

Building Tennessee's Tomorrow:

Anticipating the State's Infrastructure Needs

July 2014 through June 2019

SCHOOL INFRASTRUCTURE NEEDS

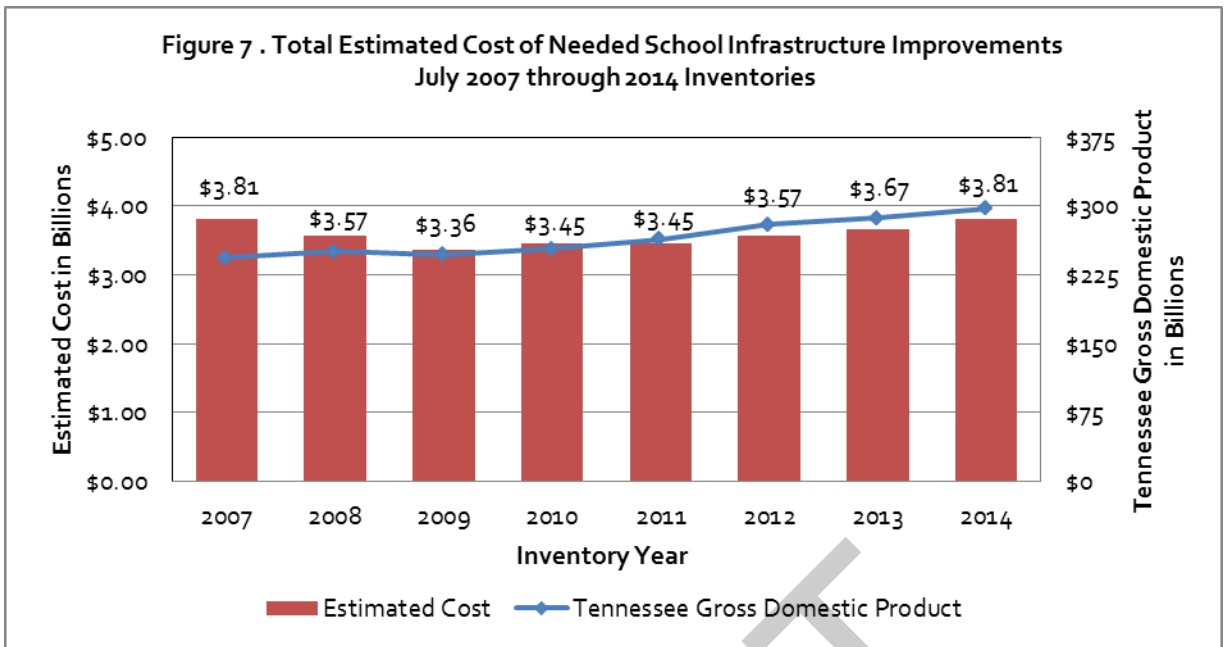
Estimated cost of public school facility improvements increases even as the need for new schools declines.

Tennessee's 141 public school systems need an estimated \$3.8 billion in infrastructure improvements to be in some stage of development during the five-year period July 2014 through June 2019, a \$139 million increase since last year (see table 16). The total estimated cost of school facility improvements needed declined from 2008 to 2009 but increased in each of the last five years, a trend that appears to follow the pattern of Tennessee's growth in gross domestic product during and after the Great Recession (see figure 7). As shown in table 16 and in figure 8 on page 46 this increasing trend in the estimated cost of school facility improvements is driven mainly by school renovations. The coincidence of those two trends suggests that improvement "needs" reported in the inventory are driven to a large extent by the availability of funds rather than by what is actually needed.

**Table 16. Estimated Cost of Needed School Infrastructure Improvements by Type of Need
July 2013 Inventory Compared with July 2014 Inventory**

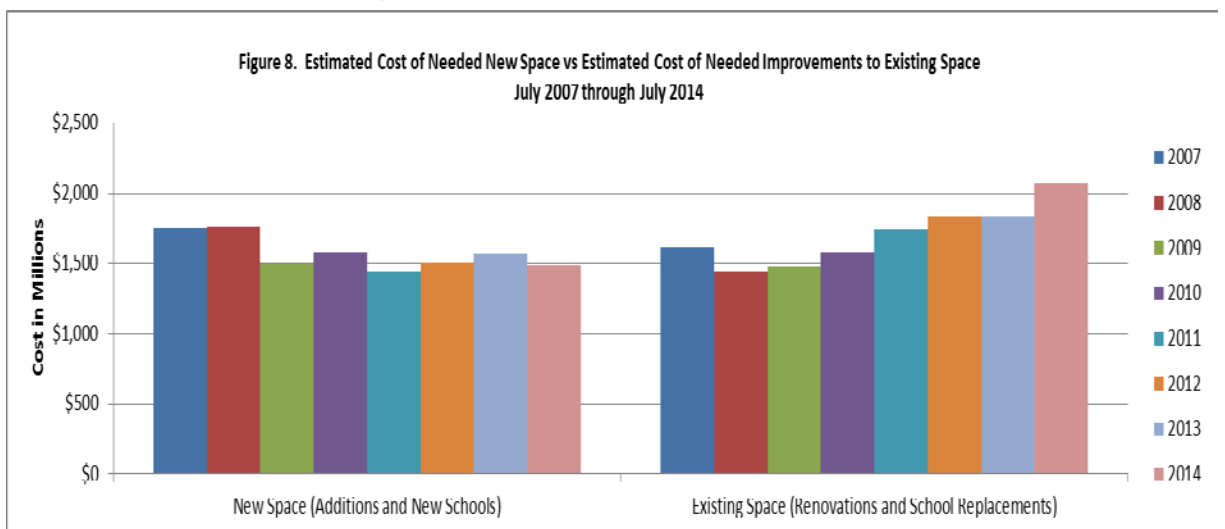
Type of Infrastructure	July 2013 Inventory	July 2014 Inventory	Difference	Percent Change
New School Space	\$ 1,571,806,453	\$ 1,492,144,377	\$ (79,662,076)	-5.1%
New Schools	1,228,385,383	1,110,941,383	(117,444,000)	-9.6%
Additions	343,421,070	381,202,994	37,781,924	11.0%
Improvements to Existing Schools	\$ 2,079,427,154	\$ 2,297,880,734	\$ 218,453,580	10.5%
Renovations	1,464,182,369	1,751,622,242	287,439,873	19.6%
Replacement Schools	372,434,000	320,110,000	(52,324,000)	-14.0%
Technology	128,278,362	112,671,588	(15,606,774)	-12.2%
Mandates	114,532,423	113,476,904	(1,055,519)	-0.9%
System-wide Needs	\$ 15,556,000	\$ 15,707,000	\$ 151,000	1.0%
Statewide Total	\$ 3,666,789,607	\$ 3,805,732,111	\$ 138,942,504	3.8%

