

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

July 2002 through June 2007

Overview

Tennessee is a low-tax state, and Tennesseans like it that way. Our citizens prefer that goods and services be provided by the private sector if at all possible. Nevertheless, there are some projects essential to the common good that the private sector cannot or will not take on. And so government must pick them up. One of the most expensive things government must do is provide the infrastructure that supports the health and welfare of its citizens.

This report is the fourth in a series that presents Tennessee's public infrastructure needs. It covers the five-year period of July 2002 through June 2007 and provides two basic types of information as reported by local officials: (1) needed infrastructure improvements; and (2) the condition of existing elementary and secondary (K-12) public schools. The projects reported by state and local officials fall into six broad categories:

**Table 1. Summary of Infrastructure Improvements Reported as Needed
Five-year Period July 2002 Through June 2007¹**

Category ²	Number of Projects or Schools Reported		Five-year Reported Estimated Cost	
Transportation & Utilities	1,958	27.4%	\$ 9,073,361,524	42.1%
Education ³	1,708	23.9%	5,115,143,336	23.7%
Health, Safety & Welfare	2,146	30.0%	4,689,150,833	21.7%
Recreation & Culture	871	12.2%	1,744,175,930	8.1%
Economic Development	238	3.3%	564,117,715	2.6%
General Government	230	3.2%	373,861,963	1.7%
Grand Total	7,151	100.0%	\$21,559,811,301	100.0%

These needs represent the best estimates that state and local officials could provide and do not represent only what they anticipate being able to afford. Preliminary analysis of responses to the question of funding availability indicates that about forty-four percent of the funding necessary is expected to be available by the time these projects are needed. Sixty-one percent of that funding is expected to come from local sources, about twenty-seven percent is expected to come from state sources, nine percent from federal sources and about three percent from various public-private partnerships or donations. This information will be reviewed and presented in greater depth in a later TACIR report.

¹ For a complete listing of all reported needs by county and by public school system, see Appendices D and E.

² A list of the types of projects included in the six general categories is shown in Table 3. Descriptions of the project types are included in the Glossary of Terms at the end of this report.

³ Includes improvements needed at existing schools. Number of projects includes the 1,283 schools for which needs were reported.

“Without question, the level of interdependence among various groups in today's society is so great that devising any effective solutions to community problems can come only when all community groups work together.”

Declaration of Interdependence

Joint Task Force of the National Association of Home Builders and the National Association of Counties

Why inventory public infrastructure needs?

The General Assembly proclaimed the value of public infrastructure in legislation enacted in 1996 when it deemed an inventory of those needs necessary “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.”⁴ 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. Local officials were asked to describe the needs they anticipated for the five-year period of July 2002 through June 2007, categorizing those needs by type of project and by stage of development. The Commission has relied entirely on local officials to determine the infrastructure needs of their constituents as envisioned by the public act.

What infrastructure is included in the inventory?

For purposes of this report, based both 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.

Further, 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. This approach, dictated by the public act, is consistent with the characterization of capital projects adopted by the General Assembly for its annual budget.

Within these parameters, local officials are encouraged to report their needs as they relate to developing goals, strategies and programs to improve their communities. They are limited only by the very broad purposes for public infrastructure listed in the law. No independent assessment of need constrains their reporting. In addition, the inventory includes capital needs identified by state officials and submitted to the Governor as part of the annual budget process, and for the first time, bridge and road project listings provided by state transportation officials.

⁴ Chapter No. 817, Public Acts of 1996. For more information about the enabling legislation, see Appendix A.

These projects fell into four general groups:

- ◆ bridge replacement and rehabilitation—\$356 million of needs identified by state highway personnel
- ◆ surface transportation—\$221 million, including road reconstruction, road widening, culvert replacement, and signalization
- ◆ local traffic safety projects—\$9.6 million, including traffic signals, turn lanes, and shoulder improvements
- ◆ enhancement projects—\$14.5 million, including sidewalks and greenways

Preliminary analysis of the data suggests that about half of these needs had already been identified by local officials and included in the inventory. TACIR staff relied on staff of the nine development districts to identify and eliminate the overlap. The addition of this information provides the most comprehensive view of transportation infrastructure needs since the inventory's inception in 1999.

