Building Tennessee's Tomorrow:

Anticipating the State's Infrastructure Needs

July 2012 through June 2017

FUNDING THE STATE'S INFRASTRUCTURE NEEDS

Nearly two-thirds of the funding needed for infrastructure in the current inventory is not yet available.

Only 38% of the funds needed to pay for public infrastructure are currently available. The inventory does not include information about whether funding is available for the estimated \$8 billion worth of improvements at existing schools or for those drawn from the capital budget requests submitted by state agencies. Excluding the cost of that infrastructure from the \$38.8 billion total reported for the period covered by the report leaves \$31 billion in needs. Of that \$31 billion, only \$11.3 billion worth of infrastructure needs are fully funded. No funding is available for \$19.3 billion of that amount, but \$362 million is available for the \$4.4 billion worth of improvements that are partially funded. See tables 12 and 13.

Table 12. Summary of Funding Availability* Five-year Period July 2012 through June 2017

	Available [in Need			nding ded [in llions]	Total Needs [in billions]	
Fully Funded Needs	\$	11.3	\$	0	\$	11.3
Partially Funded Needs		0.4		4.0		4.4
Unfunded Needs		0		15.3		15.3
Total	\$	11.6	\$	19.3	\$	30.9

*Excludes infrastructure improvements for which funding availability is not known. Note: Totals may not equal 100% because of rounding.

Last year's report was the first to include information about funding for completed projects and why they were needed. This year's report builds on that analysis, adding another year of information, providing a full five years of information about Local officials report that \$11.6 billion is available to fund public infrastructure; of that amount \$11.3 billion is for infrastructure that is fully funded.

infrastructure improvement needs first reported in the 2007 inventory.

The government that owns infrastructure typically funds the bulk of its cost. For example, local officials report that 86% of the funding for county-owned projects will come from county sources. The same is true of improvements reported in the 2007 inventory that have since been completed—counties paid 88% of the cost of meeting their infrastructure needs. Likewise, cities provided 68% of the funds necessary for improvements they needed in 2007 and have completed since then, and they also expect to provide 70% of the funds for current and future improvements. Special districts paid 82% of the cost of meeting their 2007 infrastructure needs and expect to fund 51% of their current and future costs.

Table 13. Percent of Needs Fully Funded by Type of Need Five-year Period July 2012 through June 2017

Category and Project Type	otal Needs n millions]	N	Fully Funded leeds [in millions]	Percent of Total Needs
Transportation and Utilities	\$ 21,684.4	\$	7,542.5	34.8%
Transportation	21,467.8		7,480.9	34.8%
Other Utilities	204.2		60.9	29.8%
Telecommunications	12.5		0.7	5.6%
Health, Safety, and Welfare	\$ 4,703.6	\$	1,893.0	40.2%
Water and Wastewater	3,859.3		1,639.9	42.5%
Law Enforcement	437.9		100.1	22.9%
Fire Protection	173.4		34.1	19.7%
Storm Water	152.2		83.2	54.7%
Solid Waste	36.2		9.2	25.4%
Public Health Facilities	30.7		12.5	40.9%
Housing	14.0		14.0	100.0%
Education	\$ 1,542.3	\$	319.9	20.7%
New Public Schools	1,517.7		309.5	20.4%
School System-wide	14.9		10.2	68.3%
Post-secondary Education and Preschools	9.7		0.2	2.3%
Recreation and Culture	\$ 1,363.7	\$	425.2	31.2%
Recreation	792.1		267.4	33.8%
Community Development	403.4		118.0	29.2%
Libraries, Museums, and Historic Sites	168.2		39.8	23.7%
Economic Development	\$ 1,256.1	\$	975.7	77.7%
Business District Development	981.8		928.3	94.6%
Industrial Sites and Parks	274.3		47.3	17.3%
General Government	\$ 356.4	\$	121.0	34.0%
Public Buildings	255.0		93.1	36.5%
Other Facilities	101.4		28.0	27.6%
Grand Total	\$ 30,906.5	\$	11,277.3	36.5%

Infrastructure is built for many reasons: enhancing communities, accommodating population growth, improving public health and safety, supporting economic development, and meeting government mandates. Around two-thirds (65%) of unmet infrastructure needs in this inventory would improve public health and safety, 30% would accommodate population

growth, and 21% would enhance communities (see figure 7). These percentages add to more than 100% because there may be more than one reason for any particular project. percentages are comparable to those for projects completed since 2007: public health and safety (70%), population growth (28%), community enhancement (19%) (see figure 8).

