SCHOOL INFRASTRUCTURE NEEDS

Estimated cost of public school building infrastructure improvements increases for second year.

Tennessee's 135 public school systems need $3.8 billion for infrastructure improvements that are forecast to be in some stage of development during the five-year period July 2013 through June 2018, a $290 million increase since last year (see table 17).[15] This is the second year in a row the total has increased, though it has been relatively flat overall since 2007 (see figure 7). Improvements in public school facilities include both new space—entirely new schools and additions to existing schools—and upgrades at existing schools.

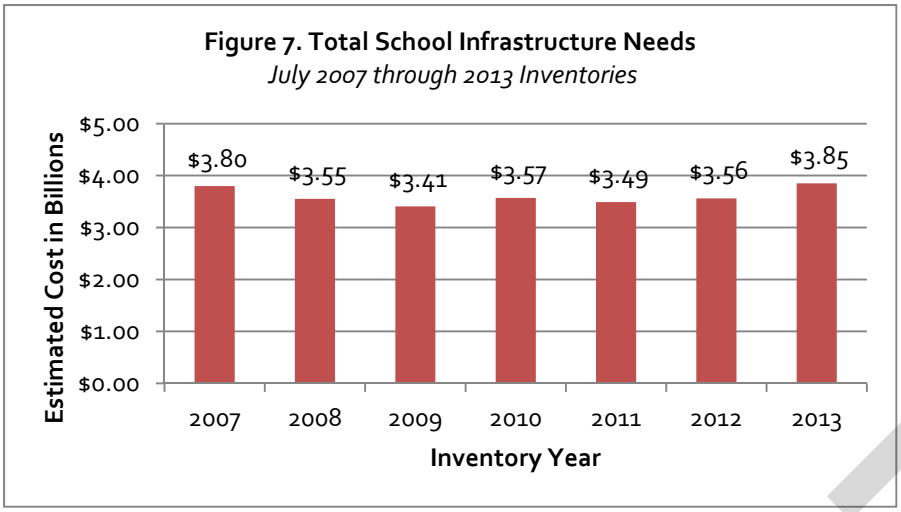
Table 17. Change in School Infrastructure Needs by Type of Need

July 2012 Inventory Compared with July 2013 Inventory

Type of Infrastructure	July 2012 Inventory	July 2013 Inventory	Difference	Percent Change
New School Space	**$ 1,521,085,932**	**$ 1,718,465,453**	**$ 197,379,521**	**13.0%**
New Schools	1,198,598,360	1,385,329,383	186,731,023	15.6%
Additions	322,487,572	333,136,070	10,648,498	3.3%
Improvements to Existing Schools	**$ 2,032,782,160**	**$ 2,118,710,913**	**$ 85,928,753**	**4.2%**
Renovations	1,474,211,591	1,524,931,669	50,720,078	3.4%
Replacement Schools	319,080,400	345,122,400	26,042,000	8.2%
Technology	117,183,961	129,455,931	12,271,970	10.5%
Mandates	122,306,208	119,200,913	(3,105,295)	-2.5%
System-wide Needs	**$ 5,971,000**	**$ 12,356,000**	**$ 6,385,000**	**106.9%**
Statewide Total	**$ 3,559,839,092**	**$ 3,849,532,366**	**$ 289,693,274**	**8.1%**

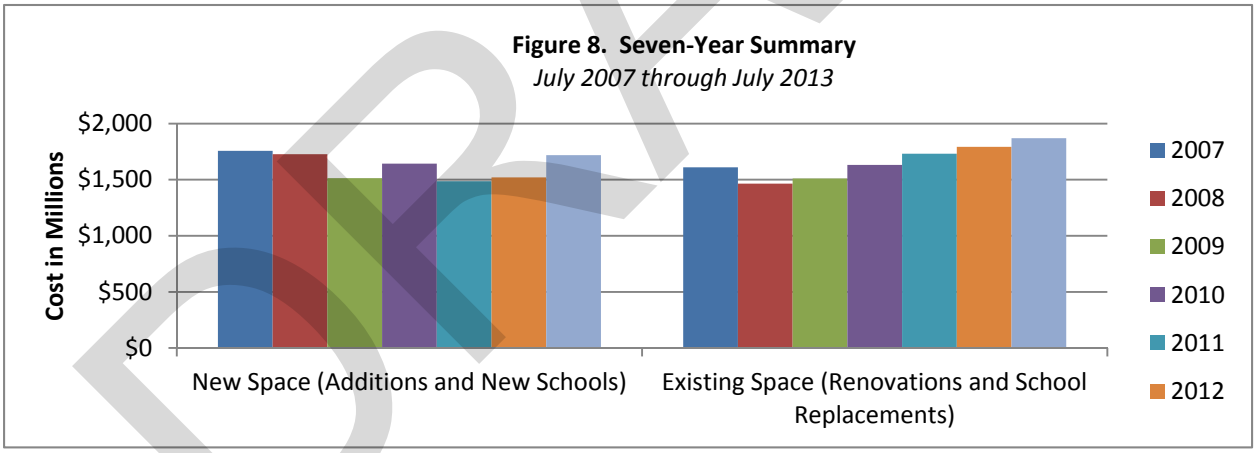
*Technology includes projects with estimated costs below the $50,000 threshold used for other types of infrastructure in the inventory. Individual technology projects under the threshold totaled $4,012,845 in 2012 and $4,529,749 in 2013.

