

Gauging Good Stewardship

Is California Adequately and Equitably Investing in its Public School Facilities?



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CITIES+SCHOOLS**
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Acknowledgements

The authors wish to thank the following for thoughtful reviews of earlier drafts: Julien Lafortune, Mary Filardo, Steve English, and Rick Simpson. We also express gratitude for the research and editorial support provided by: Jessica Rubio Rincon, Hannah Jackson, Christa Koppuzha, and Sydney Maves.

Suggested Citation

Vincent, Jeffrey M., Semhar Gebrekristos, and Lily Neinstedt. .2022. Gauging Good Stewardship: Is California Adequately and Equitably Investing in its Public School Facilities? Berkeley: Center for Cities + Schools, University of California-Berkeley.

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1. INTRODUCTION

School districts across California struggle to upkeep their school facilities. For many districts, aging inventory, coupled with limited capital funding opportunities, has led to school facilities with ballooning deferred maintenance problems and classrooms that do not appropriately support modern instructional practices.

In this paper, we investigate adequacy and equity of investment in California’s public school facilities. By using a standards-based framework to understand patterns of investment levels, we gauge the likely “good stewardship” of these physical school assets.

We look at both “maintenance & operations” (M&O) spending and capital investment by local K-12 public school districts across the state. As we describe in more detail in the next section, M&O spending goes towards facility operations (e.g., custodial cleaning and utilities) and routine (i.e. small) maintenance and recurring inspections), while capital spending funds more expensive work such as major repair of building systems, equipment, major alterations of existing buildings and new construction. M&O spending comes out of a district's general operating budget while capital investment comes out of a district's capital budget, which is largely funded by developer fees, special taxes, and/or general obligation (G.O.) bonds.

California’s system of school facility capital finance is fundamentally decentralized, relying on combining local and state funding. Covering the costs to modernize older school facilities and build new schools is primarily the responsibility of local school districts.¹ The State of California’s current school capital construction funding program (known as the School Facility Program (SFP)) was established in 1998 and provides matching grants to local school districts for eligible projects. School districts raise their share of capital funding largely through voter-approved general obligation (G.O.) bonds.

Local G.O. bonds are repaid by a tax placed on private property within the district’s geographic area. Each California school district’s maximum “bonding capacity” is defined in state statute as a percentage of the taxable property within the district, known as the total assessed property value (referred to as assessed value or AV). Currently, bonding capacity limits are set at 2.5% of AV for unified school districts (USDs) (*California Education Code* §15106) and 1.25% of AV for elementary school districts (ESDs) and high school districts (HSDs) (*California Education Code* §15102). A district’s bonding capacity (BC) sets the limit at which the district can raise local G.O. bond funds to use for capital facilities’ needs. A district may not issue G.O. bonds that exceed its bonding capacity without special approval from the State Allocation Board (SAB).

¹ School districts are also known as “local educational agencies” (LEAs). In this paper we look only at three of the main LEAs: unified school districts (USDs), high school districts (HSDs), and elementary school districts (ESDs).

Large districts have more AV and thus more BC. But large districts also tend to have more enrollment and more facilities needing investment.

The key to understanding district property wealth (and thus ability to raise local capital funding through G.O. bonds), is a district's bonding capacity *per student*. Looking at bonding capacity *per student* normalizes property wealth by district (i.e., enrollment), which enables comparing across districts of different sizes. Bonding capacity per student can vary enormously from district to district. For example, the average bonding capacity per student for California's unified school districts (USDs) is \$35,332, whereas the minimum is \$2,248 and the maximum is \$270,251. Median bonding capacity per student for USDs is \$22,727, meaning that half of California's 322 USDs have bonding capacity per student below this level.

Deferred maintenance (maintenance/repair work that is not done when it is needed) is growing beyond the ability of many school districts to adequately address it. This raises questions about whether there are structural flaws in California's facilities policy and/or structural deficiencies in how capital responsibilities for school districts are funded (Filardo & Vincent, 2017).

As state leaders consider refunding (and possibly) reforming California's School Facility Program (SFP) it is imperative to look at how well California's system of school facility finance is meeting current and future needs. Toward this end, this paper analyzes the adequacy (is the overall level of facility funding enough to reasonably meet local needs?) and equity (is each district able to reasonably raise its needed facility funding regardless of local wealth?) of recent years' facilities investment by California school districts. We provide a standards-based framework to assess school facility investments relative to statewide needs. The findings provide insight into systemic reforms needed in California's school facility finance structure.

Policy Context

The State of California began assisting local school districts in school construction and modernization in 1947. The state's involvement in funding school facilities capital needs evolved over time and in 1998 the School Facility Program (SFP) was created, which established a new, more robust program of state investment that remains in effect today. The SFP provides grants to assist local school districts in financing individual new construction and modernization projects (California Office of Public School Construction, 2019).

To fund the SFP, California voters have approved 6 statewide G.O. bonds totaling more than \$42 billion since 1998. The most recent statewide G.O. bond, *The Kindergarten Through Community College Public Education Facilities Bond Act of 2016* (Proposition 51), was approved by voters in November 2016 and authorized \$7 billion in state G.O. bonds.

However, state funding through the SFP is dwarfed by local capital funding sources. Over this same time period since 1998, California's local school districts have raised about three times more local capital funding (\$125 billion) for school construction and modernization compared to

statewide G.O. bonds. One analysis found that state funds only amounted to 16% of all capital spending by California school districts in the years 2009-2019 (Filardo, 2021). By contributing only 16% of total capital spending by local school districts, the State of California ranks 22nd nationally compared to other states. Thus, while state and local funds together have built hundreds of new schools and upgraded thousands more across the state, California's finance system for public school capital facilities is most heavily dependent on local funding sources (Brunner & Vincent, 2018).

In 2000, a class action case (*Williams v. California*, 2004) was filed, arguing that many school facilities were overcrowded, in disrepair, and unhealthy for students.² The suit alleged the State failed in its responsibility to alleviate the pervasive inadequacies and inequities in school facilities across the state. In 2004, the State enacted the *Williams v. California Settlement Legislation* (Senate Bill No. 550, Chapter 900, 2004), which established some standards and accountability measures for school facilities.³

Despite *Williams*, recent studies suggest that California's school facility finance system is deficient in two ways. First, it falls short in providing enough money to ensure facility needs across the state are met (adequacy). Second, in so far as state funding is provided for local school facilities, that funding is mostly provided with little regard to district needs, as measured by the physical conditions of facilities or the socioeconomic status of families, students, or communities (equity).

Adequacy of School Facilities

Understanding adequacy in education is a topic education researchers have explored, but the focus has been on operations funding related to education program delivery (gauging needed levels of educational staff and support services to students) and not on facilities operations or capital investment (Aportela et al., 2014; Rebell, 2006). For example, Stanford's 2018 Getting Down to Facts II project included an "adequacy study that takes on the difficult task of estimating how much funding might be enough, using a professional judgment approach to provide some insights into the resources likely needed for adequate schooling" (Imazeki et al., 2018, p.2). The researchers found that providing an adequate education would have required California to spend almost a third more than it did in 2016-2017 and they found larger gaps in spending within districts were associated with lower student performance.

A 2015 UC Berkeley study found widespread and persistent under-investment in California's K-12 public school facilities during the years 2008-2012. Researchers found that 62% of school districts failed to meet industry standards for annual investment in basic maintenance and operations

² Williams focused on three basic necessities of educational opportunity: sufficient textbooks and instructional materials, clean and safe school facilities, and qualified teachers. For more detail, see: https://decentsschools.org/settlement/Williams_v_California_Lessons_From_Nine_Years_Of_Implementation.pdf

³ Most fundamentally, the settlement established a new tool, the Facility Inspection Tool (FIT) to be developed for districts to use to inspect their facilities. FIT scores are then reported in each schools' School Accountability Report Card (SARC). For more information, see: <https://www.cde.ca.gov/eo/ce/wc/wmslawsuit.asp>.

