

Building Tennessee's Tomorrow:

Anticipating the State's Infrastructure Needs

July 2004 through June 2009

Reported Infrastructure Needs Statewide

Total Needs Grow 16% Since Last Report—Transportation and Utilities Category Continues to Lead.

State and local officials estimate the cost of public infrastructure improvements that need to be started or completed sometime between July 1, 2004, and June 30, 2009, at more than \$28.3 billion, including the estimated cost of upgrading existing public school facilities to good condition (see Table 3). This is an increase of more than \$3.9 billion or 16% since the last report. This percentage increase is larger than last year's 13% increase but within the range of increases for the first few years' inventories. It is still less than the \$4.5 billion increase between the first two reports in this TACIR series.

Transportation and Utilities continues to be the single largest category with 51% of all infrastructure needs. This one category represents nearly half of the total increase since TACIR's first report on infrastructure needs. Transportation needs alone increased \$4.2 billion since the last report and \$9.3 billion since the first. Because of the improved information system it has implemented, the Tennessee Department of Transportation provided TACIR additional data regarding transportation needs. The two other categories that increased since the last report are Education (7.4%) and General Government (3.6%). The three categories that decreased are Economic Development (39.8%), Health, Safety, and Welfare (3.1%), and Recreation and Culture (2.6%).

The one-year changes for each category of needs and type of project are shown in Table 4. Two specific types of infrastructure needs—public health facilities and non-K-12 education—increased by more than a third because of needs reported by state agencies. Public housing needs increased 58% because of reported needs for replacing existing public housing as well as adding new units.

Solid waste needs decreased by 57.8%, largely because two projects in Memphis reflecting \$64 million were reclassified as water and wastewater projects, and a \$3.6 million project in Memphis was canceled. Stormwater decreased 39.8%, partially because about \$133 million worth of projects were completed and a \$25 million project was canceled. Libraries, museums, and historic sites

Top Concerns of Tennessee's Civil Engineers, August 2003

- Roads
- Bridges
- Schools

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Table 3. Total Number and Estimated Cost of Needed Infrastructure Improvements¹⁰
Five-year Period July 2004 through June 2009

Category and Project Type¹¹	Number of Projects or Schools Reported		Five-year Reported Estimated Cost	
Transportation and Utilities	2,663	32.3%	\$ 14,570,916,337	51.4%
Transportation	2,583	31.3%	13,664,722,385	48.2%
Other Utilities	70	0.8%	558,019,952	2.0%
Navigation	4	0.0%	318,400,000	1.1%
Telecommunications	6	0.1%	29,774,000	0.1%
Education	1,690	20.5%	\$ 5,647,216,951	19.9%
Existing School Improvements	1,223	14.8%	2,069,189,959	7.3%
Non K-12 Education ¹²	320	3.9%	2,052,714,184	7.2%
K-12 New School Construction	115	1.4%	1,497,197,808	5.3%
School System-wide Need*	32	0.4%	28,115,000	0.1%
Health, Safety and Welfare	2,349	28.5%	\$ 5,198,055,196	18.3%
Water and Wastewater	1,569	19.0%	3,199,008,445	11.3%
Law Enforcement	265	3.2%	1,039,877,979	3.7%
Public Health Facilities	132	1.6%	355,133,468	1.3%
Stormwater	120	1.5%	258,485,011	0.9%
Fire Protection	179	2.2%	175,968,148	0.6%
Housing	25	0.3%	100,460,938	0.4%
Solid Waste	59	0.7%	69,121,207	0.2%
Recreation and Culture	1,087	13.2%	\$ 1,834,871,543	6.5%
Recreation	842	10.2%	1,191,604,759	4.2%
Community Development	132	1.6%	386,366,258	1.4%
Libraries, Museums, & Historic Sites	113	1.4%	256,900,526	0.9%
Economic Development	206	2.5%	\$ 668,501,407	2.4%
Business District Development	39	0.5%	397,739,479	1.4%
Industrial Sites and Parks	167	2.0%	270,761,928	1.0%
General Government	246	3.0%	\$ 425,990,395	1.5%
Public Buildings	232	2.8%	409,194,698	1.4%
Other Facilities	7	0.1%	11,375,697	0.0%
Property Acquisition	7	0.1%	5,420,000	0.0%
Grand Total	8,241	100.0%	\$ 28,345,551,829	100.0%

*These figures include the needs of the state's special schools.

decreased 27% almost entirely because of the completion of the new Nashville Main Public Library. This offset increases in the other two types of needs in the Recreation and Culture category: recreation (1.1%) and community development (10.1%).