*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 \$4,527,243 in 2013 and \$3,541,536 in 2014.

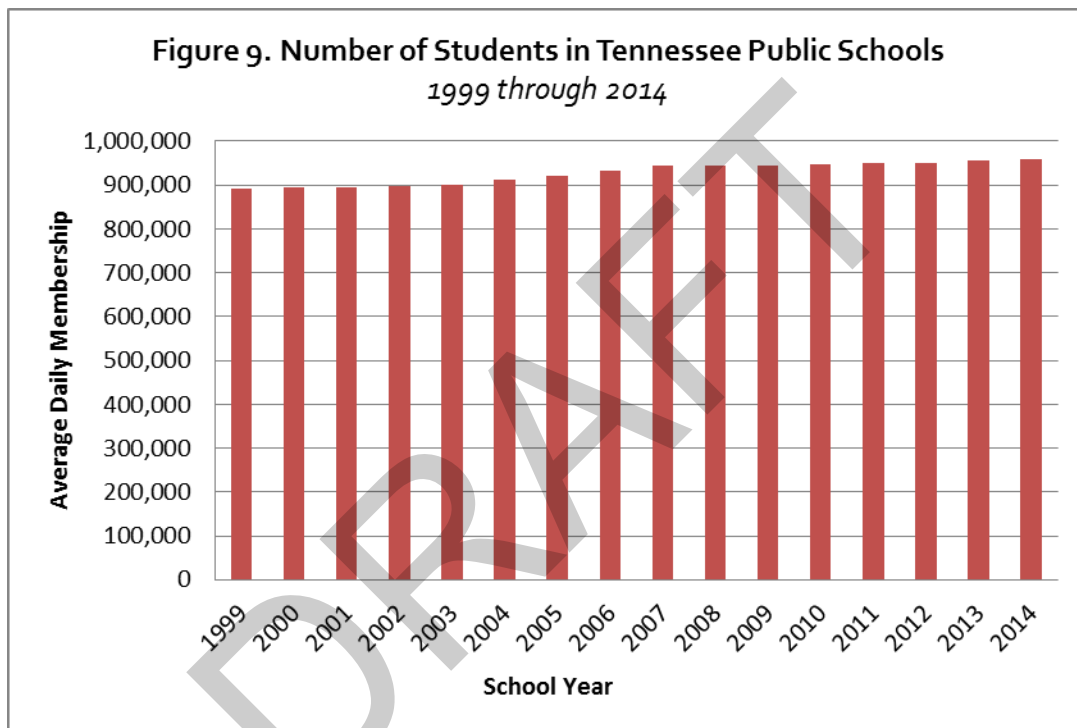


Source: TACIR Staff analysis of Public Infrastructure Needs Inventory data and Bureau of Economic Analysis, US Department of Commerce

Improvements in public school facilities include both new space—entirely new schools and additions to existing schools—and upgrades at existing schools. While the total cost of school infrastructure has gradually increased since 2009, there appears to be a shift from adding new space to improving existing space in Tennessee’s public schools (see figure 8). This shift may be partly the result of enrollment growth that began slowing in 2007, coinciding with the economic downturn, and continued to slow through 2014 (see figure 9). After a significant drop in 2009, the cost of adding new space has fluctuated and decreased \$80 million (5.1%) since last year and now totals \$1.5 billion. This decrease resulted mainly from a \$117 million (9.6%) decrease in the estimated cost of new schools needed, which now totals \$1.1 billion. The \$38 million (11.0%) increase in the estimated cost of school additions, which now totals \$381 million, wasn’t enough to offset that decrease.



The cost of improving existing space (renovations, replacement schools, technology, and mandates) has steadily increased since 2008 and is now the highest ever reported. The estimated cost for renovations, which has steadily increased since 2009 as new needs were added and old ones remained unfinished or not even started, increased \$287 million (19.6%) since last year, and the cost to replace existing schools, which has fluctuated since 2007, decreased by \$52 million (14.0%) since last year and now totals \$320 million for 14 schools. Of the 1,039 schools reporting a need for renovations in last year's inventory, only 157 of them were able to complete any renovations, and those renovations totaled \$92 million; 383 (36.9%) did not report a need for new renovations nor did they complete any from the previous inventory (\$504 million). Another 499 schools, including 184 with no renovation needs last year, added \$434 million in renovation needs this year.