(M&O) of their facilities. Looking also at capital expenditures, the researchers found that 57% of school districts failed to meet industry standards for annual capital investments. Overall, the analysis found that nearly 40% of school districts (enrolling 2.3 million students) failed to meet annual facility investments in both facilities M&O and capital needs.

Similarly, a 2021 national study found that California school districts have a combined facilities operating and capital budget gap of \$10.8 billion every year (Filardo, 2021). The study found an M&O annual spending gap of \$4.2 billion and an annual capital investment gap of \$6.5 billion per year.

The result of inadequate investment over time is school facilities in poor condition, with failing building systems. Unfortunately, little recent analysis has been done of the conditions of California school facilities. The one exception is a 2020 study by the Public Policy Institute of California (PPIC), which found that 38 percent of California students go to schools that do not meet the minimum facility standards.⁴ The researchers found that one quarter of California students attend schools with damaged floors, walls, or ceilings, and 14 percent go to schools with malfunctioning electrical systems. Fifteen percent of students attend schools that have at least one extreme deficiency, with underlying issues like gas leaks, power failures, and structural damage.

Examining recent educational facility master plans from school districts across the state highlights the widespread nature of facility challenges California districts are facing, as shown in Table 1.

⁴ PPIC analyzed school scores from the Facility Inspection Tool (FIT): “California schools are required to report annually on the condition of their buildings using Facility Inspection Tool (FIT) evaluations. This tool was adopted by the state in 2007 following the settlement of the Williams lawsuit, which alleged that the state failed in its responsibility to provide all students with equal access to the basic resources needed to learn. The results of these facility inspections are presented in School Accountability Report Cards (SARCs), which are publicly available to parents and other interested parties.

The FIT is designed to identify areas of a school site that are in need of repair based on a visual inspection. A facility in “good repair” has met the minimum standards of being clean, safe, and functional. The FIT specifies 15 sections for facility inspection. Districts are required to assess their schools annually on each of the 15 sections and note the number of good repairs (i.e., no deficiency), deficiencies, and extreme deficiencies in each section” (Gao & Lafortune, 2020, p. 6).

Table 1: Facility Challenges Identified in Three Example Educational Facility Master Plans by California School Districts

	Enrollment*	Number of Schools	Region	Key Challenge Identified in District Educational Facility Master Plan
District 1 (unified school district)	20,000	26	Bay Area	Assessing conditions at each school, the 2018 educational facility master plan concluded that "...most sites need modernization with a few buildings requiring reconstruction." The plan estimates total districtwide facility needs at \$1.3 billion to meet local priorities of safety/curb appeal, maintain building integrity, and provide for future needs.
District 2 (elementary school district)	1,800	5	Sierra Foothills	The 2017 master plan found that 75% of the district's schools scored a "fair" on the Facility Inspection Tool (FIT). "Fair" is defined as: 'The school is not in good repair. Some deficiencies noted are critical and/or widespread. Repairs and/or additional maintenance are necessary in several areas of the school site.' The plan states, "The older permanent buildings in the District would benefit from a comprehensive modernization of the facilities to include the upgrade of the site's infrastructure." Forty-one percent of the district's classrooms are in portables. The plan notes that, "Optimally, these portables should be replaced."
District 3 (unified school district)	53,000	58	Southern California	The 2018 district facility master plan identified an estimated \$2.3 billion in facility needs, noting that while the district undertakes continual effort to maintain its schools, "many facilities require substantial modernization and upgrades beyond the scope of normal maintenance."

*Enrollment rounded to the nearest 100.

Equity Across School Facilities

More attention has been paid to understanding levels of inequity in school facility funding in California. Recent analyses of this topic in California come to strikingly persistent conclusions: glaring inequities pervading California's system of school facility finance. The 2018 Getting Down to Facts II project found wide disparities in school facility funding across California school districts, which are systematically related to the wealth of local communities (Brunner & Vincent, 2018). School districts with higher assessed per-pupil property value raise substantially more revenue through local G.O. bond issues, and consequently, tend to have substantially higher total facility revenue per-pupil. As a result, school facility funding tends to be higher in districts with the highest median household income and lower in districts with lowest median household income. Because of systemic racism and disinvestment, these communities also tend to be non-white.

A 2022 PPIC study found the same pattern, noting that SFP program funding has disproportionately benefited more affluent districts and students (Gao & Lafortune, 2020). Per student funding has been highest in the highest-wealth districts, as well as those with the fewest high-need students. Low-income, English Learner, and Latino students have received less funding than non-low-income, non-EL, and White students since 1998.

The California State Auditor (CSA) also confirmed these inequities in a 2022 report, "School Facilities Program: California Needs Additional Funding and a More Equitable Approach for Modernizing Its School Facilities." The CSA noted that "financially challenged districts—which cannot fund their local share of project costs—are disadvantaged by this system" (Auditor of the State of California, 2022).

All three of these recent analyses found that state funds for the modernization of existing school facilities are inequitably distributed:

- Looking at SFP Modernization Program funding from 1998-2017, the Getting Down to Facts researchers found that school districts with the highest assessed values per student got on average eight times as much state aid per student than districts with the lowest assessed values per student (\$5,361/student compared to \$661/student) (Brunner & Vincent, 2018).
- The PPIC researchers found that SFP Modernization Program funds go disproportionately to wealthier districts with higher assessed property values per student and higher household incomes (Gao & Lafortune, 2020).
- The California State Auditor found that school districts in the lowest quartile of AV per student received about half the funding per student as districts in the top quartile of AV per student (Auditor of the State of California, 2022).

In looking at the overall disparities seen from district to district in raising both local and state capital funding, Stanford's Getting Down to Facts II authors stated,

[O]verall, our analysis reveals large facility spending differences across districts related to wealth and a state aid program that does little to dampen inequality except at the very bottom of the wealth distribution. As a result, California's system of school facility finance is relatively regressive (p. iii).

State Leaders Debate the Path Forward

On the heels of the failure of the last statewide school bond, *Proposition 13 Public Preschool, K-12, and College Health and Safety Bond Act of 2020*, which would have authorized the issuance of \$15 billion in bonds to finance capital improvements for public and charter schools statewide, two bills were introduced in the 2021-2022 legislative session to refund the SFP. Senate Bill 22 (SB 22), "Public Preschool, K-12, and College Health and Safety Bond Act of 2022" (Glazer) proposes \$15.5 billion in state G.O. bonds. Assembly Bill 75, "Education Finance: School Facilities: Kindergarten-Community Colleges Public Education Facilities Bond Act of 2022" (O'Donnell) proposes \$12 billion in state G.O. bonds. Both bills propose minor funding formula changes aimed toward increasing equitable access to funds.

However, both bills were tabled when Governor Newsom put money in the proposed 2022-23 state budget for school facilities. The final budget ultimately included \$4.2 billion over three years to support new construction and modernization projects through the School Facility Program (Newsom, 2022).

2. SCOPE AND METHODS

To inform state investment decisions, this paper looks at the “system” of delivering quality public-school facilities for California’s students and staff. While this system has many components (e.g., planning, designing, and construction), a central element is funding. When funding is severely limited, all other aspects suffer.

To aid state leaders as they contemplate the future of state capital funding for schools, this paper aims to provide a better understanding of the existing public school facility finance system in California. In particular, our intent is to assess the ways in which that system supports adequacy and equity in facility finance and conditions. To aid in this, we do the following:

First, we summarize the finance system and describe the main ways in which school districts spend money on their facilities.

Next, we present a standards-based framework for assessing levels of spending by districts on both facility maintenance and operations (M&O) and capital outlay.

Then, we apply the standards-based framework to California’s K-12 public school inventory to determine the level of annual investment needed each year.

We then use the standards-based framework to gauge good stewardship of public-school facilities across the state by comparing actual spending by California’s school districts to the investment standards. We conduct two analyses, first looking at adequacy of investment, then looking at equity in investment. Our equity analysis uses two measures of local wealth—assessed valuation of local taxable property and the share of low-income students (qualifying for free/reduced priced meals) in each school district.