[15] Memphis and Shelby County school systems consolidated in 2013, reducing the number of school systems to 135 for this inventory. Next year's inventory report will include public school infrastructure improvements for the six new school systems that were created in Shelby County in 2014.



The cost of adding new space (new schools and additions) has fluctuated since 2007 but is now the largest it has been since 2008. This is the second year that both the need for new schools and additions has increased; like the total, both have fluctuated since 2007. The need for new schools increased by $187 million (15.6%), and now totals $1.4 billion, while the estimated cost for additions to existing schools increased just $11 million (3.3%) and now totals $333 million.

The cost of improving existing space (renovations, replacement schools, technology, and mandates) has steadily increased since 2008 and is now the most ever reported (see figure 8). The estimated cost for renovations, which has steadily increased since 2007 as both more needs are reported and old ones remain unfinished,[16] increased $51 million (3.4%) since last year, and the cost to replace existing schools, which has fluctuated since 2007, increased by $26 million (8.2%) since last year.

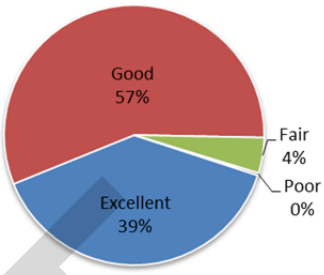


Technology infrastructure improvements increased $12 million (10.5%), ending a six-year downward trend, and the cost for improvements needed for such things as bus garages and central office buildings, which serve entire school systems, also reversed a downward trend and more than doubled last year's amount, increasing by $6 million (106.9%). The only

[16] Of the 961 schools reporting a renovation need in last year's inventory, 530 (55%) did not add needs for renovations nor did they complete any from the previous inventory ($656 million). Another 272, including 81 schools that had no renovation needs last year, added $256 million in renovation needs this year.

decrease since last year was for the estimated cost of meeting state and federal mandates, which continues a two-year downward trend with a decrease of $3 million (2.5%).Some of the needed improvements in existing facilities are related to the condition of schools,[17] but others are not. Local officials reported average needs of $5 million per school for the 5% of schools (82) in fair or poor condition. Schools in good or better condition can also have significant needs for improvement, with parts of the school requiring renovation or replacement—an average of $1 million per school for the other 95% of schools (1,131). See figure 9 for overall condition of public school buildings.

Figure 9. Overall Condition of Public School Buildings
As of July 1, 2013



The need for new schools and additions is often related to enrollment, consolidation, or school condition.

Each year since 2007, local officials have reported needing more public schools. Statewide, local officials reported a $1.4 billion need for 67 new schools, averaging $21 million per school. Most of the net $187 million increase was for 11 new schools totaling $245 million in six school systems. Student enrollment growth could be a factor for four of the six—Davidson, Robertson, Sumner, and Wilson counties each reported enrollment growth since 2007. The other two systems' enrollments are down, and they (Roane and Washington counties) are choosing to build schools that will eventually replace or consolidate aging schools.

Officials in 28 school systems reported a need for at least one new school in 2013. Since 2007, only 16 of those systems experienced enrollment growth greater than 100 students; seven systems had relatively flat growth; and five systems, most notably Shelby County, decreased enrollment by more than 100 students. See table 18. Just because a school system has decreasing enrollment doesn't mean it doesn't need new schools. The five systems with large enrollment decreases (Shelby, Roane, Cheatham, Tipton, and Washington counties) need these new schools for various reasons—consolidation, school age and condition, or localized growth at a particular school.[18] For example, Collierville High School, located in Shelby County, has been experiencing enrollment growth since 2009 because of school system boundary reconfiguration.[19]

[17] Overall school conditions used in this inventory are self-rated by the school official based on definitions located in Appendix C.

[18] Washington County is considering consolidating four schools into two because of school ages and conditions.

[19] Collierville will have its own school system in the 2014 inventory.