The Economic Development category, which had increased 70% in last year's report because of business district development needs reported for Nashville and Memphis, decreased \$442 million (40%) in this latest inventory. Both types of needs making up the category decreased. Business district development needs decreased \$342 million, with more than half of that decrease attributable

¹⁰ For complete listings of all needs reported in the July 2004 inventory by county and by public school system, see Appendices D and E.

¹¹ Descriptions of project types are included in the Glossary of Terms at the end of the report.

¹² K-12 (kindergarten through 12th grade) education includes public elementary and secondary schools. Non K-12 projects include facilities for post-secondary programs, pre-school programs, etc., as described in the Glossary of Terms at the end of the report.

to a reduction in the estimated cost of a project in Nashville. Additionally, industrial sites and parks projects with a total estimated cost of \$114 million have been completed. Economic Development has always been either the smallest or the second smallest of the six categories into which needs are grouped for reporting purposes, and increases and decreases of this size can easily cause large percentage changes in the total need for these types of projects.

Table 4. Comparison of Estimated Cost of Needed Infrastructure Improvements¹³
July 2004 Inventory vs. July 2003 Inventory

Category and Project Type ¹⁴	July 2003 Inventory	July 2004 Inventory	Difference	Percent Change
Transportation and Utilities	\$ 10,402,687,670	\$ 14,570,916,337	\$ 4,168,228,667	40.1%
Transportation	9,405,427,930	13,664,722,385	4,259,294,455	45.3%
Other Utilities	604,097,088	558,019,952	(46,077,136)	-7.6%
Navigation	357,329,977	318,400,000	(38,929,977)	-10.9%
Telecommunications	35,832,675	29,774,000	(6,058,675)	-16.9%
Education	\$ 5,257,982,121	\$ 5,647,216,951	\$ 389,234,830	7.4%
Existing School Improvements	2,014,779,791	2,069,189,959	54,410,168	2.7%
Non K-12 Education ¹⁵	1,517,532,863	2,052,714,184	535,181,321	35.3%
K-12 New School Construction	1,690,459,100	1,497,197,808	(193,261,292)	-11.4%
School System-wide Need*	35,210,367	28,115,000	(7,095,367)	-20.2%
Health, Safety and Welfare	\$ 5,366,483,107	\$ 5,198,055,196	\$ (168,427,911)	-3.1%
Water and Wastewater	3,333,945,186	3,199,008,445	(134,936,741)	-4.0%
Law Enforcement	946,792,714	1,039,877,979	93,085,265	9.8%
Public Health Facilities	256,620,827	355,133,468	98,512,641	38.4%
Stormwater	429,254,807	258,485,011	(170,769,796)	-39.8%
Fire Protection	172,727,866	175,968,148	3,240,282	1.9%
Housing	63,438,000	100,460,938	37,022,938	58.4%
Solid Waste	163,703,707	69,121,207	(94,582,500)	-57.8%
Recreation and Culture	\$ 1,883,869,024	\$ 1,834,871,543	\$ (48,997,481)	-2.6%
Recreation	1,179,119,855	1,191,604,759	12,484,904	1.1%
Community Development ¹⁶	351,051,162	386,366,258	35,315,096	10.1%
Libraries, Museums, & Historic Sites	353,698,007	256,900,526	(96,797,481)	-27.4%
Economic Development	\$ 1,110,698,296	\$ 668,501,407	\$ (442,196,889)	-39.8%
Business District Development	739,425,973	397,739,479	(341,686,494)	-46.2%
Industrial Sites and Parks	371,272,323	270,761,928	(100,510,395)	-27.1%
General Government	\$ 411,100,654	\$ 425,990,395	\$ 14,889,741	3.6%
Public Buildings	381,123,314	409,194,698	28,071,384	7.4%
Other Facilities	21,164,140	11,375,697	(9,788,443)	-46.3%
Property Acquisition	8,813,200	5,420,000	(3,393,200)	-38.5%
Grand Total	\$ 24,432,820,872	\$ 28,345,551,829	\$ 3,912,730,957	16.0%

*These figures include the needs of the state's special schools.

