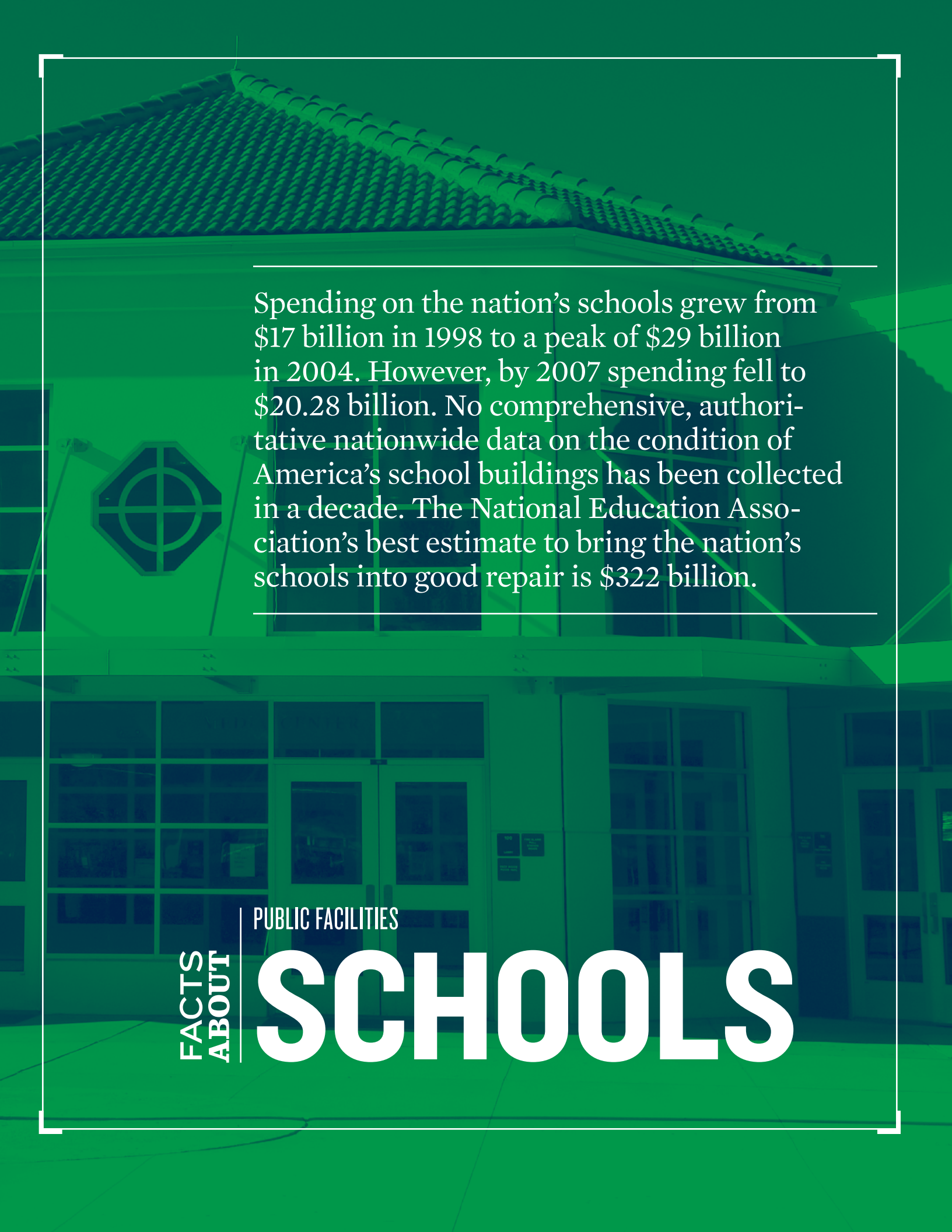
2009

# INFRASTRUCTURE FACT SHEET

ASCE American Society of Civil Engineers



Spending on the nation's schools grew from $17 billion in 1998 to a peak of $29 billion in 2004. However, by 2007 spending fell to $20.28 billion. No comprehensive, authoritative nationwide data on the condition of America's school buildings has been collected in a decade. The National Education Association's best estimate to bring the nation's schools into good repair is $322 billion.

