

2016

# STATE OF OUR SCHOOLS



## America's K-12 Facilities

## Data Sources and Methods

To complete the analysis contained in this report, the authors used a data- and standards-based framework to analyze 20 years of publicly available national and state data on public facilities spending for fiscal years 1994 through 2013.<sup>1</sup> We used the data reported by U.S. K-12 school districts on the U.S. Census of Governments F-33 Fiscal Surveys and published by the National Center for Education Statistics (NCES) as our primary data source. These data include local school district enrollments and annual revenues and expenditures, including those for capital outlay and for maintenance and operations of plant. A compilation of selected key data is provided in the profile for each state (available at [stateofourschools.org](http://stateofourschools.org)) and in Appendix A. Additional data used in this analysis are available at [stateofourschools.org/data](http://stateofourschools.org/data). Note that, due to rounding, some figures cited in the report and profiles may vary slightly from the data cited in the appendices and posted online.

To check the accuracy of this district-level data, we compared them to capital outlay data reported by the states on the U.S. Census of Governments F-13 Fiscal Surveys of State and Local Governments. To further validate that both of these data sets were accurate, we compared the school construction capital outlay on the F-33 to the total statewide construction contract start costs collected and reported by state and year by Dodge Data & Analytics (formerly McGraw-Hill Construction).

The comparison of the state data sets indicate that the capital construction investment data in 18 states may be underreported by school districts on their F-33 surveys either for reasons of classification of the types of capital outlay, or because districts were not reporting spending on their facilities when it was provided by independent state agencies. We provide our comparison data in Appendix B and note these states in the tables, as well in the online profiles. We also adjusted the state share of capital outlay provided to districts based on input from state officials, as documented in Appendix C.

The state-by-state analysis and profiles incorporate the unique history of facilities spending and investment in each state, as well as other factors that vary by state: enrollment projections, the cost of construction, and the amount of school district space in the state. The National Council on School Facilities (NCSF) surveyed states on building and site inventory sizes and the cost of new construction. State offices that oversee and/or report on school facilities in each state were given the opportunity to review the data and offer input and corrections through NCSF; many directors provided valuable insight to both the national picture and the state profiles.

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# Preface

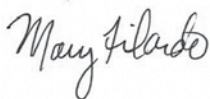
In 1995 the U.S. Government Accounting Office published *School Facilities: Condition of America's Schools* — the last truly comprehensive federal review of our nation's school infrastructure. The report found that half of all schools had problems linked to indoor air quality and an unacceptable 15,000 schools were circulating air deemed unfit to breathe. In the 20 years since the release of this report, states and districts have invested nearly \$2 trillion in school infrastructure, but the critical question remains: where do we stand today on our commitment to provide all students a quality education in a healthy and safe environment? At its heart, school facility quality is a matter of equity, and responsible planning for the future requires that we have better information about the condition of our nation's schools.

School facilities represent the second largest sector of public infrastructure spending, after highways, and yet we have no comprehensive national data source on K-12 public school infrastructure. Even at the state level, school facilities information is often scant. The dearth of official data and standards for our nation's public school infrastructure has left communities and states working largely on their own to plan for and provide high-quality facilities.

These realities inspired our three organizations to assemble the best available state-by-state data and propose a standards-based framework by which we can benchmark the nation's investment. We set out to create a common fact base to understand three critical points:

1. the scale of elementary and secondary public school infrastructure;
2. the significant effort that communities are making to provide safe, healthy, and adequate public school facilities; and
3. the future investment needed to ensure adequate and equitable public school facilities for all students, including those in low-wealth communities.

A 2015 national independent poll commissioned by the U.S. Green Building Council found that 92 percent of Americans believe that the quality of public school buildings should be improved. As a nation, we have the will, but we must find the way. We invite problem-solvers from communities, government, industry and academia to use the framework and data in this report to develop creative solutions for improving our K-12 infrastructure. Together, let us secure new revenue streams and leverage public and private resources to provide the best educational opportunities for our nation's students — all of them.



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# Executive Summary

A large and growing body of evidence demonstrates that school facilities have a direct impact on student learning, student and staff health, and school finances. But too many students attend school facilities that fall short of providing 21st century learning environments because essential maintenance and capital improvements are underfunded. This report compiles and analyzes the best available school district data about U.S. K-12 public school facilities funding into a national and state-level summary. In addition, 50 individual state profiles are available at [stateofourschools.org](http://stateofourschools.org). Together, these documents create a common fact base from which to address three key questions:

1. Do states and districts have adequate operating funds for cleaning, maintenance, and repairs to ensure buildings and grounds are healthy and safe?
2. Are districts and states investing the capital funds necessary to ensure that their public schools are educationally appropriate, energy efficient, and environmentally responsible?
3. Are states and the federal government doing enough to ensure equity in education, so that all students have access to healthy and safe school facilities that support learning?

## K-12 School Facilities Matter

The scale of U.S. public K-12 school facilities is staggering: every school day, nearly 50 million students and 6 million adults are in close to 100,000 buildings, encompassing an estimated 7.5 billion gross square feet and 2 million acres of land. In fact, state and local governments invest more capital in K-12 public school facilities than in any other infrastructure sector outside of highways. Research shows that high-quality facilities help improve student achievement, reduce truancy and suspensions, improve staff satisfaction and retention, and raise property values. They also are integral to ensuring equity in educational offerings and opportunities for students. Even so, no comprehensive information about school building conditions or funding is available at the national level, nor in the majority of states, despite the importance of this infrastructure and the enormous investments made by U.S. taxpayers.

## K-12 Facilities Spending & Investments Averaged \$99 Billion Per Year

School districts worked hard from 1994 through 2013 to operate, maintain, modernize, and meet the enrollment growth of the nation's K-12 public schools. In the span of these 20 years, school facilities changed more rapidly than at any time in recent memory, fueled by improved health and safety standards, stronger accessibility requirements, increased use of technology, and expanded programming within schools. Nationally, states and districts spent a total of \$925 billion in 2014 dollars on *maintenance and operations (M&O)*: daily cleaning, grounds keeping, maintenance, utilities, and security of facilities. This amount equaled an annual average of nearly \$46 billion per year for M&O over these 20 years. From 2011-2013, spending increased to an average of \$50 billion a year.

In addition to M&O spending, states and districts invested \$973 billion in 2014 dollars (an average of \$49 billion per year), from their *capital budgets* for new school construction and capital projects to improve existing schools. Over the past three years (2011-13), the combined spending and investment totaled nearly \$99 billion per year.

## Capital Investment Impacted Communities Inequitably

The structure of K-12 school facilities funding in the U.S. is inherently and persistently inequitable. States and the federal government contribute funds towards school districts' annual operating

costs, paying — on average — 45 percent and 10 percent, respectively. Facilities M&O, as part of the operating budget, benefits from state and federal assistance. However, in making the capital investments needed to build and improve school facilities, local school districts bear the heaviest burden. This is the case despite communities' widely disparate levels of wealth and capacity to finance all that their schools need. While five states pay for nearly all their districts' capital costs, 12 states provide no direct support to districts for capital construction responsibilities. In the remaining 33 states, the levels of state support vary greatly. The federal government contributes almost nothing to capital construction to help alleviate disparities.

## \$145 Billion Per Year Needed for 21st Century Facilities for All Children

Using industry standards adapted to K-12 public school facilities, we estimate that the nation should be spending about \$145 billion per year to maintain, operate, and renew facilities so that they provide healthy and safe 21st century learning environments for all children. Applying a 3 percent of current replacement value (CRV) standard for M&O, districts need to spend \$58 billion annually to maintain and operate the 2014 inventory of public school facilities so they are clean and in good working order. On the capital side, the nation should be spending an estimated \$77 billion per year (4 percent of CRV) to regularly upgrade existing facilities' systems, components, fixtures, equipment, and finishes as they reach the end of their anticipated life expectancy; systematically reduce the backlog of deferred maintenance that has accumulated; and alter existing facilities to respond to changing educational requirements. In addition, projections suggest at least another \$10 billion per year is needed for new construction to accommodate growing enrollments over the coming decade. That brings the total annual facilities requirements to \$145 billion per year.

### The Nation Underinvests in Public School Facilities

		Historic Spending	Modern Standards	Projected Annual Gap
K-12 FACILITIES	Maintenance & Operations	\$50 billion	\$58 billion	\$8 billion
	Capital Construction	\$49 billion	\$77 billion	\$28 billion
	New Facilities		\$10 billion	\$10 billion
	<b>TOTAL</b>	<b>\$99 billion</b>	<b>\$145 billion</b>	<b>\$46 billion</b>

## \$46 Billion Per Year Gap in K-12 Facilities Spending & Investment

The nation's current system of facilities funding leaves school districts unprepared to provide adequate and equitable school facilities. Comparing historic spending against building industry and best-practice standards for responsible facilities stewardship, we estimate that national spending falls short by about \$8 billion for M&O and \$38 billion for capital construction. In total, the nation is underspending on school facilities by \$46 billion — an annual shortfall of 32 percent. Gaps vary by state and local district, depending on investments by local communities and the structure of school facilities funding at the state level. Nevertheless, investment levels in all states but three will not meet the standards.

## A Call to Action

The American public supports high-quality school facilities. When communities have the means to build and maintain high-quality facilities, they do. This report identifies four key strategies for addressing the structural deficits in the K-12 public education infrastructure. First, understand current facilities conditions. Second, engage communities in planning for adequate and equitable 21st century facilities. Third, find and pilot new innovative sources of public funding. Finally, leverage public and private resources in new ways to assist states and districts in providing healthy, safe, educationally appropriate, and environmentally responsible facilities for their communities.



The U.S. K-12 public school system is intended to give students in all communities the education they need to rise to their greatest potential. The U.S. K-12 public education system serves nearly 50 million students and employs 6 million adults — mostly teachers — in more than 100,000 public elementary and secondary schools in about 14,000 school districts.<sup>2</sup> In every state, each of these students has the right to a public education, no matter his or her family income, race, religion, gender, disability, country of origin, immigration status, or remote residence.

To support this educational mission, K-12 public school districts operate more than 7.5 billion gross square feet of building area, which includes warehouses, bus lots, administrative offices, maintenance facilities, and even teacher housing in some remote rural districts. Public school facilities include an estimated 2 million acres of land.<sup>3</sup> Districts also provide their schools and communities with extensive outdoor spaces that include areas such as playgrounds, outdoor classrooms, athletic fields, tracks, and landscaped and undeveloped green spaces.

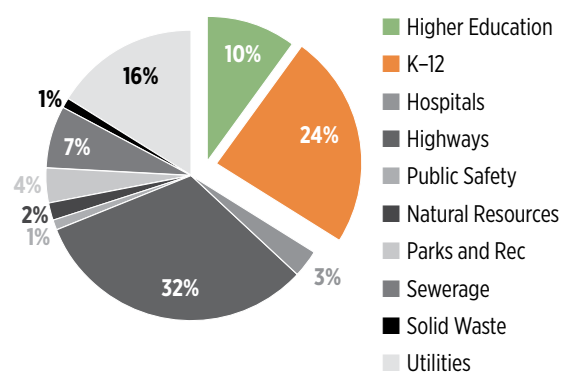
The square footage of public school district facilities equals almost half the area of all U.S. commercial office space. Next to highways, K-12 public school facilities are the nation's largest public building sector, accounting for about one-quarter of all state and local infrastructure capital projects for 1995 to 2012.<sup>4</sup>

When K-12 and public higher education are combined, public education captures the largest share of state and local capital investments.<sup>5</sup>

With more than one-sixth of the entire U.S. population inside K-12 public school buildings each weekday, school facilities have a major impact on the health and performance of

## K-12 Facilities Account for About One-Quarter of State and Local Infrastructure Investments

Percent of total state and local capital outlay, 1995–2012



Source: U.S. Census of Governments, State and Local Government F-13 Fiscal Survey, FY 1995–2012, omitting 1997, 2001, 2003

students and staff alike. They send a tangible signal of a community's willingness and ability to provide an excellent and equitable education to all its students. Our extensive public education infrastructure also impacts the social and natural environment of their communities.

## School Facilities Affect Health and Performance

The importance of facilities to health and performance is well established. In a literature review examining ventilation rates and respiratory illness, for example, researchers at Lawrence Berkeley Labs noted an increase of 50 percent to 370 percent in the incidence of respiratory illness in spaces with low ventilation rates, as are commonly found in schools, compared to spaces meeting industry-accepted standards.<sup>6</sup> Breathing fresh air is not only critical for keeping students healthy but also for keeping them alert. Several studies have linked recirculating air and low ventilation rates in classrooms with lower average daily attendance and slower speed in completing tasks.<sup>7</sup> Studies also have found that poor facilities are strongly associated with student truancy and higher rates of suspensions.<sup>8</sup>

Several studies have linked recirculating air and low ventilation rates in classrooms with lower average daily attendance and slower speed in completing tasks.

Additional research shows that adequate lighting and good acoustics also help students remain alert and ready to learn. Research has examined the connection between daylight and students' ability to focus, retain information, and maintain alertness. These studies found that students without access to daylight had disruptions in their production of hormones essential to learning.<sup>9</sup> At least six major studies have concluded that students' ability to hear their teacher clearly has a substantial impact on their short-term memory and academic performance.<sup>10</sup>

## School Facilities Impact the Environment

The location, design, and operation of school district facilities significantly impact communities and the environment. With 2 million acres of land and half the square footage of the entire commercial building sector, school districts play an important role in managing facilities to reduce the use of natural resources, support local ecology and resilience, and protect human health. School districts can save energy and water while reducing utility costs by using integrated teams for designing new buildings, upgrading buildings systems and equipment, and taking advantage of renewable energy generation opportunities. Reusing and adapting existing facilities reduces landfill waste and avoids the energy and cost of extracting or harvesting new natural resources.

The massive scale of school district infrastructure has a major impact on overall municipal infrastructure. One green roof installed on an existing school in New York City, for example, resulted in a reduction in storm water runoff of 450,000 gallons a year, both protecting the city's water treatment systems and promoting wildlife habitats.<sup>11</sup> Districts also have removed hardscape — like asphalt — and used native plants in landscaping, which helps mitigate a community's vulnerabilities from drought and flooding. Locating schools near the homes of students can enhance a community's resilience by providing ready shelter and safety in the event of natural disasters. And it can simultaneously reduce vehicle miles traveled by parents and buses, contributing to healthier air and reduced fuel consumption.

## School Facilities Are Integral to Equity

The quality of public school buildings and grounds is a health, educational, and environmental equity issue for families and communities. A growing number of states have established by law the importance of facilities as a factor in equal opportunity in education.<sup>12</sup> The U.S. Department of Education has advised school districts to take "proactive steps" to ensure that educational



resources, including facilities, are allocated fairly.<sup>13</sup> However, a study of more than 146,559 school facilities improvement projects from 1995 to 2004 found that the projects in schools located in high-wealth zip code areas had more than three times more capital investment than the schools in the lowest-wealth zip code areas.<sup>14</sup> Some students attend school in bright, comfortable, and healthy facilities, while others are assigned to dilapidated, obsolete, and unhealthy facilities that pose substantial obstacles to learning and overall well-being. Some communities have modern, high-quality public infrastructure in their neighborhoods and communities. Others do not.

Projects in schools located in high-wealth zip code areas had more than three times more capital investment than schools in the lowest-wealth zip code areas.

A 2015 study of California school districts found that low-wealth districts spent a higher proportion of their total education spending on the daily upkeep, operation, and repair of their facilities than high-wealth districts. But low-wealth districts also spent far less on capital investments for building system renewals such as roof or mechanical system replacements and building alterations such as modernizing science labs.<sup>15</sup> Because it is more difficult for low-wealth districts to borrow the necessary capital to invest in the long-term stability of their facilities, these districts end up making necessary and emergency short-term repairs using their operating budgets — the same funds they need to pay teachers, purchase instructional equipment, and pay for other day-to-day educational necessities. As such, low-wealth districts often get trapped in a vicious cycle; underspending on routine and preventive maintenance in the short term leads to much higher building costs in the long term.



It is not just students who are affected by the quality of the school facilities. Studies also have shown that investing in public school infrastructure increases the value of property beyond the amounts borrowed, boosts enrollments, and helps rebuild confidence in a formerly struggling district or school.<sup>16</sup> But because the vast majority of capital construction is funded by *local taxpayers*, the ability of school districts to pay for major facilities renewals or new construction is tied to the wealth of the community. That reality embeds inequity into a state's school facility conditions, except in the small number of states that have reformed their educational facilities finance policies and practices.

Communities understand. According to a 2015 national poll commissioned by the U.S. Green Building Council, two-thirds of Americans believe it is “very important” to improve public school buildings.<sup>17</sup> When communities can afford to maintain and invest in their public schools, they do.

## A Generation of Facilities Change



Over the past 20 years, educational environments have undergone enormous change, driven by shifting expectations and requirements from educators, parents, communities, and regulators. As educational demands and building standards have changed, many of the more than 100,000 public school facilities that were once considered to be adequate for teaching and learning now are considered to be woefully inadequate and even unsafe.