We conclude with policy reforms needed to uphold state responsibilities for facility adequacy and equity as an element of public education quality.

Our analysis includes 896 of California’s 940 public K-12 school districts (elementary school districts (ESD), high school districts (HSD), and unified school districts (USD)). These districts enroll 98% of California’s public school students. County Offices of Education and other, smaller types of education providers (e.g., State Special Schools, Statewide Benefit Charters, Non-school Locations, or Regional Occupation Centers) were excluded. Our data and methods are described in detail in the appendix.

3. THE SYSTEM FOR DELIVERY AND MAINTENANCE OF CALIFORNIA'S K-12 PUBLIC SCHOOL FACILITIES

In this section, we describe how school districts organize their facility budgets and present a standards-based framework to assess school facility investments relative to statewide needs.

How School Districts Budget and Spend on their Facilities

K-12 public school facilities—like all buildings—need regular annual spending to ensure occupant health and safety and to preserve the buildings' function. For schools, this means spending on facilities such that they provide students with safe and healthy learning environments that support the education program. But it also means regular upkeep and repair of building components such that they function as intended. Each year, school districts need to spend on daily custodial, basic and routine maintenance, utilities, and security of their buildings. Regular repairs are also required to respond to the natural aging of the existing buildings and the wear and tear from daily use. Capital investment is needed when building components, such as roofs or HVAC systems need replacing, when buildings need deeper retrofits or upgrades, and when a district must build a new school, either to accommodate growing enrollment or to replace aged-out, unsuitable buildings that are beyond their useful life.

An important truism about facilities is that not keeping up on building maintenance and repair is *cumulative*—today's unpatched roof leak becomes tomorrow's mold problem. Facility repairs left unfixed often turn into larger deficiencies that become more costly to fix.

A superintendent who oversees a district of 7 schools enrolling 3,500 students in the Sacramento area, commented on the district's 2019 facility master plan noting: "The longer we wait to repair our schools, the more expensive it will become. The longer we wait to implement new and more relevant, challenging curriculum, the more our students are harmed." This quotation articulates the problem with continuing to push off needed repairs.

Activities related to operating, maintaining, or improving a school facility require money. The money funds labor and materials. If these are not budgeted for, they rarely happen; the work is not being done.

School districts typically plan for and spend money on their facilities from two separate budgets: the general district operating budget (used for most basic M&O needs) and the capital budget (used for larger capital projects). Each budget has different funding streams. General operating funds largely come from local property tax and state transfers such as those through California's Local Control Funding Formula (LCFF). General operating budgets also pay teachers and other staff salaries. Capital budgets are largely funded by a combination of local G.O. bonds, locally imposed development fees (if available), and state grants through the SFP. Bond funds accrue interest, which must be paid in addition to the principal borrowed amount.

There are five facilities spending categories, as shown in Table 2. *Facility Operations* and *Routine Maintenance* (together commonly known as Maintenance and Operations, or "M&O") typically come from a district's general operating budget (which also funds teachers, educational materials, and district staff). The remaining four categories, *Capital Renewal*, *Major Modernization*, *Obsolete Building Replacement*, and *New Construction*, are typically funded by a capital budget.

School district capital and operating budgets are separate, but they affect each other. Well-deployed capital funds can finance improvements that help reduce facility operating expenses. Additionally, a school with well-maintained facilities, for example, may be able to extend the life of their assets and spend less money on capital renewals. The converse is also true: some districts must use operating funds on facility repairs to compensate for capital shortfalls. For example, a district may keep making frequent, inefficient, patch-over repairs to an aging HVAC system (paid for through its M&O budget) instead of replacing the system (which, as a larger expense, would be paid for with capital budget funds).

Education Industry Standards for Facility Spending

The categories of *Facility Operations*, *Routine Maintenance*, and *Capital Renewal* have commonly used standards for gauging whether actual spending is adequate within each category. These standards are calculated as a small percentage of the value of the building/facility asset, known as a facility's current replacement value (CRV).⁵

These investment standards are nationally recognized standards and widely used in the infrastructure and facility operations fields. One of the most widely cited sources for these standards comes from the National Research Council (1990) report, "Committing to the Cost of Ownership: Maintenance and Repair of Public Buildings." According to the report,

An appropriate budget allocation for routine M&R (maintenance and repair) for a substantial inventory of facilities will typically be in the range of 2 to 4 percent of the aggregate current

⁵ According to APPA (formerly the Association of Physical Plant Administrators), current replacement value is defined as "the actual cost of replacing the facilities...not the book value" and "the total expenditure in current dollars required to replace a facility...[to] meet current acceptable standards of construction and comply with regulatory requirements" (Weidner, 2004, p. 35).

replacement value of those facilities (excluding land and major associated infrastructure). In the absence of specific information upon which to base the M&R budget, this funding level should be used as an absolute minimum value. Where neglect of maintenance has caused a backlog of needed repairs to accumulate, spending must exceed this minimum level until the backlog has been eliminated. (p. xii)

In Table 2, we draw on the literature in the field to assign annual investment standards to California school facilities' needs, by categories across the M&O and capital budgets. The standard for M&O spending per year is 3% of CRV (1% for facility operations plus 2% for routine maintenance). For capital renewals, the annual standard we apply is 4% of CRV because there is strong evidence of past underinvestment and high levels of deferred maintenance statewide, as described earlier. A 2% of CRV level would only be appropriate where there is zero existing deferred maintenance. For example, a school district with a brand new school building should plan to invest about 2% of CRV annually on capital renewals to keep the building fully functional as built.

Table 2: Categories of K-12 School Facility Expenditures and Annual Investment Standards

Facility Spending Category	Description	Local Budget Category	Primary Source of Funds	Annual Investment Standard based on Current Replacement Value (CRV)
Facility Operations	The services required to keep a facility clean, sanitary, and tidy, so that its occupants are comfortable, healthy, and productive. Operations include utilities, support services to assist occupants; security; and custodial services.	M&O	District operating budget*	1% of CRV***
Routine Maintenance	Routine recurring work (preventive and emergent), including scheduled inspections, record keeping, equipment servicing, emergency repairs, patching holes, and repairing furniture and fixtures.	M&O	District operating budget*	2% of CRV***
Capital Renewal	Major repair, alteration, and replacement of building systems, equipment, and components that will sustain or extend the useful life of the entire facility campus (school). Work includes roadway and drainage improvements, playing field replacement, roofs, HVAC, windows, doors, structural repairs, building refurbishments, minor additions, modernization projects, and replacement or provision of long life assets to a facility campus such as portable classrooms and furniture, fixtures, and equipment.	Capital	Local G.O. bond**	4% of CRV****
Major Modernization	Major alteration of the entire building(s). Projects typically involve design changes and/or educational suitability alterations of building(s).	Capital	Local G.O. bond**	Above and beyond 4% of CRV
Obsolete Building Replacement	Complete or partial building replacement based on determination that it is more cost effective to fully replace building(s) rather than do major modernization.	Capital	Local G.O. bond**	Above and beyond 4% of CRV; Major upfront capital needed
New Construction for Growth	Additional capacity needed to keep up with growth in enrollment.	Capital	Local G.O. bond**	Above and beyond 4% of CRV; Major upfront capital needed

* District operating budgets are mostly funded by state aid through the Local Control Funding Formula (LCFF).

** Funding sources can also include developer fees, state SFP funds, and other sources.

*** Current Replacement Value (CRV) is the total value of the building asset, as estimated by the cost to rebuild the facility in today's construction economy.

**** The 4% of CRV investment standard includes: 2% for meeting basic building code and operations standards, 1% for costs associated with addressing accumulation of deferred maintenance, and 1% for altering buildings and site for education, environmental, and/or resiliency design deficiencies.

