
High School	\$195.29	\$30,708	163.8	\$25,550	1,025	177,500

In the last couple of years, its school construction spending has been increasing. In 2008, districts in Region 10 spent \$973M on school construction. The bulk of it was for new schools, particularly high schools. Not surprisingly, schools in these states house fewer students than the national medians. Costs tend to be a little higher than the median. Based on total dollars spent on new schools and average cost, indications are that about 43 new schools were completed in the region in 2008, with almost half of them high schools.

**Region 11: AZ, CA, HI, NV Construction Activity**



**HOW MUCH IS BEING SPENT (000's)?**

	<u>New Schools</u>	<u>Additions</u>	<u>Renovations</u>	<u>Total</u>
Completions in 2008	\$2,501,840	\$270,562	\$228,944	\$3,001,346
Completions in 2009	\$1,815,723	\$252,893	\$297,970	\$2,366,586
Starting in 2009	\$1,831,540	\$356,665	\$245,247	\$2,433,452
<b>Total Activity</b>	<b>\$6,149,103</b>	<b>\$880,120</b>	<b>\$772,161</b>	<b>\$7,801,384</b>
% of Total	78.8%	11.3%	9.9%	

**WHERE IS THE MONEY GOING?**

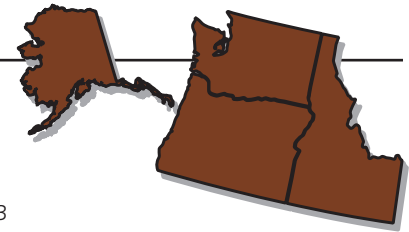
	<u>Total (000's)</u>	<u>Elementary</u>	<u>Middle</u>	<u>High</u>	<u>District</u>
Completions in 2008	\$3,001,346	30.2%	15.8%	52.7%	1.3%
Completions in 2009	\$2,366,586	35.2%	15.7%	49.2%	0.0%
Starting in 2009	\$2,433,452	25.8%	17.7%	56.5%	0.0%
<b>Total Activity</b>	<b>\$7,801,384</b>	<b>30.3%</b>	<b>16.3%</b>	<b>52.8%</b>	<b>0.5%</b>

**NEW SCHOOLS ONLY**

	<u>Cost/sq. ft.</u>	<u>Cost/student</u>	<u>Sq. ft./student</u>	<u>Median Cost (\$000's)</u>	<u>Median # Students</u>	<u>Median Size (Sq. ft.)</u>
Elementary	\$179.82	\$22,834	86.4	\$15,000	750	67,600
Middle/JHS	\$186.67	\$17,500	100.0	\$17,000	950	90,900
High School	\$233.69	\$30,000	103.9	\$54,493	1,800	210,000

The four states in Region 11 are all growing. It is not surprising Region 11 spent more than any other region (\$3B in 2008), but spending was down from the year before, and indications are that it may fall further this year. The economic woes, particularly of California and Nevada, seem to be putting a damper on construction planning. Most of the region's dollars are spent on new buildings. Buildings in this region tend to provide minimal space per student, depending on good weather to allow outside passage between classes. Based on total dollars spent on new schools and average cost, indications are that almost 100 new schools were put in place in 2008.

**Region 12: AK, ID, OR, WA Construction Activity**



**HOW MUCH IS BEING SPENT (000's)?**

	<u>New Schools</u>	<u>Additions</u>	<u>Renovations</u>	<u>Total</u>
Completions in 2008	\$461,415	\$97,567	\$216,286	\$775,268
Completions in 2009	\$535,776	\$93,189	\$181,159	\$810,124
Starting in 2009	\$582,719	\$127,922	\$106,350	\$816,991
Total Activity	\$1,579,910	\$318,678	\$503,795	\$2,402,383
% of Total	65.8%	13.3%	21.0%	