Table 18. 2007 to 2013 Student Enrollment Growth for School Systems Reporting a Need for a New School

Five-year Period July 2013 through June 2018

School System	July 2013 Estimated Cost for New Schools	2007-13 Student Growth	7-Year Compound Growth Rate
Davidson County	$ 131,334,000	5,960	1.3%
Williamson County	220,500,000	5,611	3.2%
Rutherford County	72,000,000	5,585	2.5%
Montgomery County	147,722,362	2,422	1.4%
Sumner County	42,239,021	2,087	1.3%
Wilson County	165,199,000	1,955	2.2%
Bedford County	12,000,000	639	1.4%
Robertson County	$ 37,575,000	632	1.0%
Cleveland	12,000,000	569	2.0%
Murfreesboro	20,950,000	490	1.2%
Johnson	14,000,000	435	1.0%
Putnam County	26,000,000	381	0.6%
Alcoa	30,000,000	202	2.0%
DeKalb County	42,000,000	150	0.9%
Marshall County	$ 31,000,000	103	0.3%
Sevier County	37,810,000	102	0.1%
Pickett County	15,000,000	58	1.4%
Cumberland County	14,000,000	11	0.0%
Macon County	10,000,000	(12)	-0.1%
Van Buren County	15,000,000	(49)	-1.1%
Humphreys County	7,000,000	(82)	-0.5%
Dickson County	$ 21,000,000	(89)	-0.2%
Fentress County	12,000,000	(90)	-0.7%
Washington County	70,000,000	(196)	-0.4%
Tipton County	42,500,000	(272)	-0.4%
Cheatham County	30,000,000	(452)	-1.1%
Roane County	50,000,000	(570)	-1.3%
Shelby County	56,500,000	(12,078)	-1.3%

While some systems need to build new schools, others need additions to existing school buildings, for example additional classrooms, a gym, or a cafeteria. Since the last inventory, there was a slight increase in additions ($11 million) spread across 204 schools in 69 school systems, an average of $2 million per school. Additions newly reported in this inventory total $67 million and were mostly offset by $57 million in cancelled or completed additions. The largest net increase for additions ($13 million) was in Davidson County, most of which was for classrooms at six schools. The second largest net increase ($8 million) for additions was in Sevier County and included two gyms, vocational and science classrooms, a library, and administrative space at Gatlinburg-Pittman High School and at Sevier County High School.

Nineteen other school systems reported the need for additions at 24 schools. Loudon County added $4 million to the inventory for four classrooms at Highland Park Elementary, more administrative space at Loudon Elementary, and a portable classroom and cafeteria at Philadelphia Elementary. The remaining 18 systems are both large and small with combined needs totaling less than $36 million spread over 21 schools.

The need to improve existing school buildings continues to increase and now stands at $2.1 billion.

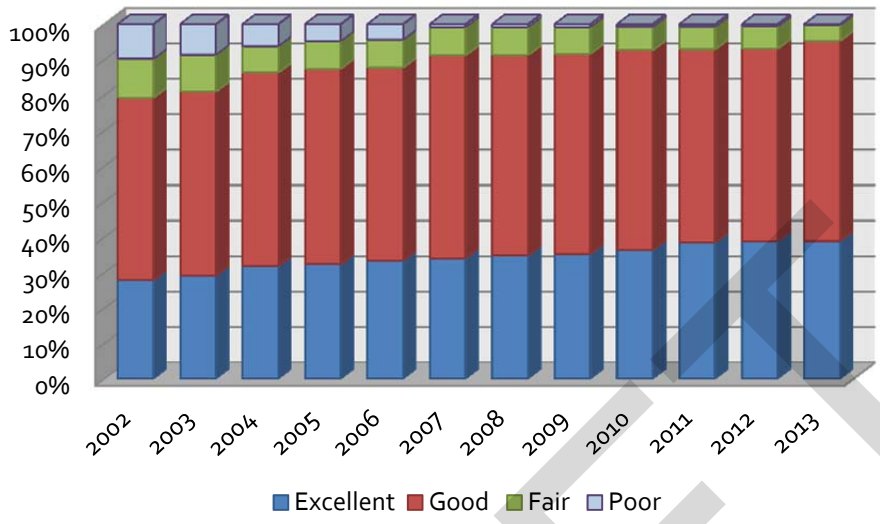
The estimated cost of improving existing schools increased by almost $86 million, from $2.0 billion to $2.1 billion (see table 17), since the last inventory and includes renovations, replacements, technology upgrades, and changes prompted by state or federal facility mandates. The increased cost for existing school infrastructure is driven mainly by the condition of schools and is mostly for renovations and to a lesser extent for replacements. The cost of meeting mandates has fluctuated over the years but remains a relatively small percentage of total improvement costs and decreased slightly, from $122 million to $119 million, since the last inventory.

The number of schools in good or excellent condition continues to increase.

For each inventory, school officials rate the overall condition of their school buildings as well as the condition of each building component. As figure 10 shows, most of Tennessee's public school buildings have been in good or better condition for several years; a very small percentage have been in fair or poor condition.[20] The number of school buildings in excellent condition decreased from 683 in the last inventory to 679, and the number rated good increased from 953 to 985. The number in fair or poor condition (82) decreased by 40 since last year's inventory and is now only 5% of the total. Most of these schools have been in fair or poor condition for some time, and as indicated in map 6, they are located all across the state.