These changes have affected every area of school districts' responsibility for their buildings and grounds, including maintenance and operations (M&O) and capital construction.



### Ensuring Healthy and Safe School Environments: Maintenance and Operations

To provide learning environments that are safe, healthy, and comfortable for students and staff, a school district must devote substantial funds to maintain and operate its facilities. Proper maintenance also extends the operational efficiency and expected lifespan of facilities and ensures that the school district obtains the maximum possible return on its capital investments. The maintenance and operation of school facilities is labor intensive. Building engineers, custodians, grounds keepers, and repair workers tend to daily maintenance and operations, such as patching roofs and cleaning gutters; changing filters in mechanical systems; refinishing floors; replacing lamps and filters; replacing failed equipment components such as motors, pumps, and switches; monitoring programming controls and settings on equipment; and responding to calls for emergency and non-emergency repairs to furniture, fixtures, doors, and windows. These maintenance activities have become more complex — and expensive — as new technologies are introduced into building systems and components. The amount of space used in education also has increased, giving districts more space to maintain and operate — sometimes with no new funding with which to do so.<sup>18</sup>

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### Ensuring Adequate and Equitable School Facilities: Capital Construction

A school district is responsible for several aspects of a capital construction program to provide adequate and equitable teaching and learning environments. The district must acquire and build facilities and grounds, renew or replace building systems and components over time, alter facilities to support evolving educational requirements, and manage deferred maintenance backlogs.

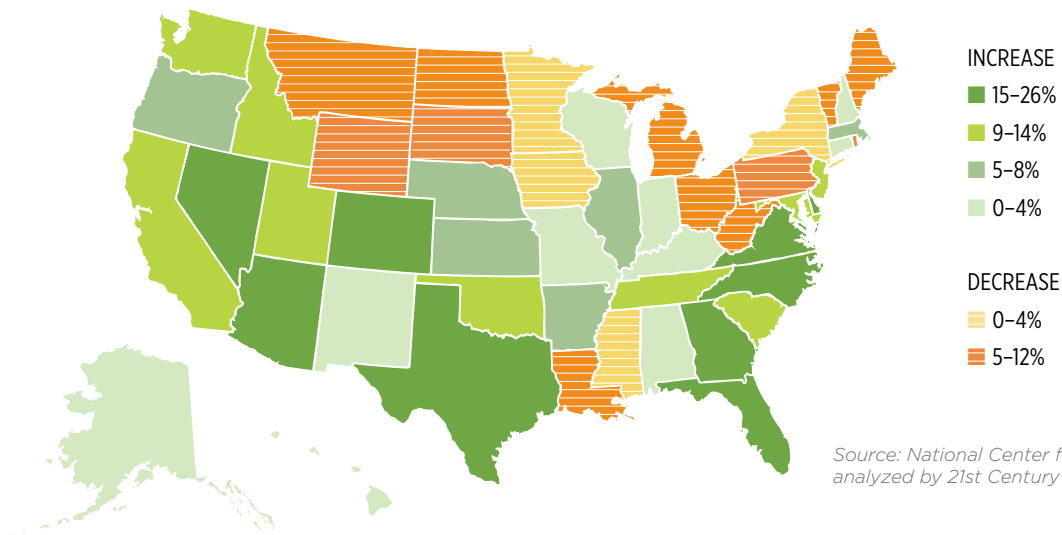
### New School Construction

**FACILITIES ACQUISITION:** Activities that result in a facility or asset becoming available in a new or like-new condition to a school district for use as a school or other district facility.

Between 1994 and 2013, U.S. K-12 public school enrollment grew by 4.8 million students, although student population increases were not uniform across states. Eighteen states had double-digit percentage point increases in enrollment. Seventeen states had increases of between 0 percent and 9 percent, and 15 states had declining enrollments.<sup>19</sup>

## K–12 Enrollment Grew 4.8 Million Overall, but Declined in 16 States

Percentage gains/declines in enrollment, FY 1994–2013



As a result, in that same time period, school districts reported a net total of about 13,000 additional K–12 schools.<sup>20</sup> From 1995 to 2013, new construction accounted for nearly 45 percent of all K–12 public school district capital construction, according to data captured by Dodge Data & Analytics.<sup>21</sup> During this period, school districts in many states had to respond to year-over-year enrollment increases while also catching up on pent-up demand from gains over previous decades.

Not all new schools or construction were driven by growth. Some of the new schools were created within other schools as part of the small schools movement. In some states, new construction was driven by enrollment *declines*. In West Virginia, for example, enrollment decreased 10 percent from 1994 to 2013, and the number of schools declined by 152. At the same time, however, new construction accounted for 55 percent of capital spending — well above the national average — as the state forced low-enrollment schools to close and consolidated new schools to replace the old.

In Ohio, a desire to consolidate and replace deteriorated and obsolete facilities with educationally and environmentally modern facilities also fueled the high level of new construction.

Ohio's enrollment declined by nearly 11 percent between 1994 and 2013, and the total number of schools declined by 133, but new construction still accounted for 60 percent of the state's capital investments. That is because Ohio undertook a major statewide modernization program to overcome years of deterioration in its school facilities.

School districts in many states had to respond to year-over-year enrollment increases while also catching up on pent-up demand from gains over previous decades.

## Renewing Systems and Components

**RENEWAL:** Major repair, alteration, and replacement of building systems, equipment, and components that will sustain or extend the useful life of the entire facility.

Even with proper routine maintenance, buildings and grounds deteriorate. In 2012-13, the average age of the main building of a public school was 44 years old.<sup>22</sup> Most building systems, components, equipment, and finishes do not last this long. The foundation and structure of a school will outlast finishes for ceilings, walls, and floors, as well as most building equipment and fixtures. As a result, during a building's life, districts have to replace all of these components: roofs, windows, and doors; boilers, chillers, and ventilation systems; and plumbing and electrical systems.



### New Health and Safety Standards

Renewing facilities helps districts meet new standards for health and safety. Most schools built before the 1980s contained building materials now known to be hazardous to human health, such as lead in plumbing and paint; asbestos in plaster, insulation, and flooring; and PCBs in caulking and lighting. Fresh air standards for ventilation have changed. Heating, ventilation, and air-conditioning systems and their controls have been improved significantly over the decades.<sup>23</sup> In response both to expanded knowledge and increasingly stringent health regulations, many districts have abated and remediated facilities to eliminate health hazards in their schools. In some cases, they have replaced entire schools to eliminate the major health and safety problems with the original design and construction.



### Increased Environmental Responsibility

Districts have made major investments in school facilities to save energy, curb operating costs, and reduce the impact of facilities on the environment. For example, in 2001 New York City replaced the last of its coal-fired boilers with cleaner, safer, and more efficient gas heating systems. Other school districts have upgraded roof systems to allow for heat-reflective materials, green roofs, and solar arrays. Nationally, a growing awareness of the impact of lighting, ventilation, and noise controls on occupant health and learning outcomes also has begun to alter district construction and renovation standards. Solutions have included better lighting; larger and better-insulated windows and skylights; computerized controls for heating, cooling, and ventilation; and improved building insulation.

## Altering Existing Schools

**ALTERATIONS:** The design, construction, furniture, fixture, and equipment improvements that are made to a fully operating facility to add capacity and make the facility more suitable for education or other district purposes.

In the past two decades, school districts have made complex alterations to existing facilities to meet new code and educational program requirements, as well as to satisfy community concerns and priorities. Alteration projects involved adding space to existing schools and changing the design and relationship of spaces in schools, as well as upgrading the furniture, fixtures, and equipment. Significant drivers for facilities alterations included new requirements for special education and physical accessibility; expansion of early childhood education; integration of technology for instruction and administration; class-size reduction; and heightened safety and security concerns.

## Support for Education Reforms

Since the 1960s, changing parent expectations and a better understanding of student needs have driven districts to add classroom space and build additions to reduce class size. Many school systems have redesigned classrooms to support new teaching models and student-directed learning. In the 1950s and 1960s, classes routinely had more than 30 students. Now, the average elementary class in public schools has 21 students, and the average secondary class has 27 students.<sup>24</sup> In response to higher academic standards and developments in the sciences and career technology fields, many districts have modernized labs to support sophisticated and specialized science and technology instruction so that students can pursue studies in fields such as robotics and biotechnology.

To reduce barriers to students' academic success, districts also have assigned additional administrators and student-support personnel, such as social workers and academic counselors. And they have expanded after-school care and other school-based services and support for families through partnerships with community-based organizations.<sup>25</sup> These added functions require additional space.

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## Serving Special Needs Students and the Physically Disabled

Since passage of the Americans with Disabilities Act in 1990, districts have modified buildings and grounds so they are fully accessible to children, teachers, parents, and visitors with physical disabilities. Educating students with a wide variety of special needs in the least-restrictive environment possible — required by the federal Individuals with Disabilities Education Act — has meant that school districts have expanded their K-12 facilities to support therapeutic services, small class sizes for autistic and emotionally disturbed students, and other programmatic changes.



## Expanded Early Education

When most of the nation's current public school buildings were built, kindergarten was an innovation and rarely more than a half-day program. Now, full-day kindergarten is the norm. And an increased emphasis on early childhood education has further expanded elementary schools and required changes to the design, furniture, and fixtures in classrooms, bathrooms, and outdoor play areas.



## Increased Technology

Instructional and administrative technology has had a dramatic impact on school facilities. Increasingly, technology is viewed as integral to learning, teaching, assessment, and management. As a result, districts have needed to pay for new technology and equipment — as well as upgrades to their electrical and other building infrastructure, such as cooling and dehumidification — to support the use of technology in schools.



## Increased Safety and Security

In recent years, school districts have invested more in school safety and security in the face of both natural and manmade threats to students, staff, and visitors. Upgrades to better prepare for natural disasters have included building safe rooms for tornados, installing hurricane-resistant windows, and modifying structures to withstand movement from earthquakes. In many cases, school buildings are designated public shelters during catastrophic events, and the facility must be ready to support the needs of the community. Some school districts also have modified entrances and hardware on doors to better control access and enable schools to lock down in case of a threat.



## School Grounds as a Community Asset

The land surrounding schools is an important local asset, and school districts have partnered with local communities and municipalities to take advantage of available educational, environmental, and community benefits. Teachers and school leaders have advocated for healthier outdoor places for children to play and learn, and some districts support gardens and farms for use in food service and for health and environmental education. School districts have removed paving to reduce storm water run-off and sedimentation. They have increased native vegetation to reduce maintenance and improve wildlife habitats. Districts have altered outdoor play and athletic facilities to provide both students and community members healthy places to play and to support athletics and physical activity from childhood through adulthood.

## Addressing Deferred Maintenance

**DEFERRED MAINTENANCE:** Maintenance, system upgrades, or repairs that were deferred to a future budget cycle or postponed until funding was available.

Due to a history of national underinvestment in school facilities, school districts have struggled to keep up with basic maintenance and repairs, renewals, and alterations. The delay of these important responsibilities has led to a backlog of critical projects in many districts, which can trigger emergency repairs and higher expenses. Nationally, the lack of data about the condition of school facilities makes it difficult to assess how far behind school districts may have fallen, but recent estimates indicate enormous need. The U.S. General Accountability Office (GAO) last completed a comprehensive survey and study of the condition of K-12 public schools in 1995, when it found that 15,000 schools had indoor air that the EPA classified as “unfit to breathe” and school districts were carrying \$113 billion in deferred repairs and maintenance. In the absence of a more recent survey of school facility conditions, the *2013 State of Our Schools* report cited analysis of available 2008 school district M&O spending and capital investment data. It estimated that districts were carrying at least \$271 billion in deferred maintenance and repairs. When including requirements for alterations and scheduled renewals of existing facilities, the estimated pricetag doubled to \$542 billion.

States' and public K-12 school districts' responsibilities for school facilities fall into two main categories: daily maintenance and operations (M&O) and capital construction. School districts pay for M&O activities out of their annual *operating budget* and for capital management activities, such as capital projects and new construction, out of their *capital budget*. The capital accounts hold funds for purchasing multi-year assets, and they are often borrowed (financed by bonds).

## Maintenance and Operations: An Average of \$46 Billion Per Year

From 1994 through 2013, U.S. K-12 school districts collectively spent \$925 billion (in 2014 dollars) on M&O — an average of \$46 billion each year. This spending was for utilities (electricity and energy for heating and cooling, water, telecommunications, refuse, and recycling services); building security; and labor, material, and contract services for custodial, grounds keeping, and maintenance.

Between 1994 and 2013, total spending on M&O increased by 29 percent, from \$38 billion to \$49 billion; the high-water mark was \$55 billion in 2009, before the Great Recession.<sup>26</sup> However, in the three years from 2011 to 2013, districts reported spending an annual average of \$50 billion a year — nearly 32 percent more, adjusted for inflation, than in 1994. M&O spending is a major cost for school districts; nationally it averaged 10 percent of their annual operating budgets between 1994 and 2013.

The states with the lowest shares of M&O spending were Georgia (7.6 percent), Minnesota (7.7 percent), and North Carolina (8.1 percent). Those with the highest shares were Oklahoma (11.1 percent), Arizona (12.1 percent), and Alaska (12.9 percent). (Appendix A includes detailed state-by-state data.)

## ABOUT THE DATA

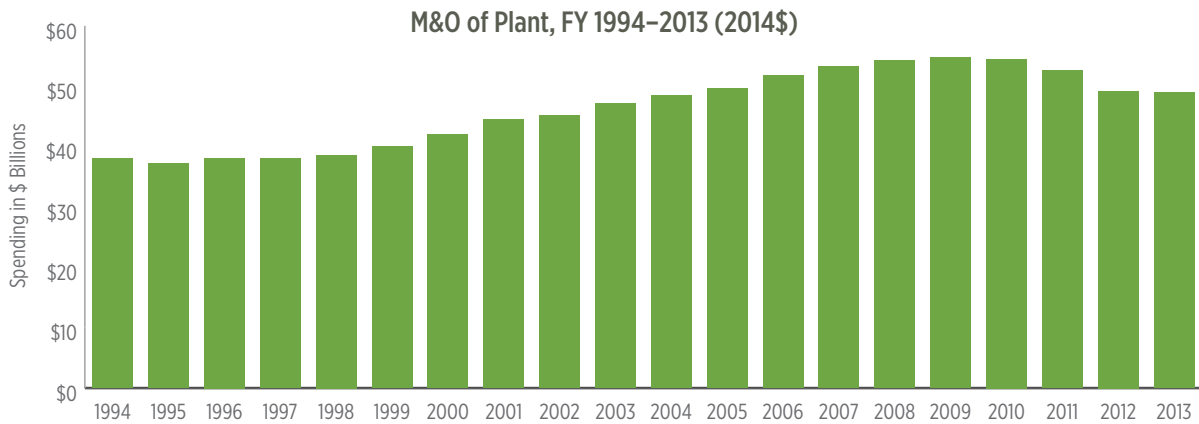
School districts annually report their expenditures for facilities' maintenance and operations (M&O) and capital construction to the U.S. Census of Governments on an annual fiscal survey. The National Center for Education Statistics (NCES) compiles the responses into data tables that are available to the public. These data are the primary source for our analysis.

**M&O of Plant:** M&O expenditures described in this report include the annual costs for routine and preventive maintenance, minor repairs, cleaning, grounds keeping, utilities, and security, in accordance with the definition used by NCES for "Operation and Maintenance of Plant."

**Total Capital Outlay:** Capital investments as defined by NCES include all capital costs for school construction, land, buildings, facilities improvements, and equipment.

**Capital Construction** as defined by NCES includes the direct cost for construction contracts (the "hard" costs) and "soft" costs for architects, engineers, bond counsel, and other fees and administrative costs required to manage building improvements, whether done in-house or contracted out. It does not include the costs for land and existing structures or instructional and other equipment.

## \$925 Billion in M&O Spending Since 1994



Source: National Center for Education Statistics, analyzed by 21st Century School Fund

Over these 20 years, inflation-adjusted M&O spending increased in every state except Michigan. Average annual M&O spending varied greatly by state, as measured by spending per student and per gross square foot. The states that spent the most for M&O per student were Alaska (\$2,096), New Jersey (\$1,923), and New York (\$1,759). At the other end of the range were Utah (\$614), Idaho (\$639), and North Carolina (\$733). The spending per student and spending per square foot are affected by the labor and material costs in a state and the level of building utilization. For example, the average M&O spending per student in California — where schools are still crowded and labor costs are high — was \$806 per student and \$8.08 per gross square foot. During this same period, North Dakota school districts reported spending nearly the same amount per student (\$862) but only \$3.55 per gross square foot.

Because the M&O data from NCES include the combined costs for cleaning, routine maintenance, utilities, minor repairs, and security, it is impossible to know which element of the total is driving changes in M&O spending. Expenditures for M&O definitely increased due to expanding square footage for maintenance and operations. But costs could be compounded by a lack of capital investment, which leads to more (and expensive) emergency repairs.

