

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

July 2023 through June 2028

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INTRODUCTION

Why do we rely on the public sector for roads, bridges, water lines, and schoolhouses? Certain goods and services—such as clean drinking water, education, commerce, and roads—must be provided in the interest of general health and safety. Public infrastructure is the answer when the service supported is essential to the common good and the private sector cannot profitably provide it at a price that makes it accessible to all. Therefore, we look to those who represent us in our public institutions to set priorities and find ways to fund them.

Why inventory public infrastructure needs?

In 1996, the Tennessee General Assembly enacted legislation that affirmed the value of public infrastructure. An inventory of necessary infrastructure was laid out “in order for the state, municipal, and county governments of Tennessee to develop goals, strategies, and programs which would

- improve the quality of life of its citizens,
- support livable communities, and
- enhance and encourage the overall economic development of the state

through the provision of adequate and essential public infrastructure.”¹ The “Public Infrastructure Needs Inventory” on which this report is based was derived from surveys of local officials by staff of the state’s nine development districts;² the capital budget requests submitted to the governor by state officials as part of the annual budget process; needed capital projects from the Tennessee Board of Regents (TBR); and bridge and road needs from project listings provided by state transportation officials. The Tennessee Advisory Commission on Intergovernmental Relations (commission) relies entirely on state and local officials to evaluate the infrastructure needs of Tennessee’s citizens as envisioned by the enabling legislation.

¹ Public Chapter 817, Acts of 1996. For more information about the enabling legislation, see appendix A.

² For more information on the importance of the inventory to the development districts and local officials, see appendix B.

What infrastructure is included in the inventory?

For the purposes of this report and based on the direction provided in the public act and common usage, public infrastructure is defined as capital facilities and land assets under public ownership or operated or maintained for public benefit. To be included in the inventory, infrastructure projects must not be considered normal or routine maintenance and must involve a capital cost of at least \$50,000.³

Local officials were asked to describe anticipated needs for the period of July 1, 2023, through June 30, 2043, classifying those needs by type of project. State-level needs were derived from capital budget requests. Both state and local officials were also asked to identify the stage of development—conceptual, planning and design, or construction—as of July 1, 2023. Because of legislation requiring the inventory's use by the commission to monitor the implementation of Tennessee's Growth Policy Act in 2000, the period covered by each inventory was expanded from 5 years to 20 years.⁴ Plans developed pursuant to that act established growth boundaries for annexation by the state's municipalities. This report focuses on the first five years of the period covered by the inventory and the following types of public infrastructure (see the glossary for definitions of project types):

- Transportation and Utilities
 - Transportation
 - Other Utilities
 - Broadband
- Education
 - Post-secondary Education
 - School Renovations
 - New Public Schools and Additions
 - Other Education
 - School System-wide
- Health, Safety, and Welfare
 - Water and Wastewater
 - Law Enforcement
 - Public Health Facilities
 - Housing
 - Fire Protection

³ School technology infrastructure is included for existing schools regardless of cost in order to provide information related to the technology component of the state's education funding formula in effect at the time of the survey.

⁴ Public Chapter 672, Acts of 2000.

- Storm Water
- Solid Waste
- Recreation and Culture
 - Recreation
 - Libraries, Museums, and Historic Sites
 - Community Development
- General Government
 - Public Buildings
 - Other Facilities
- Economic Development
 - Industrial Sites and Parks
 - Business District Development

Within these parameters, local officials are asked to report their needs as they relate to developing goals, strategies, and programs to improve their communities. They are limited by only the very broad purposes for public infrastructure as prescribed by law. No independent assessment of need constrains their reporting. In addition, the inventory includes bridge and road needs from project listings provided by the Tennessee Department of Transportation (TDOT), capital projects from TBR, and capital needs identified by state officials and submitted to the governor as part of the annual budget process.

How is the inventory accomplished?

The Public Infrastructure Needs Inventory is developed using two separate, but related, inventory forms⁵ to gather information from local officials about necessary infrastructure improvements. The Existing School Facility Needs Inventory Form is used to gather information about the condition of existing public school buildings, as well as the cost to meet all facilities mandates at the schools, put them in good condition, and provide adequate technology infrastructure. The General Public Infrastructure Needs Inventory Form is used to gather information about all other types of infrastructure, including the need for new public school buildings and school system-wide infrastructure improvements not gathered on the school inventory form. Commission staff provide local officials with supplemental information from TDOT about transportation needs, many of which originate from local officials. This information helps ensure that all known needs are captured in the inventory.

In addition to gathering information from local officials, commission staff incorporates capital improvement requests submitted by state officials

⁵ Both forms are included in appendix C.

to the governor's budget office, bridge and road needs from project listings provided by TDOT and needed capital projects from TBR. While commission staff spends considerable time reviewing all the information in the inventory to ensure accuracy and consistency, it is based on the judgment of state and local officials. In many cases, information about local needs is limited to those included in the capital improvements programs of local governments, which means the inventory may not fully capture all local requirements.

As discussed above, projects included in the report are only those in the conceptual, planning and design, or construction stage at some point during the five-year period of July 2023 through June 2028. For projects started before the five-year period, estimated costs for the projects may include amounts spent before July 2023; for projects that won't be completed during the five-year period, amounts must be spent after June 2028. All those projects are initially recorded as conceptual because capital budget requests generally serve as the source of information from state agencies (TDOT and TBR, excepted).

