Schools

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EXECUTIVE SUMMARY

School facilities represent the second largest sector of public infrastructure spending, after highways, and yet there is no comprehensive national data source on K-12 public school infrastructure. What data is available indicates that 53% of public school districts report the need to update or replace multiple building systems including HVAC systems. More than one-third of public schools have portable buildings due to capacity constraints with 45% of these portable buildings in poor or fair condition. Meanwhile, as a share of the economy, state capital funding for schools was down 31% in fiscal year 2017 compared to 2008. That is the equivalent of a $20 billion cut. The best estimates indicate a minimum of $38 billion annual funding gap for public school facilities across the country. Meanwhile, public schools increasingly serve a secondary function as emergency shelters and community resource facilities during man-made or natural disasters, and facility upgrades are needed to effectively fulfill this important community purpose.

CAPACITY & CONDITION

There are approximately 84,000 public schools with nearly 100,000 buildings[1] in the U.S. with a projected enrollment of 56.8 million by 2026.[2] Every community across the U.S. has public school buildings and facilities. They are used not only for learning, libraries, sports, and feeding children, but also for community meetings and as emergency centers and shelters. To provide a safe and healthy environment that is conducive to learning for children of all ages, school buildings need to be in good condition and provide adequate spaces, natural light, working heating and air conditioning, clean water, and modern technology to fulfill a host of other functions.

A 2015 Congressional Research Service report[3] concluded that national data on the condition of school infrastructure and the investment needs are extremely limited and outdated, and comprehensive findings remain elusive. There is no consistent federal data collection process to aggregate information on the condition of schools. Furthermore, the data that is collected is based on a wide variety of assumptions and definitions regarding both conditions and needs.

School facilities represent the second largest sector of public infrastructure spending, after highways, and yet there is no comprehensive national data source on K-12 public school infrastructure. The most comprehensive data available is a National Center for Education Statistics (NCES) survey for the 2012-2013 school year.[4] The U.S. General Accountability Office (GAO) issued a limited, one-time survey of school districts in 2020, which found that 53% of public school districts needed to update or replace multiple building systems, reinforcing the findings of the NCES report that found that 53% of public schools needed to spend money on repairs, renovations, and modernizations to bring the infrastructure into good overall condition.[5] Nearly 41% reported issues with HVAC systems, a significant concern for facilities where children routinely spend eight hours a day.