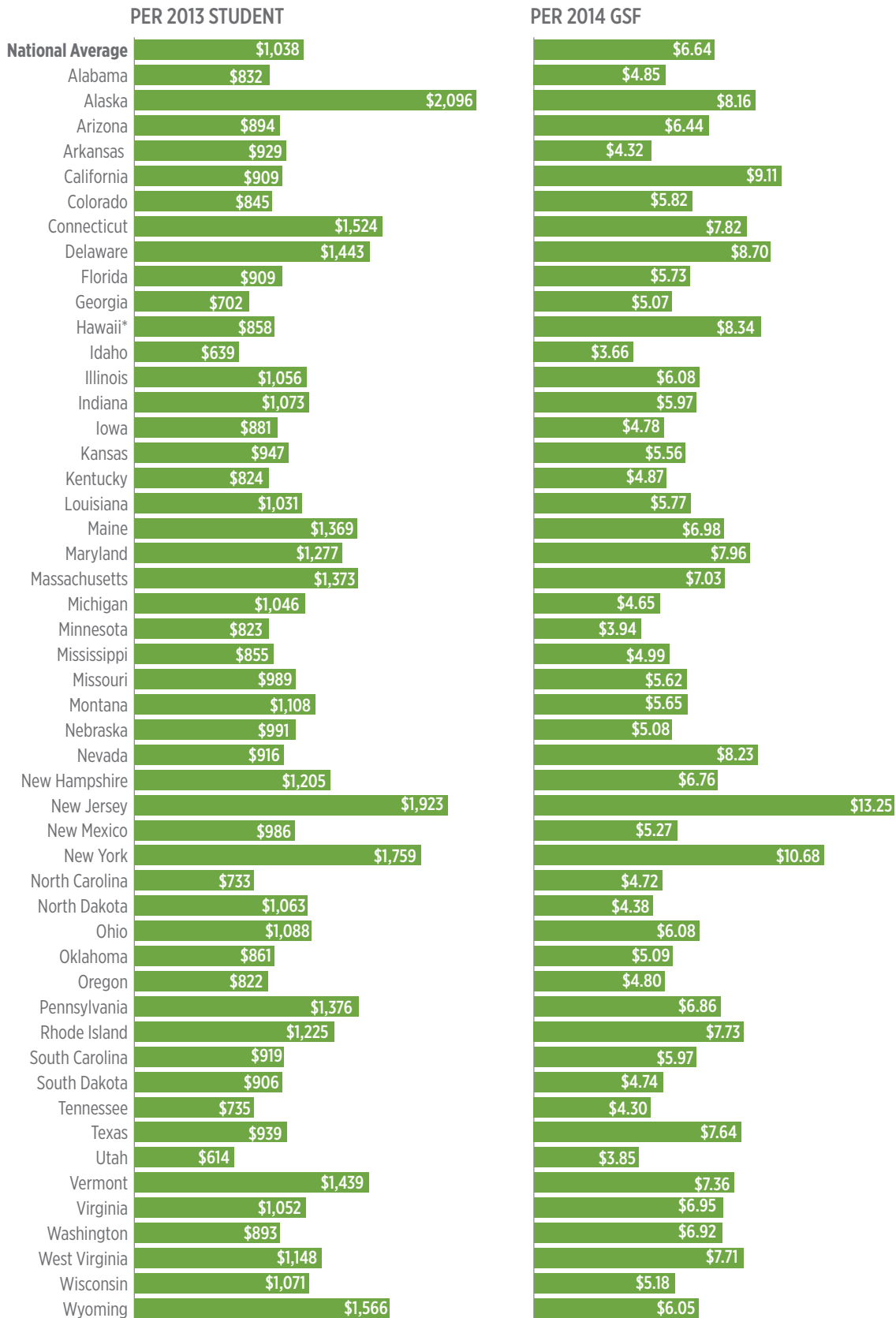
## HOW MUCH OF MAINTENANCE AND OPERATIONS IS SPENT ON UTILITIES AND SECURITY?

Because no national data set exists and very few states collect information about the components of M&O spending, we surveyed sample states and districts to estimate that *utilities costs* account for about 30–35 percent of a districts' total reported maintenance and operations (M&O) spending and that *security costs* account for slightly less than 5 percent of the total M&O spending. Utilities costs vary depending on the efficiency of the facilities, the cost of utilities in a given state, and the local climate. Security costs also vary depending on the population density of the districts and the stresses in the student population.



## Statewide M&O Spending Varies Greatly from State to State

Average annual M&O spending, FY 2011–13 (2014\$)\*

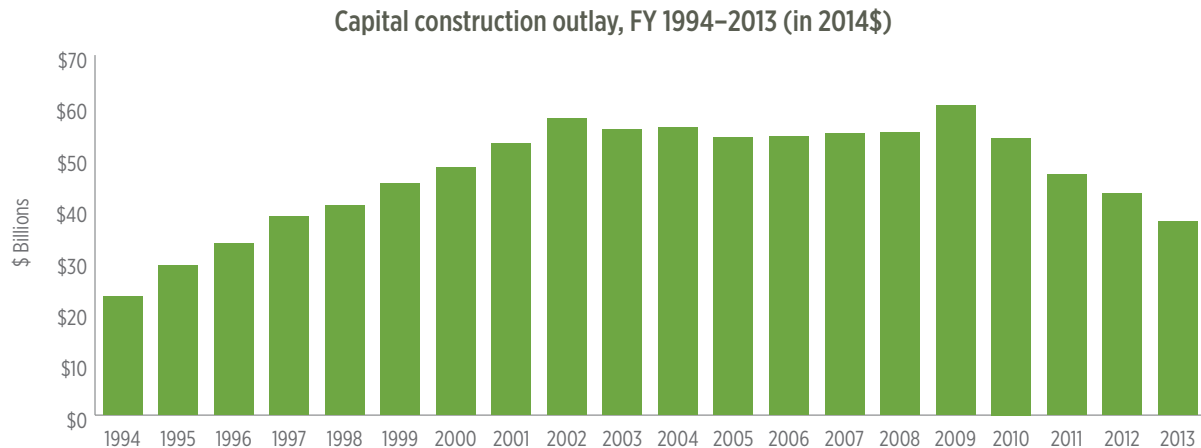


\*Statewide spending data can be found in Appendix A and online at [Stateofourschools.org](http://Stateofourschools.org).  
Source: National Center for Education Statistics, analyzed by 21st Century School Fund

## Capital Construction: An Average of \$49 Billion Per Year

From 1994 through 2013, school districts spent a total of \$973 billion on capital construction — an average of \$49 billion per year. Total capital investments amounted to \$1.26 trillion, an average of about \$63 billion per year, which included capital construction, purchase of instructional and other equipment, and acquisition of land and existing structures. Of total capital outlay during these 20 years, 77 percent was for construction to renew, alter, acquire, and build school facilities; 17 percent was for purchasing instructional and other equipment; and 6 percent was for purchasing land and existing structures.

### \$973 Billion in Total Capital Construction Investments Since 1994



Source: National Center for Education Statistics, analyzed by 21st Century School Fund

Annual capital construction spending nationally increased from \$26 billion in 1994 to a high of \$60 billion in 2009. After a relatively stable period from 2003 through 2009, capital construction spending declined by almost 40 percent from 2009 to 2013 as a result of the Great Recession of 2008. Because capital construction is largely financed by local school districts, the poor lending climate and reluctance to burden taxpayers after the recession had a striking impact on spending.

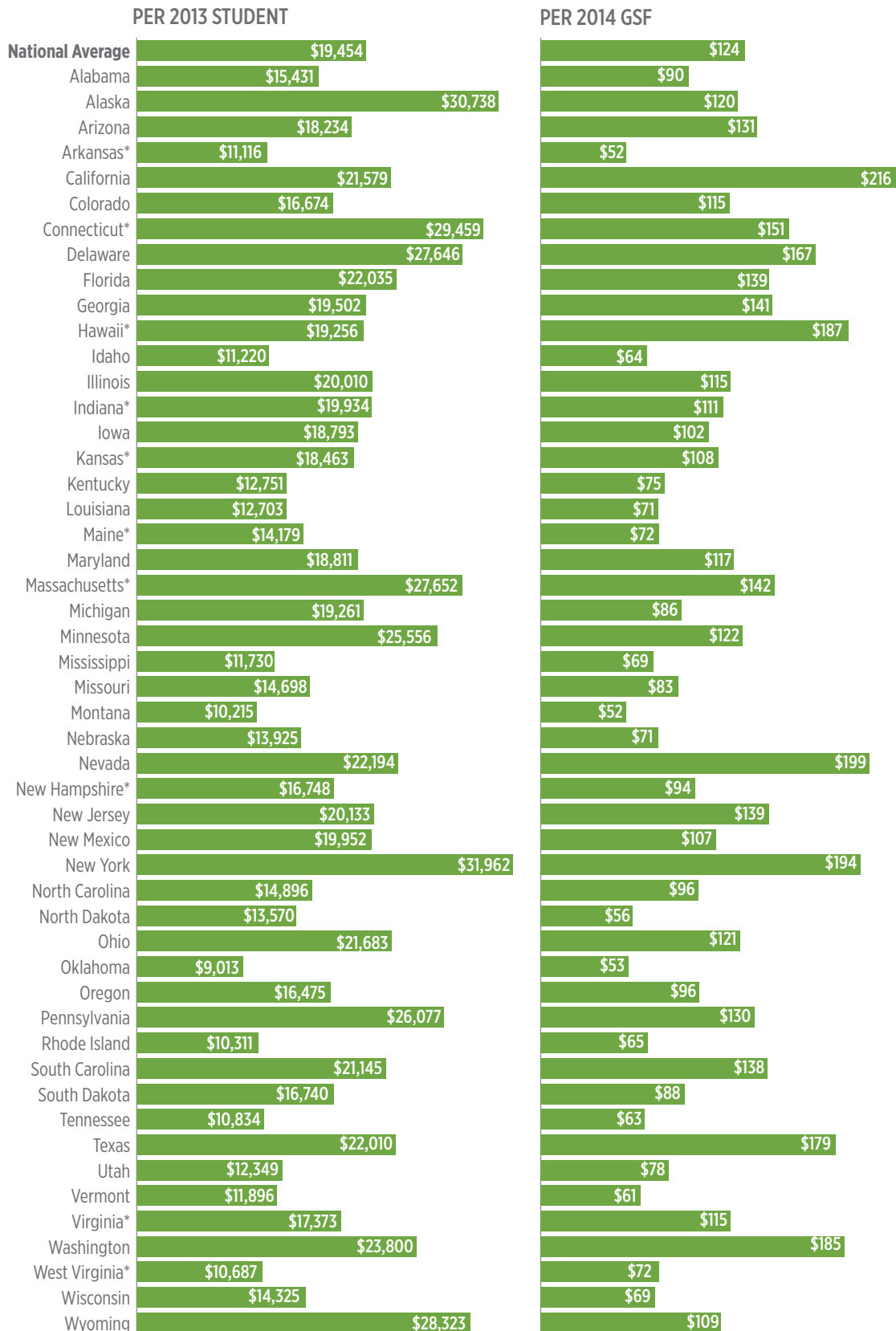
This drastic decline in school construction is greater than the decrease in overall education spending since the recession.<sup>27</sup>

Funding for school district capital construction varied significantly by state over the 20 years analyzed. The lowest-spending states, measured by the total amount of capital construction spending per gross square feet of space, were Arkansas (\$38), Maine (\$43), and Montana (\$52), and the highest-spending states were California (\$216), Nevada (\$199), and New York (\$194). School construction spending per student is another way to measure investment. However, in states with less population density — such as Alaska and Wyoming — and in states that have seen dramatic declines in enrollment — such as Pennsylvania and New York — measuring spending on a per-student basis can overstate how the spending correlates to actual conditions in the schools.

Because capital construction is largely financed by local school districts, the poor lending climate and reluctance to burden taxpayers after the recession had a striking impact on spending.

## Total Statewide Capital Investments Vary Greatly from State to State

Total school-construction capital outlay, FY 1994–2013 (2014\$)



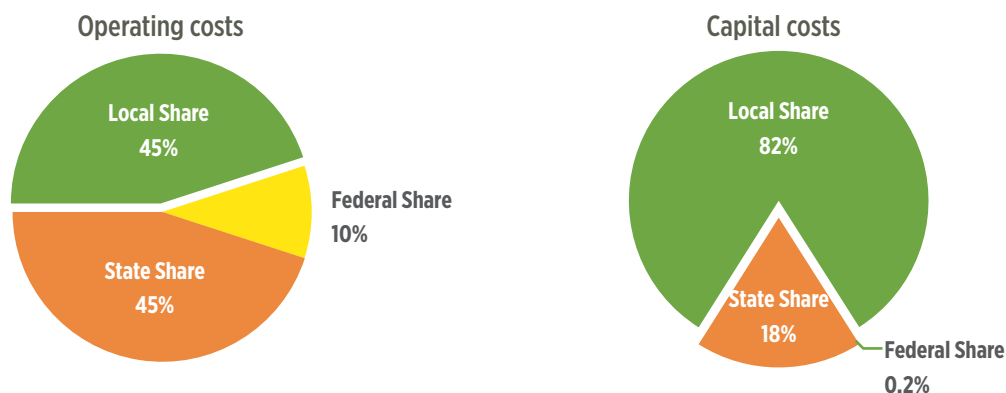
\*District data may be underreported, see Appendix A.

Source: National Center for Education Statistics, analyzed by 21st Century School Fund

## Paying for K-12 Public Education Infrastructure: An Inequitable System

With the nation's 14,000 public school districts ranging from small rural districts of fewer than 100 students to mega-urban districts of more than 1 million students, the U.S. system of public education has a strong emphasis on local control. This is especially true for funding school construction. Localities and states each contribute, on average, 45 percent of the annual operating budget,<sup>28</sup> which includes the annual costs for the maintenance and operation of facilities. The federal government contributes the remaining 10 percent toward the annual operating budget of the districts.<sup>29</sup> However, of the \$1.26 trillion in K-12 total capital outlays between 1994 and 2013, about 81 percent came from local sources, and 19 percent came from the states. Districts reported almost no federal revenue for capital construction.

### Local Communities Support the Majority of Costs for School Facilities



Source: National Center for Education Statistics, analyzed by 21st Century School Fund

Because the large majority of capital construction is funded by local taxpayers, the ability of school districts to pay for major renewals or new construction is tied to the wealth of their community, perpetuating inequity in school facility conditions. Additionally, while funding to support facilities M&O combines local, state, and federal sources, M&O competes with other essential aspects of school district operations, such as salaries and instructional equipment, which also need to be paid for through the same general operating budget. Therefore, school districts, especially those low-wealth districts that have not been able to spend needed capital construction funds to make major repairs to their buildings, are put in a position where they must stretch their general operating funds to try to make up the difference.

### Local Districts Carry the Load

Because capital projects are big-ticket items and are needed periodically, local districts usually finance them, rather than pay for them with annual operating funds. Voters make these financing decisions through bond referenda, or, in fiscally dependent school districts, county or city representatives vote on funding measures as part of their municipal capital budgets. Financing the costs for school construction is considered good practice because the costs of facilities improvements are shared across the generations of those who will use them.

At the end of 2013, districts reported that they were carrying \$409 billion in long-term debt, largely from capital spending on facilities. The national average debt per student was \$8,465. During 2013, school districts reported paying \$17 billion in interest on their long-term debt. States that help fund districts' capital investments also often borrow to finance their contributions. However, state debt dedicated for K-12 capital outlays is not differentiated from other state debt in the U.S. Census of Government State Fiscal Survey.