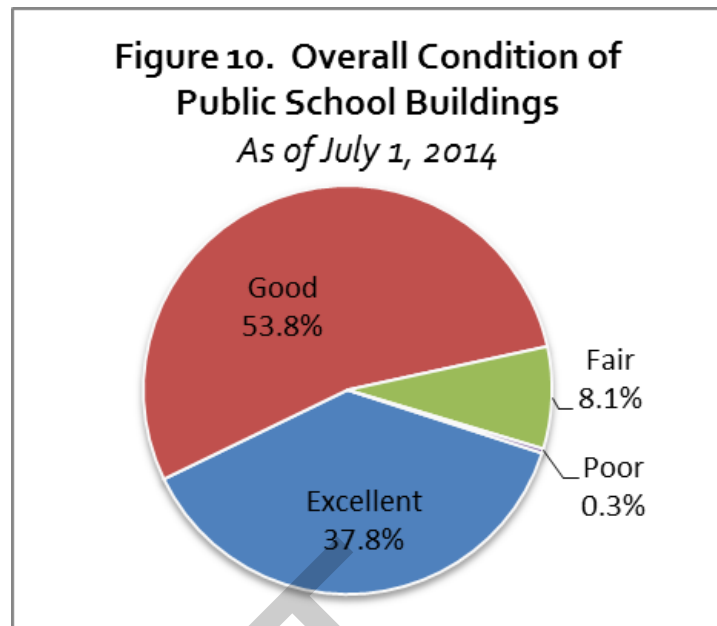


Source: Tennessee Department of Education

Local officials now report higher costs to renovate or replace existing schools, an average of \$5.8 million per school for the 142 (8.4%) schools in fair or poor condition. Improvements in existing facilities are typically related to the condition of the schools,¹⁷ which is better overall now than in the initial years of this inventory. However, schools in good or better condition (829) have significant improvement needs as well—including both renovating and replacing classrooms or other components—an average of a little over \$1.5 million per school. See figure 10 for the overall condition of public school buildings.

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

The need for technology infrastructure improvements decreased \$16 million (12.2%) after increasing by a small amount last year, resuming the downward trend of the six preceding years. The estimated cost of meeting state and federal mandates, which also continues a downward trend since 2007, decreased \$1 million (0.9%). The cost for school system-wide improvements, such as bus garages and central office buildings that serve entire school systems, increased by \$151,000 (1.0%).



Larger systems report larger total costs, but 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 59.8% of the total estimated cost of all school facility improvements but less than half the total number of students enrolled in 2014. Nine are among the ten with the most students, but the tenth, Robertson County, ranks only 15th in enrollment. Some systems, for example Davidson and Shelby counties, reported a greater need to improve existing schools, while others, including Williamson, Montgomery, Wilson, Sevier, Robertson, and Rutherford counties, reported a greater need to build new schools. Sumner County reports needing about \$59 million both for replacing schools and for improving existing space. See table 17.

By comparison, the needs of small school systems can seem insignificant unless analyzed in relation to the number of students they have enrolled. On that basis, the only large systems that stand out are Wilson and Davidson counties. The remaining systems in the top ten for total infrastructure costs per student all have fewer than 4,000 students enrolled. See table 18. The six school systems reporting the highest costs per student mainly need new schools. Van Buren and Pickett counties are first and second at \$22,001 and \$20,293 per student compared with the statewide average of \$3,971. Van Buren and Pickett both need new high schools at a cost of \$15 million each that have been in the inventory since 2005 and remain conceptual. They also need structural and technology upgrades at two schools. Alcoa needs \$33 million (\$18,429 per student) to build a new high school, DeKalb County needs a new \$42 million high school (\$16,586 per student), Overton County needs a new \$40 million high school in the Rickman community (\$16,230), and Alamo needs a little more than \$8 million (\$14,831 per student) to enlarge Alamo Elementary. Five of these six systems reported needing smaller amounts to renovate space at existing schools.

Lake County and Bristol reported large costs per student, but these costs were mainly to upgrade rather than add space. The amount per student Lake County needs to upgrade its schools (\$12,868) 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, as well as \$4 million to renovate Lake County High School.

Like Lake County, Bristol needs three times the state per pupil average to upgrade its schools (\$11,953), 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 \$3 million for eight new classrooms and a gym at Avoca Elementary school and \$3 million to renovate Tennessee High School, as well as \$2 million to renovate Holston View Elementary.

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**Table 17. Ten School Systems with the Highest Total Costs for Facility Improvements
Five-year Period July 2014 through June 2019**

School System	2014 Students		Estimated Cost				
	Number	Rank	Improvements to Existing Schools	New Space	System-wide Improvements	Total	Per Student
Davidson County	79,298	2	\$ 617,014,200	\$ 177,577,000	\$ 0	\$ 794,591,200	\$10,020
Shelby County	117,811	1	380,314,282	6,350,000	0	386,664,282	\$3,282
Williamson County	33,916	6	35,084,000	214,720,000	0	249,804,000	\$7,365
Montgomery County	30,706	7	53,450,000	132,422,362	0	185,872,362	\$6,053
Wilson County	16,446	9	26,815,940	151,500,000	0	178,315,940	\$10,842
Sumner County	28,237	8	58,500,841	59,265,021	0	117,765,862	\$4,171
Sevier County	14,304	10	32,072,168	79,673,000	0	111,745,168	\$7,812
Robertson County	10,807	15	33,365,000	55,175,000	4,265,000	92,805,000	\$8,587
Rutherford County	40,932	5	19,438,376	67,000,000	0	86,438,376	\$2,112
Hamilton County	42,385	4	71,223,000	0	0	71,223,000	\$1,680
Top Ten Total	414,840		\$ 1,327,277,807	\$ 943,682,383	\$ 4,265,000	\$2,275,225,190	\$5,485
All Others	543,440		970,602,927	548,461,994	11,442,000	1,530,506,921	\$2,816
State Total	958,280		\$ 2,297,880,734	\$1,492,144,377	\$ 15,707,000	\$3,805,732,111	\$3,971

Table 18. Ten School Systems with the Highest Cost Per Student for Facility Improvements
Five-year Period July 2014 through June 2019