PUBLIC FACILITIES

FACTS ABOUT

# SCHOOLS

PUBLIC FACILITIES

# SCHOOLS

2009 GRADE **D**

## RAISING THE GRADES SOLUTIONS

THAT WILL WORK **NOW**

**A** = Exceptional
**B** = Good
**C** = Mediocre
**D** = Poor
**F** = Failing

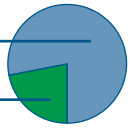
AMERICA'S INFRASTRUCTURE G.P.A. **D**

ESTIMATED 5-YEAR FUNDING REQUIREMENTS FOR **SCHOOLS**

Total investment needs
**$160 BILLION**

Estimated spending
**$125 BILLION**

Projected shortfall
**$35 BILLION**



★ **PUBLISH** regular updates of the Department of Education report *Condition of America's Public School Facilities: 1999* to ensure a clear view of conditions nationwide;

★ **EXPAND** federal tax credits to support increased use of school construction bonds;

★ **CONTINUE** and **INCREASE** federal grants for high-poverty, high-need school districts;

★ **ENCOURAGE** school districts to explore alternative financing, including lease financing and financing/ownership/use arrangements, to facilitate construction;

★ **ENCOURAGE** school districts to adopt regular, comprehensive construction and maintenance programs;

★ **INCREASE** the emphasis on research and development for design and construction to meet the rapidly changing teaching environment;

★ **ESTABLISH** a federal, multiyear capital budget for public works infrastructure construction and rehabilitation similar to those used by state and local governments;

★ **ENCOURAGE** the use of life-cycle cost analysis principles to evaluate the total costs of projects;

★ **CONSIDER** direct federal funding for school construction.

## CONDITIONS

Assessing the conditions of the nation's public school facilities remains a difficult process. There have been no comprehensive federal reports since the Department of Education report *Condition of America's Public School Facilities: 1999*.[4] That report provided a detailed snapshot of conditions across the nation and concluded that a substantial number of schools are in poor condition. The report concluded that $127 billion was needed to bring the nation's schools into good operating condition. An earlier report by the General Accounting Office (February 1995) concluded that one-third of the nation's schools needed extensive repair or replacement and that $112 billion was needed to bring the nation's public schools into an overall good condition.[13]

Some effort has been made. In 2005, the National Center for Education Statistics surveyed public school principals to determine the extent to which various environmental factors interfered with classroom instruction. A majority of respondents—44%—reported at least some interference: 33% reported minor interference; 9% reported moderate interference, and 1% reported major interference. The survey also found that while 15% of schools are overcrowded, 30% of students attend schools that are overcrowded. The report also noted that 37% of schools use portable buildings. However, this report lacks the detail of the earlier report and does not include estimates of needs or costs.[12]

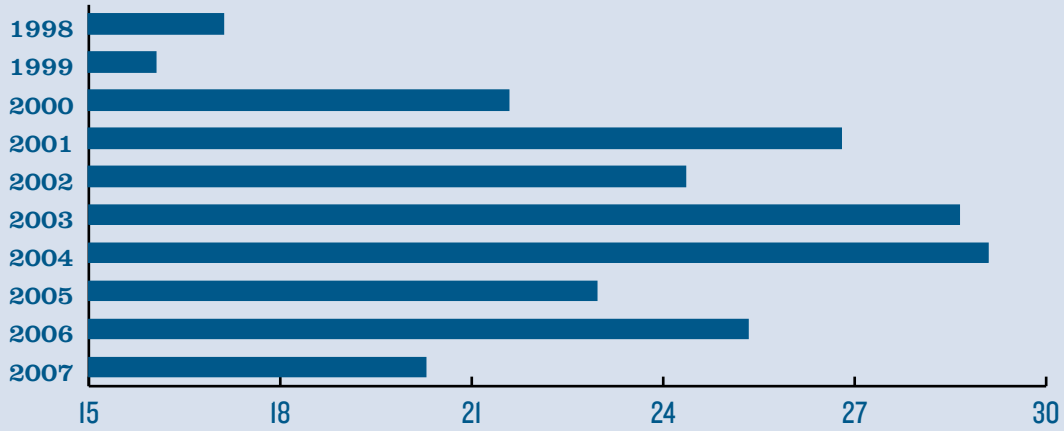
The lack of adequate information has been noted at several levels. At a hearing of the House Education and Labor Committee in February of 2008, Representative Bob Etheridge (D) of North Carolina noted that "part of the problem we have had grappling with this problem from the federal level is a lack of reliable numbers

RAISING THE GRADES CASE STUDIES

### PORTLAND, OR ★ Seismic Retrofits

Nearly half of Oregon's schools—most built prior to 1960, 10 years before statewide seismic building codes were adopted—are at risk of collapse if the state experiences a major earthquake along the Cascadia Fault. In 2005, voters approved a $1-billion bond measure to seismically retrofit schools and other high-risk facilities by 2032.[14]
*Photo courtesy of Portland Public Schools.*

**FIGURE 14.1 ★ School Construction in Billions of Dollars: 1998–2007**




**SOURCE** 34th Annual Official Education Construction Report

in real time."[16] Even at the state level adequate numbers are hard to find.