In the context of the Public Infrastructure Needs Inventory, the term "mandate" is defined as *any rule, regulation, or law originating from the federal or state government that affects the cost of a project.*⁶ The mandates most commonly reported are the Americans with Disabilities Act (ADA), asbestos, lead, underground storage tanks, and the Education Improvement Act (EIA). The EIA mandate reduced the target number of students in each K-12 public school classroom by fall 2001. Tennessee public schools began working toward that goal after the passage of the EIA in 1992, which was met by adding classroom space and hiring a sufficient number of teachers.⁷ However, some schools continue to use portable classrooms because they still do not have sufficient traditional classroom space to accommodate both teachers and students.

Except in the case of existing public schools, the inventory does not include estimates of the cost to comply with mandates. Even in the case of public schools, with the exception of the EIA, the compliance cost reported to the commission as part of the Public Infrastructure Needs Inventory is relatively small—accounting for less than 1% of the total reported Public School Infrastructure Needs. See appendix E-9.

How is the inventory used?

The Public Infrastructure Needs Inventory is both a product and a continuous process, one that has been useful in

- planning short-term and long-range goals,

⁶ See the Glossary of Terms at the end of the report.

⁷ Tennessee Comptroller of the Treasury. 2004. "The Education Improvement Act: A Progress Report." https://comptroller.tn.gov/content/dam/cot/orea/advanced-search/orea-reports-2004/2004_OREA_EdImpAct.pdf.

- providing a framework for funding decisions,
- increasing public awareness of infrastructure needs, and
- fostering better communication and collaboration among agencies and decision-makers.

The inventory promotes planning and setting priorities.

The Public Infrastructure Needs Inventory has become a tool for setting priorities and making informed decisions that is used by all stakeholders. Many decision-makers have noted that the annual inventory process offers an opportunity to set funding issues aside for a moment and think proactively and broadly about real infrastructure needs, especially in times of tight budgets and crisis-based, reactive decisions. For most officials in rural areas and smaller cities, the inventory is the closest thing they have to a Capital Improvements Program (CIP). Without the inventory, they would have little opportunity or incentive to consider their infrastructure needs. Because the inventory is not limited to needs that can be funded in the short term, it may be the only formal opportunity officials have to consider the long-range benefits of infrastructure.

The inventory helps match critical needs to limited funding opportunities.

In the absence of a formal CIP, the Public Infrastructure Needs Inventory provides basic information to state and local officials to match needs with funding. At the same time, the inventory provides information needed by the development districts to update their respective *Comprehensive Economic Development Strategy Reports required annually by the US Economic Development Administration*.⁸ Projects must be listed in these reports to be considered for funding by that agency. Information from the inventory has been used to develop lists of projects suitable for other types of state and federal grants as well. For example, many projects that have received Community Development Block Grants were originally discovered in discussions of infrastructure needs with local government officials. The inventory has also helped state decision-makers identify gaps between critical needs and available state, local, and federal funding, including an assessment of whether various communities can afford to meet their infrastructure needs or whether some additional planning needs to be done at the state level.

The inventory provides an annual review of conditions and needs of public school facilities.

Local officials are asked to report the condition of all schools on the Existing School Facility Needs Inventory Form, not just those in need of repair or replacement. Data can be retrieved from the database and analyzed to

⁸ US Economic Development Administration. "Comprehensive Economic Development Strategy (CEDS)." <https://www.eda.gov/ceds/>.

identify particular needs, such as technology. This information is useful in pinpointing pressing needs for particular schools and school systems, as well as providing an overview of patterns and trends across the state. This unique statewide database provides information about the condition and needs of Tennessee's public school facilities.

The inventory increases public awareness, communication, and collaboration among decision-makers.

As a result of the inventory, the state's infrastructure needs have been reported to a broader public audience, and the process has fostered better communication between the development districts, local and state officials, and other decision-makers. The resulting report has become a working document used at the local, regional, and state levels. It gives voice to small towns and rural communities with limited planning resources. Each update of the report provides an opportunity for re-evaluation and re-examination of projects and for improvements in the quality of the inventory and the report itself. This report is unique regarding its broad scope and comprehensive nature. Through the inventory process, development districts have expanded their contact, communication, and collaboration across agencies (e.g., local boards of education, utility districts, and TDOT) and strengthened personal relationships and trust among their more traditional local and state contacts. Infrastructure needs are being identified, assessed, and addressed locally and documented for the Tennessee General Assembly, various state agencies, and decision-makers for further assessment and consideration.

What else needs to be done?

The data collection process continues to improve, and the current inventory is more complete and accurate than ever. The commission has tried to strike a balance between requiring sufficient information to satisfy the intent of the law and creating a burden on local officials reporting their needs. By law, the inventory is required of the commission, but it is not required of state or local officials; they may decline to participate without penalty. Similarly, they may provide only partial information. This can make comparisons across jurisdictions and time difficult. But with each annual inventory, participants have become more familiar with the process and more supportive of the program. Improvements in the technological infrastructure of the inventory itself have set the stage for future efforts to make the inventory more accessible and useful to state and local policymakers and researchers.

Sometimes a large event can affect the need for infrastructure improvement. In September 2024, Hurricane Helene moved inland, bringing heavy rainfall across the southern United States, including East Tennessee and western North Carolina. The storm caused catastrophic flooding and other severe conditions, resulting in loss of life. After the floodwaters receded, federal authorities reported that

Helene caused widespread infrastructure damage throughout Tennessee, especially in Carter, Cocke, Greene, Hamblen, Hawkins, Johnson, Unicoi, and Washington counties. That damage includes roadway washouts, culvert loss, and a need for bridge repairs and replacements, resulting in the closure of Interstate 40 and Interstate 26 near the Tennessee/North Carolina state line.⁹

Because the storm happened outside the reporting window for this report, the infrastructure needs of East Tennessee resulting from Hurricane Helene are not included. They will be addressed in the next report.