¹³ For complete listings of all needs reported in the July 2004 inventory by county and by public school system, see Appendices D and E.

¹⁴ Descriptions of project types are included in the Glossary of Terms at the end of the report.

¹⁵ K-12 (kindergarten through 12th grade) education includes public elementary and secondary schools. Non K-12 projects include facilities for post-secondary programs, pre-school programs, etc., as described in the Glossary of Terms at the end of the report.

¹⁶ One project estimated to cost \$110 million was misclassified in last year's report as business district development and has been reclassified as community development in this table.

It is difficult to compare recent inventories to the first one, which was published in 1999, because of improvements in coverage, but the changes are interesting to note. Two categories of need doubled or nearly doubled: Education, to which higher education needs were first added with the March 2002 report, and Recreation and Culture. Transportation and Utilities, which is dominated by transportation needs, has almost tripled (see Table 5).

**Table 5. Comparison of Estimated Cost of Needed Infrastructure Improvements¹⁷
July 1997 Inventory vs. July 2004 Inventory**

Category ¹⁸	Reported Cost		Difference
	July 1997 through June 2002	July 2004 through June 2009	
Transportation and Utilities	\$ 5,266,418,254	\$ 14,570,916,337	176.7%
Education ¹⁹	2,652,181,076	5,647,216,951	112.9%
Health, Safety & Welfare	3,669,316,318	5,198,055,196	41.7%
Recreation & Culture	885,965,741	1,834,871,543	107.1%
Economic Development	620,462,264	668,501,407	7.7%
General Government	580,851,556	425,990,395	-26.7%
Grand Total	\$ 13,675,195,209	\$ 28,345,551,829	107.3%

New solutions are needed to what amounts to nearly a trillion dollars in critical water and wastewater investments over the next two decades. Not meeting the investment needs of the next 20 years risks reversing the public health, environmental, and economic gains of the last three decades.

Recommendations for Clean and Safe Water in the 21st Century, Water Infrastructure Now

The smallest increase (7.7%) since the first published inventory was in the Economic Development category, and one category—General Government—actually declined 26.7% since the first report. Most of the change in General Government occurred during the second and third inventories as considerable effort was being made to ensure that needs were properly categorized. In the past, a larger number of projects were classified as public buildings, other facilities and property acquisition. In many cases, more specific categories were available. Descriptions of project types were made more explicit, and any needs recorded as one of these three generic types were closely scrutinized to determine whether they belonged in a more specific category. As a result, the General Government category, which includes these three types of projects, declined by about 60% between the second and third reports.

Transportation, Education, and Water and Wastewater Continue to Dominate Statewide Needs.

As shown in Figure 3, three types of projects dominate reported needs. Transportation needs alone had always been 35% to 40% of total needs,

¹⁷ For complete listings of all needs reported in the July 2004 inventory by county and by public school system, see Appendices D and E.

¹⁸ For more detail on the categories, see Table 3 on page 12.

¹⁹ Includes improvement needed at existing public schools and the state's special schools. Number of projects includes the 1,237 schools for which needs were reported.

but now represent almost half (48.2% or \$13.7 billion) of the total. Needs reported for Tennessee’s public school systems are a distant second at 12.7% of total needs reported. Water and wastewater needs follow behind school needs at 11.3% of the total. Those three types of projects combined represent more than 72% of the total estimated cost of public infrastructure needs reported in the latest inventory.