## Average Long-Term Debt Per Student Ranges From \$700 to \$17,000 by State

District long-term debt, FY 2013, per 2013 student

■ \$15,000 and up 
 ■ \$11,001-\$15,000 
 ■ \$6,701-\$11,000 
 ■ \$3,401-\$6,700 
 ■ \$0-\$3,400

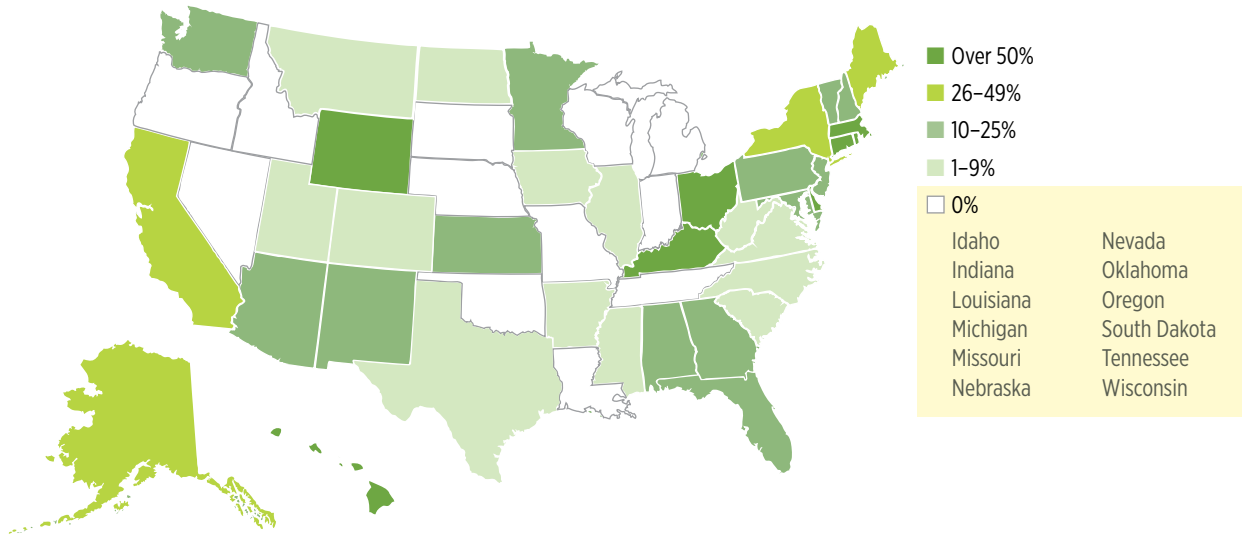
SC \$16,948	NY \$11,643	KS \$9,486	AR \$7,671	RI \$7,628	MO \$7,415	NJ \$9,486	AL \$6,872		
	OR \$11,511	CO \$9,087	NE \$6,867	IA \$6,688	VA \$6,624	NM \$5,962	SD \$5,900	OH \$5,803	
PA \$15,638	IN \$11,280	WA \$9,078		FL \$5,756	MA \$5,565	ID \$4,795	DE \$4,601	ME \$4,588	
TX \$13,297	IL \$10,128	CA \$8,799	LA \$5,717	WI \$5,260	AZ \$4,534	NH \$4,348	MS \$3,461		
MN \$12,889	AK \$10,080	<b>NATIONAL AVERAGE \$8,467</b>	CT \$5,655	TN \$5,216		ND \$3,442	VT \$3,333	GA \$2,684	
MI \$12,533	NV \$9,711		KY \$8,112	NC \$5,607	UT \$4,940	MD \$4,894	MT \$3,428	OK \$2,402	WV \$1,497

Source: National Center for Education Statistics, analyzed by 21st Century School Fund

The average amount of local district facilities long-term debt also varies greatly by state and district. The states with the lowest amount of local district debt per student are Wyoming (\$674), West Virginia (\$1,497), and Oklahoma (\$2,402). The states with the highest amount of debt per student are South Carolina (\$16,948), Pennsylvania (\$15,638), and Texas (\$13,297). In general, states in which local debt is highest are the ones that did not have a state program to help local districts pay for their facilities capital investments. High-wealth districts have the capacity to borrow what they need, and the state averages mask the fact that very wealthy communities can and do borrow at high levels, whereas many low-wealth districts (particularly small, rural districts) cannot borrow at all.

## 12 States Pay Nothing Toward District Capital Construction

State share of funding for capital outlay, FY 1994–2013



Source: National Center for Education Statistics, analyzed by 21st Century School Fund

### State Funding Support Varies

State funding roles and responsibilities for facility adequacy and equity vary widely. Nationally, states covered an average of 19 percent of K–12 public school facilities capital investments over the last 19 years. But in 2015, 12 states provided *no* direct funding or reimbursements to school districts for capital spending. At the other extreme is Hawaii, a unique state-level education district, which pays for all capital improvements using state funds. In addition, Wyoming has paid for 63 percent of its construction capital costs with state funding as a consequence of a series of state Supreme Court decisions and action on the part of the state legislature.<sup>30</sup> Connecticut (57 percent), Delaware (57 percent), Massachusetts (67 percent), and Rhode Island (78 percent) also have assumed the responsibility for most capital investments. Among the other states, the state contribution for capital investments ranges from 1 percent to 37 percent.

The share of state revenue for public school construction has increased over the past two decades. For example, the average state share rose from a low of 11 percent in 1999 to 20 percent in 2013. These increases in funding from the states were largely the result of legal challenges to the equity of states' funding systems, which tie public school funding to the wealth of the local school districts.<sup>31</sup>

### Almost No Federal Support for School Facilities

The federal government helped build the country's public education infrastructure with funding through the Works Progress Administration in the 1930s and then again in the post–World War II era with funding from the National Defense Education Act. But during the two decades studied in this report — except for a \$1.2 billion emergency school repair initiative in the 2001 federal budget directed to high-need districts and public schools with high concentrations of Native American students — the federal government provided virtually no support for states' and districts' capital responsibilities for public K–12 school facilities.<sup>32</sup>

In a study of the federal role in school facilities, researchers found that between 2004 and 2010, the federal government provided less than .02 percent of U.S. school districts' total capital spending in direct grants for school facilities, mostly awarded through the Federal Emergency Management Agency for schools affected by natural disasters.<sup>33</sup> By contrast, in 2014, the federal government funded a full 38 percent of the nation's capital investment in wastewater and transportation infrastructure.<sup>34</sup>

# What It Will Take to Meet Educational Facilities Standards

There are no national standards for K-12 public school facilities conditions, spending, and investment. Rather, communities use annual school district operating budgets, educational facilities master plans, bond referenda, and capital budgets to determine what they need for their public school facilities, and then they set priorities based on what they can afford. These are important and critical local processes. However, without standards it is impossible to measure the adequacy of facilities spending and investments.

## Industry Facilities Spending and Standards

Building science professionals use maintenance and capital renewal standards to guide facilities managers in keeping facilities in good repair.<sup>35</sup> These standards are derived by estimating the lifespan of the facility and the cost to build a new one, referred to as the Current Replacement Value (CRV), and then calculating the annual depreciation of the facility as a percentage of the CRV.

The CRV is derived by multiplying new construction costs per gross square foot (GSF) by the total gross square footage of the facilities.

The CRV of the nation’s total K-12 public school inventory was \$1.937 trillion in 2014, based on an average new construction cost of \$256 per GSF and 7.5 billion GSF of public school district facilities.

The expected lifespan of facilities is derived by averaging the life of a building structure, systems, components, furniture, fixtures, and equipment — all of which depend on the original design, construction, location, usage, and preventive maintenance of the facility.

A building expected to be maintained in good repair for 50 years depreciates at 2 percent per year. The number of years a facility is expected to fully support programs and services will vary, depending on the quality of the design, materials, and construction. Given all of this possible variation, actual requirements for spending will necessarily vary from the standards.

### Current Replacement Value of U.S. K–12 Public Schools

<p><b>NEW CONSTRUCTION COST</b> Average Cost per Gross Square Foot <b>\$256</b></p>	<p><b>X</b></p>	<p><b>FACILITIES</b> Total Gross Square Footage <b>7.5 billion</b></p>	<p><b>=</b></p>	<p><b>CURRENT REPLACEMENT VALUE</b> <b>\$1.937 trillion</b></p>
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Note: For state-level current replacement value, we multiplied the average regional cost for new-school construction (or average state cost, when state officials provided data for their states) by the total gross square footage of school buildings in their state, either reported by the state or estimated based on comparable states.

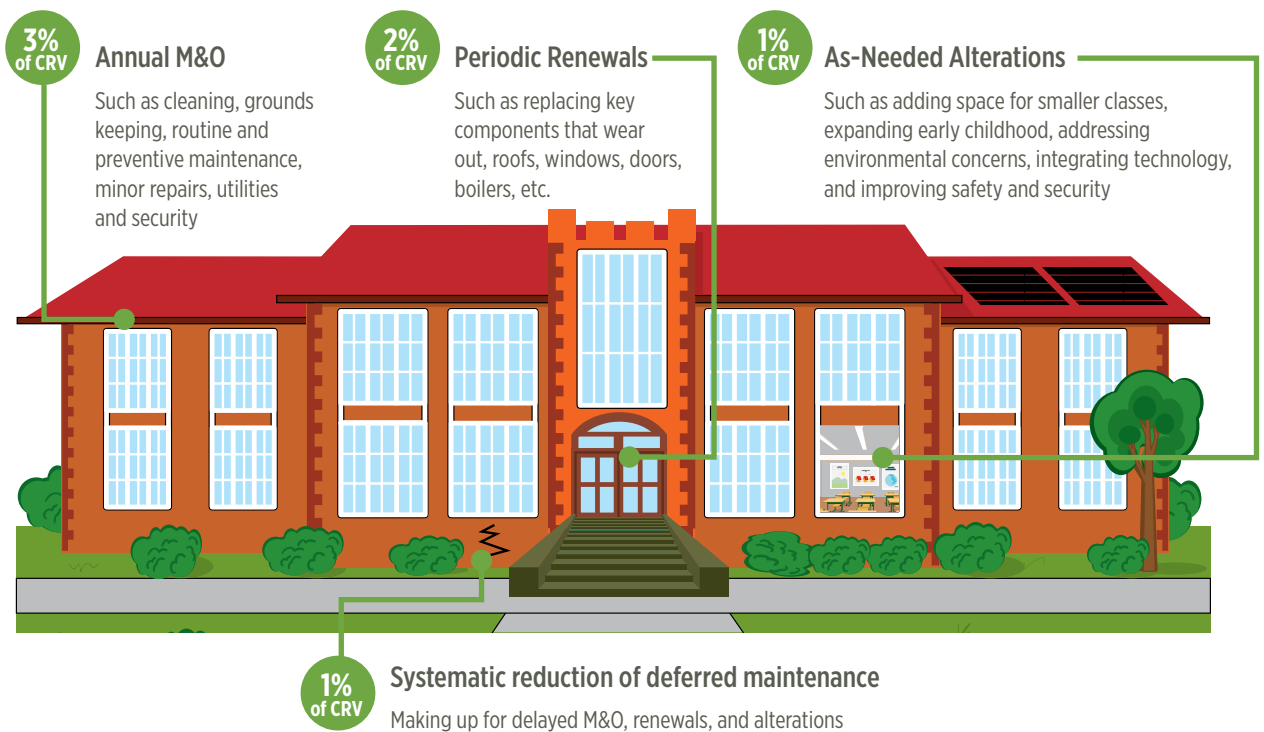
## Setting School Facilities Spending and Investment Standards: A New Stewardship Framework

To apply building industry standards to educational facilities necessitates going beyond general industry practice, which applies only to basic maintenance and renewals. Good practice calls for enhancing these basic building standards so they also extend to the responsibilities of states and districts to reduce the accumulation of deferred maintenance in school buildings and deliver facilities that support changing instructional methods, technologies, and community needs. States and districts can incorporate their unique local costs, conditions, and inventories into the following framework, using the educational facilities spending and investment standards included, to evaluate their current and future spending.

It is important to note that investments in one area can have a major impact elsewhere. For example, if a district does not undertake the cleaning or the required routine and preventive maintenance, then major building systems and components will not last as long as designed. If school districts do not renew their building systems and components on a timely schedule, then deferred maintenance will accumulate, costs for annual maintenance and repairs will rise, and poor basic building conditions will compromise the benefits of alterations for program or capacity adjustments.

### Modern Standards for Maintaining and Upgrading Current K–12 Public School Facilities

The following proposed national standards for school facilities are based on building industry best practice. The percentages refer to the percentage of facilities' current replacement value that should be invested annually to maintain school buildings in good condition. Local conditions will vary. For example, school facilities in very poor condition will need more than 1 percent a year toward their deferred maintenance. But in general, if communities have stable funding at these levels, they should be able to deliver healthy, safe, educationally appropriate, and environmentally sustainable school facilities.





## Annual Maintenance and Operations Spending Needs

A general industry standard for facility M&O (all facilities, not just schools) indicates that building owners should expect to spend a minimum of 2 percent of the CRV annually. This covers routine and preventive facilities maintenance, minor repairs, custodial services, and grounds keeping. Expenditures for these services are closely dependent on many factors, including the current square footage of school buildings. This 2 percent industry standard for M&O *does not* include costs for utilities and security. However, because these utilities and security costs average 35–40 percent of a school district’s reported spending on M&O, the 2 percent industry standard is too low for schools. Instead, 3 percent of CRV is a better standard for school facilities’ M&O budgets, so the additional costs of utilities and security are covered. **Meeting this standard requires spending \$58 billion annually.**

## Annual Capital Construction Investment Needs

Many factors affect capital budget needs, including the quality of routine and preventive maintenance, the amount of deferred maintenance that has already accumulated, and projected changes in enrollment. To improve accountability and plan for future spending, states and districts need to fully understand what is currently being spent on renewals, alterations, and acquisitions separately. However, school districts are asked to combine capital construction expenditures together when reporting spending data, so our understanding of the specific areas of underspending is incomplete. Nevertheless, the combined figures point to substantial and consistent underinvestment in capital construction.

### Capital Renewals

School district facilities managers typically expect to maintain facilities already in good condition by spending 2 percent of CRV annually on building and grounds systems, components, finishes, furniture, and equipment replacements, upgrades, and major repairs. **Meeting this standard requires spending \$39 billion annually.**

### Alterations

Even if school districts address routine facilities renewals and take care of their deferred maintenance, they also can expect regular flux in popular school design trends, changing educational models, and new classroom requirements. Investments in alterations to accommodate and support these changes can be costly and difficult to predict. Although the specific alterations themselves will not be fully predictable, that there will be necessary alterations is certain. Again, an additional 1 percent of CRV annually is modest but realistic. **Meeting this standard requires spending \$19 billion annually.**

### Deferred Maintenance

Given historic underinvestment in school buildings, standards for this sector need to include a systematic approach for reducing deferred maintenance and altering facilities to meet changing educational and community requirements. With a 2008 backlog of deferred maintenance estimated conservatively at \$271 billion and as high as \$542 billion, many public school buildings will have to make up a deficit before they can be considered in “good condition.”<sup>36</sup> To systematically reduce the accumulation of deferred maintenance, states and districts will have to spend at least an additional 1 percent of CRV on

With a 2008 backlog of deferred maintenance estimated conservatively at \$271 billion and as high as \$542 billion, many public school buildings will have to make up a deficit before they can be considered in “good condition.”

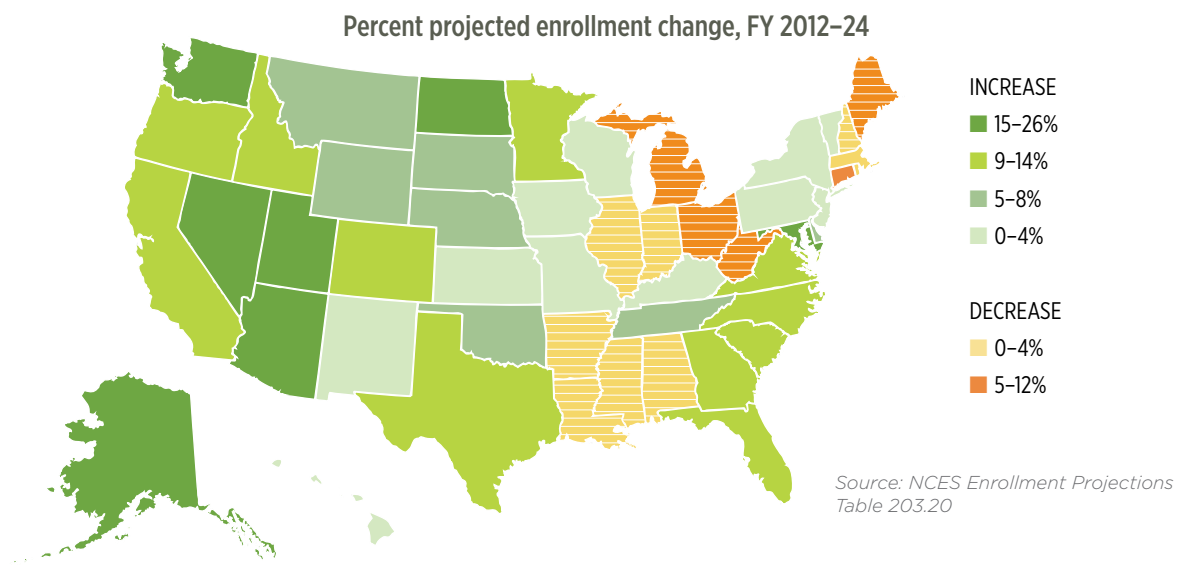
deferred maintenance annually over the next 10 years in the highest-need schools. **Meeting this standard requires spending at least \$19 billion annually.** At the end of 10 years, this steady level of spending, coupled with adequate capital renewals, would reduce the estimated deferred maintenance burden from \$271 billion to \$81 billion. In order to fully resolve the backlog of deferred maintenance, further investment beyond 1 percent of CRV annually will be required.