These standards have been adopted by many organizations in the U.S., including the National Council on School Facilities, the National Association of College and University Business Officers, the Association of School Business Officials International, and the APPA: Leadership in Educational Facilities (formerly the Association of Physical Plant Administrators). The standards have also been used in numerous academic studies on school facility finance analysis (see for example, Arsen & Davis, 2006; Bello & Loftness, 2010). Most recently, these standards were used in a study by the 21st Century School Fund, Well Building Institute, and the Center for Green Schools in “2021 State of Our Schools: America’s PK-12 Public School Facilities” (Filardo, 2021).

The Council of the Great City Schools’ 2014 report, “Reversing the Cycle of Deterioration in the Nation’s Public School Buildings” also puts forth guidance to school districts on using these benchmarks, stating,

... owners spend between 2 percent and 4 percent of the current replacement value of a building every year on maintenance, with maintenance including routine and preventive maintenance and repairs, as well as capital replacements and renewals of major systems as they reach their expected life. A 2 percent spend rate assumes the facility has a 50--year life expectancy, and a 4 percent spend rate assumes the facility has a 25--year life expectancy.

Where school facilities are well maintained, a district allocates operating budget funds of 1.5 percent to 2 percent of the current replacement value of assets for preventive and routine maintenance and minor repairs. In addition to operating budget expenditures for facilities maintenance and repair, a well-managed school district will allocate another 1 percent-2 percent for systems replacements and even entire school replacement if it is determined that replacing a facility may be more cost effective than modernizing it. (p. 16)

The standards are most valid as a guide for budget allocations for a large inventory of buildings with useful lives of 25 years or more and are a reasonable estimate for the stocks of school buildings, thus making them appropriate for use at an aggregate state level as well as an individual school district level.

Meeting *both* basic benchmarks (3% of CRV for M&O and 4% of CRV for capital renewal) will keep school buildings clean, safe, and functional, minimize lifecycle costs, and should help districts catch up (albeit slowly) on deferred maintenance backlogs. But overall, meeting these minimum standards of annual operating and capital expenditures will keep existing school facilities in a steady state of repair.

These minimum standards do not address the need for new construction for crowding or enrollment growth, fully address accumulation of deferred maintenance, remove seismic and other deficiencies, or major facility alterations needed for educational programming.

4. APPLYING THE STANDARDS: WHAT LEVEL OF INVESTMENT IS NEEDED FOR CALIFORNIA'S PUBLIC SCHOOL FACILITIES?

Now, we turn to applying the standards to California's inventory of public K-12 school infrastructure to determine the level of investment needed. To do so, we calculate the current replacement value (CRV) of all school facilities for each school district in California, which is a function of total building inventory size (measured in square feet) and estimated cost per square foot to replace the facilities.

Finding 1: California's K-12 school facility inventory totals at least 730 million square feet

Using County Assessor's Office parcel ownership data and Microsoft Building Footprint spatial data, we quantified the total square footage buildings on operating school campuses for each school district in California.⁶ These data only assume one floor for each school – in reality many have two (or more) floors, meaning these estimates are likely an undercount. Thus, as a lower bound, we find that California has at least 730,072,793 square feet of public K-12 school facilities as of 2020.

Our analysis marks the first time in many decades that California's school facility inventory space has been quantified with actual data and not merely estimated. In our 2015 analysis, we estimated each school district's total square footage using the district enrollment by grade and the California Department of Education's recommended square footage space standards by grade.⁷ Using that method, we estimated California's statewide total public K-12 school facility square footage to be, minimally, between 520-575 million square feet. Our new analysis with improved data reveals that we *under-estimated* the statewide inventory by about 27%, or roughly 155-210

⁶ See appendix for more detail on the building footprint data.

⁷ In our 2015 analysis we estimated the total building square footage in each district using the following formula: [2014 district enrollment] x [CDE recommended square footage by grade level: 77 square feet for each K-5 elementary school student, 87 square feet for each 6-8 middle school student, and 103 square feet for each 9-12 high school student]. Square footage per student standards California Department of Education School Facilities and Transportation Division.

million square feet. And because some schools have more than one floor, as noted above, we are likely still undercounting California's true inventory of square feet.

Finding 2: California's K-12 school facility inventory has an estimated current replacement value of \$378 billion

Using an average square foot replacement cost of \$517.76, California's statewide CRV for the state's 730 million square feet of public K-12 facilities is estimated to be \$378 billion (2020\$).⁸ In 2022 dollars, the statewide CRV is \$412 billion.

In our 2015 analysis we estimated California's public K-12 school facility CRV at, minimally, between \$208-\$230 billion (2014\$), which is \$271-\$300 billion in 2020\$. Our new analysis with improved inventory square footage data suggests our 2015 estimate was also a substantial under-estimation by about 21%-28%, or about \$78-\$107 billion (2020\$).

Finding 3: California's public K-12 school facility inventory needs at least \$11 billion in maintenance and operations investment each year

To meet the 3% of CRV school facility maintenance and operations (M&O) standard, California's school districts should be spending about \$11.34 billion in total each year (an average of about \$1,863 per student or \$15.53 per square foot).

⁸ We arrived at an estimated square foot replacement cost of \$517.76 by looking at numerous data points. First, in 2016 the national State of Our Schools report (Filardo, 2016) used \$400/sf for California, based on a survey of state-level school facility offices across the country. Adjusting this figure to 2020\$ using the Turner Construction Index, is \$522 (2016 to 2020 index inflator = 1.305). Second, we obtained detailed cost data on 21 recent school construction projects in California from Colbi Technologies. These projects averaged close to, but slightly less, than the first method. Erring on the conservative end we used the lower number.

Finding 4: California’s public K-12 school facility inventory needs at least \$15 billion in capital renewal investment each year

To meet the 4% of CRV capital renewal standard and address the buildup of deferred maintenance, California’s school districts should be spending about \$15.12 billion in total (an average about \$2,484 per student or \$20.71 per square foot) each year.

Table 3: M&O and Capital Renewal Standards for California K-12 School Facilities

	Annual M&O Spending Standard (3% of CRV)	Annual Capital Renewal Investment Standard (4% of CRV)
Statewide Total	\$11,340,074,679	\$15,120,099,572
Average per Student	\$1,889	\$2,519
Average per Square Foot	\$15.53	\$20.71

Note: Total square feet of public K-12 school facilities used is 730,072,793. Total enrollment used is 6,002,523 in 2020-2021 as reported by California Department of Education’s DataQuest website.

5. GAUGING GOOD STEWARDSHIP: IS CALIFORNIA ADEQUATELY AND EQUITABLY INVESTING IN ITS PUBLIC SCHOOL FACILITIES?

We now turn to gauging good stewardship of California’s public K-12 facilities by comparing average annual school district facility investment to the two investment standards (M&O and capital renewal). To do so, we benchmark each school districts’ actual facility spending against the standards listed above.⁹ Each district’s recent annual M&O spending (2018-2019) is compared to 3% of the district’s CRV of its facilities. Each district’s capital spending is averaged over five years (2015-2019), adjusted to 2020\$ and compared to 4% of the district’s CRV of its facilities. Five years of annual capital spending is averaged because capital spending can vary significantly from year to year as districts implement larger projects. M&O spending should be – and typically is – much more stable year over year.

We first analyze characteristics of districts meeting the benchmarks and those not meeting the benchmarks. Then we look at those patterns in relation to measures of local wealth.

⁹ Our analysis includes 896 of California’s 940 public K-12 school districts (elementary school districts (ESD), high school districts (HSD), and unified school districts (USD)). These districts enroll 98% of California’s public school students. County Offices of Education and other, smaller types of education providers (e.g., State Special Schools, Statewide Benefit Charters, Non-school Locations, or Regional Occupation Centers) were excluded. See methods appendix for more detail.

Finding 5: Only 14% of California school districts are meeting annual facility M&O spending standards

California school districts collectively spent about \$6.8 billion on M&O in 2018-2019, with an average per student amount of \$1,382. However, there were wide differences across districts; the minimum spent was \$28 per student, while the maximum spent was \$14,666 per student.