While transportation needs continue to grow, public school needs and water and wastewater needs reported by local officials declined in this inventory. The decrease in public school needs can largely be explained by looking at K-12 new school construction projects. The number of new projects added in the current inventory was less than half of the number of projects from the last inventory that were completed. Water and wastewater needs decreased because of the same pattern on a smaller scale. More projects were completed than were newly reported.

The figures for transportation and for water and wastewater needs are even more impressive considering that they do not include the cost of those types of projects if they are needed to support other projects. For example, if a rail spur is needed to create a new industrial site, then the rail spur is recorded in the inventory as an industrial site project with transportation as its secondary project type. Similarly, if a sewer line is needed for a new school, then the sewer line is recorded as new school construction with water and wastewater as its secondary type. This two-dimensional classification facilitates more flexibility in analyzing the costs of different types of infrastructure improvements. The effect of including infrastructure needed to support other public infrastructure needs in the totals for selected types of projects is shown in Table 6.

Figure 3. Percent of Total Reported Cost of Infrastructure Needs by Type of Project Five-year Period July 2004 thru June 2009

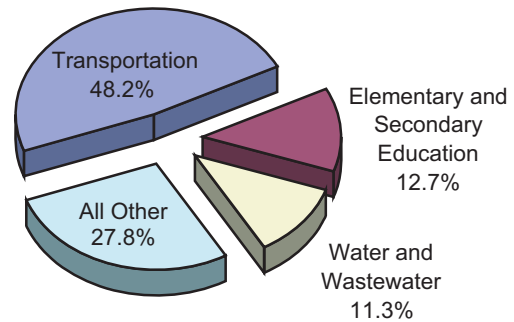


Table 6. Comparison of Needs That Provide Direct Service to Private Sector and Needs that Support Other Public Infrastructure Five-year Period July 2004 through June 2009

Category	Needs That Support Direct Service to Private Sector		Needs That Support Other Public Infrastructure		Total Estimated Cost [in millions]
	Estimated Cost [in millions]	Percent of Total Need for Infrastructure Type	Estimated Cost [in millions]	Percent of Total Need for Infrastructure Type	
Transportation	\$ 13,665	100%	\$ 42	0%	\$ 13,706
Water and Wastewater	3,199	98%	56	2%	3,255
Property Acquisition	5	2%	303	98%	309
Telecommunications	30	63%	18	37%	48
Grand Total	\$ 16,899	98%	\$ 419	2%	\$ 17,318

Not surprisingly, transportation, and water and wastewater projects are the types most likely to be needed for direct support to the private sector, and property acquisition is the type least likely to be needed for private sector services.

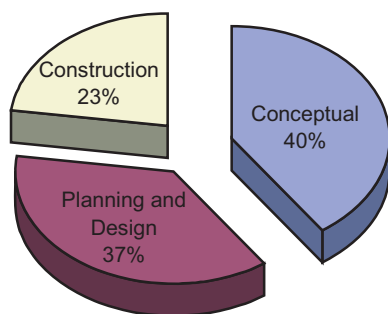
City Ownership Dominates Four of the Six Major Categories of Need.

Although most of the projects in the public infrastructure needs inventory are reported by local officials, they may ultimately be owned or controlled by a variety of entities, including state or federal governments or utility districts. Not surprisingly, cities own or control more than a third of the infrastructure needs reported in four of the six major categories: Health, Safety, and Welfare; Recreation and Culture; Economic Development; and General Government needs. Only six types of infrastructure needs within these categories were not dominated by cities. Sixty-five percent of property acquisition needs and 54% of industrial sites and parks infrastructure needs belonged to counties, and more than 85% of public health facilities needs belonged to the state. Counties own 39% of law enforcement needs and the state owns 38% (see Table 7).

Two broad categories are not dominated by cities: the Education category and the Transportation and Utilities, which is dominated by state highway projects. Forty-seven percent of education needs belong to counties, and 36% belong to the state. State costs primarily involve public higher education institutions. The only significant type of need that falls into the “other” ownership category is water and wastewater. The only significant infrastructure need that belongs to the federal government is navigation.