### New Construction

In addition to taking care of the facilities already in their inventory, states and districts have to plan for building new schools to handle enrollment growth. Nationally, enrollment is projected to increase by 3.1 million students between 2014 and 2024.<sup>37</sup>

States will first work to absorb enrollment growth into existing facilities, whether through portable classrooms or by better utilizing space. However, considering that there were nearly 600,000 portable classrooms in use in U.S. schools in 2011<sup>38</sup> — many well past their healthy lifespans — many districts will need to build new schools. The estimate assumes that only states with enrollment increases will add space for new enrollments and that each growth state will absorb 20 percent of its projected enrollment into existing facilities. Assuming that new facilities will be built at the state’s average GSF per student and at the state’s average new construction cost per square foot, **states and districts will need to spend nearly \$10 billion (2014\$) on capital construction annually over the next 10 years.**

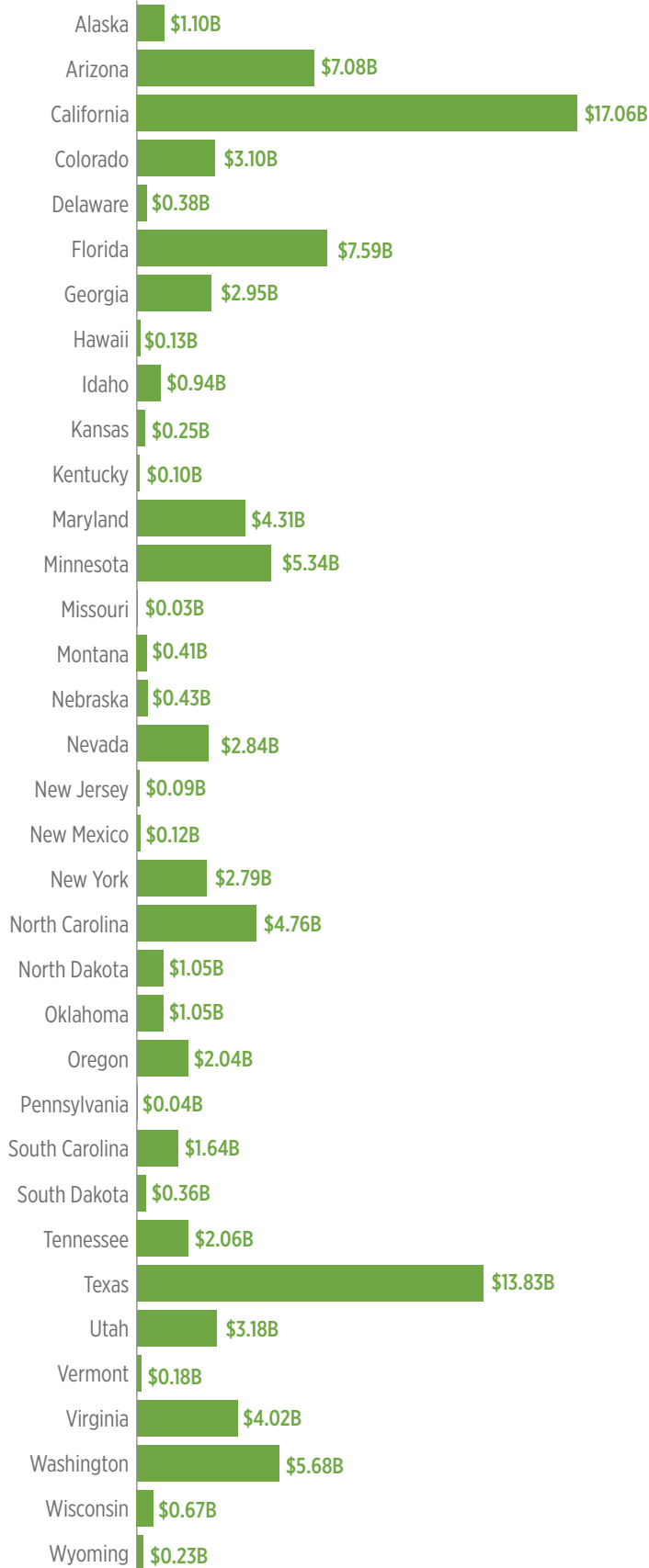
## Enrollment Projected to Grow by 3.1 Million Students by 2024



While this estimate uses nationally available data from NCES for enrollment growth projections, NCES projections will vary widely from state or local projections. For example, both the Maryland Department of Planning and NCES project enrollment increases for Maryland; however, the state projects an 8 percent increase, whereas NCES puts it at 15 percent, which would have a dramatic impact on capital construction estimates.

## Some States Are Projected To Have Significant Future Costs for New Construction

10-year estimate for new school construction, FY 2012–24



Note: This chart includes only the states with projected enrollment increases between FY 2012 and 2024.  
 Source: 21st Century School Fund calculations based on U.S. Department of Education, National Center for Education Statistics, 2014 Digest of Education Statistics, Table 203.20.

## Gaps in Delivering Adequate K-12 Facilities

A thorough analysis of 20 years of M&O spending and capital investment reveals that most states and districts do not have what they need to take care of the facilities they already have — or to build new facilities. According to the stewardship framework and standards described above, districts will fall short by \$46 billion a year. Despite the average \$99 billion annual investment over the past 20 years, the nation needs *an additional \$8 billion a year for M&O and an additional \$38 billion a year for capital construction* to catch up on deferred maintenance, to renew and alter existing facilities to address changing educational requirements, and to cover new construction based on NCES projections for rising student enrollments.

### Breaking Down the Estimated Gaps

EXISTING K-12 FACILITIES	Responsibilities	Modern Standards	Historic Spending	% of Standard	Projected Annual Gap
	Maintenance & Operations at 3% CRV	\$58 billion	\$50 billion <sup>1</sup>	86%	\$8 billion
	Capital Construction at 4% CRV	\$77 billion	\$49 billion <sup>2</sup>	63%	\$28 billion
	TOTAL at 7% CRV	\$135 billion	\$99 billion	73%	\$36 billion

NEW K-12 FACILITIES	New Seats <sup>3</sup>	GSF for New Seats	Cost per GSF	10-Year Estimate	Annual Estimate
	2.7 million	393 million	\$254	\$100 billion	\$10 billion

TOTAL K-12 FACILITIES		Modern Standards	Historic Spending	Projected Annual Gap
	Maintenance & Operations	\$58 billion	\$50 billion	\$8 billion
	Capital Construction	\$77 billion	\$49 billion	\$28 billion
	New Facilities	\$10 billion		\$10 billion
	TOTAL	\$145 billion	\$99 billion	\$46 billion

CRV (current replacement value) of \$1.937 trillion for all U.S. public schools

(1) FY2011-13 average; (2) 20-year (1994-2013) average includes NEW construction; (3) Seats for 80% of the projected enrollment

To fully meet the best practice M&O standard, school districts should be spending at least \$58 billion per year for M&O to ensure healthy, safe, and efficient facilities. This equals an annual average of about \$1,200 per student and nearly \$8 per gross square feet for cleaning, maintenance, utilities, and security. Over the past three fiscal years, however, states and districts together spent an annual average of \$50 billion, or only 86 percent of the M&O standard. Continuing to spend at this level for the current facilities inventory will result in a gap of \$8 billion per year.

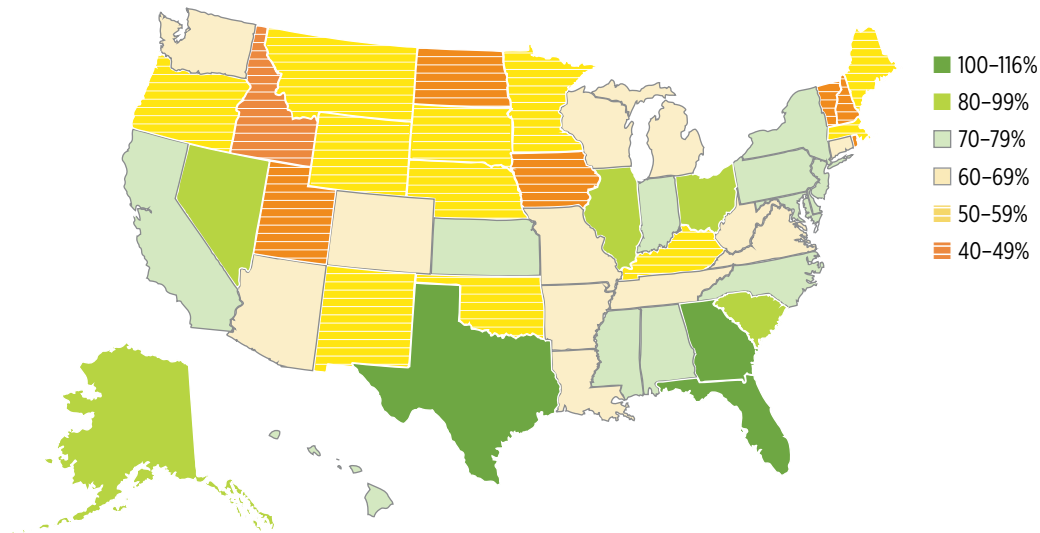
Across fiscal years 2011-13, seven states met or exceeded the minimum spending standard for M&O of their facilities. The highest-spending states were Texas (125 percent), New Jersey (117 percent), and Alaska (114 percent). The states with the largest gap between M&O spending and the standard were

Minnesota (48 percent), Idaho (51 percent), and Utah (55 percent). In some cases, high spending on M&O is driven by under-investment in capital construction and higher-than-average costs associated with utilities, security, custodial and maintenance services. Alternatively, low spending may reflect efficiencies and not necessarily neglect of the maintenance and operations of schools.

According to the stewardship framework and standards described above, districts will fall short by \$46 billion a year.

## Three States Exceed the Standard, Six Are Below 50 Percent

Percentage of standard met by historic M&O spending and capital construction investment, FY 2015



To fully meet the best practice standard for capital construction, school districts should be spending at least \$77 billion per year to ensure healthy, safe, and efficient facilities. And they will need to spend an additional \$10 billion a year to meet 80 percent of the projected enrollment growth.

Across fiscal years 1994–2013, three states met or exceeded the minimum spending standard for *capital construction* investments. The three states with the highest investment in capital construction compared with the standard were Texas (110 percent), Georgia (103 percent), and Florida (101 percent). States with the lowest capital construction spending compared with the standard were Vermont (21 percent), Rhode Island (23 percent), and Montana (28 percent). In most cases, states with high capital construction spending compared to the standard reach or exceed the standard because they build new schools to respond to enrollment growth. However, these states will need to continue to spend at the same levels to take care of what they have built.

When historic M&O spending and capital investments are combined and compared to standards, only three states' average spending levels met or exceeded the combined standards for M&O and capital investment: Texas, Florida, and Georgia.

Providing healthy, safe, educationally appropriate, and environmentally sustainable facilities for our nation's students is a complex and challenging responsibility. As the world changes and understanding of health, safety, education, and the environment grows, teaching and learning environments necessarily evolve. Although many states and school districts have made significant improvements and investments in their public education infrastructure, the nation overall is not prepared to deliver on its responsibility to provide all students access to an excellent education. As a nation, we need to close the gap between what has been spent for public school facilities and what is needed going forward to fulfill this promise.

Most troubling is the inequity of K-12 public school facilities from community to community. Some children learn in state-of-the-art school buildings, with the most modern labs, classrooms, and computer centers available. But too many students suffer in buildings that were out of date decades ago and are an embarrassment in the world's richest country. Because local wealth is the primary source of capital construction funds, underinvestment disproportionately affects children from low-income families. The results affect both students' well-being and their educational opportunities.

Effectively addressing the shortfalls and inequities will require disrupting traditional approaches to planning, managing, and funding public school facilities. Encouragingly, a number of states and communities already have begun this work. Instances of innovation and inspiration abound — within the K-12 sector and beyond. They point to a rich landscape of opportunities, if communities can harness their will to address these common challenges.

While this report provides a national overview of the issues, challenges, and opportunities, decisions about school facilities are ultimately local. We encourage communities across the country to use the information contained in this report (and the state-level supplemental online data) to do their own analyses and host their own conversations. The goal: ensure that every student in every community has the opportunity to attend K-12 public schools that provide a quality education in facilities that are healthy, safe, and conducive to learning. Below are four ideas to help prompt constructive discussions.

## 1. Understand Your Community's Public School Facilities

Addressing the nationwide funding gap requires that the American public and policymakers better understand the conditions in their own schools and how these facilities impact student and teacher health and performance, the environment, the local economy, and overall community vitality. A key requirement is to have better data on public school infrastructure. The data need to be up-to-date, comprehensive, accurate, and accessible to citizens and officials. The lack of common definitions and inconsistent spending and investment data nationally and in most states present challenges. Appendix A offers a state-by-state table showing the data discrepancies that raise questions about data accuracy, classification, and reporting. Communities must insist on getting access to accurate data on their school facilities.

## 2. Engage in Education Facilities Planning

Ultimately, the power to decide whether and how to deliver quality public educational facilities rests with taxpayers and voters. Education leaders need to better understand the power of facilities in advancing education quality and equity and must clearly and consistently communicate to the general public the value of safer and healthier environments for learning. The solutions to fixing poor facilities conditions and inequities should be planned systematically. Gaps cannot be closed overnight. Priorities must be established. Learning from best practices across the country, local communities can develop creative and practical plans to improve their public school facilities. In our democratic society, community members and school-based personnel both need to be a part of this integrated planning process.



## 3. Support New Public Funding

Adequate public funding is required to make it possible to meet the country's responsibilities to the generation of students currently in schools and the generations to come. If we as a nation continue to rely primarily on the local property tax, we cannot expect better results.

States are critical partners to their local districts. In the 12 states that provided no capital construction funding to districts, along with the 13 other states that provided less than 10 percent, a critical step is to identify state-level solutions to ensure equitable educational opportunities for all. Many states have been working to find dedicated revenue to support facilities in their local districts. New Mexico uses revenues from oil and gas reserves and Wyoming uses revenues from coal lease bonuses for their school facilities. Ohio dedicated its tobacco settlement revenue to pay for its statewide school construction program. The Georgia Legislature enabled its counties to pass a special option sales tax that can be dedicated to school construction. Iowa and Massachusetts have dedicated a portion of their state sales taxes for school construction. South Carolina recently established a statewide property tax to ensure adequate and equitable schools, including facilities.



However, even the most creative state and local partnerships leave some districts behind. It is time to explore how the federal government can help eliminate extreme inequities in school facilities conditions. It is time for a non-partisan dialogue on the appropriate federal role for helping states and districts meet our collective responsibilities.

## 4. Leverage Public and Private Resources

Innovative solutions will be necessary to sustain the scale of investment required to provide the schools that every student in every community deserves. To more fully leverage public facilities investment, a new generation of structures, funding streams, and partnerships will be needed. Leveraging these investments means finding ways to use land and building assets to raise and save funds, such as public-private and public-public development partnerships, revolving loan funds, social impact investing, and other scalable and sustainable financing solutions.

Private sector partners have an important role to play in identifying and maximizing opportunities. With private support, school districts can leverage staff and contractors toward their highest possible value, using proper controls, transparency, and oversight of decisions. Whether implementing financing solutions, structuring joint use of buildings and grounds, or locating improvements to maximize building efficiency, school districts and their state-level partners need technical and regulatory support in solving their investment shortfalls.

### A Call to Action

Federal, state, and local stakeholders — from senators to state legislators to superintendents, community leaders to impact investors — must collaborate to create, pilot, and scale new solutions and document successful strategies. Community and investment partners must come to the table.

Five states already have created separate agencies dedicated to school facilities. Some are focused primarily on state allocation of capital funds. Others are engaged in planning and project management and construction itself. One — New Mexico Public School Authority — is involved in the continuum of facilities from M&O to design and construction. However, the current reality is that most districts in most states must deliver 21st century school facilities on their own.

Thought leaders from education, government, industry, and communities are invited to use and improve on the data and standards framework presented in this report to brainstorm, share, and pilot creative new solutions to these common facilities challenges. Successful strategies that emerge from these pilots must be documented, refined, and adapted for scale. The result: school facilities that meet the needs of today's students, in every community, and for generations to come.