In some cases, government mandates ensure that necessary infrastructure is funded and completed. As noted in the first chapter, few projects are affected by

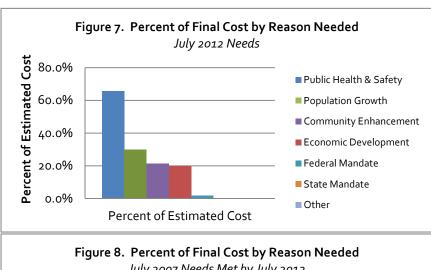


Figure 8. Percent of Final Cost by Reason Needed

July 2007 Needs Met by July 2012

80.0%
60.0%
60.0%
40.0%
20.0%
20.0%
Percent of Estimated Cost

Percent of Final Cost by Reason Needed

July 2007 Needs Met by July 2012

Public Health & Safety

Population Growth

Community Enhancement

State Mandate

Federal Mandate

Other

mandates, but one type of infrastructure—public school buildings—is needed to meet Tennessee's constitutional requirement to provide a system of free public schools to all students.¹ That mandate places a requirement on the state to fund schools, which it does through the Basic Education Program (BEP) formula. The formula includes money for capital outlay—an amount that tops \$700 million this year, of which the state pays around half. Although the state makes a substantial contribution to funding public schools, they are owned by local governments.

Table 14. Percent of July 2007 Needs Completed by Type of Need Completed between July 2007 and July 2012

Category and Project Type	July 2007 Inventory	Total Completions	Completion Rate	Percent of Total
Transportation and Utilities	\$ 17,414,430,630	\$ 3,786,123,477	21.7%	51.6%
Transportation	16,818,744,164	3,345,811,874	19.9%	45.6%

¹Article 11, Section 12 of the Tennessee State Constitution, recognizing the inherent value of education and encouraging its support, directs the General Assembly to provide for the maintenance, support, and eligibility standards of a system of free public schools.

Other Utilities	578,277,566	429,952,703	74.4%	5.9%
Telecommunications	17,408,900	10,358,900	59.5%	0.1%
Health, Safety, and Welfare	\$ 5,155,221,465	\$ 1,889,926,328	36.7%	25.8%
Water and Wastewater	3,759,747,476	1,269,753,134	33.8%	17.3%
Law Enforcement	739,903,580	388,567,033	52.5%	5.3%
Storm Water	264,425,356	60,455,204	22.9%	0.8%
Solid Waste	52,934,000	21,312,000	40.3%	0.3%
Fire Protection	209,019,045	60,042,949	28.7%	0.8%
Public Health Facilities	57,403,268	42,196,268	73.5%	0.6%
Housing	71,788,740	47,599,740	66.3%	0.6%
Education	\$ 1,862,839,839	\$ 943,066,318	50.6%	12.8%
New Public Schools	1,783,181,339	912,840,318	51.2%	12.4%
Post-secondary Education and Preschools	35,546,500	12,044,000	33.9%	0.2%
School System-wide	44,112,000	18,182,000	41.2%	0.2%
Recreation and Culture	\$ 1,484,320,256	\$ 398,530,597	26.8%	5.4%
Recreation	905,349,132	295,516,418	32.6%	4.0%
Libraries, Museums, and Historic Sites	157,702,719	61,027,657	38.7%	0.8%
Community Development	421,268,405	41,986,522	10.0%	0.6%
Economic Development	\$ 566,293,020	\$ 125,606,900	22.2%	1.7%
Business District Development	343,616,020	62,207,900	18.1%	0.8%
Industrial Sites and Parks	222,677,000	63,399,000	28.5%	0.9%
General Government	\$ 500,329,874	\$ 202,658,036	40.5%	2.8%
Public Buildings	460,387,874	180,088,036	39.1%	2.5%
Other Facilities	39,942,000	22,570,000	56.5%	0.3%
Grand Total	\$ 26,983,435,084	\$ 7,345,911,656	27.2%	100%

Reasons, ownership, and funding sources vary by type of infrastructure.