The following facts illustrate the scope of the nation's K–12 public school enterprise. In the 2008–2009 school year:

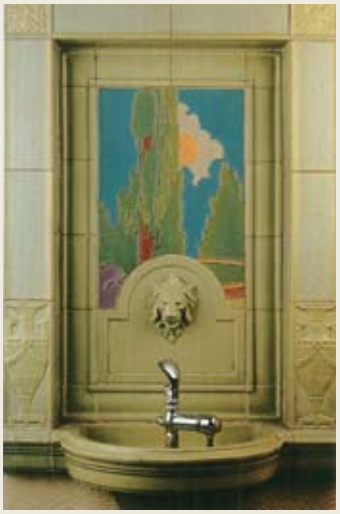
- ★ 49.8 million students are enrolled in public elementary and secondary schools;
- ★ Public schools employ about 3.3 million teachers;
- ★ There are 14,200 public school districts containing about 97,000 public schools;
- ★ Expenditures for public elementary and secondary schools are about $519 billion;
- ★ The national average spending per student in the 2005–2006 school year is about $10,418, up from $9,154 per student.[6]

Despite increasing federal mandates on school performance, school facilities in the United States are primarily a local responsibility and there is ample evidence that local communities are struggling to meet this responsibility. In 31 states, lawsuits have challenged the adequacy or equity of public education and have included facilities as elements of their cases.[7]

While detailed conditions and needs numbers do not exist, we do have up-to-date numbers on spending levels. According to the American School and University's *34th Annual Official Education Construction Report*, school construction completed in 2007 (which included both new construction and renovations) totaled more than $20.2 billion. That is down from a peak of $29 billion in 2004. The downward trend is expected to continue: with $52.7 billion in funding is projected between 2008 and 2010. This represents a

RAISING THE GRADES
CASE STUDIES

**CINCINNATI, OH ★ School Modernization Program**



Cincinnati Public Schools, Ohio's third-largest public school district, has approximately 70 schools spread across a 90-square-mile area. Beginning in 2002, it embarked on a major, 10-year long initiative to upgrade its educational facilities, turning them into modern 21st century learning environments. In addition to tearing down schools that were outmoded and/or underutilized, ongoing construction projects include both new buildings and extensive renovations of often architecturally significant older buildings, all carried out under the district's $985 million Facilities Master Plan. *Photo courtesy of Cincinnati Public Schools, photo by Robert Flischel.*

significant decrease from the $68.4 billion spent between 2005 and 2007.[1]

*Engineering News-Record* reports that despite the record breaking demands of student population growth, market conditions threaten to delay or kill projects and programs that until very recently seemed economically feasible. The cause is problems in the financial sector and declining revenues for states and local governments. Examples cited included delays on 12 major school construction projects in Maine, and the decision not to build an elementary school in Cumberland County, North Carolina, because of the failure to find buyers for the county's construction bonds.[9]

Examples of the coming slowdown include the recently released budget in New York City, which contained a reduction in construction of new schools from the 76 announced in 2003 to 42 following the latest round of budget cuts.

Other estimates include $9 billion needed for new construction and $3.5 billion needed for modernization of public school facilities in California[8] and $9.7 billion needed statewide between 2008 and 2012 for school facilities in North Carolina.[18]