	ENROLLMENT FY 2013			SCHOOLS FY 2013		20-YEAR M&O TOTALS FY 1994-2013 (2014\$)				20-YEAR CAPITAL OUTLAY TOTALS FY 1994-2013 (2014\$)						
	Enrollment SY 1993-94	Enrollment SY 2012-13	Enrollment change	Schools	Area of district bldgs in millions of GSF	Total education operating expend (\$ billions)	Total M&O expend (\$ billions)	M&O as % of total educ operating expend	Avg ann M&O expend (\$ millions)	Capital outlay (\$ billions)	School-construction cap outlay (\$ billions)	School-construction cap outlay per 2013 student	School-construction cap outlay per GSF	New construction as % of all construction starts	Total district cap outlay revenue from the state (\$ billions)	State share of total cap outlay
Alabama	734,288	744,548	1.4%	1,637	127.7	\$122	\$11	8.9%	\$541	\$14.0	\$11.5	\$15,431	\$90	58%	\$3.06	22%
Alaska	125,948	131,091	3.9%	509	33.7	\$37	\$5	12.9%	\$240	\$5.3	\$4.0	\$30,738	\$120	39%	\$1.96	37%
Arizona	709,453	941,726	24.7%	2,267	130.7	\$141	\$17	12.1%	\$849	\$24.0	\$17.2	\$18,234	\$131	59%	\$4.94	21%
Arkansas <sup>1</sup>	444,271	477,716	7.0%	1,102	102.7	\$78	\$7	9.2%	\$360	\$9.8	\$5.3	\$11,116	\$52	54%	\$1.12	12%
California	5,327,231	6,208,733	14.2%	10,315	620.0	\$1,124	\$100	8.9%	\$5,007	\$166.0	\$134.0	\$21,579	\$216	47%	\$46.67	28%
Colorado	625,062	851,063	26.6%	1,825	123.6	\$134	\$13	9.6%	\$643	\$20.3	\$14.2	\$16,674	\$115	53%	\$0.69	3%
Connecticut <sup>1</sup>	496,298	517,812	4.2%	1,148	100.9	\$154	\$14	9.3%	\$714	\$17.8	\$15.3	\$29,459	\$151	31%	\$10.13	57%
Delaware	105,547	129,026	18.2%	224	19.7	\$29	\$3	10.0%	\$144	\$3.7	\$3.3	\$25,430	\$167	42%	\$2.11	57%
Florida	2,040,763	2,680,074	23.9%	4,269	425.4	\$431	\$47	10.9%	\$2,345	\$78.4	\$59.1	\$22,035	\$139	56%	\$11.74	15%
Georgia	1,235,304	1,682,620	26.6%	2,387	233.2	\$284	\$22	7.6%	\$1,078	\$41.4	\$32.8	\$19,502	\$141	59%	\$4.84	12%
Hawaii <sup>1,2</sup>	180,410	184,760	2.4%	286	19.0	\$39	\$3	8.1%	\$160	\$4.1	\$3.6	\$19,256	\$187	37%	\$4.99	100%
Idaho	236,774	272,070	13.0%	719	47.5	\$37	\$3	9.3%	\$172	\$3.9	\$3.1	\$11,220	\$64	70%	\$0.00	0%
Illinois	1,893,078	2,069,823	8.5%	4,266	359.5	\$434	\$43	9.8%	\$2,125	\$53.8	\$41.4	\$20,010	\$115	36%	\$2.14	4%
Indiana <sup>1</sup>	965,633	1,002,772	3.7%	1,925	180.1	\$196	\$22	11.0%	\$1,085	\$30.2	\$20.0	\$19,934	\$111	34%	\$0.00	0%
Iowa	498,519	499,489	0.2%	1,390	92.0	\$94	\$8	8.7%	\$408	\$12.8	\$9.4	\$18,793	\$102	35%	\$4.48	35%
Kansas <sup>1</sup>	457,614	488,590	6.3%	1,351	83.3	\$88	\$9	10.4%	\$460	\$13.7	\$9.0	\$18,463	\$108	44%	\$1.10	8%
Kentucky	655,265	685,009	4.3%	1,568	115.8	\$116	\$10	8.9%	\$515	\$12.4	\$8.7	\$12,751	\$75	42%	\$4.13	33%
Louisiana	800,560	671,156	-19.3%	1,407	119.8	\$131	\$12	9.3%	\$605	\$12.2	\$8.5	\$12,703	\$71	40%	\$0.00	0%
Maine <sup>1</sup>	216,995	184,682	-17.5%	617	36.2	\$47	\$5	10.0%	\$233	\$4.0	\$2.6	\$14,179	\$72	48%	\$1.15	28%
Maryland	772,638	859,252	10.1%	1,449	137.9	\$204	\$19	9.4%	\$957	\$21.1	\$16.2	\$18,811	\$117	40%	\$5.47	26%
Massachusetts <sup>1</sup>	877,726	922,848	4.9%	1,854	180.3	\$251	\$23	9.3%	\$1,165	\$22.2	\$25.5	\$27,652	\$142	45%	\$14.79	67%
Michigan	1,599,377	1,381,167	-15.8%	3,550	310.8	\$364	\$38	10.4%	\$1,885	\$41.7	\$26.6	\$19,261	\$86	33%	\$0.02	0%
Minnesota	810,233	802,454	-1.0%	2,403	167.6	\$174	\$13	7.7%	\$673	\$26.1	\$20.5	\$25,556	\$122	37%	\$5.84	22%
Mississippi	505,907	492,847	-2.6%	1,063	84.4	\$74	\$7	9.7%	\$362	\$8.6	\$5.8	\$11,730	\$69	48%	\$0.20	2%
Missouri	866,378	897,224	3.4%	2,406	158.0	\$165	\$16	9.8%	\$813	\$19.6	\$13.2	\$14,698	\$83	39%	\$0.00	0%
Montana	163,009	142,797	-14.2%	824	28.0	\$29	\$3	10.3%	\$148	\$2.1	\$1.5	\$10,215	\$52	36%	\$0.03	1%
Nebraska	285,097	303,242	6.0%	1,090	59.1	\$58	\$5	9.0%	\$259	\$7.8	\$4.2	\$13,925	\$71	35%	\$0.00	0%
Nevada	235,800	431,776	45.4%	664	48.1	\$61	\$6	10.2%	\$309	\$12.3	\$9.6	\$22,194	\$199	71%	\$0.00	0%
New Hampshire <sup>1</sup>	185,360	187,703	1.2%	481	33.5	\$44	\$4	8.7%	\$191	\$4.4	\$3.1	\$16,748	\$94	38%	\$0.83	19%
New Jersey	1,151,307	1,338,657	14.0%	2,598	194.3	\$435	\$45	10.3%	\$2,230	\$34.1	\$27.0	\$20,133	\$139	28%	\$10.89	32%
New Mexico	322,292	327,209	1.5%	877	61.3	\$56	\$6	10.4%	\$294	\$10.1	\$6.5	\$19,952	\$107	41%	\$2.02	20%
New York	2,733,813	2,629,805	-4.0%	4,822	433.0	\$923	\$79	8.5%	\$3,936	\$98.2	\$84.1	\$31,962	\$194	17%	\$34.95	36%
North Carolina	1,133,231	1,468,228	22.8%	2,557	228.1	\$227	\$18	8.1%	\$923	\$27.5	\$21.9	\$14,896	\$96	57%	\$2.07	8%
North Dakota	119,127	101,025	-17.9%	517	24.5	\$20	\$2	8.8%	\$87	\$2.3	\$1.4	\$13,570	\$56	50%	\$0.04	2%
Ohio	1,807,319	1,613,718	-12.0%	3,685	288.8	\$384	\$36	9.3%	\$1,779	\$46.4	\$35.0	\$21,683	\$121	60%	\$12.67	27%
Oklahoma	604,076	671,445	10.0%	1,784	113.5	\$100	\$11	11.1%	\$554	\$9.7	\$6.1	\$9,013	\$53	35%	\$0.03	0%
Oregon	516,611	564,006	8.4%	1,251	96.5	\$109	\$9	8.7%	\$470	\$11.2	\$9.3	\$16,475	\$96	45%	\$0.00	0%
Pennsylvania	1,744,082	1,623,694	-7.4%	3,127	325.7	\$436	\$43	9.9%	\$2,156	\$48.9	\$42.3	\$26,077	\$130	30%	\$7.20	15%
Rhode Island	145,676	136,401	-6.8%	304	21.6	\$39	\$3	8.2%	\$162	\$1.4	\$1.4	\$10,311	\$65	39%	\$1.12	78%
South Carolina	643,696	722,249	10.9%	1,239	111.0	\$122	\$11	9.1%	\$559	\$21.2	\$15.3	\$21,145	\$138	57%	\$1.74	8%
South Dakota	142,825	130,296	-9.6%	697	24.9	\$21	\$2	10.0%	\$107	\$3.1	\$2.2	\$16,740	\$88	41%	\$0.00	0%
Tennessee	866,557	992,461	12.7%	1,817	169.8	\$145	\$13	9.1%	\$661	\$15.7	\$10.8	\$10,834	\$63	57%	\$0.00	0%
Texas	3,608,262	4,897,523	26.3%	8,731	602.0	\$744	\$82	11.0%	\$4,093	\$131.2	\$107.8	\$22,010	\$179	57%	\$12.21	9%
Utah	471,365	562,315	16.2%	995	89.6	\$64	\$6	9.2%	\$293	\$12.8	\$6.9	\$12,349	\$78	65%	\$0.80	6%
Vermont	102,755	89,426	-14.9%	318	17.5	\$26	\$2	8.2%	\$108	\$1.6	\$1.1	\$11,896	\$61	11%	\$0.31	19%
Virginia <sup>1</sup>	1,045,471	1,264,880	17.3%	2,182	191.4	\$241	\$24	9.8%	\$1,182	\$33.0	\$22.0	\$17,373	\$115	52%	\$1.67	5%
Washington	915,952	1,050,901	12.8%	2,370	135.6	\$189	\$17	9.2%	\$872	\$32.3	\$25.0	\$23,800	\$185	47%	\$4.50	14%
West Virginia <sup>1</sup>	314,383	282,310	-11.4%	755	42.1	\$60	\$6	10.0%	\$303	\$5.2	\$3.0	\$10,687	\$72	55%	\$0.44	9%
Wisconsin	844,001	863,737	2.3%	2,238	178.4	\$195	\$18	9.3%	\$906	\$18.2	\$12.4	\$14,325	\$69	35%	\$0.00	0%
Wyoming	100,899	91,533	-10.2%	364	23.7	\$22	\$2	10.4%	\$116	\$3.8	\$2.6	\$28,323	\$109	67%	\$2.39	63%
<b>TOTALS</b>	<b>43,384,238</b>	<b>48,265,889</b>		<b>98,224</b>	<b>7,551</b>	<b>\$9,699</b>	<b>\$925</b>		<b>\$46,236</b>	<b>\$1,261</b>	<b>\$973</b>	<b>\$20,157</b>	<b>\$129</b>		<b>\$227.46</b>	<b>18%</b>

	20-YEAR ANNUAL AVERAGES FY1994-2013 (2014\$)					DEBT END OF FY2013		CURRENT REPLACEMENT VALUE, FY 2014			FY2011-13 (2014\$)	
	School- construction cap outlay (\$ millions)	School- construction cap outlay per 2013 student	School- construction cap outlay per GSF	M&O expend per 2013 student	Avg ann M&O expend per GSF	District long-term debt, end of FY 2013 (\$ billions)	District long-term debt, end of FY 2013 per 2013 student	GSF of district bldgs (millions)	Avg cost per GSF for new construction	Current replacement value of district facilities (\$ billions)	Avg ann M&O expend per 2013 student	Avg ann M&O expend per GSF
Alabama	\$574	\$772	\$4.50	\$727	\$4.24	\$5.12	\$6,872	127.7	\$171	\$21.8	\$832	\$4.85
Alaska	\$201	\$1,537	\$5.98	\$1,833	\$713	\$1.32	\$10,080	33.7	\$239	\$8.0	\$2,096	\$8.16
Arizona	\$859	\$912	\$6.57	\$902	\$6.50	\$4.27	\$4,534	130.7	\$276	\$36.1	\$894	\$6.44
Arkansas <sup>1</sup>	\$266	\$556	\$2.59	\$753	\$3.50	\$3.66	\$7,671	102.7	\$150	\$15.4	\$929	\$4.32
California	\$6,699	\$1,079	\$10.80	\$806	\$8.08	\$54.63	\$8,799	620.0	\$400	\$248.0	\$909	\$9.11
Colorado	\$710	\$834	\$5.74	\$755	\$5.20	\$7.73	\$9,087	123.6	\$273	\$33.7	\$845	\$5.82
Connecticut <sup>1</sup>	\$763	\$1,473	\$7.56	\$1,379	\$7.08	\$2.93	\$5,655	100.9	\$360	\$36.3	\$1,524	\$7.82
Delaware	\$164	\$1,271	\$8.33	\$1,117	\$7.32	\$0.55	\$4,601	19.7	\$338	\$6.6	\$1,443	\$8.70
Florida	\$2,953	\$1,102	\$6.94	\$875	\$5.51	\$15.43	\$5,756	425.4	\$171	\$72.9	\$909	\$5.73
Georgia	\$1,641	\$975	\$7.04	\$640	\$4.62	\$4.52	\$2,684	233.2	\$171	\$40.0	\$702	\$5.07
Hawaii <sup>12</sup>	\$178	\$963	\$9.36	\$865	\$8.41	\$0.00	\$0	19.0	\$350	\$6.7	\$858	\$8.34
Idaho	\$153	\$561	\$3.22	\$632	\$3.62	\$1.30	\$4,795	47.5	\$239	\$11.3	\$639	\$3.66
Illinois	\$2,071	\$1,001	\$5.76	\$1,027	\$5.91	\$20.96	\$10,128	359.5	\$204	\$73.3	\$1,056	\$6.08
Indiana <sup>1</sup>	\$999	\$997	\$5.55	\$1,082	\$6.02	\$11.31	\$11,280	180.1	\$211	\$37.9	\$1,073	\$5.97
Iowa	\$469	\$940	\$5.10	\$816	\$4.43	\$3.34	\$6,688	92.0	\$263	\$24.2	\$881	\$4.78
Kansas <sup>1</sup>	\$451	\$923	\$5.42	\$942	\$5.52	\$4.63	\$9,486	83.3	\$213	\$17.7	\$947	\$5.56
Kentucky	\$437	\$638	\$3.77	\$751	\$4.45	\$5.56	\$8,112	115.8	\$192	\$22.3	\$824	\$4.87
Louisiana	\$426	\$635	\$3.56	\$901	\$5.05	\$3.84	\$5,717	119.8	\$204	\$24.5	\$1,031	\$5.77
Maine <sup>1</sup>	\$131	\$709	\$3.61	\$1,262	\$6.44	\$0.85	\$4,588	36.2	\$300	\$10.9	\$1,369	\$6.98
Maryland	\$808	\$941	\$5.86	\$1,114	\$6.94	\$4.20	\$4,894	137.9	\$258	\$35.6	\$1,277	\$7.96
Massachusetts <sup>1</sup>	\$1,276	\$1,383	\$7.08	\$1,263	\$6.46	\$5.14	\$5,565	180.3	\$369	\$66.5	\$1,373	\$7.03
Michigan	\$1,330	\$963	\$4.28	\$1,365	\$6.07	\$17.31	\$12,533	310.8	\$211	\$65.5	\$1,046	\$4.65
Minnesota	\$1,025	\$1,278	\$6.12	\$838	\$4.01	\$10.34	\$12,889	167.6	\$275	\$46.1	\$823	\$3.94
Mississippi	\$289	\$586	\$3.43	\$734	\$4.29	\$1.71	\$3,461	84.4	\$171	\$14.5	\$855	\$4.99
Missouri	\$659	\$735	\$4.17	\$906	\$5.14	\$6.65	\$7,415	158.0	\$213	\$33.6	\$989	\$5.62
Montana	\$73	\$511	\$2.60	\$1,039	\$5.30	\$0.49	\$3,428	28.0	\$235	\$6.6	\$1,108	\$5.65
Nebraska	\$211	\$696	\$3.57	\$855	\$4.39	\$2.08	\$6,867	59.1	\$213	\$12.6	\$991	\$5.08
Nevada	\$479	\$1,110	\$9.97	\$716	\$6.43	\$4.19	\$9,711	48.1	\$276	\$13.3	\$916	\$8.23
New Hampshire <sup>1</sup>	\$157	\$837	\$4.70	\$1,020	\$5.72	\$0.82	\$4,348	33.5	\$360	\$12.0	\$1,205	\$6.76
New Jersey	\$1,348	\$1,007	\$6.94	\$1,666	\$11.48	\$9.30	\$6,950	194.3	\$377	\$73.3	\$1,923	\$13.25
New Mexico	\$326	\$998	\$5.33	\$899	\$4.80	\$1.95	\$5,962	61.3	\$299	\$18.3	\$986	\$5.27
New York	\$4,203	\$1,598	\$9.71	\$1,497	\$9.09	\$30.62	\$11,643	433.0	\$411	\$177.9	\$1,759	\$10.68
North Carolina	\$1,094	\$745	\$4.80	\$628	\$4.05	\$8.23	\$5,607	228.1	\$192	\$43.8	\$733	\$4.72
North Dakota	\$69	\$679	\$2.80	\$862	\$3.55	\$0.35	\$3,442	24.5	\$235	\$5.8	\$1,063	\$4.38
Ohio	\$1,750	\$1,084	\$6.06	\$1,102	\$6.16	\$9.36	\$5,803	288.8	\$211	\$60.8	\$1,088	\$6.08
Oklahoma	\$303	\$451	\$2.67	\$825	\$4.88	\$1.61	\$2,402	113.5	\$204	\$23.2	\$861	\$5.09
Oregon	\$465	\$824	\$4.82	\$834	\$4.88	\$6.49	\$11,511	96.5	\$239	\$23.0	\$822	\$4.80
Pennsylvania	\$2,117	\$1,304	\$6.50	\$1,328	\$6.62	\$25.39	\$15,638	325.7	\$271	\$88.3	\$1,376	\$6.86
Rhode Island	\$70	\$516	\$3.25	\$1,189	\$7.50	\$1.04	\$7,628	21.6	\$360	\$7.8	\$1,225	\$7.73
South Carolina	\$764	\$1,057	\$6.88	\$774	\$5.03	\$12.24	\$16,948	111.0	\$192	\$21.4	\$919	\$5.97
South Dakota	\$109	\$837	\$4.38	\$818	\$4.28	\$0.77	\$5,900	24.9	\$235	\$5.9	\$906	\$4.74
Tennessee	\$538	\$542	\$3.17	\$666	\$3.89	\$5.18	\$5,216	169.8	\$192	\$32.7	\$735	\$4.30
Texas	\$5,390	\$1,101	\$8.95	\$836	\$6.80	\$65.12	\$13,297	602.0	\$204	\$123.0	\$939	\$7.64
Utah	\$347	\$617	\$3.88	\$522	\$3.28	\$2.78	\$4,940	89.6	\$235	\$21.1	\$614	\$3.85
Vermont	\$53	\$595	\$3.04	\$1,207	\$6.18	\$0.30	\$3,333	17.5	\$360	\$6.3	\$1,439	\$7.36
Virginia <sup>1</sup>	\$1,099	\$869	\$5.74	\$935	\$6.18	\$8.38	\$6,624	191.4	\$271	\$51.8	\$1,052	\$6.95
Washington	\$1,251	\$1,190	\$9.23	\$829	\$6.43	\$9.54	\$9,078	135.6	\$333	\$45.2	\$893	\$6.92
West Virginia <sup>1</sup>	\$151	\$534	\$3.59	\$1,072	\$7.19	\$0.42	\$1,497	42.1	\$247	\$10.4	\$1,148	\$7.71
Wisconsin	\$619	\$716	\$3.47	\$1,049	\$5.08	\$4.54	\$5,260	178.4	\$204	\$36.4	\$1,071	\$5.18
Wyoming	\$130	\$1,416	\$5.47	\$1,270	\$4.91	\$0.06	\$674	23.7	\$295	\$7.0	\$1,566	\$6.05
TOTALS	\$48,644	\$1,008	\$6.44			\$409		7,551		\$1,937		

