# Funding a Green New Deal for Public Schools

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by Climate and Community Project

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**Public schools are central to America's deeply held ideals.** They are community hubs that incubate democracy and cultivate empathy. But public schools today are crumbling, dilapidated, and unsafe. They circulate toxic chemicals, boast leaking roofs, and lack functioning toilets. Many students spend at least part of the school day learning in trailers.[1,2] These problems are most common in schools that serve low-income and minoritized students, where community wealth-based funding policies drive disparities that are compounded by historical race- and class-driven disinvestment.[3] While countries with some of the most successful education systems in the world, like Finland and South Korea, have initiated major redesigns to modernize their school buildings and give students the best learning experience possible, the US has not taken such an approach. In 2013, the average US public school was 44 years old and had not had a major renovation in more than a decade.[4,5] A 2020 report estimated that 54 percent of public school districts needed to update or replace multiple systems or features in their school buildings.

**As the climate crisis increases the severity of storms, heatwaves, and wildfires, it becomes clear that school infrastructure itself is in a state of crisis. Temporary buildings, which nearly a third of US school**s use, are particularly vulnerable to floods.[6] In 2019, 41 percent of surveyed districts reported needing to update or replace their heating, ventilation, and air conditioning systems.[7] The extreme heat that gripped large swaths of the country in August and September 2023 forced many schools to close just as the school year was beginning.[8] According to one study, nearly 14,000 public schools that did not need cooling systems in 1970 will need them by 2025.[9] This comes after the events of spring 2023, when smoke from extreme wildfires created hazardous air quality conditions that forced schools across the northeast US to cancel outdoor activities and opt for early dismissals.[10] Schools with outdated ventilation systems cannot protect students from extreme heat or poor air quality—and research shows that school-age children are particularly vulnerable to air pollution.[11]

Meanwhile, enrollment fluctuations present additional challenges for districts trying to maintain their school facilities. Before the COVID-19 pandemic, US student enrollment was steadily increasing: in 2020 there were nearly 5 million more K-12 students enrolled in public schools than in 1995.[12] Higher enrollment means both more wear and tear on school infrastructure and a growing need for additional classroom and facilities space. Undertaking

large-scale capital projects, however, is a challenge for most school districts. Financing capital projects often involves on debt to cover the substantial sums required, which in 47 states means winning voter approval—and ten of these states require supermajorities to approve bond issuance.[13] Some states also limit the amount of debt districts can take on to 11 percent of assessed property values on average (across 40 surveyed states).[14] These rules make it more difficult for lower-wealth districts to finance capital improvements.[15]

Since the COVID-19 pandemic, student enrollment has declined and chronic absenteeism has increased,[16] which presents a new challenge for districts because funding levels are tied to enrollment or attendance.[17] A large portion of districts' expenses are fixed costs, including facilities, and when funding decreases due to enrollment declines or attendance problems, these districts have even less money to put toward maintaining facilities. This, in turn, can lead to school closures, which have obvious adverse effects on students' math and reading achievement, particularly for Black students and special education students.[18] These closures also disproportionately affect schools in low-income and minoritized neighborhoods, forcing deep disruptions on these communities.[19]

School infrastructure in the United States has reached a crisis point. In 2021, the American Society of Civil Engineers gave US school infrastructure a grade of D+.[20] The longer that districts delay making updates or improvements to their school buildings, the more expensive and time-consuming these improvements become. And, although education funding overall has become more progressive over time—with states directing more funds toward lower-wealth school districts—funding for capital improvements remains inequitable. In approximately half of school districts nationwide, money for capital spending comes primarily from local funding sources,[21] meaning wealthier districts can finance building improvements while lower-wealth districts cannot.[22] Leaving poorer districts to fend for themselves while school roofs cave in, poison leaks from walls and sinks, and severe plumbing problems lead to school cancellations ensures that threats to student and teacher safety will grow while expenses continue to mount.[23]

These risks become more acute as the impacts of the climate crisis create more severe floods, fires, and temperatures. Most public schools lack features that can make buildings more resilient and resistant to climate disasters, and are not in any condition to withstand severe flooding or intense heat waves—nor can they maintain adequate air quality during wildfires.[24] Outmoded facilities not only face greater risks from the climate crisis, they also contribute to it. The energy inefficiencies of aging school infrastructure produce excess greenhouse gasses that accelerate the pace of the climate crisis.