School System	2014 Students		Estimated Cost				Per Student
	Number	Rank	Improvements to Existing Schools	New Space	System-wide	Total	
Van Buren County	718	126	\$ 800,000	\$ 15,000,000	\$ 0	\$ 15,800,000	\$22,001
Pickett County	747	124	167,500	15,000,000	0	15,167,500	\$20,293
Alcoa	1,812	97	0	33,400,000	0	33,400,000	\$18,429
DeKalb County	2,786	78	2,382,000	43,820,000	0	46,202,000	\$16,586
Overton County	3,238	71	8,860,000	43,700,000	0	52,560,000	\$16,230
Alamo	596	129	585,000	8,250,000	0	8,835,000	\$14,831
Lake County	840	122	10,810,000	0	0	10,810,000	\$12,868
Bristol	3,883	56	44,319,500	2,100,000	0	46,419,500	\$11,953
Wilson County	16,446	9	26,815,940	151,500,000	0	178,315,940	\$10,842
Davidson County	79,298	2	617,014,200	177,577,000	0	794,591,200	\$10,020
Top Ten Total	110,365		\$ 711,754,140	\$ 490,347,000	\$ 0	\$1,202,101,140	\$10,892
All Others	847,915		1,586,126,594	1,001,797,377	15,707,000	2,603,630,971	\$3,071
State Total	958,280		\$ 2,297,880,734	\$1,492,144,377	\$ 15,707,000	\$3,805,732,111	\$3,971

The need for new schools decreased for the first time in three years while the need for additions continues to increase.

Local officials have reported needing new public schools every year since the infrastructure survey began. Statewide, local officials reported needing \$1.1 billion for 57 new schools in the latest inventory averaging \$19 million per school. Most of the net \$117 million (9.6%) decrease was caused by the cancellation or postponement of seven new schools as four school systems refined their plans in response to changing enrollment and other factors. Part of it was a result of Murfreesboro completing an \$18 million elementary school that had been reported as a need since 2002.

Shelby County needed a \$57 million high school in their unincorporated area until a system consolidation and subsequent restructuring shifted the school system boundaries. Washington County recently decided to rehabilitate four schools instead of spending \$65 million to build two new ones, while consolidation talks with Johnson City remain undecided. Tipton County, which for the past eight inventories had reported needing \$56 million to build three new schools to meet growing student enrollment, decided that they only need to renovate their existing buildings because their enrollment is now on a downward trend. And Montgomery County postponed the need for a \$45 million new high school until 2021 after adding onto an existing high school in 2011. Although a new school will likely be needed in the future, it's not needed in the timeframe captured by this inventory.

Officials in 26 school systems reported needing at least one new school in the current inventory even though seven had little to no growth in enrollment. Only 12 grew by more than 100 students since 2009, and seven lost more than 100 students. See table 19 for the change in enrollment from 2000 through 2014 for school systems that need new schools. The seven systems with large enrollment decreases (Cheatham, Campbell, Claiborne, Humphreys, Dickson, Overton, and Cumberland counties) gave a variety of reasons for needing new

**Anticipating Needs
and Revising Plans as
Conditions Change**

As with all types of infrastructure included in the inventory, changing circumstances can cause school facility improvements to be sped up, postponed, revised, or canceled. An example occurred recently in Montgomery County when the Clarksville Montgomery County School System updated their 10-year facility construction plan. The plan is updated annually based on models that project enrollment so facilities managers can anticipate when a school will be too small to meet state statutory class-size requirements. The school system's most recent analysis indicated that a new high school that has been in the inventory for some time will not be needed until 2021, partly because of an addition to Montgomery Central High School in 2011. Postponing the new school reduced the estimated cost of new schools in the inventory by \$45 million.

For more information, see <https://www.cmcss.net/document/s/operations/10yearplan.pdf>.

schools. Cheatham, Cumberland, and Humphreys counties both expect enrollment to grow;¹⁸ Campbell and Clairborne counties each need a separate space for alternative school students; Dickson County, which relies on portable classrooms at three schools, needs to build a new middle school because of overcrowding that resulted from past growth; and Overton County needs to build a new school in the southern park of their county that serves as a bedroom community for a growing Cookeville.

Table 19. Change in Student Enrollment 2009 to 2014 for School Systems that Need New Schools During the Five-year Period July 2014 through June 2019

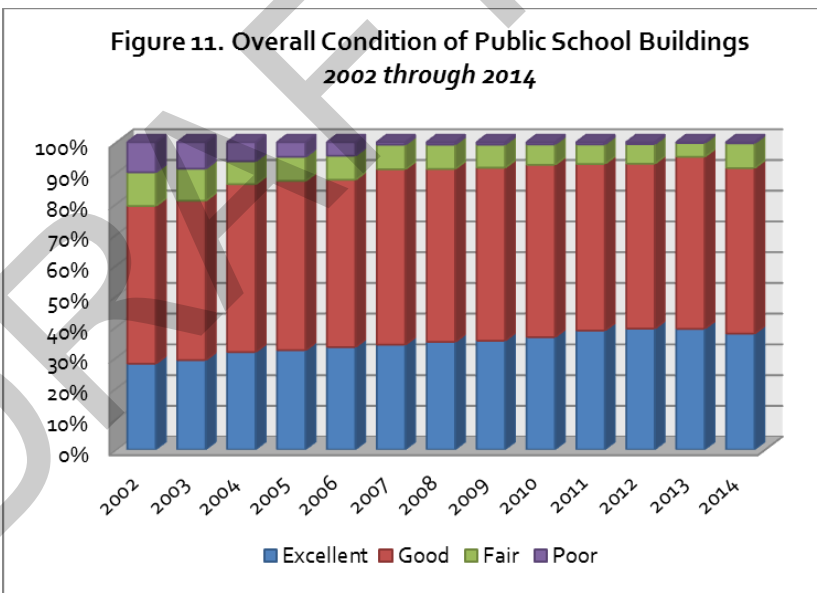
School System	Change in Student Enrollment 2009 to 2014	Estimated Cost of New Schools July 2014	
		Total	Per Student
Davidson County	7,005	\$ 113,305,000	\$1,429
Rutherford County	4,435	60,000,000	\$1,466
Williamson County	4,154	200,000,000	\$5,897
Montgomery County	2,305	104,822,362	\$3,414
Sumner County	1,683	42,239,021	\$1,496
Wilson County	1,668	151,500,000	\$9,212
Bedford County	462	12,850,000	\$1,565
Johnson City	316	14,000,000	\$1,831
Cleveland	308	14,000,000	\$2,715
Putnam County	252	26,000,000	\$2,444
Murfreesboro	213	20,950,000	\$2,963
Alcoa	175	33,400,000	\$18,429
Pickett County	83	15,000,000	\$20,069
Robertson County	34	55,175,000	\$5,105
Sevier County	26	37,350,000	\$2,611
Marshall County	20	30,900,000	\$5,855
DeKalb County	(45)	42,000,000	\$15,078
Van Buren County	(64)	15,000,000	\$20,887
Macon County	(66)	10,000,000	\$2,725
Cumberland County	(105)	14,000,000	\$1,953
Overton County	(117)	40,000,000	\$12,352
Dickson County	(197)	21,000,000	\$2,562
Claiborne County	(210)	300,000	\$67
Campbell County	(212)	150,000	\$27
Humphreys County	(222)	7,000,000	\$2,463
Cheatham County	(305)	30,000,000	\$4,619
Total	21,596	\$ 1,110,941,383	\$7,444