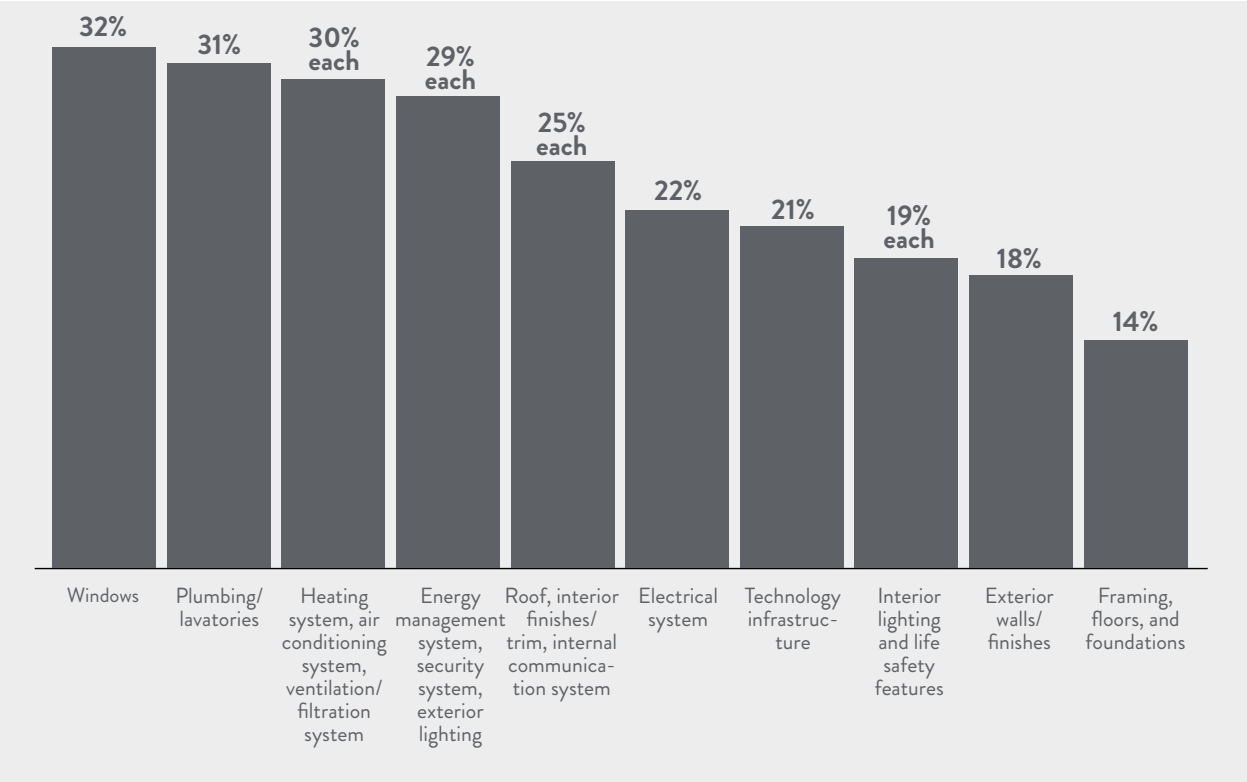
The NCES report, while older, was more comprehensive and found that 24% of overall building conditions were rated as fair or poor, while 14% to 32% of systems and features within these permanent buildings were rated in fair or poor condition. Among the 31% of public school systems with portable (temporary) buildings, 45% of overall building conditions were rated as fair or poor. Additionally, outdoor features were rated as fair or poor, including school parking lots and roadways; fencing; bus lanes and drop-off areas; outdoor athletic facilities; and outdoor play areas/playgrounds.

OPERATION & MAINTENANCE

State and local governments face a constant challenge to keep pace with operations and maintenance and the need for new school construction, in addition to accommodating improved health and safety standards, stronger accessibility requirements, and new technology. Great strides have been made in infusing technology into schools and into the instructional process. Some school districts have invested heavily in the infrastructure required to accommodate technology. As the COVID-19 pandemic illustrated, investments in technology are critical to ensure continued learning, yet despite progress, many school districts have not been able to keep pace. Meanwhile, school districts need to upgrade HVAC systems and add capacity to classrooms with outdoor classrooms, temporary buildings, or leasing new space, all with limited budgets.

The GAO estimates that while 65% of school districts have assessed their facilities within the past 10 years (86% of those do so yearly), 16% of districts have not done so within the past 10 years. Planning is often lacking, as four in 10 public schools do not have a long-term facility plan in place to address operations and maintenance. Better planning through life-cycle cost analysis will lead to a better allocation of resources. Such analysis should review costs associated with planning, funding, design, construction, operation, maintenance, and decommissioning.

Percent of building systems and features in fair and poor condition in public schools with all permanent buildings



U.S. Department of Education, National Center for Education Statistics, Institute of Education Sciences, "Condition of America's Public School Facilities: 2012–13," NCES 2014-022, March 2014.

FUNDING & FUTURE NEED

An estimated 55% of districts use local revenues as their primary source of funding for school facilities, compared to 36% that rely mainly on state funds. The most common source of local funding is property taxes, which are used in 77% of school districts. Other local funding comes from grants, bonding, other taxes, and public-private partnerships.

The Center on Budget and Policy Priorities reports that as a share of the economy, state capital funding for schools was down 31% in fiscal year 2017 compared to 2008.[6] **That's the equivalent of a $20 billion cut.** Thirty-eight states cut school capital spending as a share of the state economy over the 2008-2017 period, in many cases drastically.

