

Building Tennessee's Tomorrow: Anticipating the State's Infrastructure Needs

July 2002 through June 2007

Reported Public School Facility Conditions and Needs³⁹

According to local officials, most of Tennessee's public school buildings are in good or excellent condition; nevertheless, significant needs remain. Infrastructure improvements, including new schools as well as improvements and additions to existing schools that need to be in some phase of development during the five-year period of July 2002 through June 2007, are estimated at almost \$3.6 billion. This figure is about \$63 million more than the amount reported in the last inventory, an increase of less than two percent.

Although this year's total estimated need for school system infrastructure is comparable to last year's, there are fairly large differences in the breakdown by type of need. (Table 16, next page.) The figure for new school construction is only \$8.4 million higher, but the breakdown between needs driven by the Education Improvement Act of 1992 (EIA), which lowered class sizes by about 4½ students at all grade levels, and needs driven by enrollment growth or deterioration has shifted dramatically. The portion of the estimated cost of needed new school construction reported by local officials that can be attributed to the EIA based on analysis by TACIR staff is down forty percent, but the increase in the estimated cost to provide for enrollment growth and needed replacements more than offset that decrease.⁴⁰ Part of this change is attributable to better information about the needs.

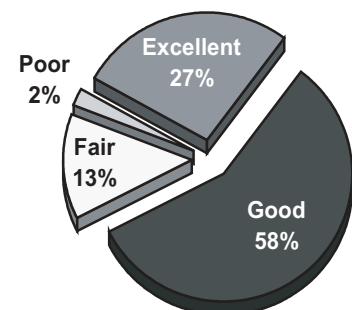
Similarly, estimated infrastructure needs at existing schools increased \$47 million overall, but general upgrade needs declined \$428 million while technology infrastructure needs increased \$485 million. In this case, the changes are attributable to large changes reported by individual school systems. The decrease in upgrade needs was primarily the result of a \$189 million decline in facility needs reported for the Knox County school system and a \$103 million decline in

Four major factors contribute to a public school system's need for infrastructure:

- ◆ growth in student populations
- ◆ compliance with class size standards
- ◆ natural wear-and-tear or neglect
- ◆ structural age

In addition, school systems are expected to comply with mandates, upgrade facilities, and add new technology infrastructure to keep up with changing times.

Figure 4. Overall Condition of Schools as Reported by Local Officials



³⁹This section of the report covers only local public school systems. It does not include the state's special schools, and therefore, totals presented here will not match totals elsewhere in this report.

⁴⁰TACIR staff analyzed patterns of growth in student counts to develop estimates of the percentage of new school construction attributable to the lower class sizes required by the Education Improvement Act of 1992 rather than to enrollment growth or replacement of existing schools. For a description of the TACIR methodology, see Appendix F.

needs reported for the Memphis school system. All of the increase in technology infrastructure needs is attributable to a new \$493 million technology initiative in the Memphis school system.

**Table 16. Total Reported Cost of Public School Infrastructure Needs⁴¹
by Type of Need—Five-year Period July 2002 through June 2007**

Type of Need	Estimated Cost [in millions]	Percent of Total
New School Construction	\$1,643.3	45.4%
<i>EIA-related Needs⁴²</i>	681.0	18.8%
<i>Enrollment Growth & Other New School Needs</i>	962.3	26.6%
Existing Schools	\$1,954.7	54.0%
<i>Facility Component Upgrades</i>	1,044.8	28.9%
<i>Technology</i>	715.9	19.8%
<i>EIA Mandate</i>	125.7	3.5%
<i>Federal Mandates</i>	35.4	1.0%
<i>Other State Mandates</i>	32.8	0.9%
System-wide Needs	\$22.5	0.6%
Grand Total All Schools Statewide	\$3,620.5	100.0%

Most of Tennessee's Public Schools are in Good or Excellent Condition—Projected Upgrade Needs Reduced Twenty-nine Percent

Defining what constitutes a high-quality learning environment is subjective in nature and difficult to quantify. While the optimum condition for schools may be a qualitative rating of excellent, as a practical matter, the goal of the inventory is to capture the cost of getting our schools in good condition—both overall and for each facility component.⁴³ As shown in Figure 4, eighty-five percent of Tennessee's public schools are in good or excellent condition. These figures evidence a continued improvement over the course of the public infrastructure needs inventory, up sixteen percentage points from sixty-nine percent in good or excellent condition reported in the inventory from three years ago and up eleven percentage points from last year. But even schools in good or excellent condition overall can have various components, such as classrooms or libraries, in less than good condition and in need of replacement or upgrading. While only fifteen percent of Tennessee's public schools are in fair or poor condition overall, local school officials report a need

⁴¹Detailed information for each school system is presented in Appendix E.