In Table 4 below we categorize school districts by how well they are meeting the annual M&O standard of 3% of CRV. Districts spending more than 75% of the standard are considered “good,” while districts spending 50% to 75% of the standard are considered “fair,” and districts spending less than 50% of the standard are considered “poor.”

Only 14% of California’s school districts fell into the “good” range by spending more than 75% of the annual M&O standard in 2018-2019.¹⁰ These districts meeting the benchmark averaged spending \$1,794 per student. These districts enroll about 28% of California’s students.

The rest of California’s school districts were about evenly split between “fair” and “poor.” Thus, more than two-thirds of California’s 6 million public school students attend school in districts that are falling short of necessary M&O investment. More than a million students are in districts falling drastically short by spending less than half of what is needed for their facilities (“poor”).

¹⁰ Note: we found 34 districts that spent more than 100% of the M&O standard.

Table 4: Characteristics of School Districts Based on Levels of Annual M&O Spending

	Rating	Number of School Districts	Total Enrollment, 2018-19	Average Annual M&O Spending per Student	Average District Share of High Need Students*	Average Assessed Property Value per Student	Median Assessed Property Value per Student
More than 75% of M&O Standard	Good	127 (14%)	1,698,940	\$1,794	60%	\$2,665,191	\$1,036,761
50% to 75% of M&O Standard	Fair	390 (44%)	3,114,596	\$1,337	60%	\$1,842,585	\$1,041,692
Less than 50% of M&O Standard	Poor	379 (42%)	1,102,095	\$1,291	60%	\$2,507,554	\$1,382,013

Note: "High need" defined as unduplicated student status.

Interestingly, we find the patterns of local wealth (share of disadvantaged students and property values per student) to be less stark than anticipated. We find that districts within each rating category enroll a similar share (60%) of high need students (as measured by share of unduplicated students). We find that the "good" and "poor" districts had similar average property values per student (\$2,665,191 and \$2,506,554, respectively), with the "fair" districts averaging about a third less (\$1,842,585). We explore possible explanations for these relationships later in the paper.

Finding 6: Only 15% of California school districts are meeting annual facility capital renewal spending standards

For the years 2015-2019, California public school districts collectively spent \$7.8 billion (2020\$), with an annual average of \$8,742,920. Like M&O spending, there were wide differences across districts: the minimum spent was \$0 per student,¹¹ the average spent was \$1,284 per student, and the maximum spent was \$26,051 per student. Of course, some of this variation is likely explained by any entirely new schools a district built in any one of these years. Constructing a new school is a large undertaking, typically costing \$25 million or more depending on size and other factors.

¹¹ Twenty-six districts reported spending zero dollars on total capital outlay. These districts enroll 4,137 students.

In Table 5 below we categorize school districts by how well they are meeting the average annual capital spending standard of 4% of CRV. Districts spending more than 75% of the standard are considered “good,” while districts spending 50% to 75% of the standard are considered “fair,” and districts spending less than 50% of the standard are considered “poor.”

Only 15% of California’s school districts fell into the “good” range by spending more than 75% of the annual capital investment standard. These districts meeting the benchmark only enroll about 20% of California’s students and they averaged spending \$3,768 per student. The districts meeting the standard are significantly wealthier in terms of local property values and have lower shares of high need students on average.

Most districts (763) spent 75% or less of the standard, with the majority of these districts (71%) spending less than 50% of the standard. In other words, over half of California’s public-school students are enrolled in districts that received a “poor” rating for facilities capital investment.

Table 5: Characteristics of School Districts Based on Average Annual Capital Spending, 2015-2019

	Rating	Number of School Districts	Total Enrollment, 2018-19	Average Annual Capital Spending per Student	Average District Share of High Need Students*	Average Assessed Property Value per Student	Median Assessed Property Value per Student
More than 75% of Capital Renewal Standard	Good	133 (15%)	1,171,078	\$3,768	51%	\$2,633,826	\$1,804,561
50% to 75% of Capital Renewal standard	Fair	129 (14%)	1,726,738	\$1,794	60%	\$1,719,569	\$1,039,728
Less than 50% of Capital Renewal standard	Poor	634 (71%)	3,017,815	\$659	62%	\$2,263,922	\$1,120,137

Note: "High need" defined as unduplicated student status.

Of course, these capital spending numbers overestimate the actual capital renewal work being done on existing facilities in these districts because new construction spending is included in the totals.¹² The data are not reported in a way that enables us to discern how much was spent on new construction and how much was spent on existing facilities. Therefore, even with new construction spending being counted, we find that 85% of school districts could not have met the 4% capital renewal benchmark for minimum spending *even if* all their capital expenditures were for capital renewals and no part of them had been for new construction or other capital projects. Thus, the number of districts not meeting capital renewal benchmarks is likely significantly *higher* than shown in Table 5.

¹² Available data do not distinguish between capital spending on new construction and capital spending on existing school facilities. Considering that Proposition 51 (passed in 2016) provided \$2.4 billion for new construction and \$1.9 billion for modernization, we can infer that a significant amount of both local and state capital funds went toward new construction projects – probably at least one-third.

Finding 7: Only 4% of California public school districts are meeting both facility investment standards

Next, we turn to looking at the districts that met various combinations of the spending standards. As Table 6 shows, only 4% of California's school districts are rated "good" on both M&O spending and capital investment. These districts only enroll 322,525 students. Only 22% of school districts met at least one benchmark. Most alarming is that 74% of districts (who enroll more than half of California's students) did not meet either spending standard. Once again we find that districts meeting both standards have significantly higher property wealth per student and smaller shares of high need students on average.

Table 6: Characteristics of School Districts Based on Average Annual Capital Spending and Annual Maintenance and Operations Spending

	Number of School Districts	Total enrollment, 2018-19	Average Annual M&O Spending per Student	Average Annual Capital Spending per Student	Average District Share of Disadvantaged Students	Average Property Value per Student	Median Property Value per Student	Average Annual Capital Revenue from State of California
Districts Rated "Good" on both M&O and Capital Spending	32 (4%)	322,525	\$1,756	\$3,094	54%	\$3,230,565	\$1,560,580	\$391
Districts Rated "Good" in One Spending Category	196 (22%)	2,224,968	\$1,466	\$2,476	56%	\$2,459,296	\$1,409,657	\$334
Districts Rated "Fair" or "Poor" in Both Spending Categories	668 (74%)	3,368,138	\$1,340	\$848	62%	\$2,128,818	\$1,115,547	\$208

Finding 8: California’s Annual School Facilities Investment Gap is nearly \$2,000 per student

In Tables 7 and 8, we show the spending standard, actual spending, and the spending gap for M&O and capital investment for California’s K-12 public school facilities. Combined, this annual gap totals more than \$10 billion per year, or about \$1,865 per student. On a square foot basis, the gap is nearly \$6 per square foot for M&O and almost \$10 per square foot for capital.