Between 1994 and 2013, school systems spent $973 billion for new school construction and capital projects to improve existing infrastructure. This spending totaled $49 billion annually. However, to provide healthy and safe 21st century learning environments, it is estimated that the nation should be spending $87 billion per year on capital needs.[7] This leaves an additional $38 billion per year that is required 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.[8]

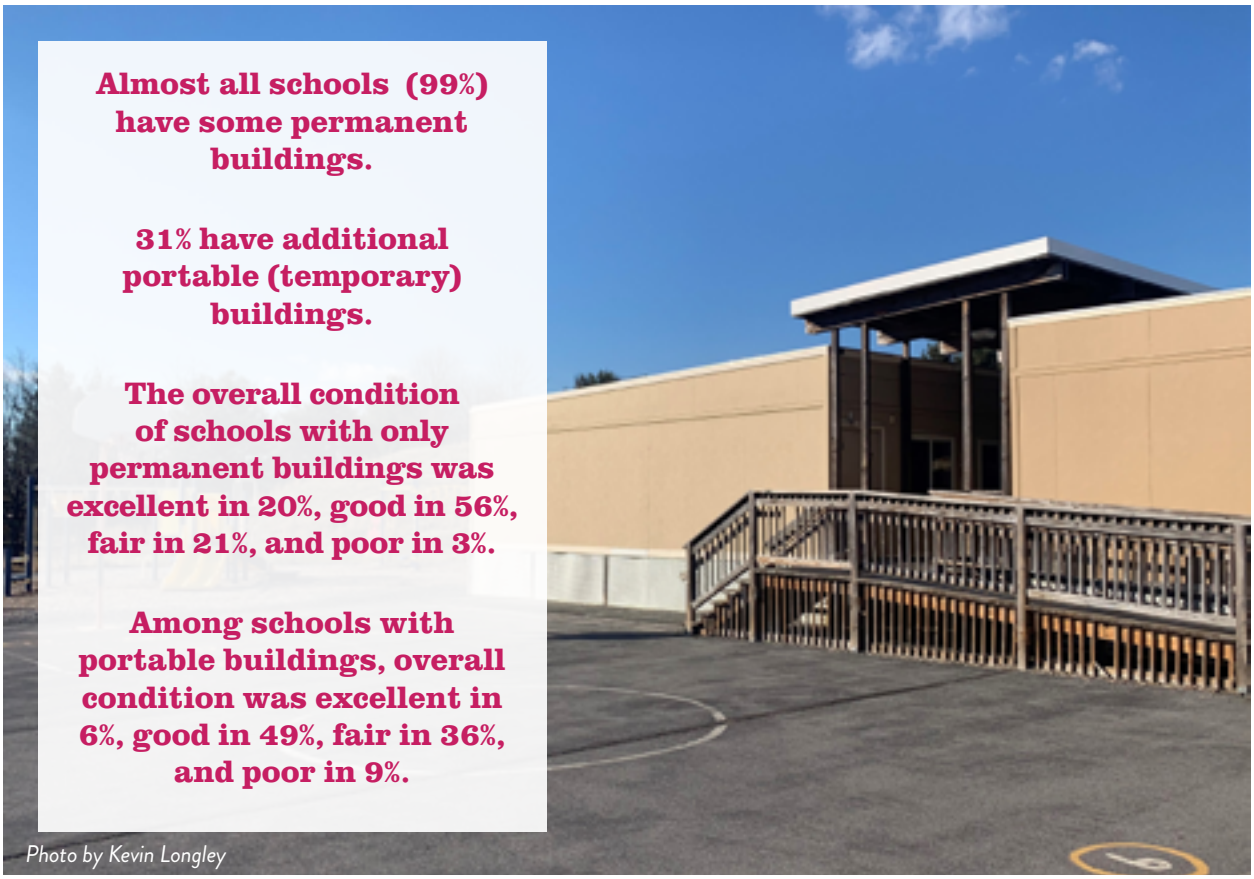
The number of students nationwide enrolled in school was 76.4 million in 2017 (pre-school — college), not statistically different from the level in 2016. (U.S. Census)