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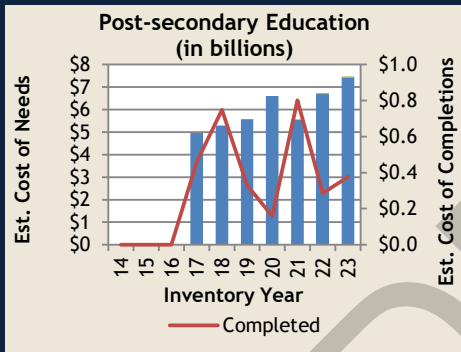
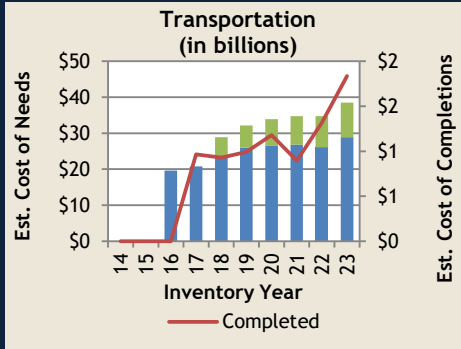
⁹ Guerry, Colleen. 2024. "Tennessee receiving \$32M in Emergency Relief funding after roads, bridges damaged by Helene." *WKRN.com*, October 5. <https://www.wkrn.com/news/tennessee-news/tennessee-sent-32m-in-emergency-relief-funding-after-roads-bridges-damaged-by-helene/>.

State Total

Total Estimated Cost* for
Infrastructure Improvements

\$77,688,453,279

TOP 3



■ = Local
■ = Regional (Serves Multiple Counties)

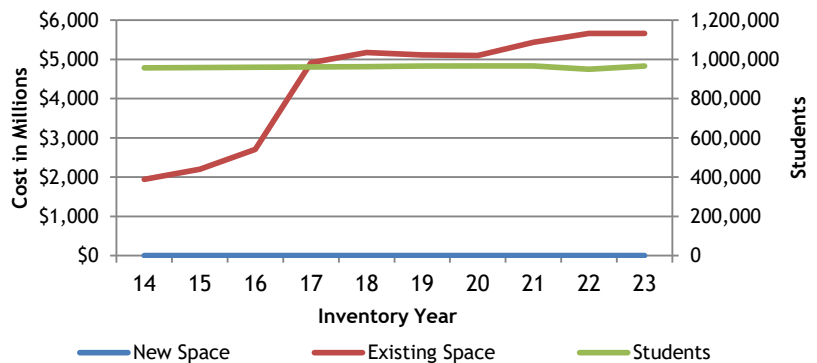
Estimated Cost of Needed Infrastructure

for State Total

Five-year period July 2023 through June 2028

Project Type	Conceptual	Planning & Design + Construction
Transportation	\$ 10,693,783,764	\$ 27,797,207,825
Post-secondary Education	3,488,252,300	3,980,589,105
Water and Wastewater	1,420,479,760	5,477,508,489
School Renovations	4,923,075,243	1,632,905,111
New Public Schools & Additions	2,081,726,460	2,548,881,090
Public Buildings	1,839,083,000	1,558,277,628
Law Enforcement	1,496,350,456	1,559,142,838
Recreation	1,424,282,145	1,293,768,989
Public Health Facilities	730,071,920	467,909,152
Fire Protection	365,550,181	223,272,056
Other Utilities	180,520,000	405,215,000
Community Development	119,241,061	293,261,248
Housing	12,582,000	384,906,915
Other Facilities	52,870,000	227,875,297
Libraries, Museums, & Historic Sites	145,928,959	113,714,719
Industrial Sites and Parks	50,409,000	143,276,601
Other Education	76,120,000	67,630,000
Storm Water	92,320,119	44,576,116
Solid Waste	54,610,000	64,242,289
School-System-wide	33,022,000	50,746,928
Business District Development	26,570,000	19,207,515
Broadband	25,500,000	1,990,000
Total	\$ 29,332,348,368	\$ 48,356,104,911

Cost of Needed New School Space vs Improvements to Existing Schools and Student Enrollment Growth



*Total Estimated Cost = Conceptual + Planning & Design + Construction

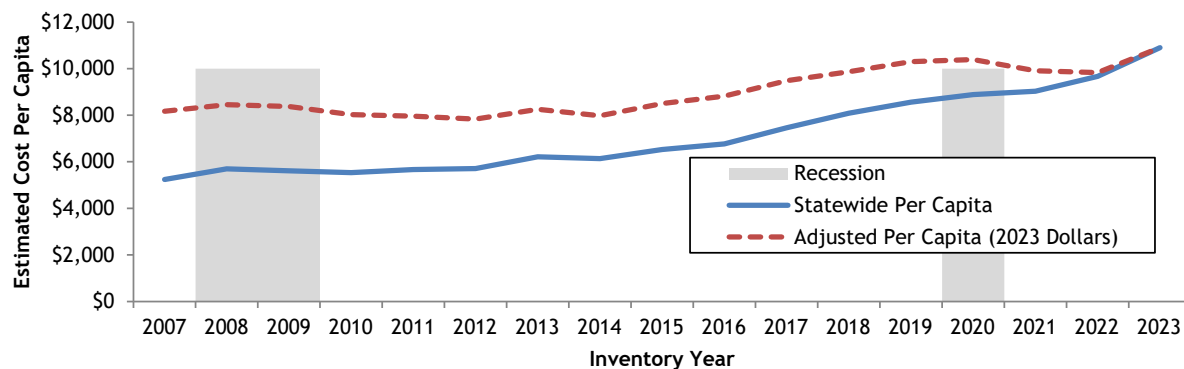
Building Tennessee's Tomorrow: Anticipating the State's Infrastructure Needs