[20] These condition ratings are defined in appendix C.

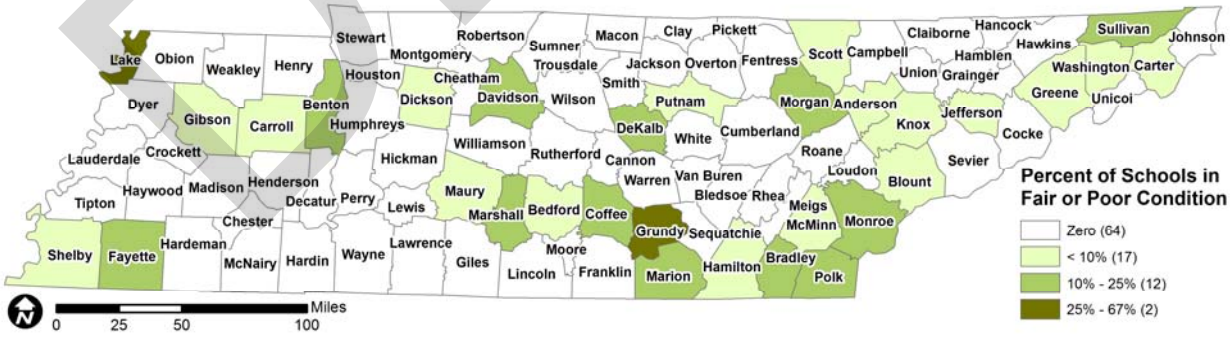
Figure 10. Overall Condition of Public School Buildings
2002 through 2013



Schools in fair or poor condition tend to be older buildings.

Not surprisingly, older schools are more likely to be in worse condition. Half of the public school buildings in use today were built in the 1950s, 1960s, and 1970s when the Baby Boom generation was making its way through school. And more than half of the schools in fair or poor condition today were built during that period. Only 11% of schools in use today were built before 1950, but 24% of school buildings rated fair or poor date to that period. By contrast, 40% of all schools were built in 1980 or later, and only 13% of those are in fair or poor condition. See figure 11.

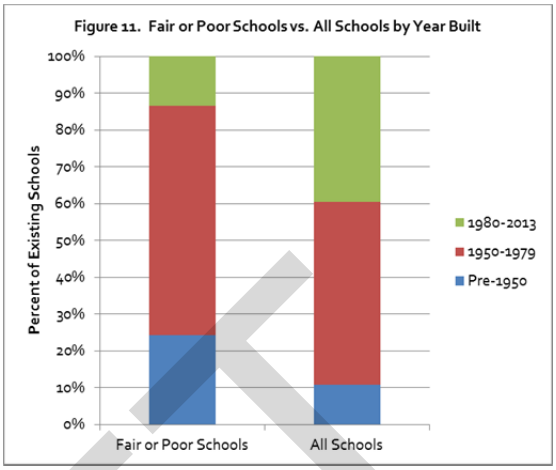
Map 6. Percent of School Buildings in Fair or Poor Condition by County
As of July 1, 2013



The relatively few schools in fair or poor condition are located throughout the state.

Although most systems (103) reported no schools in fair or poor condition, 16 reported just one, and another 16 reported two or more. Nearly 30% of the 82 schools in fair or poor condition are in Davidson County (24) where the schools are mainly older, having been built on

average 52 years ago. Another seven are in Hamilton County, which has the second largest number of schools in fair or poor condition and where the buildings are on average 62 years old. The other 14 systems with more than one school in fair or poor condition have two to four schools rated fair or poor. Shelby County stands out because the average age of schools there is 43 years, but the county reported only three out of its 235 schools as fair and none as poor.



While more schools in fair or poor condition are in urban and suburban areas, the districts with the highest percentage of their schools rated fair or poor are in rural areas. Only two school systems reported half or more of their schools in fair or poor condition—the Lake and Grundy county systems. Lake County has only three schools, two of which are in less than good condition and were built before 1965. Grundy County reported half of their schools—four elementary schools built between 1927 and 1979—in fair or poor condition. See table 19.