¹⁸ Humphreys and Cheatham school boards canceled the need for these new schools in the spring of 2016 because they experienced enrollment decreases instead.

While some systems choose to build new schools, others add space to existing school buildings instead. Since the last inventory, there was a slight increase (\$38 million) in the estimated cost of additions spread across 200 schools in 66 school systems. The cost of additions now totals \$381 million, an average of \$2 million per school, and nearly a quarter of which (\$88 million) was added in this inventory. Additions to this inventory were mostly offset by \$51 million in cancelled or completed additions. The largest net increase for additions (\$12.5 million) was in Sumner County, most of which was for classrooms at Guild and George A. Whitten elementary schools and administrative space and classrooms at Station Camp Middle School. The second largest net increase (\$11.8 million) for additions was in Jefferson County and was primarily for classrooms at Talbott Elementary. Twenty-one other school systems reported an increased need for additions for a total of 42 schools. Haywood County added \$7.2 million to the inventory, \$6 million of which is for specialized classrooms and a gym at Haywood High School. The remaining 20 systems are both large and small with a combined increase for additions of less than \$51 million spread over 40 schools.

The number of schools in good or excellent condition decreased for the first time because of a reassessment of the condition of schools in Shelby County.

For each inventory, school officials rate the overall condition of their school buildings as well as the condition of each building component. As figure 11 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 and are located throughout the state.¹⁹



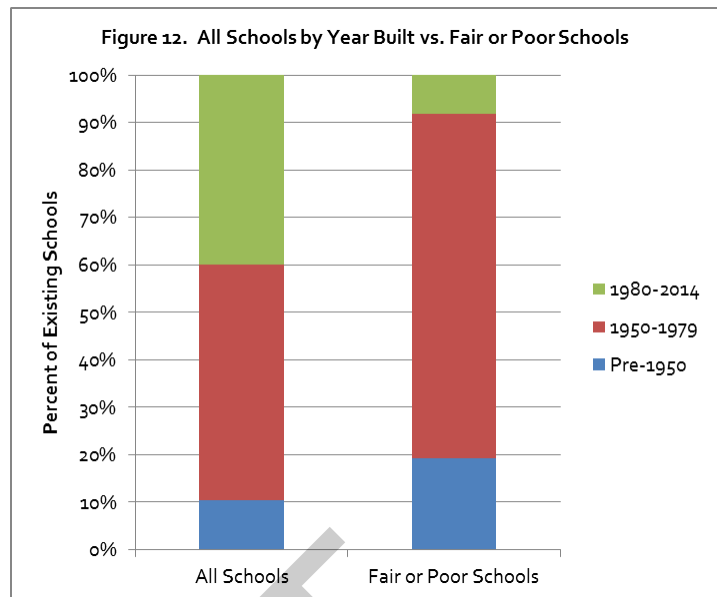
The number of school buildings in excellent condition decreased from 684 in the last inventory to 656, and the number rated good decreased from 974 to 937. Although most systems (104) reported no schools in fair or poor condition, 20 reported just one, and another 17 reported two or more. The number of schools in fair or poor condition increased by 64 from 82 in the last inventory to

¹⁹ For definitions of condition ratings used for the inventory, see appendix C.

146.²⁰ The increase was caused mainly by condition rating downgrades in Shelby County at some of its older schools.²¹

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, including more than 70% of the schools in fair or poor condition today, were built in the 1950s, 1960s, and 1970s when the Baby Boom generation was making its way through school. Only 10% of schools in use today were built before 1950, but 19% 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 8% of those are in fair or poor condition. See figure 12.



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

Of the 146 schools rated fair or poor, 54.1% of them belong to the state’s two largest school systems. Nearly 40.0% (57) are in Shelby County and were built on average 56 years ago. Another 15.1% (22) of schools in fair or poor condition are in Davidson County and average 52 years old. Hamilton County, the state’s fourth largest school system, has the third largest number of schools in fair or poor condition (7); these buildings average 63 years old. The other 14 systems with more than one school in less than good condition have two to five schools rated fair or poor. See table 20 for the number and percent of schools in fair and poor condition and the estimated cost to renovate or replace them.

While more schools in fair or poor condition are in urban and suburban areas where school systems are larger and have more buildings, the systems with the highest percentages of their schools rated fair or poor are in rural areas. Three out of the four school systems reporting half or more of their schools in fair or poor condition are in rural areas—Lake, Carroll, and Fayette county systems. Lake County has only three schools, two of which are in less than good condition and were built before 1963. Fayette and Carroll county officials each reported half of their schools in fair or poor condition—ranging between 74 and 30 years in age.

²⁰ The number of schools in the inventory decreased from 1,740 in 2013 to 1,739 in 2014.