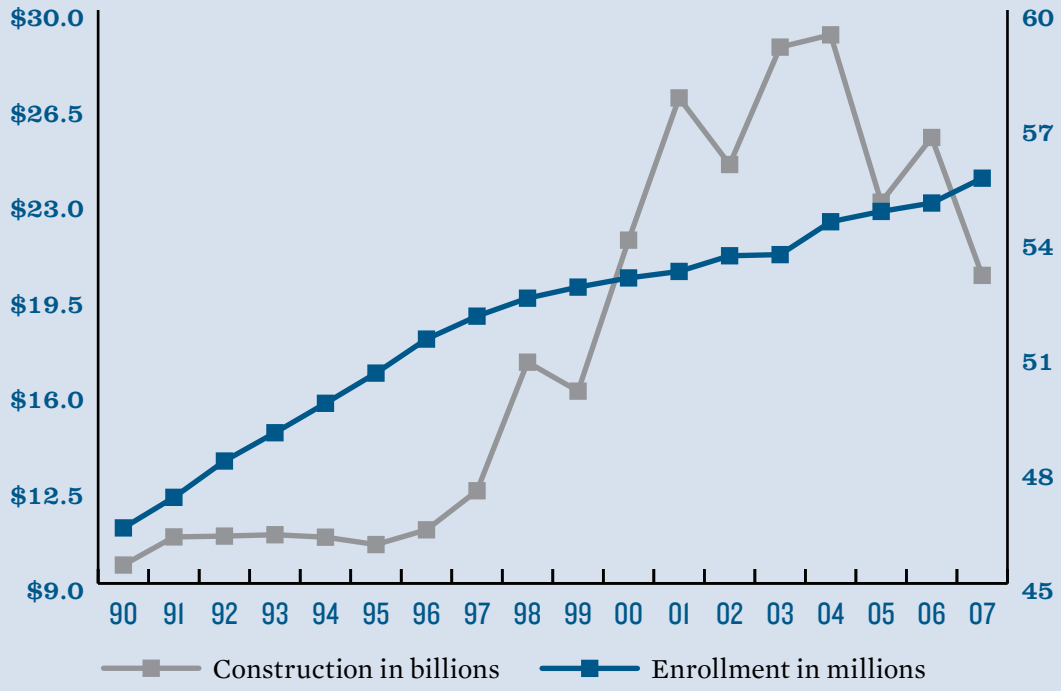
While spending is decreasing, the trend in school enrollment continues to rise. There were 48.9 million public school students in school year 2005–2006, up from 48.1 million in the 2002–2003 school year. According to the National Center for Education Statistics, public and private school enrollments will grow 7% from 2007–2016.[6]

RAISING THE GRADES
CASE STUDIES

## CAMDEN, NJ ★ Improvements to Camden High School

Scaffolding surrounding the 90-year-old Camden High School protects students and teachers from debris falling from the crumbling façade.[15] To combat the dangers of deteriorating school buildings, a new agency, the New Jersey Schools Development Authority (NJSDA), was created in 2000 and is responsible for implementing an overhaul of the educational infrastructure of hundreds of schools in districts throughout all 21 counties of the State of New Jersey. The New Jersey Educational Facilities Construction and Financing Act, which created the NJSDA, authorized $3.9 billion for school improvements.[17]
*Photo courtesy of Camden City Public Schools.*

## FIGURE 14.2 ★ School Construction vs. Enrollment: 1990–2007




**SOURCE** 34th Annual Official Education Construction Report

Another major concern is that despite increases in spending for school facilities earlier in this decade, the money has disproportionately gone to the nation's wealthiest school districts while the neediest students continue to endure the most decrepit facilities. A report by Building Education Success Together noted that over the decade of 1995 to 2004 public school districts built more than 12,000 new schools and managed more than 130,000 renovation and improvement projects. However, the least affluent school districts made the lowest investment ($4,800 per student) while the most affluent districts made the highest investment ($9,361 per student).[3]

## RESILIENCE

The nation's schools serve as pillars of local communities and often serve a dual purpose as disaster-relief shelters. As local governments hold the prime responsibility for funding schools, the economic downturn has had a negative impact on rehabilitation, modernization, and security improvements.

School facilities are not currently considered resilient because of decreased funding and increased capacity, the failure of designs

to adapt to the ever changing learning environment, and the lack of system redundancy.

In order to achieve continuous assurance of service, future investments should consider life-cycle maintenance, rapid recovery, alternative services, security, and condition and risk assessment.

## CONCLUSION

A significant problem in determining the condition of the nation's schools is the lack of reliable information. No comprehensive, authoritative data have been collected in 10 years. Spending on school construction and modernization, for which data do exist, has trended positive for much of the last 10 years, increasing from $17 billion in 1998 to a peak of $29 billion in 2004. The trend since 2004, however, has reversed and was down to $20.7 billion in 2007. Barring dramatic change in economic conditions, this downward trend will likely continue, coupled with the known needs of 10 years ago and increasing student enrollments, gives little hope for improvement. ★

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