Population growth is given as a reason for nearly all (98%) new and fully funded public school infrastructure reported in the 2012 inventory and for 83% of new school infrastructure completed between 2008 and 2012. Half (51%) of the new public school infrastructure needs reported in 2007 have been met (see table 14). Schools completed between 2008 and 2012 were mainly funded by counties, which own 85.7% of this new public school infrastructure. Cities are the second largest owners of new public schools at 11.0%, and special school districts are third at 3.4%. Currently, local officials report that \$1.5 billion is needed for new public school infrastructure, of which \$309.5 million is fully funded. Although the state provides considerable funding for school capital outlay, it does not earmark those funds for that specific purpose. School systems have the flexibility to use those funds to meet various school needs and generally report using them for operating costs.

Public health and safety is the main reason given for transportation infrastructure, accounting for 71% of improvements in the 2012 inventory and 78% of improvements made since 2007 (see tables 15 and 16). Consequently, several dedicated funding mechanisms, including the

federal and state fuel taxes and local wheel taxes, help ensure that transportation infrastructure needs are met. In recent years, federal fuel tax revenue has been insufficient to pay Highway Trust Fund commitments to states. Congress has transferred money into the federal Highway Trust Fund seven years to avoid reducing funding to all states, but the resulting uncertainty in funding makes it difficult for states to plan. If federal funds were reduced, the Tennessee Department of Transportation (TDOT) would likely abandon some new construction in favor of maintenance.

Transportation accounts for 69% (\$21 billion) of all infrastructure costs for which funding information is available and 66% of the improvements that are fully funded and 46% of the cost of total completions. The majority of transportation infrastructure needs completed since the 2007 inventory were state owned (73%); 68% of the funding for those improvements was state revenue, and 28% was federal revenue. Local governments owned the remainder of the projects. Cities own 15% of the transportation infrastructure completed since 2007 and funded about half (52%); most of the rest of the funding came from state (15%) and federal (30%) sources. Counties own 11% of the transportation infrastructure completed since 2007 and funded about (53%); most of the rest of the funding came from state (14%) and federal sources (32%).

Water and wastewater infrastructure is needed to ensure clean drinking water and protect water supply sources. Consequently, public health and safety was the main reason given for 88% of the estimated cost of improvements reported in the 2012 inventory, as well as 87% of improvements completed between 2008 and 2012. The utilities that provide these services are required to be self-sustaining, funded mainly by user fees rather than through taxes, so that the amount each customer pays is in proportion to the amount that customer uses. Water and wastewater projects made up 17% (\$1.3 billion) of the total dollars needed for all 2007 projects completed since then and had a completion rate of 34%. Half of the water and wastewater infrastructure improvements completed since 2007 belong to cities, which paid for 73% of the cost of their improvements, and 17% of the improvements are owned by counties, which paid 91% of their costs. The remaining 28% is owned by utility districts, which paid 80% of the cost of their infrastructure improvements. Although they don't own any of this infrastructure, the state and federal governments contributed 19% of the funding necessary to complete it.

Storm water infrastructure is also necessary to protect our drinking water, as well as to control flooding, and the reason given most often for needing it is public health and safety (94%). Although the need for it grows as the amount of land covered by impervious surfaces (e.g., buildings, roads and streets, and parking lots) increases, population growth is rarely mentioned as a reason for needing it (0.5% of all storm water improvements in the current inventory and 3.6% of the 2007 improvements that have been completed). Counties provide some storm water infrastructure, but 90% of the fully funded improvements in the current inventory are owned by cities, and 93% of the cost is paid by cities. A total of \$152 million is needed for storm water infrastructure in the current inventory, of which \$83 million is available. Only 23% (\$60 million) of the storm water improvements needed in 2007 have been completed. Storm

water infrastructure is primarily funded with general tax revenue and, to a lesser extent, with user fees.

Public health and safety was the reason given for 31% of other utility infrastructure—infrastructure owned by public gas and electric utilities—in the current inventory, but for 95% of the improvements completed since 2007. In contrast, population growth and community enhancement were more often given as reasons for other utility infrastructure needs in the current inventory (38% and 49%) than for those needs completed since 2007 (4% and 0.7%). Economic development is given as a reason for 20% of the improvements in the current inventory but only 1% of the improvements completed since 2007. Of the \$578 million worth of other utility infrastructure needs reported in 2007, 74% has been completed. A single project in Nashville, owned by the metropolitan government, accounts for more than two-thirds of the 2007 total and 94% of the cost of improvements completed since then. All of the county costs, including those, were paid for by the counties themselves, mainly from user fees. Cities own just 5% of other utility infrastructure and paid 97% of the cost of their own.