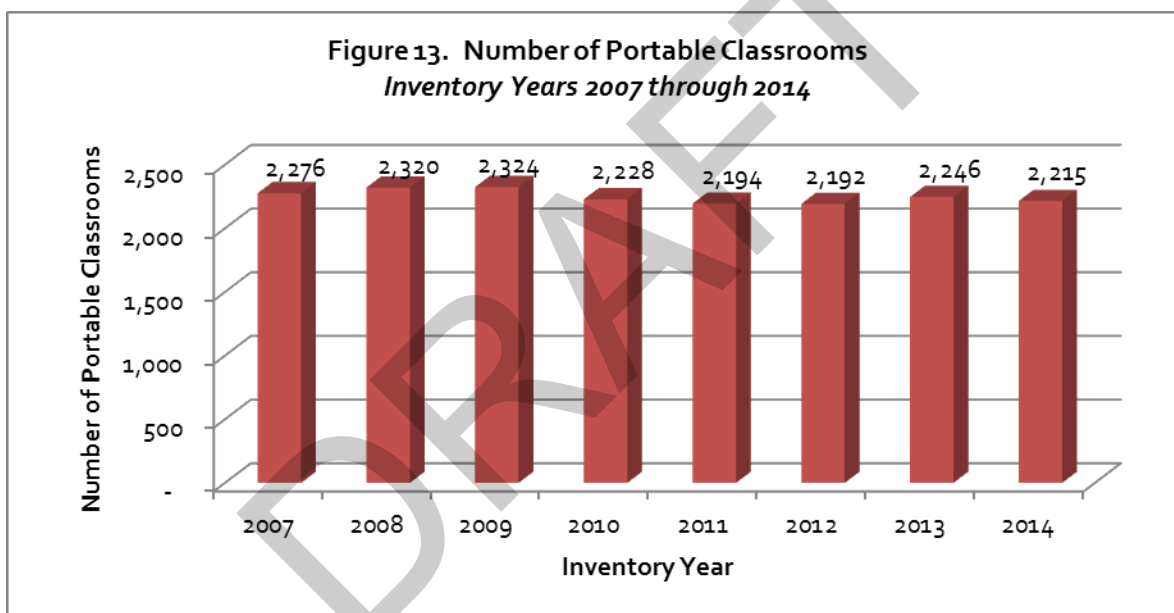
²¹ Shelby County (55), Germantown (5), Bartlett (1), Collierville (1), and Lakeland (1).

**Table 20. Estimated Cost to Renovate or Replace Schools in Fair or Poor Condition
Five-year Period July 2014 through June 2019**

School System	All Schools		Schools in Fair or Poor Condition			
	Number of Schools	Estimated Cost to Renovate or Replace	Number of Schools	Percent Fair/Poor	Estimated Cost to Renovate or Replace	Percent of Total Cost
Shelby County	198	\$ 283,544,277	57	28.8%	\$ 161,323,602	56.9%
Davidson County	144	612,810,000	22	15.3%	189,192,000	30.9%
Hamilton County	73	71,223,000	7	9.6%	41,703,000	58.6%
Fayette County	10	16,530,000	5	50.0%	3,580,000	21.7%
Germantown	5	41,240,000	5	100.0%	41,240,000	100.0%
Sullivan County	22	58,795,000	4	18.2%	55,520,000	94.4%
Lauderdale County	7	22,464,800	3	42.9%	22,204,800	98.8%
Grundy County	7	6,765,000	3	42.9%	5,150,000	76.1%
Bradley County	17	13,115,000	3	17.6%	5,360,000	40.9%
Putnam County	18	31,200,000	3	16.7%	27,800,000	89.1%
Lake County	3	10,660,000	2	66.7%	10,660,000	100.0%
Morgan County	8	784,000	2	25.0%	627,000	80.0%
Bristol	8	42,107,000	2	25.0%	26,200,000	62.2%
Marion County	10	8,050,000	2	20.0%	7,870,000	97.8%
Coffee County	10	9,250,000	2	20.0%	9,250,000	100.0%
Monroe County	13	23,685,660	2	15.4%	15,919,920	67.2%
Knox County	88	23,808,029	2	2.3%	3,417,650	14.4%
Carroll County	2	210,000	1	50.0%	210,000	100.0%
Humboldt	4	6,900,000	1	25.0%	6,350,000	92.0%
Millington	4	15,659,000	1	25.0%	6,659,000	42.5%
DeKalb County	6	2,378,000	1	16.7%	175,000	7.4%
Polk County	6	2,125,000	1	16.7%	2,015,000	94.8%
Greeneville	7	3,575,000	1	14.3%	2,400,000	67.1%
Scott County	7	1,125,000	1	14.3%	790,000	70.2%
Oak Ridge	8	12,148,133	1	12.5%	10,850,000	89.3%
Benton County	8	2,802,000	1	12.5%	200,000	7.1%
Collierville	8	11,915,000	1	12.5%	6,000,000	50.4%
McMinn County	9	9,650,000	1	11.1%	6,600,000	68.4%
Marshall County	9	3,986,796	1	11.1%	200,000	5.0%
Bartlett	11	8,200,000	1	9.1%	1,200,000	14.6%
Johnson City	11	33,900,000	1	9.1%	33,900,000	100.0%
Claiborne County	13	3,059,000	1	7.7%	175,000	5.7%
Jefferson County	13	39,277,908	1	7.7%	24,463,908	62.3%
Bedford County	14	29,515,000	1	7.1%	28,885,000	97.9%
Carter County	15	14,639,193	1	6.7%	13,200,000	90.2%
Dickson County	16	17,402,948	1	6.3%	60,000	0.3%
Maury County	20	56,812,000	1	5.0%	45,175,000	79.5%
Subtotal	832	\$ 1,551,311,744	146	18%	\$ 816,525,880	52.6%
All Others	907	520,420,498				
State Total	1,739	\$2,071,732,242				

