

Date of Hearing: April 12, 2023

ASSEMBLY COMMITTEE ON EDUCATION  
Al Muratsuchi, Chair  
AB 1642 (Gipson) – As Amended March 20, 2023

**SUBJECT:** School facilities: master plan for green schoolyards: recommendations

**SUMMARY:** Requires the California Department of Education (CDE) and the Natural Resources Agency to facilitate an interagency and stakeholder engagement process to develop, on or before December 1, 2024, recommendations for a master plan for green schoolyards. Specifically, **this bill:**

- 1) Requires the CDE and the Natural Resources Agency, in consultation with the Division of the State Architect (DSA), the Office of Public School Construction (OPSC), and any other appropriate state entities, as determined by the CDE and the Natural Resources Agency, to facilitate an interagency and stakeholder engagement process to develop, on or before December 1, 2024, recommendations for a master plan for green schoolyards.
- 2) Requires the CDE and the Natural Resources Agency to, on or before December 1, 2024, report to the appropriate policy and fiscal committees of the Legislature on the recommendations for a master plan for green schoolyards.

**EXISTING LAW:**

- 1) Requires the governing board of any school district to meet with appropriate local government recreation and park authorities to review all possible methods of coordinating planning, design, and construction of new school facilities and schoolsites or major additions to existing school facilities and recreation and park facilities in the community. (Education Code (EC) Section 35275)
- 2) Makes findings and declarations that school gardens provide an interactive, hands-on learning environment in which pupils learn composting and waste management techniques, fundamental concepts about nutrition and obesity prevention, and the cultural and historical aspects of our food supply. School gardens also foster a better understanding and appreciation of where food comes from, how food travels from the farm to the table, and the important role of agriculture in the state, national, and global economy. (EC 51795)
- 3) Establishes the Instructional School Gardens Program, administered by the CDE for the promotion, creation, and support of instructional school gardens through the allocation of grants, and through technical assistance provided, to school districts, charter schools, or county offices of education (COEs). (EC 51796)
- 4) Prohibits a local governing board from siting a school located on land that was previously a hazardous waste disposal site, that contains pipelines that carry hazardous substances, or that is near an airport runway or freeway, other busy traffic corridors and railyards that have the potential to expose students and school staff to hazardous air emissions. (EC 17213 and 17215)

- 5) Requires the California Environmental Protection Agency (CalEPA) to identify disadvantaged communities for investment opportunities. Requires these communities to be identified based on geographic, socioeconomic, public health, and environmental hazard criteria, and may include, but are not limited to, either of the following:
- a) Areas disproportionately affected by environmental pollution and other hazards that can lead to negative public health effects, exposure, or environmental degradation; or
  - b) Areas with concentrations of people that are of low income, high unemployment, low levels of homeownership, high rent burden, sensitive populations, or low levels of educational attainment. (Health and Safety Code 39711)

**FISCAL EFFECT:** Unknown

**COMMENTS:**

***Need for the bill.*** According to the author, “Reimagining our playgrounds can change the way our children experience the outdoors and enhance their learning and social development. With this bill, we can modify grim blacktop ‘playgrounds,’ by turning them into vibrant, verdant areas of play. AB 1642 aims to create green playgrounds, which promote healthy play for children as well as provide our communities with a way to reduce the high temperatures that are caused by asphalt playgrounds. Access to nature has been proven to affect health, happiness, and prosperity. It is time to think about our communities and how we can change them in ways that will transform the lives of students, families, teachers, and the whole community.”

***Urban Forests.*** An urban forest is comprised of trees and other vegetation in and around our communities, including the trees in our yards and along residential streets, in parking lots and along commercial thoroughfares, on school grounds and in parks and open spaces. Trees provide energy conservation, reduce urban heat island effects, reduce storm-water runoff, improve local air quality, support public and mental health benefits, provide wildlife habitat, and increase property values. Trees are critical to the quality of life in our urban environments. Climate change, pollution, drought, arboreal disease, and other factors strain our urban forests. Extreme weather and emerging tree pests such as the Polyphagous Shot Hole Borer and Kuroshio Shot Hole Borer threaten the gains California has made in increasing the urban canopy. Investments in maintaining and protecting our current urban forests and developing new urban forests can help combat those threats and further the state’s goals for urban forestry.