We, the authors of this report, advocate for increasing federal funding to make all school buildings into safe environments that promote learning and community, repair and replace aging structures and systems to increase energy efficiency and promote climate resilience, and construct new energy-efficient school buildings designed to center student learning and interaction that can accommodate larger enrollments and withstand the effectsof the climate crisis. Disparities in the quality of school facilities, long exacerbated by chronic race- and class-based disinvestment and dependence on local property values, disproportionately affect marginalized communities. Increasing funding for school infrastructure is an opportunity for the federal government to right these wrongs and make impactful investments that will improve learning and invigorate communities.

## Implications of poor school infrastructure

### Learning and working conditions

School buildings create learning conditions for students and working conditions for teachers and school staff. Poor building conditions can have major consequences on teacher and student experiences—and, because so many US public schools are in poor condition, cumulative effects lead to poorer academic performance at scale and weaken the education labor force.

Research shows lower attendance rates at schools that need structural repair, use temporary buildings, or whose custodial teams are understaffed.[25] Shabby school buildings make for worse learning and working environments: a study surveying 80 middle schools in Virginia found that schools with poorer facilities were perceived as less orderly with weaker academics, had less community engagement to support teaching and learning, and had less enthusiastic teachers.[26] Students who attend schools in poor condition score lower on tests and suffer higher absenteeism.[27,28] They also tend to have lower perceptions of their schools' social climates.[29]

Heating and cooling, in particular, can have major impacts on student learning. Students fare worse on tests when classrooms are too hot: a study of New York City schools estimates that "510,000 exams that otherwise would have passed received failing grades due to hot temperature, affecting at least 90,000 students.[30] Even though proper heating and cooling has major implications for student performance, many schools have outdated or inefficient systems—or no cooling systems at all. In a survey of 12,000 high schoolers from across the country, less than 60 percent reported having adequate air conditioning in their classrooms.[31] Many schools that lack central cooling systems rely on window units for air conditioning, and, often, these units are not installed in all classrooms.[32] Research also shows that schools with poorer environmental air quality have lower test scores, more student behavioral issues, and higher absence rates.[33] Air quality concerns are particularly

worrying because, according to a 2019 national survey, more than 40 percent of districts reported needing updates or replacements for their ventilation systems in at least half their schools.[34] Neglecting to make large-scale investments in these systems adversely affects student learning. But the opposite is also true: research has shown that investing in school infrastructure improves students' reading levels over the long term.[35]

Poor building conditions also affect student, teacher, and school staff health. A study of students from 130 schools showed students who attended schools in poorer condition had higher rates of hospitalization for asthma.[36] Another study found that illness-related absences are more frequent when buildings have poor ventilation.[37]

The same factors that create poor learning environments for students also create poor working conditions for teachers. Working conditions, including poor facilities, are among the strongest predictors of teacher turnover problems.[38] In a study conducted in South Carolina, principals describe the relationship between poor building conditions, student and teacher morale, and school climate. School principals noted that "Our worn out facilities are becoming impossible to keep clean. It sends the message that third-rate is acceptable" and "new facilities afford children wider opportunities and let them know that education is valued by their community and state."[39] With teacher morale already flagging due to the COVID-19 pandemic, poor and unsafe working conditions may exacerbate this stress and contribute to more teachers leaving the profession.[40]

## Equity

The negative impacts of poor school infrastructure fall disproportionately on lower-income communities and communities of color. Buildings in these areas tend to be in poorer conditions than buildings in other communities: according to a national survey in 2012-13, close to one-third of very high-poverty schools, and more than a quarter of high-minoritized schools, were in fair or poor condition.[41] There are several reasons for this: long-term disinvestment in school buildings in lower-income and minoritized communities, including their schools; insufficient state and federal funding for school infrastructure; and the complexity of policies governing financing for capital projects. Histories of structural racism and classism have resulted in chronic disinvestment in low-income and minoritized communities, particularly in schools.[42] After suffering decades of neglect, schools in many underserved communities have fallen into deep disrepair.[43,44] But policies regulating facilities funding make it difficult for low-income districts to secure the funding to make improvements and repairs.