Table 19. Renovation and Replacement Costs for the Ten Systems with Two or More Schools in Fair or Poor Condition

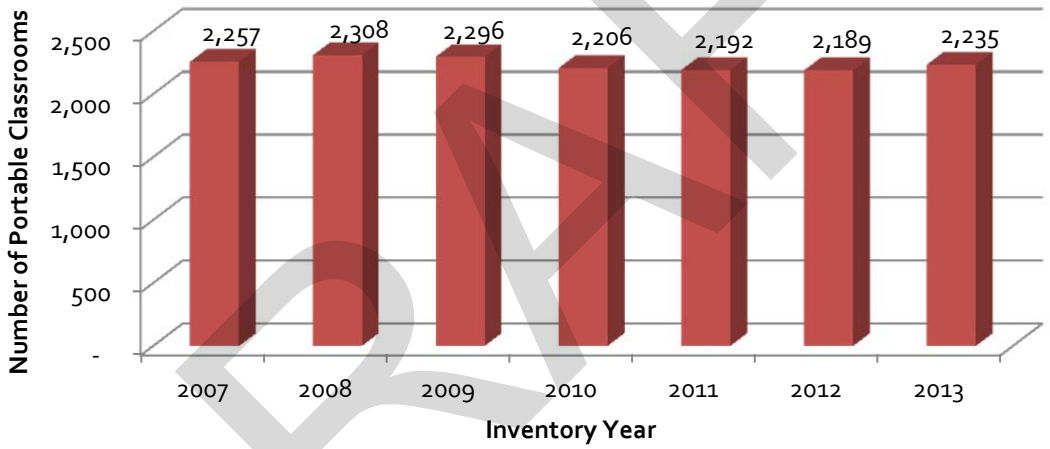
Five-year Period July 2013 through June 2018

	All Schools		Schools in Fair or Poor Condition			
School System	Number of Schools	Estimated Cost to Renovate and Replace	Number of Schools	Percent Fair/Poor	Estimated Cost to Renovate and Replace	Percent of Renovation Needs
Davidson County	137	$ 629,680,300	24	17.5%	$ 179,585,000	28.5%
Hamilton County	74	20,028,000	7	9.5%	13,428,000	67.0%
Grundy County	8	6,765,000	4	50.0%	6,015,000	88.9%
Bradley County	18	13,115,000	3	16.7%	5,360,000	40.9%
Knox County	89	9,225,037	3	3.4%	4,370,000	47.4%
Sullivan County	22	35,930,000	3	13.6%	660,000	1.8%
Bristol	8	40,607,000	3	37.5%	28,857,000	71.1%
Shelby County	235	247,459,194	3	1.3%	4,130,000	1.7%
Oak Ridge	8	15,073,133	2	25.0%	14,000,000	92.9%
Coffee County	9	33,550,000	2	22.2%	33,550,000	100.0%
Fayette County	11	14,160,000	2	18.2%	13,130,000	92.7%
Lake County	3	10,660,000	2	66.7%	10,660,000	100.0%
Marion County	10	8,050,000	2	20.0%	7,870,000	97.8%
Monroe County	13	32,685,660	2	15.4%	15,919,920	48.7%
Morgan County	8	5,995,882	2	25.0%	2,393,000	39.9%
Putnam County	20	31,380,000	2	10.0%	30,250,000	96.4%
Subtotal	**673**	**$ 1,154,364,206**	**66**	**10%**	**$ 370,177,920**	**32.1%**
All Others	**1,073**	**719,722,863**	**16**	**1%**	**187,994,780**	**26.1%**
State Total	**1,746**	**$ 1,874,087,069**	**82**	**5%**	**$ 558,172,700**	**29.8%**

The number of portables at Tennessee's public schools remains steady as enrollment growth has flattened out.

School systems use portables to deal with unanticipated space shortages, such as those caused by natural disasters, to substitute for space that's in bad shape, and to provide temporary classrooms for large influxes of new students while they plan more permanent solutions. Statewide, school systems reported having 2,235 portable classrooms, down by 73 since the peak of 2,308 in the 2008 inventory but up by 46 since last year (see figure 12). Dyer County is a good example of a system that used portables as a temporary solution while building new schools. Both Fifth Consolidated School and Newbern Grammar used portable classrooms until 2012 because the existing school buildings were old and in bad shape. Those schools were replaced by larger facilities and ceased using portable classrooms when they opened in 2012.

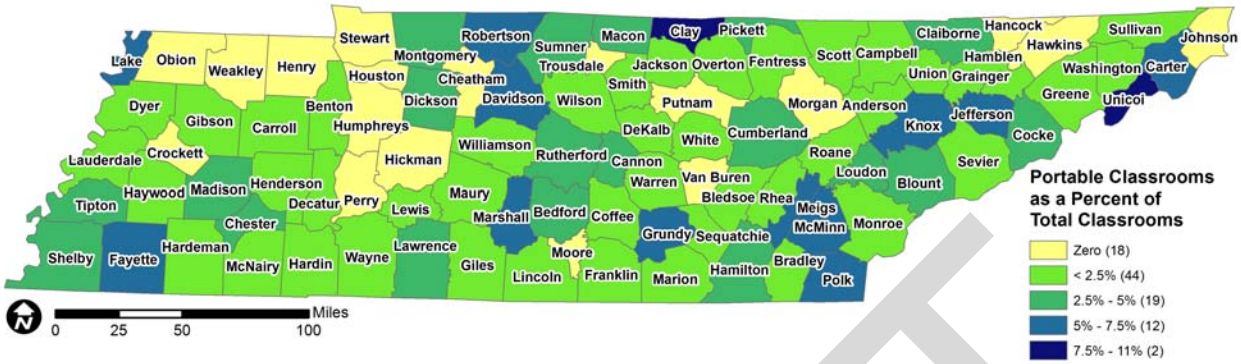
Figure 12. Number of Portable Classrooms
Inventory Years 2007 through 2013