Public health and safety is the main reason given for all fire protection infrastructure, but population growth is also given as a reason for 25% of it. Although community enhancement is given as a reason for only 6% of the fire protection improvements in the current inventory, it is given as a reason for nearly 19% of improvements completed since 2007. Local officials report that \$173 million is needed for the fire protection infrastructure in the current inventory and that around one-fifth of that cost (\$34 million) is funded. Only 29% (\$60 million) of the fire protection infrastructure needed in 2007 has been completed. Almost two-thirds (62%) of fire protection infrastructure improvements completed since 2007 belong to cities, which paid 91% of the cost of their improvements, and 38% of the improvements are owned by counties, which paid 96% of their costs.

As with fire protection, public health and safety is the main reason given for all law enforcement infrastructure. Population growth is also given as a reason for 24% of law enforcement infrastructure. Community enhancement is given as a reason for 30% of the law enforcement improvements in the current inventory and about 14% of improvements completed since 2007. Local officials report that \$438 million is needed for the law enforcement infrastructure improvements in the current inventory and that \$100 million of this cost is funded. Approximately 53% (\$389 million) of the law enforcement infrastructure needed in 2007 has been completed. Counties own 86% of the law enforcement infrastructure improvements made since 2007 and paid nearly all (99%) the cost of that infrastructure; 14% is owned by cities, which paid nearly 100% of their costs. Like fire protection infrastructure, law enforcement infrastructure is funded with general tax revenue.

Public buildings, including mainly county courthouses, county offices, city halls, and public works offices, serve a variety of purposes and are needed for many reasons. The public building improvements in the current inventory are needed largely for community enhancement (58%) and public health and safety (39%) but also for population growth (37%).

A very small percentage (9%) is needed for economic development. Improvements that have been completed since 2007 were needed mainly for public health and safety (55%) but also for community enhancement (28%) and economic development (27%), and to a lesser extent for population growth (19%). About \$255 million is needed for public building infrastructure in the current inventory, and \$93 million of this cost is funded, mostly with general tax revenue. More than one-third (\$180 million) of the public building improvements needed in 2007 have been completed. Approximately 61% of those belong to counties, which paid nearly their entire cost (97%), and 37% of them are owned by cities, which paid 91% of their cost.

Community enhancement is the reason given most often (95%) for business district development infrastructure in the current inventory, but only for 35% of the improvements completed since 2007. Not surprisingly, economic development is often the reason for needing this type of infrastructure (82% in the current inventory and 66% for those improvements completed since 2007). While population growth is listed as a reason for only 1% of the business district improvements in the current inventory, it is listed as a reason for over half (56%) of those completed since 2007. Of the \$982 million needed for business district infrastructure in the current inventory, 95% (\$928 million) is funded, and nearly all of it belongs to counties. Most of this is for the new convention center and the adjacent art district redevelopment area in Nashville, which together cost an estimated \$854 million and are included as county infrastructure because they are owned by a metropolitan government. About one-fifth (\$62 million) of the business district infrastructure needed in 2007 has been completed. Nearly all (95%) of the \$62 million worth of business district infrastructure improvements completed since 2007 belong to counties, which paid 63% of the cost of their improvements. Three-quarters of this belongs to Metropolitan Nashville and Davidson County. Most of the remainder of county costs (33%) was funded by the federal government.

Economic development is the main reason for nearly all industrial site and park infrastructure (95% of improvements in the current inventory and 99% of those completed). Community enhancement and population growth are reasons given for 22% and 16% of industrial sites and parks in the current inventory. Community enhancement was given as a reason for only 5% of industrial site and park improvements completed since 2007; population growth was not given as a reason for any of this new infrastructure. These projects can be complex with multiple components, such as roads, rail spurs, ports, and utilities that are classified as other types of infrastructure (e.g., transportation and water and wastewater) and have different funding sources. Rail spurs and ports are typically funded with state or federal grants; utilities are typically funded with user fees. Only 17% (\$47 million) of the \$274 million needed for industrial site and park infrastructure in the current inventory is fully funded. Slightly over 28% (\$63) million) of the industrial site and park improvements needed in 2007 have been completed. Approximately 66% of industrial site and park improvements completed since 2007 belong to counties, which paid 53% of the cost of their improvements. Federal and state sources, such as the state departments of transportation and of economic and community development, paid 44% of the cost of counties' improvements. About 23% of the improvements are owned by cities, which paid 54% of their costs. The state paid about a quarter of the cost of these, and special districts paid 15% of their costs, mainly for water or wastewater infrastructure.