Those who are enrolled make up 24.7% of the population age three and older. (U.S. Census)[9]

Every school day, nearly 50 million K-12 students and six million a dults occupy close to 100,000 public school buildings on an estimated 2 million acres of land. (NCES)

The student population increased by nearly 5 million between 1994 and 2013, requiring an additional 13,000 K-12 schools. (NCSF)[10]

Enrollment is projected to increase by 3% between the 2013-2014 and 2025-26 academic years — rising from 50 million to 51.4 million students. (NCES)[11]



A TEMPORARY SCHOOL BUILDING IN MARYLAND.

Though the current school infrastructure funding gap is nearly $40 billion annually, the true cost is undoubtedly higher due to school systems' loss of income during the 2020 pandemic and its impact on tax revenues.[12]

PUBLIC SAFETY AND RESILIENCE

To provide a safe and effective learning environment for the nation's K-12 students, public schools need to be in good condition.

Public schools often serve a secondary function as emergency shelters and community resource facilities during man-made or natural disasters. This critical function has a significant role in public health, safety, and welfare, and requires facilities to be maintained to function in emergencies and help communities recover quickly. Schools require upgrades to effectively fulfill this important community purpose, including windows that can withstand high winds, structures designed to survive earthquakes, and rooms specifically designed as shelters from tornados.

SCHOOL CONSTRUCTION IN NORTH CAROLINA

Schools

RECOMMENDATIONS TO RAISE THE GRADE

- All schools (new and existing) should be designed to withstand seismic, wind, and flood events. State and local governments must support the widespread adoption and enforcement of modern building and infrastructure codes, such as *ASCE 7: Minimum Design Loads and Associated Criteria for Buildings and Other Structures.* ASCE 7 describes the means for determining flood, tsunami, snow, rain, atmospheric ice, earthquake, wind, and other loads and their combinations for general structural design. ASCE 7 is continuously updated to reflect our changing world and to make infrastructure more resilient in the face of new challenges.
- The U.S. Department of Education should coordinate with state agencies and local school districts to obtain and publish nationwide statistics on school infrastructure at regular intervals.
- School districts should focus on Life-Cycle Cost Analysis (LCCA) principles in the planning and design processes to evaluate the total cost of projects.
    - Design new campuses for the lowest net present value cost that includes life-cycle O&M in addition to capital construction.
    - Implement building condition assessment of existing school infrastructure.
    - Budget for the total cost of ownership and train facilities staff to implement these policies.
- School districts should develop capital planning frameworks that can be nimble and responsive to changing technologies and demographics, in order to optimize learning environments and consider the holistic needs of the community.
- Continue to encourage school districts to adopt regular, comprehensive major maintenance, renewal, and construction programs, and implement preventive maintenance programs to extend the life of school facilities.
- Explore alternative financing for public school facilities, including lease financing, as well as ownership and use arrangements, to facilitate school construction projects.

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SOURCES

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4. U.S. Department of Education, National Center for Education Statistics, Institute of Education Sciences, "Condition of America's Public School Facilities: 2012–13," NCES 2014-022, March 2014.
5. " K-12 Education: School Districts Frequently Identified Multiple Building Systems Needing Updates or Replacement," file:///G:/GRA/Word/Report%20Card/2021%20Report%20Card/Categories/Schools/GAO%20Report%20June%202020.pdf GOA-20-949, June 2020.
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8. 21st Century School Fund Inc., U.S. Green Building Council Inc., and the National Council on School Facilities, "State of Our Schools: America's K-12 Facilities," 2016.
9. U.S. Census Bureau "More Than 76 Million Students Enrolled in U.S. Schools, Census Bureau Reports," 2018.
10. 21st Century School Fund Inc., U.S. Green Building Council Inc., and the National Council on School Facilities, "State of Our Schools: America's K-12 Facilities," 2016.
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