For the second year in a row, local officials were provided an opportunity to report whether projects were funded, and if so, from what source. Response to this question has improved, but despite continued efforts to ensure that availability of funds played no role in whether needs were reported, it again appears that some local officials are understating their true needs and reporting instead the infrastructure they plan to build or believe their tax base can support. As a result, it may again be useful to treat the inventory as a sample of statewide needs and use it to develop estimates for counties whose needs appear to be underreported. Some discussion of this type of analysis is included in this report; however, given the extensive amount of information gathered for the inventory, much more work could be done.

What have we learned about public infrastructure needs?

State and local officials report a total need for public infrastructure improvements for 2002 through 2007 of \$21.6 billion, including upgrading existing public schools to good condition. This represents an increase of close to \$8 billion or more than fifty-eight percent since the first inventory was published four years ago. Transportation and utilities represents the single largest category and the largest one-year increase in estimated costs (from \$8.3 billion to \$9.1 billion). The second largest increase was in the education category as the total estimated costs, including the needs of the state's public colleges and universities, increased seven percent (from \$4.8 billion to \$5.1 billion). The increase comprises \$289 million for higher education and \$47 million for public elementary and secondary schools, including the state's special schools.

Characteristics of Infrastructure

- ✓ It serves an essential public purpose.
- ✓ It has a long useful life.
- ✓ It is infrequent and expensive.
- ✓ It is fixed in place or stationary.
- ✓ It is related to other government functions and expenditures.
- ✓ It is usually the responsibility of local government.

Joint Task Force of the National Association of Home Builders and the National Association of Counties

"A walk across the street seems natural, but it is an engineered activity. Paving, traffic light, crosswalk, warning sign, lighting, and perhaps, sidewalk: these make up the infrastructure of the pedestrian experience."

Me, Myself and Infrastructure

American Society of Civil Engineers

Transportation needs increased by \$950 million over last year—about one-third of which is attributable to the inclusion for the first time of information directly from state highway officials. The additional information from the state transportation department makes the inventory the most comprehensive view of transportation infrastructure needs presented thus far. Ninety-six percent of the needs listed by state officials were divided between surface transportation projects and bridge repair or replacement projects. Their lists totaled about \$600 million, but about half that amount had already been reported by local officials in the previous inventory. Thus, new projects from the state lists account for only about one-third of the increase in estimated transportation infrastructure needs. New needs identified by local officials accounted for the remaining increase. About half of the reported transportation costs in this inventory are the state's responsibility, including the state highway and interstate systems.

The condition of existing schools continues to improve as estimated costs to improve them decline. If not for the addition of a \$490 million technology initiative for the Memphis city school system, the needs identified at existing elementary and secondary schools would have declined more than \$445 million. While technology has become essential to a sound, basic education, this latter figure better represents the cost of putting all school buildings in good condition. In the past year, these repair costs have declined, and the proportion of schools reported to be in good or excellent condition has increased to eighty-five percent. However, the total for all public school facility needs remains significant at \$3.6 billion or nearly seventeen percent of all reported infrastructure needs.

TACIR staff analysis of public school needs indicates that more than \$800 million of the estimated costs reported by local officials is required to provide adequate classrooms for teachers employed as a result of the Education Improvement Act of 1992 (EIA). This figure represents a \$546 million decline (forty percent) since last year's report. Most of that cost is reported as new school construction. (TACIR staff estimated the portion of the new school construction costs attributable to the EIA as described in Appendix F.) The total estimated costs reported for new school construction stayed essentially the same at \$1.6 billion as some projects were completed and others were begun.

The economic development category had the largest percentage change of any category as the result of a major modification of a single, large project. This category is the second smallest of the six categories into which needs are grouped for reporting purposes, so a substantial change in a single large project can cause a significant change in the total. In this case, the restructuring of one business district

development project in Knox County, which reduced its cost from \$280 million to \$22 million, accounts for more than eighty percent of the total \$314 million decline in this category. Without that one change, the total need for infrastructure to support economic development would have decreased by only \$56 million or six percent.