Community enhancement is the reason given for nearly all (93%) new recreation infrastructure in the current inventory and nearly all (94%) improvements completed since 2007. About 34% (\$267 million) of the \$792 million worth of recreation infrastructure is fully funded, mainly by general tax revenue. About 33% (\$296 million) of the recreation improvements needed in 2007 have been completed. When looking at the 2007 completions, 57% were owned by cities and 36% were owned by counties. Cities paid 62% of their costs and counties paid 72% of theirs. The rest of the funding came from state and federal agencies, with federal agencies paying 20% of the cost of city-owned improvements and 18% of the cost of county-owned improvements. The state paid the other 13% for cities and 2% for counties.

The current inventory includes only one housing project; two were completed in 2012. Community enhancement is given as a reason for all three of these projects, and economic development is given for the one in Memphis, which is the only housing need in the current inventory. Community enhancement was the main reason for nearly all (99%) of the housing improvements made since 2007. Population growth, public health and safety, and economic development were reasons for 24%, 23%, and 22% of those improvements. Of the \$72 million in housing improvement needs reported in 2007, 66% has been completed. Cities own 62% of this housing and paid 47% of the cost; federal and private grants shared the rest of the cost about equally. The federal government paid nearly all (99%) of the cost of county-owned housing improvements, which accounted for the remaining 38% of this public infrastructure.

Table 15. Reason Given for Needing Infrastructure Improvements in the Current Inventory
Five-year Period July 2012 through June 2017

		Reason for Infrastructure Need						
Category and Type of Infrastructure	July 2012 Estimated Cost	Public Health and Safety	Population Growth	Community Enhancement	Economic Development	Federal and State Mandates	Other Reasons	
Transportation and Utilities	\$ 21,684,439,662	71.0%	28.1%	12.7%	20.2%	1.8%	0.0%	
Transportation	21,467,753,953	71.3%	28.1%	12.4%	20.2%	1.8%	0.0%	
Other Utilities	204,185,709	30.7%	38.4%	48.8%	20.0%	0.0%	0.0%	
Telecommunications	12,500,000	60.0%	0.0%	5.6%	40.0%	0.0%	0.0%	
Health, Safety, and Welfare	\$ 4,703,633,950	89.6%	27.9%	25.1%	9.7%	2.7%	0.5%	
Water and Wastewater	3,859,293,821	88.0%	29.8%	25.3%	10.9%	3.1%	0.5%	
Law Enforcement	437,932,084	100.0%	23.9%	29.7%	0.2%	0.0%	0.0%	
Storm Water	152,180,113	94.2%	0.5%	24.1%	13.1%	0.8%	0.0%	
Solid Waste	36,172,000	86.2%	35.8%	19.5%	4.2%	14.1%	11.1%	
Fire Protection	173,385,132	100.0%	24.7%	6.1%	0.9%	1.0%	0.0%	
Public Health Facilities	30,670,800	100.0%	2.8%	28.7%	3.3%	0.0%	0.8%	
Housing	14,000,000	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	
Education	\$ 1,542,254,760	4.5%	96.6%	4.1%	3.6%	0.0%	2.1%	
New Public Schools	1,517,678,760	4.2%	98.0%	3.5%	3.1%	0.0%	2.1%	
Post-secondary Education and Preschools	9,705,000	0.0%	15.5%	7.3%	82.2%	0.0%	0.0%	
School System-wide	14,871,000	40.0%	6.3%	61.2%	0.0%	0.0%	0.0%	
Recreation and Culture	\$ 1,363,707,369	14.6%	9.6%	93.7%	16.7%	2.2%	0.0%	
Recreation	792,095,541	22.0%	9.8%	93.0%	5.3%	2.3%	0.0%	
Libraries, Museums, and Historic Sites	168,213,494	3.2%	11.7%	93.4%	14.3%	7.1%	0.1%	
Community Development	403,398,334	4.6%	8.5%	95.1%	40.2%	0.0%	0.0%	
Economic Development	\$ 1,256,075,051	0.9%	4.1%	79.1%	85.0%	1.4%	0.0%	
Business District Development	981,788,620	0.1%	0.9%	95.1%	82.3%	0.0%	0.0%	
Industrial Sites and Parks	274,286,431	3.7%	15.9%	22.1%	94.6%	6.5%	0.0%	
General Government	\$ 356,371,756	32.8%	31.5%	62.3%	10.1%	11.9%	0.0%	
Public Buildings	254,983,202	39.1%	36.7%	57.6%	9.1%	16.6%	0.0%	
Other Facilities	101,388,554	16.9%	18.6%	74.4%	12.5%	0.1%	0.0%	
Grand Total	\$ 30,906,482,548	64.7%	29.8%	21.0%	20.2%	2.0%	0.1%	