	M&O GAP PROJECTION ANALYSIS						CAPITAL CONSTRUCTION GAP PROJECTION ANALYSIS					
	3% standard for ann M&O spending (\$ millions)	M&O expend in millions FY 2011-13 (2014\$)	M&O expend as % of 3% standard	Projected M&O expend gap in millions	M&O expend gap per 2013 student	M&O gap per GSF	4% standard for cap investment in existing facilities (\$ millions)	Cap construction expend gap (\$ millions)	Cap construction as % of 4% standard	Cap construction expend gap per GSF	Cap construction expend gap per student	4% standard for cap investment in existing facilities per GSF
Alabama	\$655	\$620	95%	\$35	\$47	\$0.28	\$873	\$299	66%	\$2.34	\$401	\$6.84
Alaska	\$241	\$275	114%	-\$34	-\$259	-\$1.00	\$322	\$121	63%	\$3.58	\$919	\$9.56
Arizona	\$1,084	\$842	78%	\$242	\$257	\$1.85	\$1,446	\$587	59%	\$4.49	\$624	\$11.06
Arkansas <sup>1</sup>	\$462	\$444	96%	\$18	\$38	\$0.18	\$616	\$350	43%	\$3.41	\$734	\$6.00
California	\$7,440	\$5,646	76%	\$1,794	\$289	\$2.89	\$9,920	\$3,221	68%	\$5.20	\$519	\$16.00
Colorado	\$1,012	\$719	71%	\$293	\$344	\$2.37	\$1,350	\$640	53%	\$5.18	\$753	\$10.92
Connecticut <sup>1</sup>	\$1,089	\$789	72%	\$300	\$579	\$2.97	\$1,452	\$689	53%	\$6.83	\$1,331	\$14.39
Delaware	\$199	\$171	86%	\$28	\$217	\$1.41	\$266	\$102	62%	\$5.18	\$790	\$13.51
Florida	\$2,187	\$2,437	111%	-\$250	-\$93	-\$0.59	\$2,917	-\$36	101%	-\$0.08	-\$13	\$6.86
Georgia	\$1,199	\$1,182	99%	\$17	\$10	\$0.07	\$1,599	-\$42	103%	-\$0.18	-\$25	\$6.86
Hawaii <sup>1,2</sup>	\$200	\$159	79%	\$42	\$222	\$2.18	\$266	\$88	67%	\$4.64	\$477	\$14.00
Idaho	\$340	\$174	51%	\$166	\$610	\$3.50	\$454	\$301	34%	\$6.35	\$1,108	\$9.57
Illinois	\$2,199	\$2,186	99%	\$13	\$6	\$0.04	\$2,933	\$862	71%	\$2.40	\$417	\$8.16
Indiana <sup>1</sup>	\$1,138	\$1,076	95%	\$62	\$62	\$0.35	\$1,517	\$518	66%	\$2.87	\$516	\$8.42
Iowa	\$726	\$440	61%	\$286	\$573	\$3.11	\$968	\$499	48%	\$5.42	\$998	\$10.52
Kansas <sup>1</sup>	\$531	\$463	87%	\$68	\$139	\$0.82	\$708	\$257	64%	\$3.09	\$526	\$8.50
Kentucky	\$668	\$564	85%	\$104	\$152	\$0.90	\$890	\$453	49%	\$3.92	\$662	\$7.69
Louisiana	\$734	\$692	94%	\$42	\$63	\$0.35	\$979	\$553	44%	\$4.61	\$824	\$8.17
Maine <sup>1</sup>	\$326	\$253	78%	\$73	\$395	\$2.02	\$435	\$304	30%	\$8.40	\$1,646	\$12.01
Maryland	\$1,067	\$1,097	103%	-\$30	-\$35	-\$0.22	\$1,423	\$615	57%	\$4.46	\$716	\$10.32
Massachusetts <sup>1</sup>	\$1,996	\$1,267	63%	\$729	\$790	\$4.04	\$2,661	\$1,385	48%	\$7.68	\$1,501	\$14.76
Michigan	\$1,964	\$1,445	74%	\$519	\$376	\$1.67	\$2,618	\$1,288	51%	\$4.14	\$932	\$8.42
Minnesota	\$1,383	\$660	48%	\$723	\$901	\$4.31	\$1,843	\$818	56%	\$4.88	\$1,019	\$11.00
Mississippi	\$434	\$421	97%	\$13	\$26	\$0.15	\$578	\$289	50%	\$3.42	\$586	\$6.85
Missouri	\$1,008	\$888	88%	\$120	\$134	\$0.76	\$1,344	\$685	49%	\$4.33	\$763	\$8.51
Montana	\$198	\$158	80%	\$40	\$280	\$1.42	\$264	\$191	28%	\$6.82	\$1,338	\$9.42
Nebraska	\$377	\$300	80%	\$77	\$254	\$1.30	\$503	\$292	42%	\$4.94	\$963	\$8.51
Nevada	\$399	\$396	99%	\$3	\$7	\$0.07	\$531	\$52	90%	\$1.08	\$120	\$11.05
New Hampshire <sup>1</sup>	\$361	\$226	63%	\$135	\$719	\$4.03	\$481	\$324	33%	\$9.68	\$1,725	\$14.38
New Jersey	\$2,198	\$2,574	117%	-\$376	-\$281	-\$1.94	\$2,930	\$1,582	46%	\$8.14	\$1,182	\$15.08
New Mexico	\$550	\$323	59%	\$227	\$694	\$3.71	\$733	\$407	45%	\$6.64	\$1,243	\$11.96
New York	\$5,336	\$4,625	87%	\$711	\$270	\$1.64	\$7,115	\$2,912	59%	\$6.73	\$1,107	\$16.43
North Carolina	\$1,315	\$1,076	82%	\$239	\$163	\$1.05	\$1,754	\$660	62%	\$2.90	\$450	\$7.69
North Dakota	\$173	\$107	62%	\$66	\$653	\$2.68	\$231	\$162	30%	\$6.63	\$1,608	\$9.42
Ohio	\$1,825	\$1,756	96%	\$69	\$43	\$0.24	\$2,433	\$683	72%	\$2.37	\$424	\$8.42
Oklahoma	\$695	\$578	83%	\$117	\$174	\$1.03	\$927	\$624	33%	\$5.50	\$930	\$8.17
Oregon	\$691	\$464	67%	\$227	\$402	\$2.36	\$922	\$457	50%	\$4.74	\$811	\$9.56
Pennsylvania	\$2,649	\$2,234	84%	\$419	\$256	\$1.27	\$3,532	\$1,415	60%	\$4.34	\$871	\$10.85
Rhode Island	\$233	\$167	72%	\$66	\$484	\$3.05	\$311	\$241	23%	\$11.13	\$1,765	\$14.38
South Carolina	\$641	\$664	104%	-\$23	-\$32	-\$0.20	\$854	\$90	89%	\$0.81	\$125	\$7.69
South Dakota	\$176	\$118	67%	\$58	\$445	\$2.33	\$234	\$125	47%	\$5.02	\$959	\$9.40
Tennessee	\$980	\$729	74%	\$251	\$253	\$1.48	\$1,306	\$768	41%	\$4.52	\$774	\$7.69
Texas	\$3,689	\$4,598	125%	-\$909	-\$186	-\$1.51	\$4,918	-\$472	110%	-\$0.78	-\$96	\$8.17
Utah	\$632	\$345	55%	\$287	\$510	\$3.20	\$843	\$496	41%	\$5.53	\$882	\$9.41
Vermont	\$188	\$129	68%	\$59	\$660	\$3.40	\$251	\$198	21%	\$11.32	\$2,212	\$14.37
Virginia <sup>1</sup>	\$1,554	\$1,331	86%	\$223	\$176	\$1.17	\$2,072	\$973	53%	\$5.08	\$769	\$10.82
Washington	\$1,355	\$938	69%	\$417	\$397	\$3.08	\$1,807	\$556	69%	\$4.10	\$529	\$13.33
West Virginia <sup>1</sup>	\$312	\$324	104%	-\$12	-\$43	-\$0.29	\$416	\$265	36%	\$6.30	\$939	\$9.89
Wisconsin	\$1,092	\$925	85%	\$167	\$193	\$0.94	\$1,455	\$836	43%	\$4.69	\$968	\$8.16
Wyoming	\$210	\$143	68%	\$67	\$732	\$2.81	\$279	\$149	46%	\$6.31	\$1,632	\$11.78
TOTALS	\$58,111	\$50,138		\$7,973			\$77,480	\$28,836				

	COMBINED GAP PROJECTION ANALYSIS			NEW CONSTRUCTION PROJECTIONS FY 2013-2024						
	Combined share of 7% standard (\$ billions)	Total Annual Avg Facilities Spending (M&O + cap const) (\$ billions)	% of 7% standard	% Enrollment Change 2012-24	Projected enrollment change	New seats to serve 80% of projected growth	Avg cost of new construction per GSF in 2014	Avg GSF per student	GSF required to serve 80% of projected growth	Est total cost of new construction required for growth
Alabama	\$1.5	\$1,195	78%	-2.8	(20,737)			171		\$0
Alaska	\$0.6	\$476	85%	17.0	22,311	17,849	\$239	257	4,586,615	\$1,095,650,612
Arizona	\$2.5	\$1,701	67%	21.2	230,616	184,493	\$276	139	25,609,147	\$7,080,416,960
Arkansas <sup>1</sup>	\$1.1	\$710	66%	-0.7	(3,357)			215		\$0
California	\$17.4	\$12,345	71%	8.5	533,749	426,999	\$400	100	42,639,860	\$17,055,943,878
Colorado	\$2.4	\$1,429	61%	11.3	97,639	78,111	\$273	145	11,343,010	\$3,096,641,832
Connecticut <sup>1</sup>	\$2.5	\$1,552	61%	-4.8	(26,554)			195		\$0
Delaware	\$0.5	\$335	72%	7.2	9,274	7,419	\$338	153	1,132,174	\$382,108,675
Florida	\$5.1	\$5,390	106%	13.0	348,738	278,990	\$171	159	44,287,108	\$7,590,219,743
Georgia	\$2.8	\$2,823	101%	9.1	154,968	123,974	\$171	139	17,183,516	\$2,945,025,552
Hawaii <sup>1,2</sup>	\$0.5	\$337	72%	2.5	4,540	3,632	\$350	103	373,501	\$130,725,265
Idaho	\$0.8	\$327	41%	9.9	28,166	22,533	\$239	174	3,931,012	\$939,040,141
Illinois	\$5.1	\$4,257	83%	-1.7	(35,880)			174		\$0
Indiana <sup>1</sup>	\$2.7	\$2,075	78%	-1.1	(11,569)			180		\$0
Iowa	\$1.7	\$909	54%	1.3	6,575	5,260	\$263	184	968,830	\$254,802,328
Kansas <sup>1</sup>	\$1.2	\$914	74%	2.2	10,757	8,606	\$213	170	1,466,640	\$311,866,265
Kentucky	\$1.6	\$1,001	64%	0.6	4,033	3,226	\$192	169	545,287	\$104,838,615
Louisiana	\$1.7	\$1,118	65%	-0.5	(3,503)			179		\$0
Maine <sup>1</sup>	\$0.8	\$384	50%	-6.8	(12,639)			196		\$0
Maryland	\$2.5	\$1,905	77%	15.1	130,162	104,130	\$258	160	16,707,935	\$4,310,647,305
Massachusetts <sup>1</sup>	\$4.7	\$2,543	55%	-1.1	(10,773)			195		\$0
Michigan	\$4.6	\$2,775	61%	-5.2	(80,770)			225		\$0
Minnesota	\$3.2	\$1,685	52%	13.7	116,196	92,957	\$275	209	19,413,244	\$5,338,642,172
Mississippi	\$1.0	\$710	70%	-3.0	(14,750)			171		\$0
Missouri	\$2.4	\$1,547	66%	0.1	1,100	880	\$213	176	154,983	\$32,955,649
Montana	\$0.5	\$231	50%	7.8	11,192	8,954	\$235	196	1,757,033	\$413,330,404
Nebraska	\$0.9	\$511	58%	4.2	12,895	10,316	\$213	195	2,010,465	\$427,505,347
Nevada	\$0.9	\$875	94%	25.8	115,193	92,154	\$276	111	10,256,946	\$2,835,840,521
New Hampshire <sup>1</sup>	\$0.8	\$383	45%	-2.1	(3,974)			178		\$0
New Jersey	\$5.1	\$3,922	76%	0.1	1,997	1,598	\$377	145	231,885	\$87,420,825
New Mexico	\$1.3	\$649	51%	0.8	2,580	2,064	\$299	187	386,445	\$115,547,192
New York	\$12.5	\$8,828	71%	1.9	51,597	41,278	\$411	165	6,796,398	\$2,791,947,435
North Carolina	\$3.1	\$2,170	71%	13.1	199,435	159,548	\$192	155	24,782,220	\$4,764,712,274
North Dakota	\$0.4	\$176	44%	22.9	23,089	18,471	\$235	243	4,483,190	\$1,054,640,640
Ohio	\$4.3	\$3,506	82%	-4.5	(78,016)			179		\$0
Oklahoma	\$1.6	\$881	54%	5.6	38,017	30,414	\$204	169	5,139,698	\$1,049,766,140
Oregon	\$1.6	\$929	58%	10.6	62,336	49,869	\$239	171	8,530,851	\$2,037,849,766
Pennsylvania	\$6.2	\$4,351	70%	0.1	1,023	818	\$271	201	164,145	\$44,483,422
Rhode Island	\$0.5	\$237	44%	-3.3	(4,681)			159		\$0
South Carolina	\$1.5	\$1,428	96%	9.4	69,402	55,522	\$192	154	8,536,711	\$1,641,296,587
South Dakota	\$0.4	\$227	55%	7.8	10,129	8,103	\$235	191	1,547,926	\$364,139,215
Tennessee	\$2.3	\$1,267	55%	7.9	78,404	62,723	\$192	171	10,733,615	\$2,063,680,550
Texas	\$8.6	\$9,988	116%	13.6	688,641	550,913	\$204	123	67,715,674	\$13,830,700,760
Utah	\$1.5	\$692	47%	17.3	106,121	84,897	\$235	159	13,525,605	\$3,181,808,291
Vermont	\$0.4	\$182	41%	3.6	3,276	2,621	\$360	195	512,042	\$184,137,173
Virginia <sup>1</sup>	\$3.6	\$2,430	67%	9.7	122,681	98,145	\$271	151	14,854,772	\$4,020,097,381
Washington	\$3.2	\$2,189	69%	15.7	165,206	132,165	\$333	129	17,048,748	\$5,680,301,891
West Virginia <sup>1</sup>	\$0.7	\$475	65%	-11.4	(32,344)			149		\$0
Wisconsin	\$2.5	\$1,544	61%	2.3	19,864	15,891	\$204	207	3,282,495	\$669,432,127
Wyoming	\$0.5	\$273	56%	4.1	3,767	3,014	\$295	259	779,767	\$230,031,382
<b>TOTALS</b>	<b>\$133</b>	<b>\$98,787</b>			<b>3,146,122</b>	<b>2,788,535</b>			<b>393,419,496</b>	<b>\$98,158,194,313</b>

1. Where a comparison with data on hard-cost construction-contract starts provided by Dodge Data & Analytics showed the district-reported figures for school-construction capital outlay to have been underreported (see Appendix B), we adjusted those figures.
2. Where additional data from state officials showed the district-reported figures for maintenance and operations expenditures to have been underreported, we adjusted those figures accordingly.