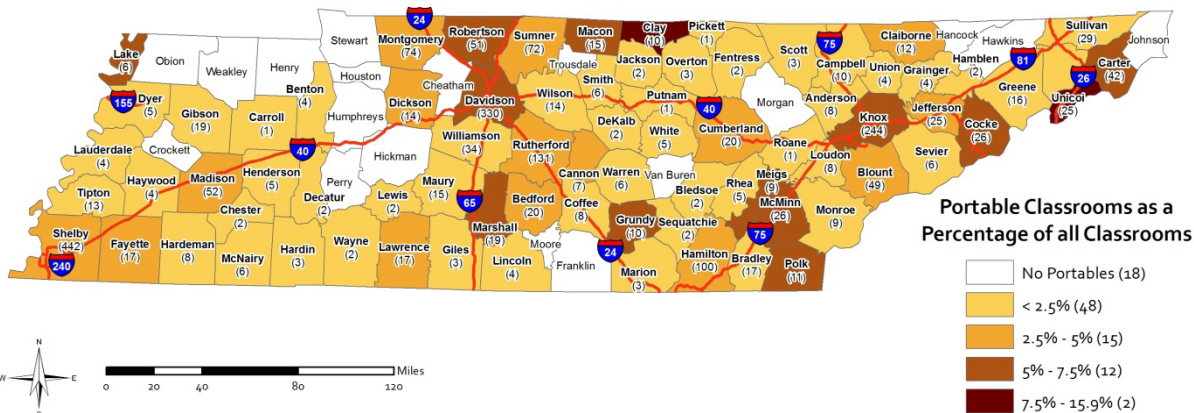
The number of portables at Tennessee’s public schools remains steady as enrollment growth has flattened out.

School systems use portables for a variety of reasons: to deal with unanticipated space shortages, such as those caused by natural disasters, as substitutes for space in poor condition, and to provide temporary classrooms for large influxes of new students while they plan more permanent solutions. For example, Dickson County is using portable classrooms at three schools because of overcrowding as they await construction of a new \$21 million middle school. Love Chapel Elementary in Unicoi County had to move their students into 21 portable classrooms when a sinkhole opened up next to the school in 2012. And Jefferson County High School, a school building that is old and in bad shape, is using portables as a temporary solution while a \$24 million comprehensive renovation is being planned. Statewide, school systems reported having 2,215 portable classrooms—3.1% of all classrooms in the state—down by 109 since the peak of 2,324 in the 2009 inventory and down by 31 since last year (see figure 13). Information about each school system’s use of portables can be found in appendix F-7.



Map 11, which sums system-level information on portables to the county level, shows that most counties (66 of 95) rely on portables for 2.5% or less of their total classrooms. Twenty-seven counties rely on portables for between 2.5% and 7.5% of their classrooms, and only two, Clay and Unicoi (shaded dark red in map 11), rely on them for more than 7.5%. Clay County’s use of portables peaked at 12 (12.6%) in 2010 and is now 10 (11.6%). Unicoi County has 25 portables (10.5% of its total classrooms), up from 4 (1.7%) in 2012 when the 21 portable classrooms were added to house the students from the Love Chapel school. If not for those portables, the number in Unicoi County would now be less than in 2007.

Map 11. Portable Classrooms, Number and Percent of Total Classrooms by County
As of July 1, 2014



Twenty-six school systems had more portable classrooms in 2014 than in 2007. While most school systems added only a few, five added more than ten—Knox (91), Unicoi (19), Montgomery (16), Williamson (13), and Cumberland (12). Knox County, with growing student enrollment, increased the number of portables in the system from 153 in 2007 to 244 by 2014. Slightly more than half of Knox’s schools (48 of 88 schools) now have at least one portable on site compared with 41.9% in 2007. Montgomery County, where the student population has grown substantially (fourth overall in student growth since 2007) increased its use of portables from 58 in 2007 to 74 in 2014. These were distributed across 14 of their 38 schools, eight of which increased portable usage, while five reduced their usage. Williamson County, which has had an even larger influx of new students (second overall in student growth since 2007), has increased their use of portable classrooms from 21 in 2007 to 34 in 2014. Cumberland County, with almost no enrollment growth since 2007, increased their use of portables from eight at two schools in 2007 to 20 at five schools in 2014 while renovating these schools.

Overall, 36 school systems reported fewer portable classrooms in 2014 than in 2007. Shelby County Schools, which consolidated with Memphis City Schools in 2013, eliminated the largest number of portables (49) since 2007 and now has 375. Hardin County eliminated 25 of the 28 portable classrooms it had in 2007, consolidating five existing schools that used portables into two schools that do not.²² Davidson County was able to eliminate 21 portables since 2007 because of new schools and additions but still has 330. Similarly, Dyer County has only five portable classrooms, down from 25 in 2007. They replaced two schools in 2012. The other 32 systems with decreases used from one to 19 fewer portable classrooms, five of which now use zero portables.

²² Nixon, North Savannah, Walker, Walnut Grove, and Whites elementary schools all used portables until 2010 when they consolidated into East Hardin and Northside elementary schools and subsequently removed all portable classrooms.

The number of systems not using portables increased from 45 in 2007 to 48 in 2014, but five that had portables in 2007 no longer do, and two that did not now have them. Of the 43 systems that had no portables in 2007 and still don't have any, 30 decreased in enrollment by an average of 182 students, and 13 increased by an average of 174 students. Athens and Manchester, along with Hawkins, Franklin, and Moore counties had portable classrooms in 2007 but no longer do, possibly because of slow-growing or shrinking enrollment. Since 2007, Athens' enrollment decreased by 130 students, Hawkins County's decreased by 545, Franklin County's decreased by 456, and Moore County's decreased by only 56. However, Manchester's enrollment only increased by three students. The two systems that now use portables are Lauderdale (4) and Wayne (2) counties. Both reported renovation and addition needs and use portables while projects are under construction.