Table 16. Reason Given for Needing Infrastructure Improvements Completed Since 2007
Infrastructure Needs Reported July 1, 2007, and Completed by July 1, 2012

	-		Reason for Infrastructure Need					
Category and Type of Infrastructure		uly 2007 Needs mpleted by July 2012	Public Health and Safety	Population Growth	Community Enhancement	Economic Development	Federal and State Mandates	Other Reasons
Transportation and	\$	3,786,123,477	79.8%	15.9%	14.3%	12.1%	0.2%	0.0%
Utilities								
Transportation		3,345,811,874	77.9%	17.5%	16.1%	13.4%	0.2%	0.0%
Other Utilities		429,952,703	95.5%	3.8%	0.7%	1.4%	0.0%	0.0%
Telecommunications		10,358,900	68.1%	0.0%	0.0%	31.9%	0.0%	0.0%
Health, Safety, and Welfare	\$	1,889,926,328	88.9%	28.2%	15.0%	5.9%	3.6%	0.2%
Water and Wastewater		1,269,753,134	87.1%	31.1%	12.7%	7.7%	3.3%	0.1%
Law Enforcement		388,567,033	100.0%	27.5%	14.0%	0.0%	6.2%	0.0%
Storm Water		60,455,204	98.3%	3.6%	5.1%	3.3%	0.4%	3.3%
Solid Waste		21,312,000	65.8%	14.2%	26.6%	4.2%	0.0%	0.0%
Fire Protection		60,042,949	100.0%	25.6%	18.9%	0.7%	3.5%	0.0%
Public Health Facilities		42,196,268	100.0%	0.8%	0.0%	0.0%	0.0%	0.0%
Housing		47,599,740	23.3%	24.4%	98.9%	22.3%	0.0%	0.0%
Education	\$	943,066,318	9.0%	82.6%	26.4%	2.1%	6.5%	0.8%
New Public Schools		912,840,318	8.0%	83.5%	26.2%	1.9%	6.7%	0.8%
Post-secondary Education and Preschools		12,044,000	34.9%	45.1%	31.6%	23.2%	0.0%	0.0%
School System-wide		18,182,000	37.9%	63.5%	33.7%	0.0%	1.6%	2.2%
Recreation and Culture	\$	398,530,597	12.8%	9.8%	93.1%	6.8%	0.5%	0.0%
Recreation		295,516,418	15.9%	9.8%	93.6%	3.7%	0.6%	0.0%
Libraries, Museums, and Historic Sites		61,027,657	0.2%	16.5%	89.6%	5.7%	0.0%	0.0%
Community Development		41,986,522	9.5%	0.5%	94.4%	30.7%	0.0%	0.0%
Economic Development	\$	125,606,900	2.3%	27.9%	19.9%	82.3%	0.0%	0.0%
Business District Development		62,207,900	0.0%	56.3%	35.5%	65.6%	0.0%	0.0%
Industrial Sites and Parks		63,399,000	4.5%	0.0%	4.7%	98.7%	0.0%	0.0%
General Government	\$	202,658,036	52.2%	24.7%	25.7%	23.6%	6.3%	0.0%
Public Buildings		180,088,036	54.7%	19.3%	28.5%	26.6%	7.1%	0.0%
Other Facilities		22,570,000	31.9%	67.7%	3.7%	0.0%	0.0%	0.0%
Grand Total	\$	7,345,911,656	67.4%	27.7%	20.7%	10.5%	2.0%	0.2%