***Greener schools.*** The majority of the state’s urban schools are covered in hard surfaces, particularly in neighborhoods that already suffering from park scarcity. Play spaces are covered in asphalt and concrete, which contribute to the urban heat island effect. Green space, such as grass, trees, and shrubs, which have been shown to lower temperatures is linked to improved child development outcomes. In addition to reducing heat, spending time in green spaces has been shown to improve student’s academic achievement, improve concentration, and reduce stress. Greenery near schools has also been shown to improve air quality.

***The impact of heat on students and their academic performance.*** As climate change intensifies, students are increasingly burdened by worsening heat waves, wildfires, drought, and other extreme weather-related events that hinder their well-being and academic development, according to a 2023 report from the Sean N. Parker Center for Allergy and Asthma Research at Stanford University and other partners, *Climate Resilient California Schools: Safeguarding*

*Children's Health and Opportunity to Learn in TK-12.* Children are particularly vulnerable to extreme weather conditions because their bodies are more sensitive and less capable of self-regulating temperature.

According to a 2022 Legislative Analyst Office report, *Climate Change Impacts Across California K-12 Education*, climate change has led to students experiencing greater learning loss, poorer academic outcomes, food insecurity, and traumatic mental health problems. Moreover, minority children who live in high-poverty neighborhoods are often exposed to more heat, which contributes to racial disparities in health outcomes. School facilities located in low-income neighborhoods have historically had fewer financial resources to invest in efficient HVAC systems, thereby compounding student health risks from worsening climate change.

Indoor temperatures in California public schools are not currently subject to any upper limits in existing law, and schools are not required to have air conditioning or other cooling systems. Indoor classrooms that cannot maintain healthy temperatures exacerbate existing inequities in student and health outcomes (Patel, 2023). According to a 2020 Journal of Human Resources article, *Hot Temperature and High Stakes Performance*, hot temperature reduces performance by up to 13% of a standard deviation and leads to persistent impacts on high school graduation status, despite compensatory responses by teachers who selectively upward manipulate grades after hotter exams. According to a 2020 American Economic Journal: Economic Policy article, *Heat and Learning*, students of color and students in lower-income areas are the most affected by heat-driven learning losses, exacerbating racial and income-based achievement gaps. It is estimated that 5% of the nationwide gap in academic achievement between white and Black students is due to heat and air conditioning disparities.

***Benefits of green space in areas with pollution.*** According to the National Parks Service, “Poor air quality is a common problem in many urban areas. It can lead to decreased human health, damage to landscape materials and ecosystem processes, and spoiled scenic views due to reduced visibility....Trees can improve air quality through a number of means, including by (1) reducing air temperature thus altering pollution concentrations, (2) reducing energy consumption in buildings, which consequently reduces air pollutant emissions from the power sources, and most notably, (3) directly removing pollutants from the air. Urban forests can remove multiple tons of ozone, gaseous air pollution, and particulate matter each year either through direct uptake of gasses or temporarily intercepting airborne particles. The combined positive impacts of an urban forest lead to a net reduction in urban ozone formation, according to multiple studies from the USDA Forest Service.”

Environmental health scientists promote the use of green environments to improve air quality and public health. According to the University of Washington's Green Cities: Good Health website, “vegetation and trees, in particular, can act as natural filters for both gases and particulate matter in urban environments.”

According to a 2008 Journal of Epidemiology and Community Health study, *Children Living in Areas with More Street Trees Have Lower Prevalence of Asthma*, “Areas with more street trees experienced a lower prevalence of early childhood asthma. This association was stronger after adjusting for potential confounders such as population density and proximity to sources of air pollution.”

***How do trees remove air pollution?*** According to the National Parks Service, “Trees absorb gaseous molecules in the air. Tiny pores on tree leaf surfaces called stomata take in air that includes toxic pollutants. Once inside the leaf, the gases diffuse into intercellular spaces and may react with inner-leaf surfaces. This means pollutants like Sulphur dioxide (SO<sub>2</sub>), nitrogen dioxide (NO<sub>2</sub>), carbon monoxide (CO), and ozone are permanently converted when inside the leaf. However, studies have found that ground-level ozone significantly reduces tree growth, injures the foliage, and predisposes trees to insect and disease attack.