The majority of spending on school facilities comes from local revenues. Between 2009 and 2019, local revenues funded 77 percent of facilities projects, on average, while states provided only 22 percent.[45] Even when states do create programs to fund capital projects, these often require districts to match funds and can end up going to whiter, higher-income districts.[46] The consequence of relying primarily on local funds for capital projects means that lower-property-wealth districts, which have smaller pots of local revenues, are less likely to undertake these projects, deferring necessary maintenance and upgrades.[47] Another factor that can make infrastructure projects more difficult is regulations around districts taking on debt to finance these projects. Many states require majority or even supermajority votes to approve bonds issuance for financing major capital projects.[48] This can prove a serious hurdle for districts, particularly those that face competing demands for public investments but have scant local revenues, where increasing funding for school buildings might be less likely to pass, even if needs are urgent.[49] The cumulative result of these compounding challenges is that schools in low-income and high-minoritized districts are more run-down—and potentially dangerous—than schools in more affluent and whiter communities.[50]

## Public Schools in the Climate Crisis

Outdated school infrastructure both contributes to and is impacted by the climate crisis. Calculations based on energy consumption from the US Energy Information Administration estimate that public schools emit 78 million metric tons of CO2 each year.[51] The high rate of emissions is largely a result of outmoded, energy-inefficient infrastructure. For example, a 2019 survey of 64 school districts found that more than one in four reported needed updates or replacements for windows, nearly half needed to update heating, ventilation, and air conditioning systems, and nearly a third reported needing updates to electrical systems.[52] Outdated windows, HVAC, and electrical systems all contribute to energy inefficiencies. Multiple studies have shown that school buses also contribute to poor air quality.[53]

In addition to contributing to the climate crisis through energy inefficiencies and the use of fossil fuels, schools in poor condition are also vulnerable to the effects of the climate crisis. In 2023 in Vermont, for example, 14 schools sustained damage after historic flooding across the state, and three of those schools had major damage.[54] As schools across the country opened this fall, temperatures exceeded 100 degrees across 19 states, affecting 100 million people in the US. In response, schools canceled recess and sports activities, implemented remote learning, and made attendance optional or canceled school outright.[55] Wildfires that devastated West Maui left 3,000 students and 400 staff without a school. In June, smoke from Canadian wildfirescaused school closures and canceled school activities across New York, New Jersey, Pennsylvania, and Washington, DC.[56] According to the Government Accountability Office, "over one-half (54 percent) of public school districts were in counties that experienced presidentially-declared major disasters from 2017 through

2019...These school districts included over two-thirds (67percent) of all students across the country."[57]

### Education funding in the United States

Most school funding comes from state and local tax revenues: state and local sources each contribute a little over 45 percent of funds, and federal sources contribute about 8 percent.[63] The primary source of local revenues is property taxes, which make up about 80 percent of local funds, on average.[64] Districts with lower property values—which serve lower-income students, and often high proportions of minoritized students—therefore generate less local funding for schools, a longstanding source of inequity in education funding. Today, most states direct state revenues toward districts with lower property wealth, and federal funding, through Title I, goes to lower-income districts. As a result, most states spend as much or more per student in low-income compared to higher-income districts.[65,66] Although school funding overall is close to equal or mildly progressive across many districts, funding for school buildings comes primarily from local sources.

**Therefore, facility funding remains unequal, and wealthier districts are able to spend more to maintain pristine buildings and state-of-the-art facilities while schools in poorer districts fall into deeper disrepair.**[67]

## Community benefits of investing in school infrastructure

Disinvestment in school infrastructure contributes to the plight of underserved communities. Inadequate building conditions are linked to poorer student test scores, health, and attendance—all of which compound over time—and also impact community wellbeing.
In many communities, schools double as community centers,[58] hosting continuing education classes, community meetings, rallies, polling stations, after school programs, recreation leagues, and performances. Poor facilities can limit schools from hosting functions that bolster and unite communities.