⁴²TACIR staff analyzed patterns of growth in student counts to develop estimates of the percentage of new school construction attributable to the lower class sizes required by the Education Improvement Act of 1992 rather than to enrollment growth or replacement of existing schools. For a description of the TACIR methodology, see Appendix F.

⁴³See the *Existing School Facility Needs Inventory Form, Section B-9*, in Appendix C for more specific information about the facility rating scale.

to upgrade one or more facility components at thirty-five percent of all schools for a total estimated cost of more than one billion dollars as shown in Table 16 on the preceding page.

As shown in Table 17, close to ninety-five percent of Tennessee's public school systems rate at least half of their school buildings good to excellent. Only one relatively small school system, Athens City, indicates that none of their buildings is in good or excellent condition. The cost of putting all public schools in good condition varies among school systems depending on the percentage of schools already in good or excellent condition. With all of five of its schools in fair or poor condition, the Athens City school system estimates that it needs about \$5,100 per student, or more than four times the statewide cost per student, to put their schools in good or better condition.⁴⁴ One large school system causes the group of fifteen with fifty to seventy-five percent of their schools in good or excellent condition to appear to contradict the general rule that cost per student falls as system-wide conditions improve. That apparent contradiction is attributable to the needs reported by a single large system, Shelby County. The Shelby County school system estimated that it would cost more than \$400 million to upgrade all of its school facilities to good or better condition. This large amount reported by one school system represents eighty-five percent of the needs for systems in which fifty to seventy five percent of schools are in good or excellent condition. Without the Shelby County school system's needs, the cost per student for systems with fifty to seventy-five percent of their schools in good or better condition would be around \$950 instead of nearly \$4,000.

Table 17. Cost per Student to Put All Schools in Good Condition by Percent of Schools Currently in Good or Excellent Condition

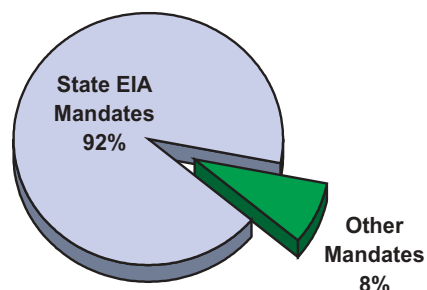
Percent of Schools in Good or Excellent Condition	Number of School Systems	Percent of School Systems	Cost per Student to Put All Schools in Good or Excellent Condition
None	1	0.7%	\$ 5,105
25% to 50%	8	5.8%	\$ 2,613
50% to 75%	20	14.5%	\$ 3,989
75% to 100%	109	79.0%	\$ 443
Total	138	100.0%	\$ 1,161

EIA Costs Continue to Decline, But Remain the Most Significant Mandate for Tennessee Schools

The total estimated cost for all school systems to meet all state and federal facilities mandates declined substantially since the last inventory one year ago. More than \$800 million is needed in order for Tennessee's public schools to comply with state and federal facilities mandates, but that is a decrease of more than \$530 million since the March 2002 report. Ninety-two percent of the

⁴⁴ The Athens City School system is relatively small with five schools and an average of 1,733 students for the 2001-02 school year.

Figure 5. Percent of Reported Cost of Facilities Mandates at Public Schools by Type of Mandate



total cost is attributable to the Education Improvement Act (EIA) adopted by the Tennessee General Assembly in 1992—down from ninety-six percent last year;⁴⁵ the remainder is about evenly split between federal and other state mandates. (See Figure 5 and Table 18.)

One of the hallmarks of the EIA was the reduction of class sizes for students in all grades. The EIA set a deadline of fall 2001 for meeting the new standards. School systems had nine years from passage of the EIA to hire a sufficient number of teachers to meet the new standards, and they did

meet them. But just as smaller classes mean more teachers, more teachers mean more classrooms, and nearly one-third of Tennessee's school systems still need more classroom space to properly house those teachers and students. They have, however, made substantial progress since this annual inventory of needs began. The estimated cost of unmet classroom space needs attributable to the EIA has been cut in half over the last three years, and the percent of all school infrastructure needs attributable to the EIA declined from thirty-eight percent last year to twenty-two percent in this report. As with progress toward improving the overall condition of existing schools, this dramatic improvement indicates that school systems have used the new funds provided by the state and local governments very wisely.