July 2023 through June 2028

INFRASTRUCTURE NEEDS OVERVIEW

The estimated cost per capita of all needed public infrastructure improvements in Tennessee increased for the ninth straight reporting period¹⁰ (see figure 1). State and local officials report an increase of approximately \$10 billion (14%) in this year's inventory (see table 1), which brings the estimated cost of public infrastructure improvements that need to be in some stage of development (see figure 2) between July 1, 2023, and June 30, 2028, to \$78 billion.¹¹ The categories of Transportation and Utilities; Education; and Health, Safety, and Welfare continue to account for most of the total estimated cost of the inventory and are also the primary drivers of this year's reported increase in total estimated cost. The percentage of funded infrastructure needs reported at the time the inventory was conducted increased by 1% from 2022 to 2023.

**Figure 1. Total Estimated Cost Per Capita of Needed Infrastructure Improvements
July 2007 to July 2023**



¹⁰ Federal Reserve Bank of St. Louis, State and Local Government Consumption Price Index, retrieved from Federal Reserve Economic Data (FRED), Federal Reserve Bank of St. Louis.

¹¹ For complete listings of all needs reported in the July 2023 inventory by county and by public school system, see appendixes D and E.

Table 1. Comparison of Estimated Cost of Needed Infrastructure Improvements
July 2022 Inventory vs. July 2023 Inventory

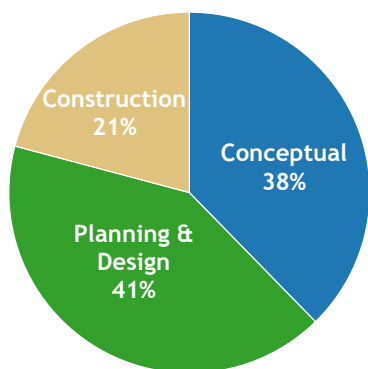
Category and Type of Infrastructure	July 2022 Inventory	July 2023 Inventory	Difference	Percent Change
Transportation and Utilities	\$ 35,307,076,611	\$ 39,104,216,589	\$ 3,797,139,978	10.8%
Transportation	34,726,101,611	38,490,991,589	3,764,889,978	10.8%
Other Utilities	553,485,000	585,735,000	32,250,000	5.8%
Broadband	27,490,000	27,490,000	-	0.0%
Education	\$ 16,638,745,690	\$ 18,882,948,237	\$ 2,244,202,547	13.5%
Post-secondary Education	6,731,625,940	7,468,841,405	737,215,465	11.0%
School Renovations*	5,660,890,369	6,555,980,354	895,089,985	15.8%
New Public Schools & Additions	4,062,872,544	4,630,607,550	567,735,006	14.0%
Other Education**	128,180,000	143,750,000	15,570,000	12.1%
School-System-wide	55,176,837	83,768,928	28,592,091	51.8%
Health, Safety and Welfare	\$ 10,945,521,089	\$ 12,393,522,291	\$ 1,448,001,202	13.2%
Water and Wastewater	6,414,390,636	6,897,988,249	483,597,613	7.5%
Law Enforcement	2,580,146,121	3,055,493,294	475,347,173	18.4%
Public Health Facilities	1,091,396,012	1,197,981,072	106,585,060	9.8%
Housing	233,470,350	397,488,915	164,018,565	70.3%
Fire Protection	420,875,265	588,822,237	167,946,972	39.9%
Storm Water	115,735,416	136,896,235	21,160,819	18.3%
Solid Waste	89,507,289	118,852,289	29,345,000	32.8%
Recreation and Culture	\$ 2,511,889,567	\$ 3,390,197,121	\$ 878,307,554	35.0%
Recreation	1,920,259,506	2,718,051,134	797,791,628	41.5%
Libraries, Museums, and Historic Sites	206,048,188	259,643,678	53,595,490	26.0%
Community Development	385,581,873	412,502,309	26,920,436	7.0%
General Government	\$ 2,496,495,846	\$ 3,678,105,925	\$ 1,181,610,079	47.3%
Public Buildings	2,237,257,628	3,397,360,628	1,160,103,000	51.9%
Other Facilities	259,238,218	280,745,297	21,507,079	8.3%
Economic Development	\$ 239,248,302	\$ 239,463,116	\$ 214,814	0.1%
Industrial Sites and Parks	187,118,896	193,685,601	6,566,705	3.5%
Business District Development	52,129,406	45,777,515	(6,351,891)	-12.2%
Grand Total	\$ 68,138,977,105	\$ 77,688,453,279	\$ 9,549,476,174	14.0%

*School Renovations include school technology projects with estimated costs below the \$50,000 threshold used for other types of infrastructure included in the inventory. Individual technology projects under the threshold totaled \$3,422,369 in 2022 and \$2,897,644 in 2023.

**Other Education includes infrastructure improvements reported at state educational institutions not associated with institutes of higher education or at the county, city, or special school systems level. Examples include the Tennessee School for the Deaf and Alvin C. York Institute.