# K-12 Capital Outlay and Construction FY 1995–2011\* (2014\$)

	State-Reported K-12 Total Capital Outlay (F-15)	District-Reported Total Capital Outlay (F-33)	F-33 Total Cap. Outlay as % of F-15 Total K-12 Cap. Outlay	District-Reported K-12 School Construction Outlay (F-33)	School Construction Outlay (F-33) as % of District-Reported Total Cap. Outlay	Dodge-Reported K-12 Public School Construction Contract Costs	Dodge Reported Construction Contract Costs as % of School Construction Outlay	Adjusted K-12 School Construction Outlay
<b>National Average</b>			<b>100%</b>		<b>74%</b>		<b>71%</b>	
Alabama	\$12,970,544,848	\$12,268,245,357	95%	\$10,131,862,068	83%	\$7,480,227,682	74%	
Alaska	\$4,867,298,569	\$4,695,964,963	96%	\$3,648,116,583	78%	\$2,876,525,652	79%	
Arizona	\$21,528,125,663	\$21,446,835,821	100%	\$15,637,553,181	73%	\$9,778,487,250	63%	
Arkansas <sup>2,3</sup>	\$7,202,616,805	\$8,647,572,335	120%	\$3,038,728,574	35%	\$3,732,642,090	123%	\$4,479,170,508
California	\$149,721,433,097	\$148,759,434,000	99%	\$118,162,491,453	79%	\$57,910,284,392	49%	
Colorado	\$18,744,368,557	\$18,273,633,415	97%	\$13,162,229,537	72%	\$8,024,147,643	61%	
Connecticut <sup>3</sup>	\$10,182,835,951	\$15,076,176,839	148%	\$8,000,559,868	53%	\$10,342,545,703	129%	\$12,411,054,844
Delaware	\$3,250,578,798	\$3,244,176,002	100%	\$2,903,083,571	89%	\$2,166,512,386	75%	
Florida	\$72,754,670,016	\$71,781,768,073	99%	\$54,519,475,706	76%	\$30,699,647,261	56%	
Georgia	\$37,431,596,750	\$36,779,861,259	98%	\$29,159,879,069	79%	\$20,359,080,116	70%	
Hawaii <sup>1,3</sup>	\$3,404,961,851	\$3,489,973,452	102%	\$1,552,482,000	44%	\$2,665,559,151	172%	\$3,198,670,981
Idaho	\$3,606,910,599	\$3,573,352,031	99%	\$2,878,553,209	81%	\$2,132,619,665	74%	
Illinois	\$50,768,183,046	\$48,674,693,200	96%	\$37,414,499,340	77%	\$25,571,395,170	68%	
Indiana <sup>2,3</sup>	\$20,562,747,494	\$26,888,191,312	131%	\$10,470,271,172	39%	\$15,220,203,070	145%	\$18,264,243,684
Iowa	\$10,752,502,629	\$10,712,987,917	100%	\$7,820,100,593	73%	\$5,742,796,256	73%	
Kansas <sup>2,3</sup>	\$8,677,629,106	\$11,494,063,385	132%	\$4,300,876,696	37%	\$6,361,368,630	148%	\$7,633,642,356
Kentucky	\$10,967,976,011	\$10,584,071,604	96%	\$7,390,889,104	70%	\$7,018,857,034	95%	
Louisiana	\$10,405,508,418	\$10,312,360,583	99%	\$6,988,055,907	68%	\$5,625,619,592	81%	
Maine <sup>2,3</sup>	\$2,729,969,228	\$3,723,581,912	136%	\$1,331,642,418	36%	\$1,987,837,513	149%	\$2,385,405,016
Maryland	\$18,866,386,470	\$18,150,589,962	96%	\$13,901,497,395	77%	\$9,701,460,862	70%	
Massachusetts <sup>2,3</sup>	\$15,942,961,253	\$18,275,574,362	115%	\$9,256,570,389	51%	\$17,187,516,440	186%	\$20,625,019,728
Michigan	\$38,262,466,968	\$38,003,887,872	99%	\$24,907,519,828	66%	\$18,921,837,283	76%	
Minnesota	\$22,900,285,168	\$22,881,215,071	100%	\$17,888,922,186	78%	\$9,519,584,419	53%	
Mississippi	\$7,917,048,021	\$7,681,590,871	97%	\$5,320,419,180	69%	\$3,961,476,188	74%	
Missouri	\$17,578,888,152	\$17,043,857,212	97%	\$11,501,126,731	67%	\$7,993,207,536	69%	
Montana	\$1,841,145,771	\$1,809,470,544	98%	\$1,217,724,370	67%	\$789,057,469	65%	
Nebraska <sup>2</sup>	\$7,074,416,440	\$6,823,162,184	96%	\$3,640,547,023	53%	\$3,146,382,764	86%	
Nevada	\$11,458,259,596	\$11,398,410,130	99%	\$8,846,248,698	78%	\$5,832,526,939	66%	
New Hampshire <sup>3</sup>	\$3,533,622,013	\$4,018,515,705	114%	\$2,317,686,426	58%	\$2,448,398,092	106%	\$2,938,077,710
New Jersey <sup>1</sup>	\$37,824,132,926	\$31,518,597,544	83%	\$24,622,003,568	78%	\$19,365,102,124	79%	
New Mexico	\$8,759,252,214	\$8,638,839,015	99%	\$5,616,981,340	65%	\$4,664,805,501	83%	
New York	\$88,073,848,986	\$86,717,953,647	98%	\$75,429,748,122	87%	\$46,397,296,110	62%	
North Carolina	\$25,500,053,498	\$25,175,107,047	99%	\$20,180,544,374	80%	\$15,913,544,247	79%	
North Dakota <sup>2</sup>	\$1,807,013,275	\$1,761,778,348	97%	\$1,030,108,654	58%	\$801,659,662	78%	

\*The data set analyzed did not include hard-cost construction-contract data for FY 1994 or state-reported total capital outlay data for FY 2012–2013.

	State-Reported K-12 Total Capital Outlay (F-13)	District-Reported Total Capital Outlay (F-33)	F-33 Total Cap. Outlay as % of F-13 Total K-12 Cap. Outlay	District-Reported K-12 School Construction Outlay (F-33)	School Construction Outlay (F-33) as % of District-Reported Total Cap. Outlay	Dodge-Reported K-12 Public School Construction Contract Costs	Dodge Reported Construction Contract Costs as % of School Construction Outlay	Adjusted K-12 School Construction Outlay
Ohio	\$41,831,416,336	\$40,573,902,929	97%	\$30,411,212,874	75%	\$23,890,164,384	79%	
Oklahoma	\$8,500,710,026	\$8,304,397,347	98%	\$5,164,146,725	62%	\$4,522,465,829	88%	
Oregon	\$10,037,646,759	\$9,910,516,812	99%	\$8,281,327,486	84%	\$5,417,391,684	65%	
Pennsylvania	\$44,210,005,960	\$43,728,205,630	99%	\$37,871,484,390	87%	\$26,146,648,230	69%	
Rhode Island <sup>1</sup>	\$873,567,909	\$1,347,145,702	154%	\$1,347,145,702	100%	\$1,204,338,493	89%	
South Carolina	\$19,267,928,237	\$18,928,879,958	98%	\$13,864,109,815	73%	\$10,584,459,432	76%	
South Dakota	\$2,675,123,862	\$2,638,153,736	99%	\$1,859,367,406	70%	\$1,216,256,612	65%	
Tennessee	\$15,384,028,518	\$13,970,218,178	91%	\$9,670,963,675	69%	\$8,961,234,912	93%	
Texas	\$116,776,988,300	\$116,393,977,498	100%	\$95,825,342,911	82%	\$65,347,354,854	68%	
Utah <sup>2</sup>	\$10,694,856,128	\$10,983,521,924	103%	\$5,957,954,140	54%	\$5,163,280,365	87%	
Vermont <sup>1</sup>	\$1,433,846,001	\$1,417,843,732	99%	\$934,832,615	66%	\$813,613,642	87%	
Virginia <sup>2,3</sup>	\$24,703,530,667	\$28,521,682,684	115%	\$14,156,713,624	50%	\$15,315,298,441	108%	\$18,378,358,129
Washington	\$30,018,147,985	\$27,566,330,805	92%	\$21,302,451,410	77%	\$13,631,982,872	64%	
West Virginia <sup>2,3</sup>	\$3,908,373,222	\$4,475,652,822	115%	\$1,900,148,543	42%	\$1,915,672,096	101%	\$2,298,806,515
Wisconsin	\$16,805,680,750	\$16,240,913,224	97%	\$11,275,229,183	69%	\$7,924,929,373	70%	
Wyoming	\$3,305,028,645	\$3,261,369,963	99%	\$2,257,216,340	69%	\$1,505,889,355	67%	

In order to identify potential data-accuracy issues regarding the data reported by states and school districts on the U.S. Census of Governments Fiscal (F-13 and F-33) Surveys, we calculated the annual averages for each state on four key data points for test years FY 1995–2011 and compared them to the national averages or, in the case of total capital outlay, an expected figure of 100%. This process identified the outliers against the national averages and raised the following concerns about the accuracy of the publicly available data sets:

- 1 In states where district-reported and state-reported figures for total capital outlay differ by more than 10%, district-reported capital construction data may be misreported.
- 2 In states where school-construction outlay was less than 60% of the district-reported total capital outlay versus the national average of 75%, some districts may have misclassified some school construction outlay and therefore underreported it.
- 3 In states where hard-cost construction-contract amounts reported by Dodge Data Analytics are more than 85% of the district-reported figures for school-construction outlay (which include hard and soft costs), school-construction outlay figures may be underreported; however, adjustments were only made for states where hard cost school construction contract amounts exceeded 100% of district reported capital construction outlay.

Sources: National Center for Education Statistics, U.S. Census of Governments, Dodge Analytics

# Adjustments to State Share of Funding for Capital Outlay FY 1994–2013

(Data Field C11 of F-33 Fiscal Survey)

	DISTRICT-REPORTED (2014\$)		ADJUSTED	
	Total Capital Outlay (\$ billions)	Revenue from the State for Capital Outlay (\$ billions)	Adjusted Revenue from the State for Capital Outlay (\$ billions)	State Share of Total Capital Outlay
<b>United States</b>	<b>\$1,261</b>	<b>\$177.26</b>	<b>\$227.46</b>	<b>18%</b>
Alabama	\$14	\$3.05	\$3.06	22%
Alaska	\$5	\$1.87	\$1.96	37%
Arizona	\$24	\$4.94	\$4.94	21%
Arkansas	\$10	\$0.52	\$1.12	12%
California	\$166	\$45.07	\$46.67	28%
Colorado	\$20	\$0.69	\$0.69	3%
Connecticut	\$18	\$9.87	\$10.13	57%
Delaware	\$4	\$2.06	\$2.11	57%
Florida	\$78	\$10.61	\$11.74	15%
Georgia	\$41	\$4.51	\$4.84	12%
Hawaii	\$4	\$4.87	\$4.99	122%
Idaho	\$4	\$0.00	\$0.00	0%
Illinois	\$54	\$2.14	\$2.14	4%
Indiana	\$30	\$0.00	\$0.00	0%
Iowa	\$13	\$0.50	\$4.48	35%
Kansas	\$14	\$1.09	\$1.10	8%
Kentucky	\$12	\$4.05	\$4.13	33%
Louisiana	\$12	\$0.00	\$0.00	0%
Maine	\$4	\$1.04	\$1.15	28%
Maryland	\$21	\$5.22	\$5.47	26%
Massachusetts	\$22	\$11.96	\$14.79	67%
Michigan	\$42	\$0.00	\$0.02	0%
Minnesota	\$26	\$5.38	\$5.84	22%
Mississippi	\$9	\$0.18	\$0.20	2%
Missouri	\$20	\$0.00	\$0.00	0%
Montana	\$2	\$0.03	\$0.03	1%
Nebraska	\$8	\$0.00	\$0.00	0%
Nevada	\$12	\$0.00	\$0.00	0%
New Hampshire	\$4	\$0.80	\$0.83	19%
New Jersey	\$34	\$8.41	\$10.89	32%
New Mexico	\$10	\$1.47	\$2.02	20%
New York	\$98	\$0.41	\$34.95	36%
North Carolina	\$28	\$2.07	\$2.07	8%
North Dakota	\$2	\$0.04	\$0.04	2%

	DISTRICT-REPORTED (2014\$)		ADJUSTED	
	Total Capital Outlay (\$ billions)	Revenue from the State for Capital Outlay (\$ billions)	Adjusted Revenue from the State for Capital Outlay (\$ billions)	State Share of Total Capital Outlay
Ohio	\$46	\$12.75	\$12.67	27%
Oklahoma	\$10	\$0.03	\$0.03	0%
Oregon	\$11	\$0.00	\$0.00	0%
Pennsylvania	\$49	\$6.86	\$7.20	15%
Rhode Island	\$1	\$1.09	\$1.12	78%
South Carolina	\$21	\$1.72	\$1.74	8%
South Dakota	\$3	\$0.00	\$0.00	0%
Tennessee	\$16	\$0.00	\$0.00	0%
Texas	\$131	\$12.21	\$12.21	9%
Utah	\$13	\$0.77	\$0.80	6%
Vermont	\$2	\$0.29	\$0.31	19%
Virginia	\$33	\$1.65	\$1.67	5%
Washington	\$32	\$4.19	\$4.50	14%
West Virginia	\$5	\$0.44	\$0.44	9%
Wisconsin	\$18	\$0.00	\$0.00	0%
Wyoming	\$4	\$2.36	\$2.39	63%

District-reported figures in yellow were adjusted with input provided by state officials.

Sources: National Center for Education Statistics, F-33 Fiscal Surveys FY 1994–2013.



## Endnotes

1. Primary sources:
  - (1) The U.S. Census of Governments F-33 Fiscal Surveys as published by the National Center on Education Statistics (NCES). These data include annual revenues and expenditures of local school districts, including those for capital outlay and for maintenance and operations of plant.
  - (2) The U.S. Census of Governments F-13 Fiscal Surveys as published by NCES. These data include figures for capital outlays by state and local governments on public elementary and secondary school facilities.
  - (3) Proprietary data from Dodge Data & Analytics on the costs at contract start of public school districts' school construction projects by project type and state and year. Dodge Data & Analytics (formerly McGraw-Hill Construction) is a private company that collects information as a service to industry subcontractors and suppliers.
  - (4) Inventory data from state-level school facilities offices and agencies that are members of the National Council on School Facilities.
2. U.S. Department of Education, National Center for Education Statistics. Digest of Education Statistics, Tables 216.20 (2015); 213.10 (2014); 216.10 (2014); and 214.30 (2014).
3. Because no national data source for this information exists, the National Council on School Facilities collected school facilities inventory information from state facilities officials and other state organizations. It obtained data for 26 states and 21st Century School Fund estimated the inventories for the remaining states based on the square-footage-per-student figures reported by comparable states.
4. See U.S. Department of Energy, 2012 Commercial Building Energy Consumption Survey (CBECS), Table B1, U.S. Department of Energy (March 2015) <http://www.eia.gov/consumption/commercial/data/2012/xls/b1.xlsx> (accessed Feb. 1, 2016). More than half of all office buildings are 5,000 gross square feet or smaller. U.S. Department of Energy, 2012 Commercial Building Energy Consumption Survey (CBECS), Table B6, U.S. Department of Energy (March 2015) <http://www.eia.gov/consumption/commercial/data/2012/xls/b6.xlsx> (accessed Feb. 1, 2016).
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12. See Sciarra, D.G., Bell, K.L., and Kenyon, S. (2006). Safe and Adequate: Using Litigation to Address Inadequate K-12 School Facilities, Education Law Center [http://www.edlawcenter.org/assets/files/pdfs/publications/Safe\\_and\\_Adequate.pdf](http://www.edlawcenter.org/assets/files/pdfs/publications/Safe_and_Adequate.pdf) (accessed Feb. 1, 2016).
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18. See Council of the Great City Schools, "Reversing the Cycle of Deterioration in the Nation's Public School Buildings (October 2014) <http://cgcs.org/cms/lib/DC00001581/Centricity/Domain/87/FacilitiesReport2014.pdf> (accessed Feb. 1, 2016).
19. 21st Century School Fund calculation from National Center for Education Statistics enrollment data.
20. 21st Century School Fund calculation from U.S. Department of Education, National Center for Education Statistics, Digest of Education Statistics, Tables 95 (1995) and 216.70 (2014).
21. Proprietary data licensed from Dodge Data & Analytics. This figure is consistent with survey data from the National Center for Education Statistics, which found in 2012 that 59 percent of all "main instructional buildings" were less than 15 years old. See U.S. Department of Education, National Center for Education Statistics, Digest of Education Statistics, Table 217.10 (2014).
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21st Century School Fund is a not-for-profit organization founded in 1994 to build the public will and the public capacity for modernized public school facilities. 21CSF is a well-respected and relied-upon source of research, policy analysis and technical assistance for communities, school districts and states on the public engagement, policies and practices that support the delivery of healthy, safe and educationally appropriate K-12 public school facilities.



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