Building Tennessee's Tomorrow:

Anticipating the State's Infrastructure Needs

July 2019 through June 2024

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 and roads to access employment, education, and commerce—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 these essential services. Under normal circumstances it can be a daunting task for government officials to match limited funds to seemingly unlimited needs; now, officials must address this challenge alongside the effects of the COVID19 pandemic, the effects of which include potential tax revenue losses and rising public health expenditures.

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 three sources: surveys of local officials by the staff of the state's nine development districts,[2] capital budget requests submitted to the Governor by state officials as part of the annual budget process, and needed capital projects from the Tennessee Board of Regents (TBR),

[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.

along with bridge and road needs from project listings provided by state transportation officials. The Commission relies entirely on state and local officials to evaluate the infrastructure needs of Tennessee's citizens as envisioned by the enabling legislation.

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 anticipate needs for the period of July 1, 2019, through June 30, 2039, 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 under construction—as of July 1, 2019. Because of legislation requiring the inventory's use by the Commission to monitor implementation of Tennessee's Growth Policy Act, in 2000 the period covered by each inventory was expanded 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

[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.
[4] Public Chapter 672, Acts of 2000.

    - Law Enforcement
    - Public Health Facilities
    - Housing
    - Fire Protection
    - 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 only by 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 forms[5] that gather information from local officials about necessary infrastructure improvements. The Existing School Facility Needs Inventory Form is used to collect information about the condition of existing public school buildings, as well as ascertain 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

[5] Both forms are included in appendix C.

included on the school inventory form. TACIR staff provide local officials with supplemental information from the state highway department about transportation needs, much of which originates from local officials. This information helps ensure that all known needs are captured in the inventory.

In addition to gathering information from local officials, TACIR staff incorporates capital improvement requests submitted by state officials to the Governor's Budget Office, bridge and road needs from project listings provided by TDOT and needed capital projects from TBR. While TACIR 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 2019 through June 2024. For projects started before the five-year period, estimated costs for the projects may include amounts spent before July 2018; for projects that won't be completed during the five-year period, amounts must be spent after June 2023. All of 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, and underground storage tanks; and the Education Improvement Act (EIA). The EIA mandate reduced the 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 cost reported to the Commission

[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." http://comptroller.tn.gov/repository/RE/educimproveact.pdf.

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 that has been useful in

- planning short-term and long-range goals,
- 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 in a time of tight budgets and crisis-based, reactive decisions, the annual inventory process offers the one opportunity they have to set funding issues aside for a moment and think proactively and broadly about real infrastructure needs. 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 in order 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*, which are required annually by the US Economic Development Administration.[8] Projects are not considered for funding by that agency unless they are listed in one of these reports. 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

[8] US Economic Development Administration. "CEDS Content Guidelines." https://www.eda.gov/ceds/.

were originally discovered during 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 the 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 identify particular needs, such as lagging 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 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 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 with agencies not traditionally sought-after (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?

In the face of a global pandemic, governments have taken various lockdown approaches to contain the spread of COVID-19 to try to preserve public health and reduce the loss of life as a direct result of the virus. These approaches have the potential to decrease economic output at every level

(local, state, and federal) and subsequently may reduce government tax revenues. Additionally, strategies put in place to mitigate the virus may result in long-lasting social changes that could affect public infrastructure needs, such as potentially reducing the need to repair or expand public roads or possibly increasing the need for technology infrastructure at public schools as students shift from in-person learning to remote-learning.

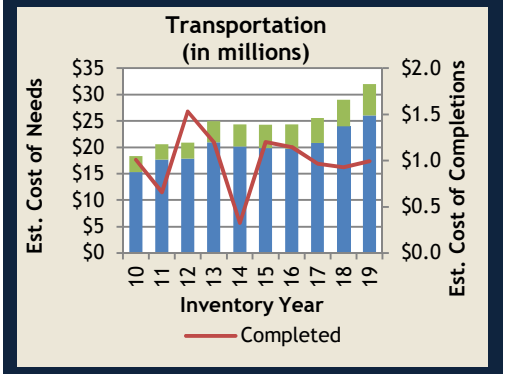
TACIR is conducting a new, special project to compare-and-contrast the effects of past social and economic disruptions with the current COVID-19-induced disruptions by using historical trends to determine their effects on public infrastructure development or priorities. The project will include a survey of city and county mayors in order to get their insights on how COVID-19 is affecting their communities, as well as their public infrastructure needs. This is a multi-year project that will utilize the existing public infrastructure data to identify trends and correlations with other variables, such as revenue, that affect the operations of state and local governments in Tennessee.