Figure 2. Percent of Total Reported Cost of Infrastructure Improvements by Stage of Development

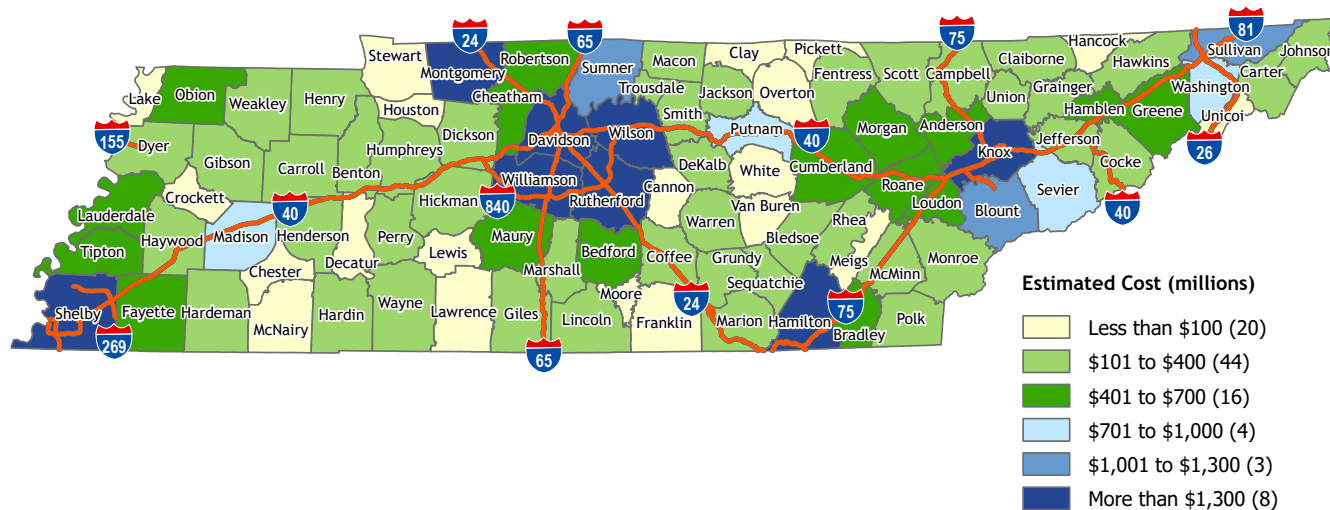
Five-year Period July 2023 through June 2028



Public infrastructure is needed in every corner of the state, from highly populated counties like Shelby and Davidson to rural counties like Humphreys and Pickett. In general, it has been the case throughout the history of this inventory that the more people living in a county and the more that population grows, the more infrastructure the county will need (see map 1). However, relative to their populations, counties with small populations need just as much or more infrastructure than counties with large populations (see map 2). Individual county summaries, starting on page 19, offer a breakdown of infrastructure needs by county.

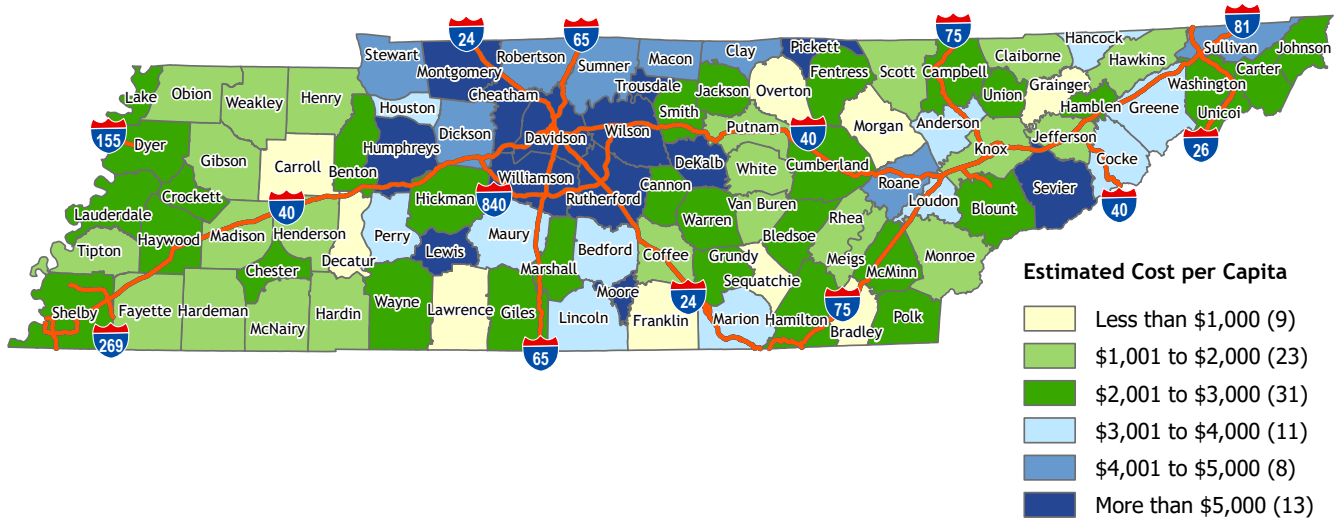
Map 1. Total Estimated Cost of Needed Infrastructure Improvements

Five-year Period July 2023 through June 2028



Note: County totals include the total estimated cost of both regional and local infrastructure needs but do not include the \$5,095,168,535 for infrastructure improvements that cross county lines.

Map 2. Estimated Cost of Needed Local Infrastructure Improvements per Capita
Five-year Period July 2021 through June 2026



Public infrastructure needed for Transportation and Utilities accounted for the largest cost increase in this year's inventory.

Infrastructure needs for Transportation and Utilities increased for the ninth year in a row. It continues to be the category with the largest cost in the inventory, with \$39 billion in total needs—50% of the inventory. The total cost of transportation projects increased by \$4 billion (11%), largely because of new projects (\$3 billion) and cost increases in existing projects (\$4 billion). The increase was largely offset by \$2 billion in completed projects, \$441 million in cost decreases, and \$166 million in canceled projects.