Some school systems (36) still have the same number of portable classrooms they had in 2007. Of those, the system with the most portables is Carter County, which has a total of 40 at ten of their 15 schools. Out of those ten, four schools averaging 56 years in age reported a need for \$14 million in renovations and upgrades. A sixth canceled plans for a \$17 million replacement school to focus on renovating the existing school building, and 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 eight inventories. The average age of those schools is 51 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 529 since 2007 and 127 since 2013 for Carter and 174 since 2007 and 103 since 2013 for McMinn. Unlike Carter and McMinn counties, Marshall County—with 19 portables since 2007—has increasing enrollment. Marshall County officials reported that five schools have been using the same number of portable classrooms since 2007; three of these schools reported a need for renovations, and one is in the process of constructing an addition..

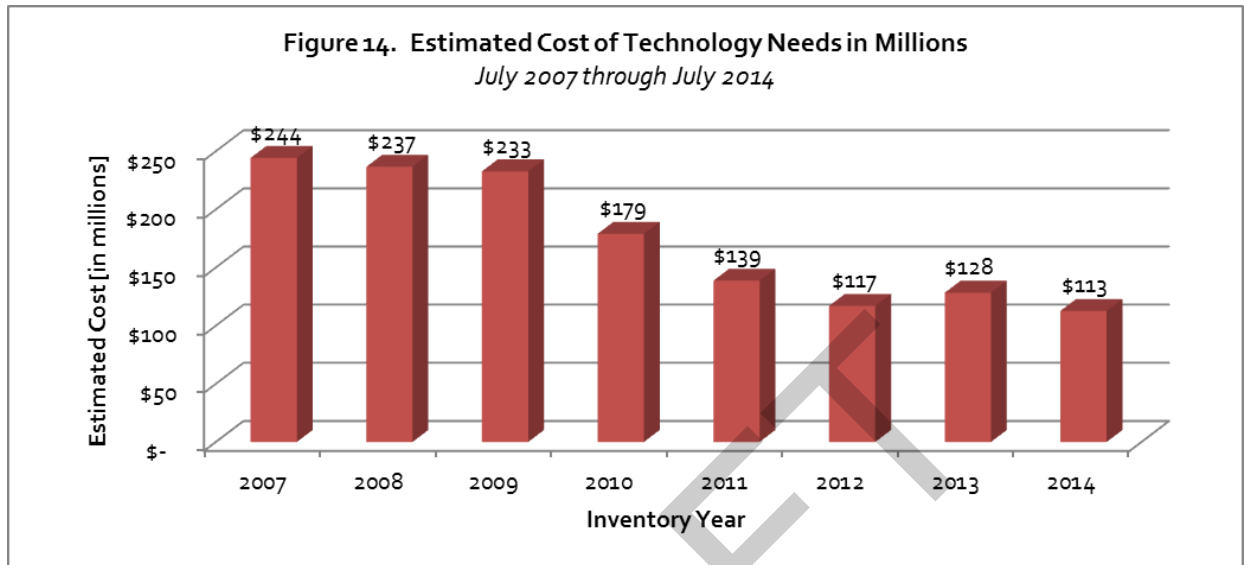
The cost of improving existing school buildings continues to increase, mainly for renovations, and now stands at \$2.3 billion.

The estimated cost of improving space at existing schools increased by almost \$218 million, from \$2.1 billion to \$2.3 billion, since the last inventory and includes renovations, replacements, technology upgrades, and changes prompted by state or federal facility mandates (see table 16). The increase was 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 \$115 million to \$113 million, since the last inventory.

Technology infrastructure improvement needs remain low compared with pre-recession levels.

The need for technology infrastructure improvements at existing public schools decreased \$16 million (12.2%), resuming the downward trend of the six preceding years after increasing by a small amount last year, and now totals \$113 million (see figure 14) at 584 schools in 87 school systems. The cost of these upgrades, which include wiring, new computer labs, and security

systems, appears to be leveling out after a downward trend since the 2007 inventory. This leveling out of technology improvements could be a result of schools entering an technology upgrade phase compared with when they had to install the initial technology infrastructure in the early 2000s. Technology infrastructure for new schools is included in their overall cost rather than in these figures.



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 \$235 million, from \$1.8 billion to \$2.1 billion (see table 16), since the last inventory. Most of the increase (\$287 million) is for renovations, continuing the increasing cost trend for a fifth year. The estimated cost of replacing schools decreased by \$52 million to a total of \$320 million.

The average amount per school needed to renovate or replace those in fair or poor condition is almost four times larger than the average cost to upgrade the 829 schools in good or excellent condition, \$5.8 million versus \$1.5 million (see table 21). Since the last inventory, costs for school renovations increased slightly and still total roughly \$1.7 billion. 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 829 schools in good or excellent condition make up a larger part of the inventory—\$1.1 billion, an average of \$1.3 million dollars per school. Renovations needed to bring the 142 schools in fair or poor condition to good or excellent condition will require an estimated \$655 million, an average of \$4.6 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 \$320 million to replace a total of 14 schools, a decrease of 14.0% (\$52 million) from last year’s report. The average cost to replace these schools is \$23 million. Of the 14 schools, five are in good condition, six 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. These five schools in

good condition are, on average, at least 70 years old. School systems that cannot immediately afford to replace schools may renovate them in the meantime. Cascade High School, built in 1976 in Bedford County, is a good example. They need \$24 million to replace the school and approximately \$5 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 21. Estimated Cost to Renovate or Replace Schools by School Condition
Five-year Period July 2014 through June 2019

School Condition	Number of Schools	Estimated Cost to Renovate	Estimated Cost to Replace	Totals	Average Cost Per School
Good or Excellent	829	\$ 1,092,556,362	\$ 158,950,000	\$ 1,251,506,362	\$ 1,509,658
Fair or Poor	142	655,365,880	161,160,000	816,525,880	5,750,182
Total	971	\$ 1,747,922,242	\$ 320,110,000	\$ 2,068,032,242	\$ 2,129,796

Note: The total for renovations does not include the \$3,700,000 in facility upgrades captured in the school system-wide category used for the total renovation cost in Table 16.

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