**Table 18. Total Reported Cost of Facilities Mandates at Public Schools
—Five-year Period July 2002 through June 2007**

Mandates	Estimated Cost [in millions]	Percent of Total Mandate Cost
State Mandate Total	\$ 839.6	96.0%
▪ State-EIA (New & Existing Schools)	806.7	92.2%
▪ State-Fire Codes	18.3	2.1%
▪ State-Other	14.6	1.7%
Federal Mandate Total	\$ 35.4	4.0%
▪ Asbestos	20.5	2.3%
▪ Americans with Disabilities Act	12.7	1.5%
▪ Special Education	1.3	0.1%
▪ Title I	0.5	0.1%
▪ Underground Storage Tanks	0.3	0.0%
▪ Lead	0.1	0.0%
▪ Radon	0.0	0.0%
Grand Total All Mandates	\$ 875.9	100.0%

⁴⁵ TACIR staff analyzed patterns of growth in student counts to develop estimates of the percentage of new school construction attributable to the lower class sizes required by the Education Improvement Act of 1992 rather than to enrollment growth or replacement of existing schools. For a description of the TACIR methodology, see Appendix F.

The estimated costs to meet state fire codes and other state mandates have increased, but relative to the total cost of all mandates, the increase, at around \$18 million, is fairly small. As has been the case with other needs, this increase is attributable to a change in the estimated costs reported by a single school system. In this case, the Rutherford County school system reported an \$11 million increase in building code related needs.

Average Cost per Student to Meet Infrastructure Needs Varies Widely⁴⁶

Drawing conclusions about the variation across school systems in reported infrastructure needs is difficult. Based on the information provided by local officials for their schools and the estimates developed by TACIR staff for new school construction attributable to the EIA, just under half of Tennessee's public school systems (sixty-four of the 137 full-service systems) still need additional classroom space to house the additional teachers and classes necessary to meet the new class-size standards first imposed in fall 2001. Most of those school systems can meet that need for less than \$3,000 per student.

**Table 20: Number of School Systems by Range of Upgrade Costs per Student
—Five-year Period July 2002 to June 2007**

Reported Upgrade Costs per Student	Number of School Systems	Percent of School Systems
None	54	39.4%
Less than \$500	46	33.6%
\$500 to \$1,000	15	10.9%
\$1,000 to \$1,500	4	2.9%
\$1,500 to \$2,000	4	2.9%
More than \$2,000	14	10.2%
Total	137*	100.0%

* There are 138 public school systems in Tennessee. The Carroll County system was removed from all statistical analyses because it does not serve elementary school students and therefore is not comparable to the other 137 systems.

**Table 19: Number of School Systems by Range of EIA-related Infrastructure Costs per Student
—Five-year Period July 2002 to June 2007**

Reported EIA Costs per Student	Number of School Systems	Percent of School Systems
None	73	53.3%
Less than \$1,000	29	21.2%
\$1,000 to \$2,000	11	8.0%
\$2,000 to \$3,000	10	7.3%
\$3,000 to \$4,000	7	5.1%
More than \$4,000	7	5.1%
Total	137*	100.0%

* There are 138 public school systems in Tennessee. The Carroll County system was removed from all statistical analyses because it does not serve elementary school students and therefore is not comparable to the other 137 systems.

As shown in Table 20 at left, nearly four in ten systems report no need for upgrades at their school facilities, and nearly as many (about one third) report that they can put all of their facilities in good or better condition for less than \$500 per student system wide. This is no small amount, but eighteen school systems report a cost of more than triple that amount per student. The number of school systems at the high end for upgrade needs is nearly double the number from last year's inventory because of improved analytical methods. Over the course of the last year, TACIR staff devised a way to include amounts that were not reported on the *Existing School Facility Needs Inventory Form*, but were reported instead as system-wide needs on the *General Infrastructure Needs Inventory Form*.⁴⁷

⁴⁶Appendix E includes the cost per student for each school system.

⁴⁷Appendix C includes the inventory forms.

Not surprisingly, the estimated cost per student to provide needed technology infrastructure is considerably less than the cost per student for the “bricks and mortar” EIA classroom and upgrade needs shown in Tables 19 and 20. In general, more school systems are reporting no new technology needs, and about the same number are reporting needs of less than \$100 per student system wide. (See Table 21.) Twenty-seven school systems now report no need to upgrade technology in their schools, which is three more than in the previous inventory. Six fewer reported needs of more than \$300 per student. These changes might seem to contradict the overall \$485 million increase in technology needs discussed earlier except that entire increase is attributable to a new technology initiative in one school system, Memphis.

Table 21: Number of School Systems by Range of Technology Infrastructure Costs per Student

—Five-year Period July 2002 to June 2007

Technology Cost per Student	Number of School Systems	Percent of School Systems
\$0	27	19.7%
Less than \$100	59	43.1%
\$100 to \$200	26	19.0%
\$200 to \$300	10	7.3%
\$300 to \$400	6	4.4%
More than \$400	9	6.6%
Totals	137*	100.0%

* There are 138 public school systems in Tennessee. The Carroll County system was removed from all statistical analyses because it does not serve elementary school students and therefore is not comparable to the other 137 systems.