Investing in school buildings can improve students' academic outcomes and strengthen local economies. Installing air filters in every classroom, for example, leads to big improvements in student test scores.[59] Investing in HVAC systems could mitigate air quality problems, particularly as wildfires continue to create hazardous conditions across large swaths of the United States. School building renovations and new constructions result in better student attendance and higher test scores.[60] Several studies have shown that spending on school capital projects leads to medium- and long-term increases in community home values.[61] These capital projects also ensure school buildings can serve a dual purpose: as enriching learning environments and as centers that create ties among local groups and foster a sense of community. Studies of high-minoritized, low-income urban districts show that investingin school infrastructure holds particular benefits for these communities, raising test scores, decreasing absences, and increasing home values.[62]

## Opportunities

Given the dire state of US school infrastructure, its impacts on students' health and learning, the toll it takes on teachers, and the reality that the climate crisis will intensify these problems, it is urgent that The Federal government act immediately to repair and rebuild our crumbling schools and create energy-efficient and disaster-resilient buildings. But finding financing is difficult: most districts must rely on local taxes, issue bonds, and take out loans in order to procure enough funding to undertake large-scale improvements to school infrastructure. Below, we point to recent legislation and other sources that can help communities invest in their school buildings with federal assistance for updates and improvements.

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| **ESSER funding** | Districts received three waves of Elementary and Secondary Schools Emergency Relief (ESSER) funding to help mitigate and recover from the educational challenges of COVID-19. Many districts are using portions of their ESSER funding to improve facilities, especially HVAC systems. But this is a temporary funding source; districts can use funds from these grants only through September 2024. Given the breadth and depth of challenges districts are undertaking to help their students and teachers recover from the pandemic's toll, there are already many demands on these funds. https://oese.ed.gov/files/2021/09/Using-COVID-Relief-Funds-for-Facility-Upgrades-Renovations-and-Construction-09.02.21.pdf |
| **WIFIA loans** | Through the Water Infrastructure Finance and Innovation Act (WIFIA), the Environmental Protection Agency can issue loans to help municipalities improve drinking water and replace outdated water infrastructure, including water mains and service lines that contain lead. https://www.epa.gov/wifia/what-wifia. |
| **Energy-Efficiency Tax Reduction** | The federal government offers a tax deduction of $1.80 per square foot for improvements to interior lighting, the building envelope (windows, roof, exterior walls and doors, and building foundation), heating, cooling, and ventilation (HVAC), or hot water systems that reduce energy and power costs. This tax deduction can help offset the cost of building improvements. https://www.energy.gov/eere/buildings/179d-commercial-buildings-energy-efficiency-tax-deduction-public-schools#:~:text=Local%20school%20districts%20can%20take,responsible%20for%20the%20system%27s%20design. |
| **Renew America's Schools Program** | The federal Department of Energy has made $500 million available to districts for energy upgrades in their schools, and prioritizes schools in high-needs communities. [The application for this program is currently closed but we are expecting a second round of funding to open in the spring of 2024. https://www.energy.gov/scep/renew-americas-schools./ |
| **Energy Improvements in Rural or Remote Areas** | State and local governments can apply for grants to increase energy efficiency in rural areas. https://www.energy.gov/oced/energy-improvements-rural-or-remote-areas-0. |

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| **Qualified Commercial Vehicle Tax Credit*** | Through the Inflation Reduction Act (IRA), these non-competitive**, uncapped tax** credits apply to electric school bus installation costs, with a maximum amount of $40,000 per vehicle. For more information see Commercial Clean Vehicle Tax Credits and this explainer from the Electric School Bus Initiative. |
| **Investment Tax Credit*** | Through the IRA, this non-competitive**, uncapped** tax credit can be applied to the costs of installing solar, energy storage, or geothermal HVAC systems. It applies to both new construction and retrofits. |
| **Energy Efficient Commercial Buildings Deduction*** | Through the IRA, schools can receive this tax deduction for the installation of HVAC or hot water systems, building envelopes, or interior lighting systems that improve the energy efficiency and reduce energy and power costs by 50% or more compared to the minimum requirements. |
| **Alternative Fuel Refueling Property Credit** | Through the IRA, this non-competitive**, uncapped** tax credit applies to the cost of installing electric vehicle charging equipment, which can be used for both passenger electric vehicles and electric school buses. |
| **Direct Pay** | Through the IRA, districts can receive tax-free payments equal to the full value of tax credits for clean energy projects through grants or forgivable loans from the IRS. The latest guidance is here: https://www.whitehouse.gov/cleanenergy/directpay/. |
| **State funding** | States may have funds that provide grants or rebates to districts for upgrading school infrastructure. Some states use lottery taxes or sales taxes as supplemental revenue streams to fund education, and some use new revenue sources such as taxes on marijuana sales or sports betting. States may also help districts underwrite capital projects or provide money up front. Find information about your state by searching on the state website, specifically, the education department and energy department websites. Also try the state representatives' or governors' web pages. |
| * Through the IRA, direct pay applies. | |
| ** Non-competitive grants do not require an "application," and schools do not compete against each other for limited funds. An unlimited number of schools can participate in the uncapped credit programs, and there is no limit on the total credit amount eligible for schools. | |
| For more information on Inflation Reduction Act programs, see the resources collated by Undaunted K-12 in "Schools and the Inflation Reduction Act."[68] | |