This year's total of 2,235 portable classrooms (see figure 12) is 3.1% of all classrooms in the state. As illustrated in map 7, which sums system-level information on portables to the county level, most counties (62 of 95) rely on portables for 2.5% or less of their total classrooms. Thirty-one counties rely on portables for between 2.5% and 7.5% of their classrooms, and only two, Clay and Unicoi, rely on them for more than 7.5%. These two counties are shaded dark blue in map 6. Clay County's use of portables peaked in 2010 at 13% and is now 11%. Unicoi County's percentage of portable classrooms is currently at 10.5%, up from 1.7% last year, when Love Chapel Elementary had to be moved into portable classrooms because a large sink hole opened up next to the school building. Information about each school system's use of portables can be found in appendix I-7.

Map 7. Portable Classrooms as a Percent of Total Classrooms by County

As of July, 1 2013



Twenty-two school systems had more portable classrooms in 2013 than in 2007. While most school systems added only a few, four added more than ten—Unicoi (19), Knox (86), Montgomery (16), and Cumberland (12). Unicoi is a special case because of the emergency noted above—while the number of portables used in the county increased by a net of 19 from 2007 through 2013, it would actualy have decreased if not for the 21 portables in use at Love Chapel Elementary School. Knox County, with growing student enrollment, increased the number of portables in the district from 158 in 2007 to 244 through 2013, adding 49 in 2013 alone.. Slightly more than half of Knox's schools (47 out of 89 schools) have at least one portable on site compared with 43% in 2007. Montgomery County, where the student population has grown substantially (6th overall in student growth since 2007) increased its use of portables from 58 in 2007 to 74 in 2013. Their portables are located at 14 schools, nine of which increased portable usage while five reduced their usage. Cumberland County, with nearly no student growth since 2007, increased their portable usage from eight portable classrooms at two schools in 2007 to 20 at five schools in 2013 while renovating these schools.

Overall, 30 school systems reported fewer portable classrooms in 2013 than in 2007. Shelby County Schools, which consolidated with Memphis Schools in 2013, eliminated the most portables (47) since 2007 but still has 444.[21] Hardin County eliminated 25 of the 28 portable classrooms it had in 2007 when they consolidated five existing schools that used portables into two schools that do not. Davidson County has eliminated 21 portables since 2007 but still has 330. They no longer need as many because of new schools and additions. Similarly, Dyer County has only five portable classrooms, down from 25 in 2007. They replaced two schools in 2012. The other 26 systems with decreases used from one to 14 fewer portable classrooms, and four systems now use zero portables.

The number of systems not using portables increased from 47 in 2007 to 48 in 2013, but four that had portables in 2007 no longer do, and three that did not have portables now have them.

[21] Separately, Shelby County reduced their portables from 147 to 118 and Memphis reduced theirs from 344 to 326 since 2007.

Of the 44 systems that had no portables in 2007 and still don't have any, 31 decreased in enrollment by an average of 153 students, and 14 increased by an average of 137 students. Athens, Manchester, and Hawkins and Moore counties had portable classrooms in 2007 but no longer do, possibly because of slow-growing or shrinking enrollment. Athens' enrollment decreased by 180 students and Hawkins County's decreased by 383, but Moore County's decreased by only 3, and Manchester's enrollment increased by 22 students. The three systems that now use portables are Lauderdale (4), Rhea (3), and Wayne (2) counties—Rhea is the only one experiencing student growth and may need portables for that reason, the other two reported renovation and addition needs and use portables while projects are under construction.

Some school systems (39) still have the same number of portable classrooms as they had in 2007. Of those, the system with the most portables is Carter County, which has a total of 41 at ten of their 17 schools. Out those ten, five schools averaging 56 years in age, reported a need for $14 million in renovations and upgrades, and a sixth needs to be replaced at an estimated cost of $17 million. A seventh awaits completion of an addition. McMinn County has the second largest number of portables, using 26 of them at the same six schools in each of the past seven inventories. The average age of those schools is 50 years, and they reported needing an average of $471 thousand for renovations and upgrades (ranging from $200 thousand to $1.2 million per school). Enrollment in both systems has been trending downward, by 417 since 2007 and 11 since 2012 for Carter and 71 since 2007 and 76 since 2012 for McMinn.