Table 7: Spending Standard, Actual Spending, and Investment Gap for California Public School Facility Maintenance & Operations

	Annual M&O Spending Standard (3% of CRV)	Actual Annual M&O Spending in California, 2018-2019	M&O Spending Gap
Statewide Total	\$11,021,697,024	\$6,849,184,768	\$4,172,512,256
Average per Student	\$1,863.15	\$1,157.81	\$705.34
Average per Square Foot	\$15.53	\$9.65	\$5.88

Table 8: Spending Standard, Actual Spending, and Investment Gap for California Public School Facility Capital Renewal

	Annual Capital Renewal Investment Standard (4% of CRV)	Actual Annual Capital Renewal Investment in California, 2015-2019	Capital Investment Gap
Statewide Total	\$14,695,596,032	\$7,833,656,320	\$6,861,939,712
Average per Student	\$2,484.20	\$1,324.23	\$1,159.97
Average per Square Foot	\$20.71	\$11.04	\$9.67

Finding 9: Schools in Districts with Higher Assessed Property Value Invest More in their Facilities

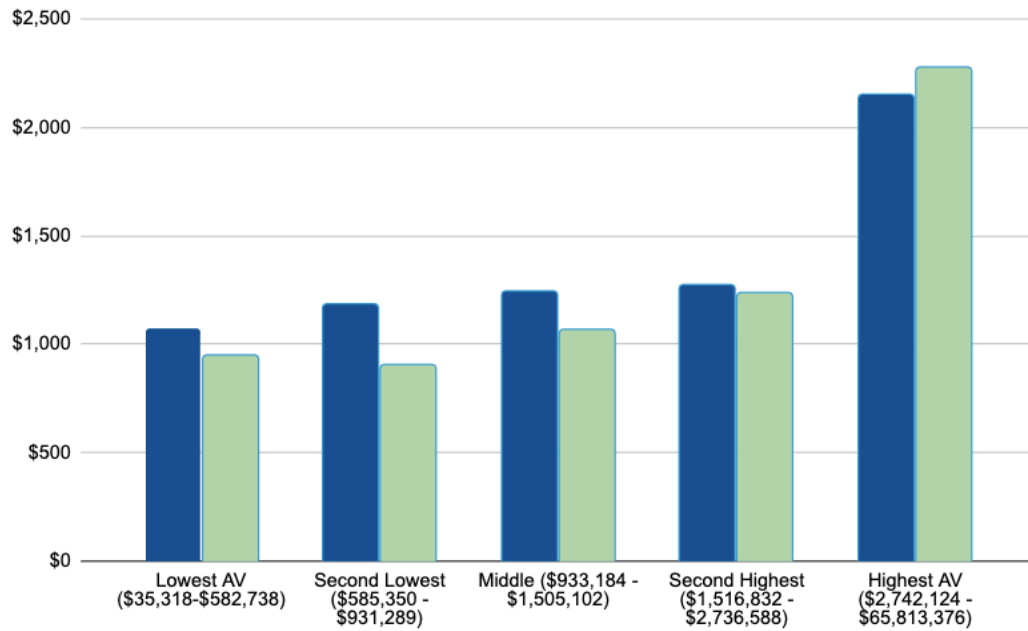
Now we turn to looking at facility investment equity. First, we look at facility spending in relation to local assessed property values per student. Then, we look at facility spending in relation to student poverty (percentage of students in the district qualifying for free or reduced priced meals (FRPM)). As researchers for Stanford’s Getting Down to Facts II project found, both local wealth factors are important predictors of facilities revenues and spending (Brunner et al., 2021; Brunner & Vincent, 2018) and FRPM is limited in its ability to measure student poverty (Fazlul et al., 2021). The heat matrix (Figure 1) below shows the relationship between student poverty and local property values, with darker colors showing higher density of districts.

Figure 1: Number of California School Districts in Quintiles of Student Poverty and Assessed Property Value per Student, 2020

		Quintiles of Student Poverty as Measured by FRPM					
		Low Student Poverty			High Student Poverty		
		1	2	3	4	5	
Quintiles of Assessed Property Value per Student	Low AV	1	6	22	28	47	73
		2	18	34	41	50	37
		3	30	37	43	37	36
	High AV	4	55	43	44	25	12
		5	75	40	21	22	20

Dividing all school districts into quintiles of local assessed property value (AV) per student, from low to high, we find a distinct relationship with M&O spending and capital outlay. The districts with the highest property values per student spent about twice as much on average as all other groups on both M&O and capital outlay, as shown in Figure 2. The districts in the two lowest quintiles of property value per student, averaged spending the least on both M&O and capital outlay. These patterns remain consistent with our previous analysis for the years 2008-2012.

Figure 2: Average Annual School District Expenditures on M&O and Capital Outlay by Quintiles of Assessed Property Value per Student



Average Annual Maintenance & Operations per Student	\$1,072	\$1,187	\$1,239	\$1,269	\$2,147
Average Annual Capital Outlay per Student	\$949	\$900	\$1,069	\$1,234	\$2,277

Note: Annual capital outlay expenditures are averaged for the years 2015 through 2019 and adjusted to 2020\$ using the Turner Construction index. M&O expenditure is from the single year 2018-2019 and unadjusted. Both are divided by total district enrollment in 2018-2019.

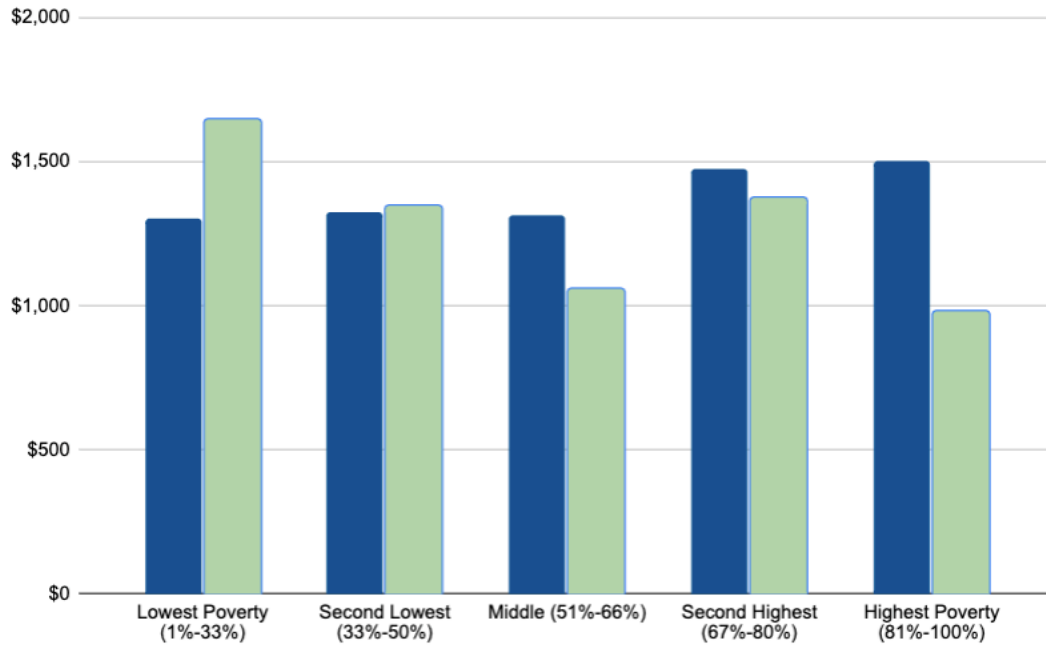
Based on this trend, it is highly likely that the wealthiest communities in California have the highest quality of school facilities for their students.

Finding 10: School Facility Needs Place Higher Budget Burdens on Districts Serving More Low-Income Students

Dividing all school districts into quintiles based on the percentage of district enrollment qualifying for FRPM, we find that how districts spend on facilities varies significantly with FRPM levels. Districts with the highest shares of low-income students (where more than 81.3% of students qualify for FRPM) spent *less on capital outlay per student* and *more on M&O per student* than districts serving higher income students, as shown in Figure 3. These “highest poverty” districts spent more than a third less per student on capital outlay on average, compared to the lowest poverty districts (\$981 compared to \$1,643). Districts in the two quintiles of highest poverty

student share, averaged spending about 12% to 14% more per student on M&O compared to all other districts. This finding means that districts serving more lower wealth children and families tend to spend more per student on basic facility maintenance and operations out of their district operating budgets than districts serving higher income families.

Figure 3: Average Annual School District Expenditures on M&O and Capital Outlay by Quintiles of Student Poverty



Average Annual Maintenance & Operations per Student	\$1,300	\$1,322	\$1,314	\$1,476	\$1,499
Average Annual Capital Outlay per Student	\$1,643	\$1,349	\$1,058	\$1,376	\$981

Note: Annual capital outlay expenditures are averaged for the years 2015 through 2019 and adjusted to 2020\$ using the Turner Construction index. M&O expenditure is from the single year 2018-2019 and unadjusted. Both are divided by total district enrollment in 2018-2019.