Projects included in capital improvement programs are far more likely to be in the construction stage than projects not included in capital improvement programs, which may indicate that only projects local officials expect to be able to fund are included in these documents. One of the questions asked on the general survey form is whether the project reported is included in a capital improvement plan.⁵ More than sixty-one percent of the projects not included in plans were in the conceptual stage and twenty-two percent were in the planning and design stage. In contrast, thirty-nine percent of projects reportedly in capital improvement plans were under construction at the time of the survey; only twenty-two percent were still in the conceptual stage. Sixty-five percent of the projects completed during this five-year period had been included in a capital improvement program.

State or federal mandates affect about eight percent of all projects in the current inventory, which is about the same as last year. As a practical matter, TACIR does not require that the cost of state or federal mandates be separately estimated for all projects, therefore, it is not possible to determine how much of the total estimated costs reported is attributable to those mandates. The inventory does, however, include estimates of mandate compliance costs for existing public schools. Adding this information to estimates by TACIR staff of the proportion of new school construction costs attributable to the EIA indicates that state and federal mandates account for about twenty-four percent of all needs reported for Tennessee's public schools. The comparable figure for last year was forty percent. Again, nearly all of the cost attributable to mandates is related to providing classrooms for the teachers necessary to meet the lower class sizes required by the EIA. Federal mandates account for only one percent of the total mandate cost for local schools.

What else needs to be done?

As the data collection process has improved, the inventory has moved closer to representing the total public infrastructure needs of the state. TACIR has tried to strike a balance between requiring sufficient information to satisfy the intent of the law and creating an impediment to local officials reporting their needs. By law, the inventory is required

The Principles of Smart Development

- Efficient use of land resources
- Full use of urban services
- Mixed use
- Transportation options
- Detailed, human-scale design

Development incorporating these principles conserves valuable land, energy, and facilities resources; offers people multiple convenient transportation options; relieves traffic congestion and air pollution; offers residents a variety of dwelling choices; and creates attractive community-oriented neighborhoods.

American Planning Association

⁵ A copy of the form is included in Appendix C.

Over the coming months, TACIR staff will also analyze and publish information about several new bits of information gathered about infrastructure needs in this most recent inventory:

Analysis of project types and their relationship to local economic and population factors.

Availability of funds for reported needs.

Comparison of Tennessee's efforts to identify and meet infrastructure needs to efforts in other states.

Location of projects in relation to boundaries established pursuant to Tennessee's Growth Policy Act [Chapter No. 1101, Public Acts of 1998], including a review of estimated needs through the fiscal year 2021, the period covered by most of the initial growth plans adopted under PC 1101.

of TACIR, but it is not required of local officials. Local officials may decline to participate without penalty; similarly, they may provide only partial information, making comparisons across jurisdictions difficult. Development district staff and state officials have been extremely helpful in providing TACIR with information to complete previously identified gaps in data, and their efforts have made this year's data source the most complete in the project's history.

Since the passage of Public Chapter 817, the General Assembly has adopted a new growth policy act (Chapter No. 1101, Public Acts of 1998) and, further, has formally linked the two (Chapter No. 672, Public Acts 2000). TACIR is now directed to use the public infrastructure needs inventory as one element in monitoring implementation of the growth policy act. This linkage requires two significant changes in the survey used to gather information for the inventory: asking local officials to project their infrastructure needs over a twenty-year period and asking them to identify the locations of the projects they report in terms of the boundaries established pursuant to the growth policy act.⁶ Estimating infrastructure needs over a twenty-year period is quite a challenge for local officials, and the information that can be derived from those projections is inherently less reliable than the information derived from the five-year reporting period of the first two inventories. Nevertheless, with staff support, the Commission will review progress toward implementing this aspect of Public Chapter 672 and recommend any changes that may be needed to meet the goals of the infrastructure inventory and the growth policy act. While this report focuses on the first five years of needs reported in the current inventory, the full twenty-year data set will be reviewed over the next several months and presented in the context of the growth policy act.

⁶ Appendix A includes the relevant legislation.