Like Carter and McMinn counties—Fayette, Marshall, and Tipton counties, each with 19 portables since 2007—have declining enrollment. Fayette County officials reported five out of six schools with portables need to be renovated or replaced. In addition, they rated two of these five schools in fair overall condition. Marshall County officials reported that five schools have been using the same number of portable classrooms since 2007 and that they need to renovate only two. Only two of Tipton County's three schools used the same amount of portables since 2007 and have not completed renovations that have been reported as needed since 2010.

Estimated cost to improve school buildings continues to increase, mainly for renovations.

Systems seeking to improve school buildings have two choices: renovate or replace them. In some cases entire schools need to be renovated or replaced; in other cases, only parts of schools need to be upgraded. The estimated cost to renovate or replace existing schools increased by $77 million, from $1.8 billion to $1.9 billion (see table 21), since the last inventory. Most of the increase ($51 million) is for renovations, following the pattern of the last four years. The estimated cost of replacing schools has been relatively flat at about $325 million for the last seven years, down slightly from a high of $374 million in 2007.

The average amount per school needed to renovate or replace those in fair or poor condition is almost six times larger than the average cost to upgrade the 1,131 schools in good or excellent condition, $7 million versus $1 million (see table 20). Since the last inventory, costs for school

renovations increased slightly and still total roughly $1.5 billion. This is the fourth consecutive year the estimated cost of renovations has increased. While on a per school basis school buildings in fair or poor condition cost more to fix than those in better condition, renovations at the 1,131 schools in good or excellent condition make up a larger part of the inventory—$1.1 billion, an average of almost one million dollars per school. Renovations needed to bring the 82 schools in fair or poor condition to good or excellent condition will require an estimated $420 million, an average of $5 million per school.

Sometimes renovating a school is not enough to meet the needs of students, and schools have to be replaced. Local officials reported that they need $345 million to replace a total of 16 schools, an increase of 8.2% ($26 million) from last year's report. The average cost to replace these schools is $22 million. Of the 16 schools, eight are in good condition, five are in fair condition, two are in poor condition, and the one that had been in excellent condition needs to be replaced because of a dangerous sinkhole that threatens the building. All eight of the schools in good condition are at least 50 years old. School systems that cannot immediately afford to replace schools may renovate them in the meantime. Watertown High School, built in 1962, is a great example. They need $37 million to replace the school and $6 million to upgrade the existing building both so it can remain in use until the new high school is built and so it can be used as a middle school thereafter.

Table 20. Renovations and School Replacement Costs by School Condition

Five-year Period July 2013 through June 2018

School Condition	Number of Schools	Estimated Cost to Renovate	Estimated Cost to Replace	Totals	Average Cost Per School
Good or Excellent	1,131	$ 1,101,216,969	$ 207,246,400	$ 1,308,463,369	$ 1,156,908
Fair or Poor	82	419,681,700	137,876,000	557,557,700	6,799,484
Total	**1,213**	**$ 1,520,898,669**	**$ 345,122,400**	**$ 1,866,021,069**	**$ 1,538,352**

Does not include facility upgrades captured in the school system-wide category used for the total renovation cost in Table 17.

The cost to improve technology infrastructure at existing public schools increased by $12 million since the last inventory and now totals $129 million (see figure 13). The cost of these upgrades, which include wiring, new computer labs, and security systems, increased for the first time since the 2007 inventory. Knox County's technology needs—estimated at $8 million—were the main reason for the increase and include needs for personalized learning environments where each student above third grade will either have a tablet or laptop by 2019. Technology infrastructure for new schools is included in their overall cost rather than in these figures.

Figure 13. Estimated Cost of Technology Needs in Millions

July 2007 through July 2013

Larger systems reported greater total costs, while smaller systems often have greater costs per student.

School systems with more students have more school buildings and, therefore, greater infrastructure improvement needs than smaller systems. The ten systems with the greatest infrastructure needs account for 64% of the total cost (see table 20). Seven of them are among the ten with the most students. The other three systems are Maury County (12th in enrollment), Robertson County (14th in enrollment), and Washington County (20th in enrollment). Some systems, such as Davidson, Shelby, and Maury counties, reported a greater need to improve existing schools while others, such as Williamson, Montgomery, Wilson, Sevier, Rutherford, and Washington counties, reported a greater need to build new schools. The lone exception in the top ten, Robertson County, reports a more balanced approach to addressing school infrastructure needs.