**WHERE IS THE MONEY GOING?**

	<u>Total (000's)</u>	<u>Elementary</u>	<u>Middle</u>	<u>High</u>	<u>District</u>
Completions in 2008	\$775,268	28.2%	33.7%	37.0%	1.1%
Completions in 2009	\$810,124	28.1%	26.5%	41.5%	4.0%
Starting in 2009	\$816,991	32.7%	10.1%	55.3%	1.9%
Total Activity	\$2,402,383	29.7%	23.2%	44.7%	2.4%

**NEW SCHOOLS ONLY**

	<u>Cost/sq. ft.</u>	<u>Cost/student</u>	<u>Sq. ft./student</u>	<u>Median Cost (\$000's)</u>	<u>Median # Students</u>	<u>Median Size (Sq. ft.)</u>
Elementary	\$205.88	\$22,222	118.0	\$11,505	500	59,000
Middle/JHS	\$206.04	\$27,500	138.8	\$22,000	800	115,000
High School	\$194.04	\$33,988	161.3	\$42,900	1,150	196,500

School districts in these four states put \$775M worth of construction in place in 2008 — an increase from the previous year. They are projecting at least as much activity next year. About two-thirds of the funding goes towards new schools. High schools are getting an increasing share of the dollars. This is a region with above median construction costs and high aspirations. The schools tend to provide more space per student than the national medians. Based on total dollars spent on new schools and average cost, indications are that as many as 25 new schools were completed in 2008.

# Trends Since 1995

This is the 14th year that School Planning & Management has collected and published data on costs of new schools in the United States. Reporting is done based on medians. The number shown is more than what one-half of schools constructed cost and less than the cost for the other half (see Table 5 for more on national medians and the regional tables starting on page CR9 for regional medians).

While data is available from 1995, it is probably more useful to examine cost changes in terms of what has happened during the first eight years of the current century. Since 2000, the cost per sq. ft. for construction of schools has risen more than 50 percent. High schools, which cost \$122.31 per sq. ft. in 2000, are being constructed for \$187.27 today — an increase of just over 53 percent. Middle school construction costs have risen from \$117.65 per sq. ft. to \$178.29 (51.5 percent). Elementary school construction has risen from \$113.03 per sq. ft. to \$178.77, an increase of more than 58 percent.

Why have elementary school costs risen faster than those of middle and high schools? A partial answer, at least, is the increased technological sophistication being put into new elementary schools. Eight years ago, high schools and

most middle schools were being wired for Internet use. Few elementary schools, at that time, were getting more than “drops” where individual computers could be used in classrooms and computer labs. Today (see Table 8), virtually all schools at all levels are being equipped with a full range of technology options. **Graph A** shows how the median cost per sq. ft. has changed over the full 14 years during which data has been collected.

**Graph B** examines the history of construction cost per student over the same period of time. Cost per sq. ft. is totally controlled by outside forces. Cost per student, to some extent, can be controlled by the school district. The simple act of increasing the announced number of students who will be served by a new school, after all, will lower the cost per pupil. It is assumed that school districts do not do this, but with the economy robbing schools of operating funds, some districts are increasing the number of students allowed per class and that, in turn, can affect the cost per student if the new standards are applied to a building under construction.

The median cost per student for a new high school fell slightly this year to \$29,167, a small fluctuation that seems

related to the amount of space allocated to each student (or an increase in the number of students to be accommodated). But the real story is seen if one looks at 1995, when the median high school was constructed for \$12,500 per student, meaning that a 1,500-student school cost a total of \$18.75M. Today the median 1,500-student high school costs about \$43M. Remember, that's the point at which half cost more and half less. In many parts of the nation, high school projects of \$70 and \$80M are becoming commonplace.

Elementary school costs per student have risen more than 70 percent since 2000, standing today at \$21,477. In part, that is the result of deliberate policy to lower class size, especially in the earlier grades. Until this year, new elementary schools were steadily providing more space per student, year after year, and this, of course, translated into increased costs per student.

**Graph C** shows the amount of space each school type is allocating per student. This is an area where schools can control costs, and for 2008 at least, that appears to be the trend. Each school type this year, at the median, provided less space per student than it did a year ago.