The needs for other types of infrastructure within the Transportation and Utilities category also increased. For example, needs reported for other utilities, including projects such as installation of gas lines and electrical cables, increased by \$32 million (6%) in this year's inventory and now total \$586 million. Broadband needs remained the same. Broadband needs in the inventory include only projects owned by government entities. As a result, the inventory doesn't fully capture the need for expanded access to broadband in many communities because broadband deployment in many areas relies less on municipal utilities, which are sub-entities of municipal governments, and more on privately owned entities.

Education infrastructure needs increased, mostly because of school renovation needs.

The estimated cost of infrastructure needs for Education increased by \$2 billion (14%), which was driven primarily by a \$1 billion increase in school renovation needs. Most of the increase was for school renovations needed in

Metro Nashville Public Schools (\$668 million), followed by Wilson County (\$106 million) and Rutherford County (\$93 million). School systems in Nashville-Davidson and surrounding counties are planning for continued rapid population and job growth in the coming decade and beyond.

Remaining infrastructure needs within the Education category—including post-secondary education, new public schools and additions, school system-wide, and other education—increased by just over \$1 billion. Post-secondary education needs increased by \$737 million—including improvements to Liberty Stadium at the University of Memphis (\$200 million) and construction of a student housing facility at Tennessee State University (\$157 million). Local officials reported an increase of \$662 million in the need for new public schools, which ranged from a high of \$93 million for a new school in Hamilton County to a low of \$6.5 million for a Cocke County School System Innovation Center. The need for other education projects increased by \$16 million—examples of other education facilities include the Tennessee School for the Deaf and the Tennessee School for the Blind—both facilities are state-run. See table 2.

Table 2. Estimated Cost of School Infrastructure Improvements by Type of Need
July 2022 Inventory vs. July 2023 Inventory

Type of Infrastructure	July 2022 Inventory	July 2023 Inventory	Difference	Percent Change
New Public Schools & Additions	\$ 4,062,872,544	\$ 4,630,607,550	\$ 567,735,006	14.0%
New Schools	3,382,888,751	4,044,762,491	661,873,740	19.6%
Additions	679,983,793	585,845,059	(94,138,734)	-13.8%
School Renovations	\$ 5,660,890,369	\$ 6,555,980,354	\$ 895,089,985	15.8%
Renovations	5,475,366,348	6,368,952,792	893,586,444	16.3%
Technology	98,516,407	107,452,226	8,935,819	9.1%
Mandates	87,007,614	79,575,336	(7,432,278)	-8.5%
System-wide Needs	\$ 70,002,384	\$ 83,768,928	\$ 13,766,544	19.7%
Statewide Total	\$ 9,793,765,297	\$ 11,270,356,832	\$ 1,476,591,535	15.1%

School systems must comply with the Tennessee Constitution's guarantee of the right of access to public education,¹² as well as with the Tennessee Education Improvement Act of 1992,¹³ which places limits on the number of students in classrooms. School systems with growing enrollment face the challenge of providing enough space for students, while other school systems need to renovate or replace their schools because of age, condition, or issues concerning school restructuring or consolidation, all while costs increase. Similar issues face Tennessee's public institutions of higher education—dormitories need to be replaced because of their age, and classrooms and labs need to be added or upgraded to meet typical market demands.

¹² Article XI, Section 12, Constitution of the State of Tennessee.

¹³ State of Tennessee Comptroller of the Treasury. 2004. "The Education Improvement Act: A Progress Report." https://comptroller.tn.gov/content/dam/cot/orea/advanced-search/orea-reports-2004/2004_OREA_EdImpAct.pdf.

Because of the condition of many Tennessee schools, improvements to existing space are necessary. Although 170 public schools (10%) in Tennessee were rated by their local school officials as being in fair or poor condition (see figure 3), only 147 of those schools were reported as needing improvements to existing space, which accounts for 38% of total estimated needs for renovations. See figure 3, table 3, and appendix E.

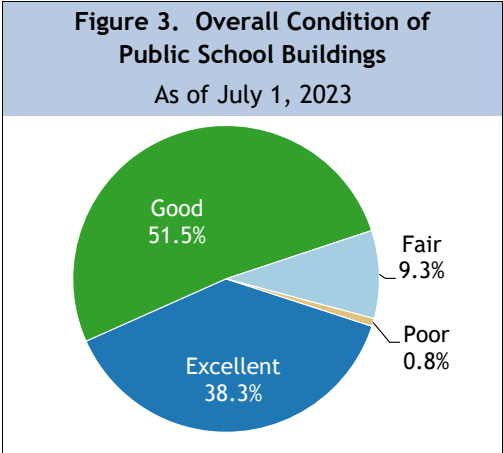


Table 3. Renovations Costs by School Condition
Five-year Period July 2023 through June 2028

School Condition	Number of Schools	Estimated Cost to Renovate	Average Cost Per School
Good or Excellent	981	\$ 3,942,294,027	\$ 4,018,648
Fair or Poor	147	2,426,658,765	16,507,883
Total	1,128	\$ 6,368,952,792	\$ 5,646,235

Note: Only schools with a reported cost for improvements are included.

The cost of needed education infrastructure has increased over the years mainly because of the rising cost of construction materials and labor. The US Bureau of Labor Statistics' New School Construction Price Index rose almost 82 points (58%) from July 2013 to July 2023.¹⁴ In 2013, the average cost of a completed new school in Tennessee was \$21 million. But the four schools completed since last year's report averaged \$26 million each, including a new \$32 million elementary school in Wilson County, a \$28 million middle school in Montgomery County, and two elementary schools in Knox County for \$26 million and \$20 million. Local officials report needing 77 more schools over the next five years at an average of \$53 million each.