Stage of Development Varies With Type of Project; State Needs Are Far More Likely to be in the Conceptual Stage.

Figure 4. Percent of Total Reported Cost of Infrastructure Needs* by Stage of Development Five-year Period July 2004 through June 2009



* Excludes needs reported for existing schools

As shown in Figure 4, projects in the construction stage comprised a smaller share (23%) of the total cost of projects in the inventory than did projects in the planning and design or construction stage. Costs were about evenly divided between the conceptual and the planning and design stages. As Table 8 illustrates, the distribution varies for different types of projects. More than 75% of infrastructure improvements needed for public education institutions are in the conceptual stage. This figure is strongly influenced by the state's higher education

Table 7. Total Estimated Cost [in millions] of Needed Infrastructure Improvements by Project Type and Level of Government
Five-year Period July 2004 through June 2009

Category and Project Type ²⁰	City	County	State	Federal	Joint	Other	Total
Transportation and Utilities	\$3,528.5	\$775.5	\$9,765.7	\$300.0	\$156.4	\$8.9	\$14,535.0
Transportation	2,954.1	752.7	9,765.7	0.0	156.4	0.0	13,628.8
Other Utilities	548.4	0.8	0.0	0.0	0.0	8.9	558.0
Navigation	0.0	18.4	0.0	300.0	0.0	0.0	318.4
Telecommunications	26.1	3.7	0.0	0.0	0.0	0.0	29.8
Education	\$922.5	\$2,645.3	\$2,057.7	\$0.0	\$0.0	\$21.8	\$5,647.2
Existing School Improvements	718.0	1,329.7	0.0	0.0	0.0	21.5	2,069.2
K-12 New School Construction	199.2	1,298.0	0.0	0.0	0.0	0.0	1,497.2
Non K-12 Education ²¹	0.0	6.5	2,046.2	0.0	0.0	0.0	2,052.7
School System-wide Need*	5.3	11.1	11.5	0.0	0.0	0.3	28.1
Health, Safety and Welfare	\$3,051.7	\$653.8	\$704.1	\$0.0	\$103.4	\$685.1	\$5,198.1
Water and Wastewater	2,233.3	176.4	2.0	0.0	102.2	685.1	3,199.0
Law Enforcement	232.4	408.8	398.6	0.0	0.0	0.0	1,039.9
Stormwater	245.7	11.9	0.1	0.0	0.8	0.0	258.5
Solid Waste	49.8	19.0	0.0	0.0	0.4	0.0	69.1
Fire Protection	164.2	11.8	0.0	0.0	0.0	0.0	176.0
Public Health Facilities	29.2	22.5	303.4	0.0	0.0	0.0	355.1
Housing	97.1	3.4	0.0	0.0	0.0	0.0	100.5
Recreation and Culture	\$1,239.4	\$279.2	\$298.0	\$2.9	\$15.4	\$0.0	\$1,834.9
Recreation	843.5	157.0	182.5	2.8	5.8	0.0	1,191.6
Libraries and Museums	98.6	39.7	111.9	0.1	6.6	0.0	256.9
Community Development	297.3	82.4	3.6	0.0	3.0	0.0	386.4
Economic Development	\$470.2	\$165.2	\$6.6	\$0.0	\$16.2	\$10.3	\$668.5
Industrial Sites and Parks	94.8	147.0	2.4	0.0	16.2	10.3	270.8
Business District Development	375.4	18.2	4.2	0.0	0.0	0.0	397.7
General Government	\$298.1	\$45.4	\$54.9	\$23.0	\$1.8	\$2.8	\$426.0
Public Buildings	292.0	41.9	48.2	23.0	1.3	2.8	409.2
Other Facilities	4.6	0.0	6.7	0.0	0.0	0.0	11.4
Property Acquisition	1.4	3.5	0.0	0.0	0.5	0.0	5.4
Grand Total	\$9,510.4	\$4,564.5	\$12,886.9	\$325.9	\$293.0	\$728.9	\$28,309.7

*These figures include the needs of the state's special schools.