## A Green New Deal for Public Schools

While the options listed in the table above can enable districts to begin funding improvements, these sources are not enough to meet the deep needs of public schools, especially as the threats of the climate crisis intensify. **Concerted federal investment in school infrastructure is imperative to guarantee a safe environment for students, teachers, and school staff—one that inspires learning while withstanding the worsening impacts of the climate crisis, using energy-efficient systems, and ending reliance on fossil fuels.** Historically, the federal government has provided emergency funding to schools in times of crisis.[69] We argue that the inequality in school facilities across the country is an ongoing and urgent crisis, and the federal government must respond.

The Green New Deal for Public Schools is designed to allow districts, particularly those with less access to local funding sources, to invest in their school buildings to ensure safe and productive learning environments. The bill proposes providing $1.6 trillion in federal financing to repair and replace outdated systems and structures in school buildings, invest in energy-efficient technologies, and create large-scale improvements in school infrastructure across the country. This legislation, which would improve learning environments for millions of students who currently attend schools in dangerous, aging buildings, would create 1.3 million good-paying jobs annually and reduce carbon emissions by 78 million metric tons per year.

The Green New Deal for Public Schools proposes spending $446 billion over 10 years for Climate Capital Facilities Grants to fund healthy, green, climate-friendly retrofits for every public school in the country. The grants would be paired with an additional $223 billion in green retrofit low-interest loans. Grant funding would target school districts in the lowest-income areas, prioritizing their access for the program's first three years to ensure that needier districts receive funding quickly. The bill proposes an additional $40 billion for school resilience measures to keep schools safe in extreme weather.

Other provisions in the Green New Deal for Public Schools include $250 billion over 10 years to Resource Block Grants to fund staffing increases, expanded social service programming, and curriculum development at high-need schools. Additionally, the funds may be used to design locally-rooted curricula, adopt trauma-informed, culturally responsive, and restorative justice practices, and partner with community organizations to offer a range of services to schools and neighborhoods. The Green New Deal for Public Schools also proposes allocating $100 million over 10 years to Educational Equity Planning Grants to pilot a process for eliminating intra-region education inequities in school funding. Educational Equity Planning Grants will encourage neighboring districts to form regional consortia, which will receive funding to conduct extensive community outreach, identify the historical and current sources of educational disparities within the region, and create and implement plans to address those disparities.

**The $1.6 trillion in total funding from the Green New Deal for Public Schools will help remediate longstanding educational injustices, make schools more climate-resilient, and improve the experience of learning and working in schools for students and teachers across the country.**

Historically, public schools have been sites of critical civil rights battles, including the fight against racial segregation, race-based attendance policies, and gerrymandered school boundaries. The Green New Deal for Public Schools aims to build on this legacy by directing federal investments to school buildings and districts that are the most vulnerable to economic marginalization, environmental injustice, and educational inequity—vulnerabilities that, for far too many school districts, have become even more serious since the beginning of the COVID-19 pandemic.

Ambitious investments in upgrading school buildings while eliminating carbon pollution would represent a profound step toward remediating deeply entrenched inequities and make dramatic improvements to learning and teaching conditions in the country's most vulnerable schools. The Green New Deal for Public Schools will ensure that all US public schools will provide safe and productive learning environments that nurture and encourage our future leaders.

**Climate and Community Project** is a progressive climate policy think tank that mobilizes a network of leading academic and movement researchers in developing cutting-edge research at the climate-inequality nexus. We've produced multiple research briefs alongside movement and political partners including the Green New Deal for Public Schools, A New Era of Public Power, and High Roads to Resilience.

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