Water and wastewater and law enforcement infrastructure needs lead the increase for Health, Safety, and Welfare.

Health, Safety, and Welfare infrastructure needs increased by \$1 billion—15% of the overall increase in the total estimated cost of the inventory. Water and wastewater (\$484 million) and law enforcement (\$475 million) comprise 66% of the increase in the category. Changes to existing projects drove the increase in water and wastewater needs (\$414 million), including a waste water treatment plant upgrade in Blount County (\$68 million) and a new water tank in Sumner County (\$38 million). New law enforcement needs also contributed and include two projects with a cost of \$30 million or more—the construction of new jails in DeKalb County

¹⁴ US Bureau of Labor Statistics. 2023. Producer Price Index (PPI) industry data for new school building construction is not seasonally adjusted. <https://www.bls.gov/data/>.

(\$70 million) and Humphreys County (\$30 million). Infrastructure needs reported for fire protection, housing, and public health facilities also increased by over \$100 million each, totaling \$439 million.

Within General Government, the need for public buildings once again drove this year's increase.

The need for General Government infrastructure increased by \$1 billion (47%) to a total of \$4 billion. Almost all this increase (98%) was driven by an increase in public building infrastructure needs, with much of it resulting from three new state-owned projects in Nashville, including a new parking garage for the Tennessee Tower (\$136 million), renovation of the old Library and Archives and Supreme Court Building (\$119 million), and a State Vehicle Surplus Service Center in Davidson County (\$85 million). Costs for existing public building needs increased by \$373 million—\$114 million of the increase is for a renovation project in the state-owned Tennessee Tower in Davidson County (\$114 million).

The cost of infrastructure needed for other facilities—structures that are publicly owned but not typically open to the public, like maintenance facilities and salt bins—increased by \$22 million (8%) to a total of \$281 million. New projects drove the increase in other facilities' needs (\$39 million). Of the new projects, a \$23 million gravesite improvement project at the West Tennessee State Veterans Cemetery in Memphis was the largest. The increase in new projects was offset by completed projects (\$27 million).

The need for projects that support Recreation and Culture increased.

The estimated cost of infrastructure needs for Recreation and Culture increased by \$878 million (35%) to a total of \$3 billion. Within the Recreation and Culture category, recreation needs increased by \$798 million because of new projects totaling \$691 million and cost increases totaling \$245 million. Two examples of large new recreation projects are reconstruction of the Henry Horton State Park Lodge in Marshall County (\$90 million) and the Natchez Trace State Park Inn (\$22 million). Because projects in state parks are recreation, state-owned infrastructure accounts for the largest projects. The two largest new locally-owned recreation projects are Cedar Stone Park improvements in Smyrna (\$12 million) and the East Knox Greenway project in Knoxville (\$6 million). Of the other types of infrastructure within the category, libraries, museums, and historic sites needs increased by \$54 million mostly because of a \$16 million increase in the cost of a state-owned Tennessee Historical Society visitor center in Knox County and a new \$14 million project to renovate Rock Island State Park's historic mill. Needs for community development increased by \$27 million.

Although needs for industrial sites and parks drove the increase in Economic Development, they were mostly offset by a decrease in business district development needs.

Infrastructure needs for Economic Development increased by \$214,814 (0.1%). Infrastructure needs reported for industrial sites and parks increased by \$7 million—the cost of existing needs increased by \$15 million but was offset by the cost of completed projects (\$7 million) and a decrease in existing needs (\$4 million). The need for industrial sites and parks infrastructure was offset by a \$6 million decrease in business district development needs.

In this year's inventory, funding has not been identified for two-thirds of the estimated cost of needed improvements.

Information about funding for public infrastructure needs reported by officials indicates that 66% of the funds required to meet those needs was not available at the time the inventory was conducted. Excluding improvements needed at existing schools and those drawn from capital budget requests submitted by state agencies—neither of which includes funding information—only \$19 billion in funding is available for the remaining \$56 billion in needs (see table 4). Typically, as a project evolves, funding sources are identified and pursued. Of course, a lack of funding will prevent certain projects from ever being completed. In fact, most of the infrastructure needs reported in the July 2018 inventory that were not already fully funded were still needed five years later. As in prior years, funding for needs reported in the inventory comes from federal, state, and local sources.

Table 4. Public Infrastructure Needs Summary of Funding Availability*
Five-year Period July 2023 through June 2028

	Funding Available [in billions]	Funding Needed [in billions]	Total Needed [in billions]
Fully Funded Improvements	\$ 17.8	\$ 0.0	\$ 17.8
Partially Funded Improvements	1.2	6.8	8.0
Unfunded Improvements	0.0	29.6	29.6
Total	\$ 19.0	\$ 36.4	\$ 55.5

*Excludes infrastructure improvements for which funding availability is not known.

Note: Totals may not equal 100% because of rounding.

The government that owns the infrastructure typically funds the bulk of its cost, and a variety of revenue sources are used. For example, the state collects taxes and appropriates funds for its own projects but also provides grants to local governments through programs in various state agencies. Even so, cities and counties fund most of their infrastructure improvements with their own property and sales tax revenues, while utility districts fund their improvements primarily with dedicated revenue sources in the form of user fees.