To understand the implications of this pattern, remember that inadequate capital renewal spending leads to expensive critical and emergency repairs. Schools that operate with obsolete or worn-out systems, components, and equipment require more attention to everyday maintenance and repair in order to maintain functionality and safety. The reality of the cost of facility components in disrepair is a long-standing truism in the field and is articulated well by the Building Research Board of the National Research Council (Building Research Board, National Research Council, 1990).

Another description of this can be seen in a letter written by a California school superintendent in the district's 2021 district facility master plan:

Each year the Board of Trustees budgets money for deferred maintenance. However, regardless of the amount budgeted, unplanned and catastrophic problems such as major roof leaks and broken air conditioners must be addressed immediately. And just like a homeowner, unplanned repairs always seem to crop up at the worst times. When these happen, the District must draw from its ever-shrinking reserves to address an immediate need. It is important to keep in mind that the State of California provide NO general fund money for school districts to address facilities. None. The only way [our district] can afford comprehensive repairs and upgrades of its facilities is through passage of a local general obligation (GO) bond measure. But in the meantime, as our schools age, just as our homes do, certain items must be repaired, replaced and upgraded to protect the value and usability of the property. Absent compelling financial limitations, families do not ignore broken toilets or broken hot water heaters, and school districts can't send kids home from school because the air conditioner is not working in May! (Picus, 2019, p. 3)

Our findings in this section suggest that communities and school districts serving lower income students and their families are more often under-spending on capital needs, and are thus forced to over-compensate for this with higher M&O spending out of their operating budget. This means building operations cost more in these poorer districts, leaving fewer dollars for education programs.

Finding 11: 38% of California School Districts Do Not Have Enough Taxable Property Wealth to Meet Basic School Facility Capital Needs

As noted earlier, median bonding capacity per student for USDs is \$22,727, meaning that half of California's 322 USDs have bonding capacity per student below this level.

Given the assumption that 4% of CRV represents the minimum basic annual capital needs for a school district, are there any districts that do not have that much taxable property value? To answer this question, we compare a district's total bonding capacity to the 4% of CRV needed over 5 years (because it is conceivable for a district to do a local bond every 5 years).

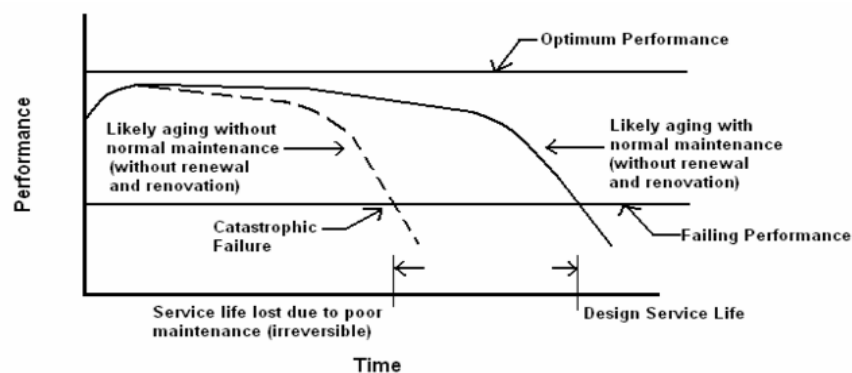
We find that 38% of districts (N=341) do not have enough taxable property wealth (at the statutory bonding capacity limits) to raise enough local bond dollars to cover five years of basic capital facilities needs.

6. MOVING FORWARD: KEY POLICY CONSIDERATIONS TO PROMOTE ADEQUACY AND EQUITY IN CALIFORNIA'S PUBLIC SCHOOL FACILITIES

As policy leaders in California consider the state's role in funding K-12 school facilities, our findings of inadequate and inequitable statewide school facility spending trends across the state should raise flags for educators, parents, and state lawmakers. The State of California has a fundamental interest in reducing risks and costs for children and taxpayers associated with underspending on school facilities, as well as a constitutional duty to ensure equal educational opportunity for all children. All students should have the ability to attend school in a healthy, efficient, high-quality facility that supports the schools' education program.

Without good stewardship and normal maintenance, the building's performance will be sub-optimal and prolonged deferred maintenance can lead to catastrophic failure (Bello & Loftness, 2010; Building Research Board, National Research Council, 1990; Tolk, 2007). Figure 3 illustrates the relationship between the service life of building components over time with varying levels of maintenance and upkeep. The figure shows how aging without and without normal maintenance affect building performance. Note that even with normal maintenance buildings need "renewal and renovation" (which we refer to as "capital renewal" and "major modernization" in Table 1 earlier in the paper) to avoid failing performance.

Figure 4: Service Life of a Facility With and Without Normal Maintenance



Source: (Bello & Loftness, 2010), adapted from (Tolk, 2007).

Next, we highlight 3 key policy considerations for state leaders to address:

Policy Consideration #1: More investment is needed in California's public school facility infrastructure

The annual investment gap in California's public-school facilities appears stubbornly persistent. More investment is needed almost entirely across the board. The vast majority of California's students are attending schools that are failing to meet minimum industry standard benchmarks for maintenance and operations spending, capital renewal spending, or both. This finding raises concerns that cumulative building deficiencies are likely compounding each year in schools across the state.

Accumulating school facility deficiencies work against numerous state policy priorities:

- **Poor quality school facility conditions undermine student achievement.** Studies find significant correlations between poor structural, conditional, and aesthetic attributes of school buildings and low student learning and achievement (Maxwell, 2016). For example, a 2022 study in LAUSD found that students assigned to new facilities attended almost a week of additional schooling each year and these students saw substantial math and English improvements (Lafortune & Schönholzer, 2022). A 2022 meta analysis also finds significant positive test score effects associated with facility investments (Jackson & Mackevicius, 2021).
- **Poor quality school facility conditions risk childhood health.** School buildings that are improperly maintained are more likely to have poor ventilation, uncomfortable temperatures, inadequate lighting, excessive noise, or the presence of mold. Exposure to any of these environmental conditions can harm students' health and contribute to absenteeism (Fisk et al., 2016). Maintaining good indoor air quality (IAQ), including fresh air circulation and filtration, is especially important for reducing respiratory and other harms to students, including reducing COVID transmission (Eitland et al., 2019). A 2021 national study by the Center for Green Schools and ASHRAE (which included California school districts) found strong evidence that "schools relied on their HVAC systems to make buildings safer for students and teachers, but in many cases, these systems were outdated or not designed to support the recommended strategies" (Hoang & Heming, 2021).
- **Poor quality school facility conditions hinder expansion of early education.** Governor Newsom and the State of California have made a strong new commitment to expanding pre-kindergarten education across the state. The 2020 "Master Plan for Early Learning and Care: California for All Kids" lays out an ambitious framework of universal prekindergarten (California Health and Human Services Agency, 2020). Improving and increasing facilities (including at existing K-12 schools) to accommodate expanded early learning is central to the plan. To do so, schools may need to be expanded and/or modernized. Classrooms for young children must be healthy indoor environments and have direct access to sinks and bathrooms (similar to the classroom standards for kindergarten). Achieving these conditions requires good maintenance practices and will likely require capital upgrades in many cases.

- **Poor quality school facility conditions work against teacher attraction and retention.** California faces a growing public education workforce crisis in the form of teacher shortages (Darling-Hammond et al., 2018). Poor facilities conditions have been found to increase the likelihood of teacher turnover, while good facility conditions help reduce teacher turnover (Loeb et al., 2005). Teacher recruitment and retention challenges are disproportionately impacting already disadvantaged students in California, working against efforts to close educational equity gaps.
- **Poor quality school facility conditions work against climate resiliency.** The state has crafted an ambitious climate mitigation plan, with the California Air Resources Board Draft 2022 Scoping Plan (California Air Resources Board, 2022). Not only are the majority of California’s public school buildings not designed for the new era of climate change, they are increasingly falling into disrepair, making it difficult for schools to appropriately adapt to and mitigate climate risk (Patel et al., 2022). A 2020 analysis by the Public Policy Institute of California found that in 2018-19, 38% of the state’s students attended schools that did not meet minimum facility standards (Gao & Lafortune, 2020).