Table 21. Ten Systems with the Highest Total Costs for Improvements

Five-year Period July 2013 through June 2018

	Estimated Cost				2013 Students		
School System	Total	Improvements to Existing Schools	New Space	System-wide	Number	Rank	Cost Per Student
Davidson County	$ 824,607,500	$ 633,884,500	$ 190,723,000	$ 0	77,964	2	$ 10,577
Shelby County	416,716,229	351,616,229	65,100,000	0	148,295	1	2,810
Williamson County	284,836,000	48,336,000	236,500,000	0	32,912	6	8,655
Montgomery County	238,377,362	66,655,000	171,722,362	0	29,871	7	7,980
Wilson County	223,000,430	57,801,430	165,199,000	0	16,002	9	13,936
Sevier County	108,740,868	24,848,868	83,892,000	0	14,303	10	7,603
Rutherford County	100,713,488	21,533,488	79,000,000	180,000	39,969	5	2,520
Maury County	97,073,300	94,199,800	2,873,500	0	11,554	12	8,401
Washington County	94,134,750	19,659,250	70,175,500	4,300,000	8,927	20	10,545
Robertson County	83,792,000	41,167,000	37,575,000	5,050,000	11,182	14	7,493
Top Ten Total	**$2,471,991,927**	**$ 1,359,701,565**	**$1,102,760,362**	**$ 9,530,000**	**390,979**		**$ 6,323**
All Others	**1,377,540,439**	**759,009,348**	**615,705,091**	**2,826,000**	**565,994**		**2,434**
State Total	**$ 3,849,532,366**	**$ 2,118,710,913**	**$1,718,465,453**	**$ 12,356,000**	**956,973**		**$ 4,023**

Table 22. Ten Systems with the Highest Per Student Costs for Improvements

Five-year Period July 2013 through June 2018

	Estimated Cost				2012 Students		
School System	Total	Improvements to Existing Schools	New Space	System-wide	Number	Rank	Cost Per Student
Van Buren County	$ 16,564,247	$ 564,247	$ 16,000,000	$ 0	729	125	$ 22,727
Pickett County	15,187,500	187,500	15,000,000	0	733	124	20,732
Alcoa	30,400,000	400,000	30,000,000	0	1,797	98	16,920
DeKalb County	46,202,000	2,382,000	43,820,000	0	2,886	77	16,009
Alamo	8,760,000	510,000	8,250,000	0	595	129	14,719
Wilson County	223,000,430	57,801,430	165,199,000	0	16,002	9	13,936
Lake County	10,900,000	10,810,000	90,000	0	870	122	12,523
Bristol	45,319,500	43,319,500	2,000,000	0	3,895	57	11,636
Davidson County	824,607,500	633,884,500	190,723,000	0	77,964	2	10,577
Washington County	94,134,750	19,659,250	70,175,500	4,300,000	8,927	20	10,545
Top Ten Total	**$ 1,315,075,927**	**$ 769,518,427**	**$ 541,257,500**	**$ 4,300,000**	**114,398**		**$ 11,496**
All Others	**2,534,456,439**	**1,349,192,486**	**1,177,207,953**	**8,056,000**	**842,576**		**3,008**
State Total	**$ 3,849,532,366**	**$ 2,118,710,913**	**$1,718,465,453**	**$ 12,356,000**	**956,973**		**$ 4,023**

Small school systems can be overlooked when considering overall costs. Compared with larger school systems, those with fewer students may report lower total infrastructure improvement costs but larger costs per student. Wilson, Davidson, and Williamson counties are the only large systems that are among those with the highest total cost per student. See table 22.

The four school systems reporting the highest costs per student mainly need new schools. Van Buren County has the greatest cost per student at $22,727 compared with the statewide average of $4,007. Van Buren needs $1 million for new classrooms and a gym at Spencer Elementary and a $15 million new high school that has been in the inventory since 2005 and that remains in the conceptual stage. Alcoa needs $30 million ($16,920 per student) to build a new high school, DeKalb County needs a new $42 million high school ($16,009 per student), and Alamo needs $8 million ($14,719 per student) to enlarge Alamo Elementary. All four systems reported needing smaller amounts to renovate space at existing schools.

Washington County also needs new schools as well as renovations; 12 of their 16 existing schools need renovations and one needs an addition. The total cost for these improvements, more than twice the state average per student ($10,545), includes two $35 million elementary schools; one each for the Boones Creek and Jonesborough areas.

Lake County and Bristol reported large costs per student, but mainly to upgrade rather than add space. The amount per student Lake County needs to upgrade its schools ($12,523) is more than three times the state average and includes $7 million to renovate the cafeteria, the library, administrative offices, the gym, and over half of the classrooms at Margaret Newton Elementary School and $4 million to renovate Lake County High School. Lake County also needs $90,000 for a new music classroom at Laura Kendall Elementary School.

Like Lake County, Bristol needs almost three times the state per pupil average to upgrade its schools ($11,636), including $23 million to renovate Vance Middle School, $10 million to completely renovate Anderson Elementary, and $5 million to renovate 22 classrooms, the gym, the library, and the cafeteria at Haynesfield Elementary. Bristol also needs $2 million for eight new classrooms at Avoca Elementary school and $3 million to renovate Tennessee High School, as well as $2 million to renovate Holston View Elementary.