Because most of the state’s infrastructure needs are not included in this funding analysis, local government sources—mainly counties and cities—provide most of the capital for all the fully-funded needs presented here. Exceptions include transportation, which is funded primarily by the federal and state governments. Industrial sites and parks also receive a substantial portion of funding from federal and state government. Broadband; recreation; storm water; housing; and libraries, museums, and historic sites also rely on the federal government for significant portions of their reported funding (see table 5). Although table 5 shows no state funding for new public schools, the state does generate funding through its Tennessee Investment in Student Achievement (TISA) funding formula that can be used for capital outlay; however, the funds are not earmarked exclusively for this purpose, allowing school systems to allocate them toward operating costs if needed.

Table 5. Funding Source by Category and Type of Infrastructure for Fully Funded Improvement Needs [in millions]
Five-year Period July 2023 through June 2028

Category and Project Type	State		Federal		Other		City		County		Special District		Total
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount
Transportation and Utilities	\$ 1,927.6	19.1%	\$ 5,091.7	50.5%	\$ 27.4	0.3%	\$ 1,269.4	12.6%	\$ 1,754.0	17.4%	\$ 3.3	0.0%	\$ 10,073.3
Transportation	1,927.6	19.6%	5,084.0	51.8%	25.2	0.3%	1,025.7	10.5%	1,747.4	17.8%	0.8	0.0%	9,810.7
Other Utilities	0.0	0.0%	6.8	2.6%	2.0	0.8%	242.8	93.2%	6.6	2.5%	2.5	1.0%	260.6
Broadband	0.0	0.0%	0.9	45.2%	0.2	9.0%	0.9	45.7%	0.0	0.0%	0.0	0.0%	2.0
Health, Safety, and Welfare	\$ 87.1	1.6%	\$ 190.4	3.4%	\$ 306.5	5.5%	\$ 2,498.1	44.5%	\$ 2,186.9	38.9%	\$ 348.3	6.2%	\$ 5,617.3
Water and Wastewater	66.5	1.5%	154.5	3.5%	119.8	2.7%	2,054.6	46.2%	1,703.9	38.3%	345.4	7.8%	4,444.7
Law Enforcement	4.7	0.8%	11.4	2.0%	0.0	0.0%	152.7	26.2%	414.5	71.1%	0.0	0.0%	583.4
Housing	0.5	0.1%	2.3	0.7%	184.9	52.3%	166.1	46.9%	0.0	0.0%	0.0	0.0%	353.9
Fire Protection	0.3	0.3%	7.9	5.9%	0.0	0.0%	102.9	76.9%	22.8	17.0%	0.0	0.0%	133.9
Public Health Facilities	10.9	37.0%	6.1	20.8%	0.7	2.5%	0.0	0.0%	11.7	39.7%	0.0	0.0%	29.5
Storm Water	2.5	8.7%	4.3	15.2%	0.0	0.0%	20.7	73.3%	0.8	2.9%	0.0	0.0%	28.2
Solid Waste	1.8	4.0%	3.9	8.8%	1.0	2.3%	1.1	2.5%	33.2	75.7%	2.9	6.7%	43.8
Education	12.0	1.2%	\$ 69.6	6.7%	3.0	0.3%	\$ 55.4	5.4%	\$ 858.6	83.2%	\$ 33.6	3.3%	\$ 1,032.2
Post-secondary Education	10.0	100.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	10.0
New Public Schools	2.0	0.2%	65.2	6.7%	3.0	0.3%	55.0	5.6%	851.7	87.2%	0.0	0.0%	976.9
School-System-wide	0.0	0.0%	4.4	9.7%	0.0	0.0%	0.4	0.9%	6.8	15.1%	33.6	74.3%	45.3
Recreation and Culture	\$ 22.5	3.9%	\$ 122.9	21.3%	\$ 18.2	3.2%	\$ 230.7	40.0%	\$ 182.3	31.6%	\$ 0.0	0.0%	\$ 576.6
Recreation	21.1	4.4%	94.7	19.7%	15.2	3.2%	208.1	43.4%	140.9	29.4%	0.0	0.0%	480.0
Libraries, Museums, and Historic Sites	0.6	1.4%	9.5	23.2%	0.2	0.5%	1.6	3.9%	29.0	71.1%	0.0	0.0%	40.8
Community Development	0.9	1.6%	18.8	33.6%	2.8	4.9%	21.1	37.7%	12.4	22.1%	0.0	0.0%	55.9
Economic Development	\$ 29.7	28.5%	\$ 12.2	11.7%	\$ 1.3	1.3%	\$ 18.9	18.1%	\$ 41.3	39.6%	\$ 0.9	0.8%	\$ 104.3
Industrial Sites and Parks	29.7	33.8%	11.2	12.7%	1.3	1.5%	4.0	4.5%	40.9	46.5%	0.9	1.0%	87.9
Business District Development	0.0	0.0%	1.0	6.1%	0.0	0.0%	14.9	91.1%	0.5	2.9%	0.0	0.0%	16.4
General Government	\$ 2.5	0.6%	\$ 19.3	4.6%	\$ 18.5	4.4%	\$ 186.4	44.7%	\$ 190.4	45.7%	\$ 0.0	0.0%	\$ 417.0
Public Buildings	1.7	0.5%	18.7	5.4%	0.9	0.2%	158.5	45.4%	169.5	48.5%	0.0	0.0%	349.2
Other Facilities	0.7	1.1%	0.6	0.9%	17.6	26.0%	27.9	41.2%	20.9	30.8%	0.0	0.0%	67.7
Grand Total	\$ 2,081.4	11.7%	\$ 5,506.1	30.9%	\$ 374.8	2.1%	\$ 4,259.0	23.9%	\$ 5,213.4	29.3%	\$ 386.1	2.2%	\$ 17,820.8