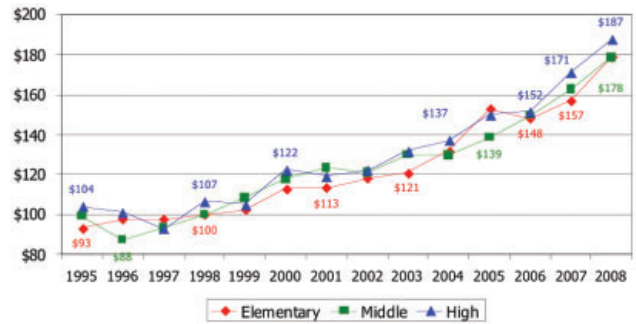
High schools actually reached their peak in terms of space per student in 1997 when the median new school was reported to be providing more than 184 sq. ft. per pupil. After that peak, the space allocated fell for a few years and finally settled in at slightly better than 160 sq. ft. for the past five years. But this year, the space allocated fell back to 155 sq. ft. per student. One factor in this may be the location of new high schools, many of them in California, Arizona, Florida, and other states where relatively warm winter weather allows schools to be planned as campuses, with students walking outside from building to building. With fewer interior corridors, less space is needed.

Middle school projects also had settled into a relatively steady pattern with the median school providing better than 140 sq. ft. per students for the last five years. That dropped to 136 sq. ft. per pupil this year.

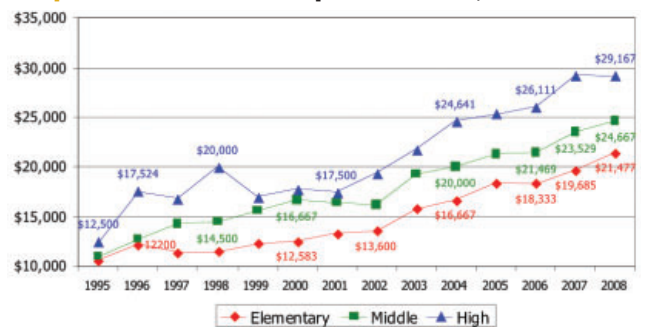
Elementary schools followed the same pattern, dropping from a steady 120 sq. ft. or more to just 115 this year. It would appear that in a lot of school districts, the high cost of construction is being met to some extent by reducing the space of the school. If this is accomplished by more efficient design, that's all to the good. But if it is being done by reducing educational space — skimping on the size of classrooms, for example — the long-term cost may prove dear. **SPM**

**Paul Abramson** is education industry analyst for SP&M and president of Stanton Leggett & Associates, an educational facility consulting firm based in Mamaroneck, NY. He was recently named CEFPI's 2008 "Planner of the Year." He can be reached at [intelled@aol.com](mailto:intelled@aol.com).

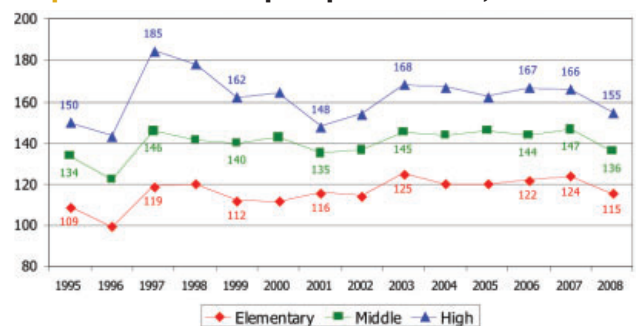
**Graph A: Median Cost per Sq. Ft., 1995-2008**



**Graph B: Median Cost per Student, 1995-2008**



**Graph C: Median Sq. Ft. per Student, 1995-2008**



**DOWNLOAD THIS REPORT**

For your reference and convenience, a PDF of this report can be downloaded from [www.webSPM.com](http://www.webSPM.com) (click on Research and Reports).

**SCHOOL**  
Planning & Management

Find this report and much more @ [www.webSPM.com](http://www.webSPM.com)

2009 ANNUAL SCHOOL CONSTRUCTION REPORT