²⁰ Descriptions of the project types are included in the Glossary of Terms at the end of the report.

²¹ K-12 (kindergarten through 12th grade) education includes public elementary and secondary schools. Non K-12 projects include facilities for post-secondary programs, pre-school programs, etc., as described in the Glossary of Terms at the end of the report.

Table 8. Needed Infrastructure Improvements by Project Type and Stage of Development ²²
Five-year Period July 2004 through June 2009

Category and Project Type ²³	Conceptual			Planning & Design			Construction		
	Number	Cost [in millions]	%	Number	Cost [in millions]	%	Number	Cost [in millions]	%
Transportation and Utilities	794	\$4,475.4	30.7%	1202	\$7,259.9	49.8%	667	\$2,835.6	19.5%
Transportation	771	4,405.8	32.2%	1178	6,881.8	50.4%	634	2,377.2	17.4%
Other Utilities	21	47.6	8.5%	18	61.6	11.0%	31	448.9	80.4%
Navigation	1	4.0	1.3%	3	314.4	98.7%	0	0.0	0.0%
Telecommunications	1	18.0	60.5%	3	2.2	7.3%	2	9.6	32.2%
Education	345	\$2,784.3	77.8%	64	\$383.6	10.7%	58	\$410.2	11.5%
K-12 New School Construction ²⁴	65	941.8	62.9%	16	198.4	13.2%	34	357.0	23.8%
Non K-12 Education	256	1,822.0	88.8%	43	179.2	8.7%	21	51.6	2.5%
School System-wide Need *	24	20.5	72.8%	5	6.1	21.7%	3	1.6	5.5%
Health, Safety and Welfare	1017	\$2,090.2	40.2%	753	\$1,445.2	27.8%	579	\$1,662.6	32.0%
Water and Wastewater	596	1,064.5	33.3%	529	865.5	27.1%	444	1,269.0	39.7%
Law Enforcement	180	563.8	54.2%	49	316.4	30.4%	36	159.7	15.4%
Stormwater	37	104.2	40.3%	48	72.9	28.2%	35	81.4	31.5%
Solid Waste	18	18.6	26.9%	26	23.8	34.4%	15	26.7	38.7%
Fire Protection	95	69.7	39.6%	63	56.5	32.1%	21	49.7	28.2%
Public Health Facilities	88	266.4	75.0%	23	70.0	19.7%	21	18.7	5.3%
Housing	3	2.9	2.9%	15	40.2	40.0%	7	57.3	57.1%
Recreation and Culture	480	\$860.5	46.9%	325	\$418.3	22.8%	282	\$556.1	30.3%
Recreation	375	557.5	46.8%	237	296.3	24.9%	230	337.8	28.3%
Libraries, Museums, & Historic Sites	51	160.2	62.4%	40	68.8	26.8%	22	27.9	10.9%
Community Development	54	142.8	37.0%	48	53.2	13.8%	30	190.4	49.3%
Economic Development	90	\$185.2	27.7%	71	\$127.5	19.1%	45	\$355.8	53.2%
Industrial Sites and Parks	75	125.6	46.4%	57	80.9	29.9%	35	64.3	23.7%
Business District Development	15	59.6	15.0%	14	46.5	11.7%	10	291.6	73.3%
General Government	134	\$185.9	43.6%	67	\$86.8	20.4%	45	\$153.3	36.0%
Public Buildings	127	182.4	44.6%	61	79.5	19.4%	44	147.3	36.0%
Other Facilities	5	0.8	7.4%	1	4.5	39.8%	1	6.0	52.7%
Property Acquisition	2	2.6	48.3%	5	2.8	51.7%	0	0.0	0.0%
Grand Total	2,860	\$10,581.4	40.3%	2,482	\$9,721.3	37.0%	1,676	\$5,973.6	22.7%

*These figures include the needs of the state's special schools.

²² For complete listings of costs by project type, stage of development, and county, see Appendix D.

²³ Descriptions of the project types are included in the Glossary of Terms at the end of the report. This table does not include existing public schools.