To address the cumulative school facility deficiencies growing across the state and to meet these additional state policy priorities, state leaders will need to figure out a more robust finance system that meets the challenge. Moving forward, the state should ensure that all school districts can reasonably meet both facilities maintenance and capital investment needs through an appropriate combination of local and state funding/financing sources.

Policy Consideration #2: The State must remedy the disadvantage low wealth districts face in upkeep and modernizing their facilities

As our findings show, inequities in California’s public-school facilities finance are also stubbornly persistent. It is also likely that building deficiencies are, on average, compounding faster in schools attended by high-need students. As other studies have found, low income and minority students are more likely to attend schools with poor physical conditions, which exacerbate educational inequities. When poor facility conditions disproportionately affect students and educators in low-wealth communities, they undermine the educational equity priorities that are fundamental in California’s educational finance system, the Local Control Funding Formula (LCFF).

In enacting the LCFF, the Governor and Legislature established the principle that school districts with higher need students should get more state funding. To bring the facilities side of school district budgets into the LCFF era, the State of California should “undo” the disadvantage low wealth districts face in upkeep and modernizing their facilities. The State’s role, *at minimum*, should be to equalize the ability of local districts to raise sufficient capital dollars for their school facilities. The evidence is overwhelmingly consistent: districts with lower property values *per student* raise far fewer local GO bond revenues on average. Moving forward, California should utilize fund-matching formula(s) for school facility funds that are weighted in favor of districts with

limited local tax base relative to their size/enrollment *and* high percentages of high-need students and/or low local household incomes.

At least 23 states adjust for local wealth in their school facility capital funding formulas; there are many options to learn from (Vincent, 2014). By adopting this policy, California will better align its school facilities funding approach with its recently revamped and more equitable education program funding approach under LCFF.

Policy Consideration #3: Improved standards for facilities planning and budgeting are needed

State guidelines/standards are needed to improve local facility planning and budgeting. While the Governor and State Board of Education have made more robust, participatory, and transparent local school district operational planning and budgeting a core aspect of the LCFF, the same should be done for school facilities planning and budgeting, with local flexibility and accountability paramount. A sound planning process that is guided by up-to-date local needs and information is a key element of improving public school facilities (Filardo & Vincent, 2017). As a condition of receiving state funding, school districts should have a board-approved district facility master plan that includes inventory and conditions assessments of all facilities, enrollment forecasts, and locally identified priorities for maintenance, capital renewals, modernization, and new construction. As part of this planning process, districts can identify the facility conditions that will support the education and health of their students and protect the facility assets, then establish spending targets (detailed in a capital budget plan) for M&O, capital renewals, major modernization, and new construction to realize these conditions. Local spending in relation to these standards and actual facility conditions demonstrates local maintenance of effort.

The State of California has a fundamental interest in reducing risks and costs for children and taxpayers associated with underspending on school facilities, as well as a constitutional duty to ensure equal educational opportunity for all children. Without good information on conditions and need, it's very hard to spend adequately or efficiently and target places where facility need is greatest. The lack of a basic statewide inventory of all K-12 public school facilities, conditions assessments of those facilities, or full information on local school district facility spending is a major obstacle to fully understanding—and addressing—school facility needs in California. The adoption of consistent and adequate information sharing on public school facilities data to uphold public accountability is essential. Past efforts have been stymied. The California Community College system and many other states regularly collect this information and use it to inform how facility funds are prioritized—an approach that should be adopted for California's K-12 facilities. The improved local facility planning and budgeting standards described above can be the information source for the database. With this information, state and local leaders can best strive for adequate and equitable spending in all schools and identify important priorities.

APPENDIX: DATA AND METHODS

In this study, we make use of available data on K-12 public school facility expenditures in California and draw on the facility expenditure standards in the building management field. Our approach offers a simple and replicable way to assess patterns of K-12 school facility spending statewide, to provide a better basis for policy decision making. This approach is especially useful when detailed statewide data on school facility conditions is not available, as is the case in California.

Key to our analysis is school district level data on facility maintenance and operations (M&O) expenditures and capital outlay, as reported by the National Center for Education Statistics (NCES) Common Core of Data (<https://nces.ed.gov/ccd/files.asp>) based on the U.S. Census Bureau's Census of Governments and the Annual Surveys of State and Local Government Finances as authorized by law under Title 13, U.S. Code, Sections 161 and 182. The Annual Survey of School System Finances, similar to previous annual surveys and censuses of governments, covers the entire range of government finance activities—revenue, expenditure, debt, and assets (cash and security holdings) (<https://www.census.gov/programs-surveys/school-finances.html>).

These data are combined with additional district-level data from a variety of sources, including California Department of Education, as listed in Table 9. We assembled complete data on 896 of California's 940 public K-12 school districts ((elementary school districts (ESD), high school districts (HSD), and unified school districts (USD)). These districts enroll 98% of California's public school students. County Offices of Education and other, smaller types of education providers (e.g., State Special Schools, Statewide Benefit Charters, Non-school Locations, or Regional Occupation Centers) were excluded.

Key to our analysis is also quantifying the total school square feet of buildings at each school within each school district. To do so, we first created a geo-spatial inventory of all land owned by California public school districts by assembling parcel ownership data obtained from all 58 county offices of education. We then used the statewide building footprint spatial layer created by Microsoft (<https://github.com/microsoft/USBuildingFootprints>) and isolated the building footprints on school district owned properties that have operation schools on them. Using a Geographic Information System (GIS), we quantified the total building square footage for each school district. Further description of these data and our methods to identify and measure school district property and buildings can be found in (Center for Cities + Schools et al., 2022)

Table 9: Data and Sources

	Year(s)	Source
School District Enrollment	2018-2019	California Department of Education
School District building square footage	2020	Center for Cities + Schools, cityLAB, and Turner Center for Housing Innovation*
Operations and Maintenance of Plant Spending by School Districts**	2018-2019	National Center for Education Statistics, Common Core of Data
Capital Outlay Expenditures by School Districts***	2015-2019	National Center for Education Statistics, Common Core of Data
State Share of District Capital Outlay****	2015-2019	National Center for Education Statistics, Common Core of Data
Unduplicated Pupil Percentage (UPP)	2018-2019	California Department of Education
Share of Students in District Qualifying for Free or Reduced Priced Meals (FRPM)	2018-2019	California Department of Education
School District Assessed Value (AV)	2019-2020	Eastshore Consulting
Building square footage	2020	Microsoft

* Center for Cities + Schools, cityLAB, and Turner Center for Housing Innovation. (2022). Education Workforce Housing in California: Developing the 21st Century Public School Campus. Berkeley and Los Angeles: University of California. <https://csba.org/workforcehousing>

** Defined by NCES as “expenditures for buildings services (heating, electricity, air conditioning, property insurance), care and upkeep of grounds and equipment, nonstudent transportation vehicle operation and maintenance, and security services.” Reported in actual dollars (unadjusted)

*** Defined by NCES as “expenditures for construction of fixed assets; purchasing fixed assets including land and existing buildings and grounds; and equipment.” Data are reported are averaged over five years and adjusted to 2020\$ using the Turner Construction Index

**** State share is averaged over five years and adjusted to 2020\$ using the Turner Construction Index

Table 10: Descriptive Statistics for Study Data

	Mean	Median	25th percent	75th percent
M&O, per student (2018-2019)	\$1,382	\$1,182	\$982	\$1,498
Capital Outlay, per student (2015-2019)	\$1,284	\$787	\$310	\$1,596
State Capital Outlay, per student	\$242	\$8	\$0	\$201
Assessed Valuation, per student	\$2,240,458	\$1,186,111	\$676,262	\$2,223,642
Share of Students on FRPM	56%	58%	38%	77%
Total Enrollment	6,602	2,072	407	6,817

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