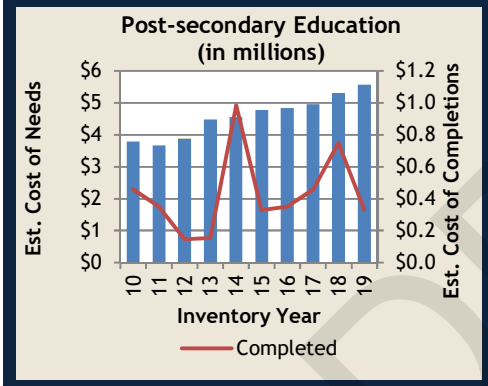
State Total

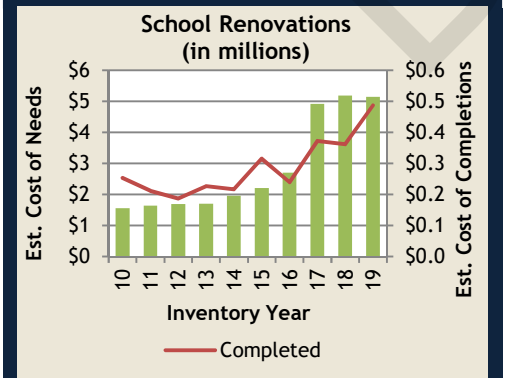
Total Estimated Cost* for Infrastructure Improvements

$58,579,260,883

TOP 3





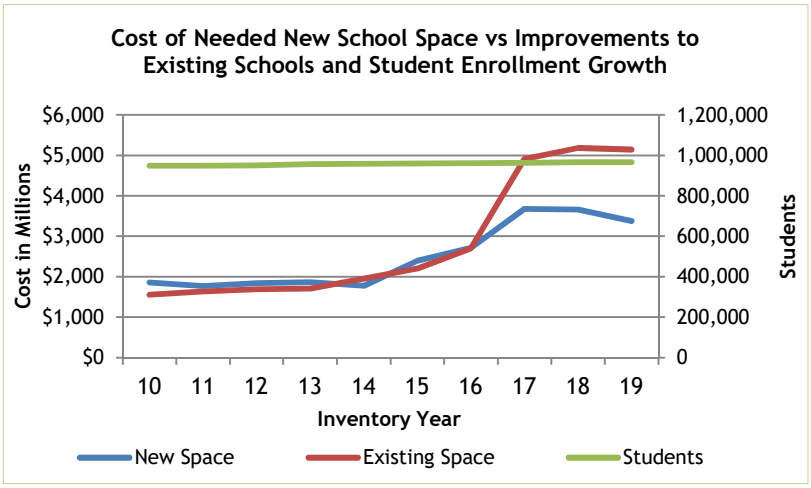


= Local

= Regional (Serves Multiple Counties)

Estimated Cost of Needed Infrastructure for State Total Five-year period July 2019 through June 2024

Project Type	Conceptual	Planning & Design + Construction
Transportation	$ 8,855,770,202	$ 23,164,240,034
Post-secondary Education	$ 2,135,300,726	$ 3,433,347,219
School Renovations	$ 4,448,787,949	$ 696,503,294
Water and Wastewater	$ 1,130,905,140	$ 3,826,972,004
New Public Schools & Additions	$ 2,029,418,902	$ 1,350,025,517
Recreation	$ 640,235,475	$ 1,018,414,210
Law Enforcement	$ 494,959,620	$ 933,406,172
Public Buildings	$ 800,145,000	$ 485,400,780
Other Utilities	$ 140,770,000	$ 496,160,117
Public Health Facilities	$ 384,700,000	$ 218,819,229
Libraries, Museums, & Historic Sites	$ 108,687,000	$ 246,112,838
Housing	$ 16,225,000	$ 311,892,911
Fire Protection	$ 172,129,165	$ 106,463,850
Community Development	$ 101,556,500	$ 131,541,779
Industrial Sites and Parks	$ 52,597,500	$ 162,143,863
Other Facilities	$ 59,113,000	$ 114,353,634
Storm Water	$ 60,644,000	$ 23,458,924
Other Education	$ 41,835,000	$ 33,980,000
Business District Development	$ 18,750,000	$ 52,383,058
School-System-wide	$ 9,752,000	$ 25,200,000
Solid Waste	$ 11,500,000	$ 21,159,271
Broadband	$ -	$ 13,500,000
Total	$21,713,782,179	$ 36,865,478,704



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