²⁴ K-12 (kindergarten through 12th grade) education includes public elementary and secondary schools. Non K-12 projects include facilities for post-secondary programs, pre-school programs, etc., as described in the Glossary of Terms at the end of the report.

projects, but even when only new elementary and secondary schools are considered, nearly two-thirds are in the conceptual stage. Information about improvement needs at existing schools is not included in this analysis because there are numerous small projects in varying stages of development reported for existing schools, making it impossible to identify a single stage for each school.

Infrastructure needs reported by state agencies other than the Department of Transportation are far less likely to be in the planning and design or construction stages than local needs are. Higher education comprises the lion's share of state-level needs, and with 89% of those in the conceptual stage, 88% of all state-level needs are in the conceptual stage. Even so, because non-transportation state-level needs are so small in comparison to local and transportation needs, Figure 4 would change very little if they were removed.

Projects Included in Capital Improvements Programs Are Far More Likely to be Under Construction Than Projects That Are Not in Those Planning Documents.

Excluding improvements needed at existing schools and state facilities, about 49% of the infrastructure needs reported for July 2004 through June 2009 were part of some governmental entity's official capital improvements program (CIP). That figure is a bit low this year because some of the transportation needs newly provided by state officials were not compared to CIPs to see whether they were listed there.

Inclusion in a CIP indicates a high probability that a project will proceed to construction. CIPs are planning documents and so are unlikely to include needs that cannot be funded and completed during the period covered by the CIP. Not surprisingly, needs included in CIPs are more likely to be under construction than needs that are not included in CIPs. Needs not in CIPs are more likely to be conceptual. About 33% of project costs in a CIP were in the construction phase, compared with only about 14% of the projects not in a CIP (see Figure 2). This pattern is consistent across all six TACIR reports. A look at the dollar amounts involved makes the point even more starkly: \$4.1 billion of needs included in CIPs are in the construction stage whereas \$1.8 billion of needs not included in CIPs are in the construction stage, a difference of more than \$2 billion.

The infrastructure needs most and least likely to be included in a CIP are shown in Table 9. The percentage of estimated cost included in CIPs varied from a low of 19% for industrial sites and parks to a high of 99% for navigation and telecommunication needs. Navigation projects and telecommunications projects are not as routine as some other types of projects, so they are almost always included in a CIP. Given that

"Using a CIP to make annual expenditures for public improvements is one of the best ways to implement a comprehensive plan."

Capital Improvements Programs: Linking Budgeting and Planning, American Planning Association

inclusion in a CIP is an indication of whether a project can and will be funded, types of needs with higher percentages of costs included in CIPs are more likely to have projects make it to the construction phase.

Table 9. Percent of Estimated Cost of Infrastructure Needs Included²⁵ in Capital Improvements Programs (CIPs) Five-year Period July 2004 through June 2009

Type of Project	Estimated Cost Included In CIPs	Percent of Cost Included In CIPs
Navigation	\$314,400,000	99%
Telecommunications	29,390,000	99%
Other Utilities	533,440,592	96%
Stormwater	226,264,183	88%
Business District Development	339,219,000	85%
Housing	84,653,000	84%
Law Enforcement	818,509,748	79%
Libraries, Museums, & Historic Sites	200,620,208	78%
Public Health Facilities	273,342,360	77%
Non K-12 Education	1,571,340,352	77%
Fire Protection	131,818,148	75%
Solid Waste	51,753,707	75%
Public Buildings	296,511,976	72%
Community Development	263,925,183	68%
Recreation	804,502,207	68%
Water and Wastewater	1,885,770,829	59%
Other Facilities	5,375,697	47%
K-12 New School Construction	566,933,969	38%
School System-wide Need	10,516,000	37%
Transportation	4,359,040,638	32%
Property Acquisition	1,420,000	26%
Industrial Sites and Parks	50,755,000	19%
Grand Total	\$12,819,502,797	49%

State and Federal Mandates Affect Less Than 5% of All Projects and Account For Only 3.8% of Elementary and Secondary School Needs.

While TACIR does not ask local or state officials to split out the marginal cost of state and federal mandates—except for needs at existing schools—TACIR does ask how many projects are affected by them. Local officials often do not have the information necessary to split out marginal costs. It is impossible to determine from the annual inventory how much of the estimated total costs are attributable to state and federal mandates. The overall number of projects affected by mandates such

²⁵ Excludes state facilities and improvements at needed schools.

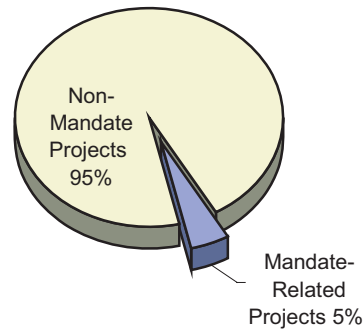
as the federal Americans with Disabilities Act and the state Education Improvement Act is a relatively small portion (4.6%) of the total number of projects in the inventory (see Figure 5).

The number of projects affected by mandates continues to decline. About 15% of projects reported in 2001 were mandate related. The percentage fell to 9% the following year, and the percentage affected by mandates now stands at just under 5%. Collectively, schools account for 78% of the total number of projects affected by facilities mandates and were far more likely to be associated with mandates than any other type of project.²⁶

As shown in Table 10, public school projects are far more likely than other types of projects to be affected by mandates; non K-12 education needs are the next most likely to be affected by mandates, followed by public health.

TACIR staff estimate that 3.8% of all improvement costs reported for schools were the result of a state or federal mandate,²⁷ with 51% of that cost attributable to the Education Improvement Act of 1992 (see Table 11).²⁸ That act required a substantial reduction in class sizes throughout all grades in Tennessee public schools by the fall of 2001.²⁹ All schools met this requirement, but many continue to need facilities improvements to house the additional teachers and classes.

**Figure 5. Percent of Infrastructure Projects Involving Mandates
Five-year Period July 2004
through June 2009**



²⁶ Projects reported for existing schools were aggregated so that each school is counted only once in this percentage figure.

²⁷ Projects reported for existing schools were aggregated so that each school is counted only once in this percentage figure.

²⁸ Chapter 535, Public Acts of 1992.

²⁹ Tennessee Code Annotated, § 49-3-353.

Table 10. Percent of Projects Reported to Involve Facilities Mandates by Type of Project
Five-year Period July 2004 through June 2009

Type of Project	Number of Projects or Schools Reported	Projects or Schools Affected by Mandates	
		Number	Percent
Existing School Improvements	1,223	288	23.5%
School System-wide Need*	32	3	9.4%
Non K-12 Education	320	29	9.1%
Public Health Facilities	132	9	6.8%
K-12 New School Construction	115	4	3.5%
Solid Waste	59	2	3.4%
Stormwater	120	3	2.5%
Public Buildings	232	4	1.7%
Water and Wastewater	1,569	24	1.5%
Recreation	842	8	1.0%
Law Enforcement	265	1	0.4%
Transportation	2,583	5	0.2%
Other Utilities	70	0	0.0%
Business District Development	39	0	0.0%
Fire Protection	179	0	0.0%
Libraries, Museums, & Historic Sites	113	0	0.0%
Community Development	132	0	0.0%
Industrial Sites and Parks	167	0	0.0%
Telecommunications	6	0	0.0%
Housing	25	0	0.0%
Other Facilities	7	0	0.0%
Property Acquisition	7	0	0.0%
Navigation	4	0	0.0%
Grand Total	8,241	380	4.6%

*These figures include the needs of the state's special schools.

Table 11. Estimated Cost of Facilities Mandates Reported for Local Public Schools
Five-year Period July 2004 through June 2009

Type of Need	Estimated Cost [in millions]	Percent of Total
State & Federal Mandates	\$ 137.1	3.8%
EIA Costs at New and Existing Schools	69.2	1.9%
Other State Mandates	34.4	1.0%
Federal Mandates	33.4	0.9%
Non-mandated Needs	\$ 3,446.0	96.2%
Statewide Total	\$ 3,583.0	100.0%