Trees can remove particulate matter (PM) by “catching” them temporarily. Fine particulate matter is deposited on tree surfaces clinging to leaves and stems instead of floating about in the air. Most PM<sub>2.5</sub> will only remain on surfaces. With rain or precipitation, the particulates can be dissolved in the storm water runoff or transferred to the soil. Particulates can also be resuspended or re-enter the atmosphere, making the tree only a temporary retention site for many atmospheric particles.”

***School garden programs.*** Existing law encourages schools to establish school garden programs. The Green Schoolyards grant program, a component of CalFire’s Urban and Community Forestry Program, is designed to assist with planning and implementing projects to plant trees that, when mature, will cover at least 30% of each school property, shading areas used most often by students during the school day. Priority for these grants is being given to districts and schools in under-served communities with the highest poverty levels, hottest climates, and least existing tree cover. Non-profit child care facilities that receive state or federal funding are also eligible for these grant funds. The 2022-23 Budget included \$150 million over two years for Green Schoolyard grants (\$117 million in 2022-23 and \$33 million in 2023-24).

In 1995, the CDE launched the Garden in Every School initiative and collaborates with entities that support school gardens, including public and private agricultural agencies, waste management agencies, health agencies and others.

In 2006, AB 1535 (Nunez), Chapter 427, Statutes of 2006, provided \$15 million for a grant program administered by the State Superintendent of Public Instruction (SPI). Kindergarten through grade 8 schoolsites were eligible to receive a maximum of \$2,500 and high schools were eligible to receive a maximum of \$5,000. Funds were used for instructional school garden equipment or supplies and professional development for teachers, garden volunteers and food service staff. According to the CDE, approximately 3,500 schoolsites received grants.

Existing law also requires a local governing board to evaluate methods for coordinating and planning new schoolsites and parks in the community. Many new schools are now constructed adjacent to a city park.

***Arguments in support.*** The Trust for Public Land writes, “Climate change impacts on our K-12 schools and students have received increasing attention from scientists, universities and the California legislature as reports of dangerous 165-degree surface temperatures are becoming too common as the planet continues to heat up. Extreme heat is now harming our students and making their playgrounds and campuses unsafe. Most of our public schools were built in the decades following WWII and are in dangerous disrepair, covered in heat absorbing asphalt, offer no tree canopy or green spaces and are ‘climate liabilities’ to our communities and children.”

***Related legislation.*** AB 57 (Kalra) of the 2023-24 Session would establish the California Pocket Forest Initiative under the administration of the Department of Forestry and Fire Protection (Cal FIRE) to provide grants to cities, counties, districts, nonprofit organizations, and public schools to establish pocket forests on public lands in order to test and demonstrate the applicability and effectiveness of the Miyawaki method in California.

AB 247 (Muratsuchi) of the 2023-24 Session would place the Kindergarten-Community Colleges Public Education Facilities Bond Act of 2024 on the 2024 statewide ballot, to be operative only if approved by voters at the election.

AB 384 (Calderon) of the 2023-24 Session would require the CDE to conduct a research study on recommended indoor air temperature ranges and temperature control standards for public schools, to compile a statewide inventory of heating and cooling systems and interventions in all public schools, and to develop policy recommendations for safe indoor air temperature standards for public school facilities.

AB 527 (Calderon) of the 2023-24 Session would require the CAL FIRE to provide grants to qualified entities to support school greening.

SB 28 (Glazer) of the 2023-24 Session would place the Public Preschool, K-12, and College Health and Safety Bond Act on the ballot for the March 2024 statewide primary election.

SB 394 (Gonzalez) of the 2023-24 Session would require the State Energy Resources Conservation and Development Commission to develop a Master Plan for Healthy, Sustainable, and Climate-Resilient Schools on or before November 1, 2024, if an appropriation is made for that purpose. Requires the master plan to include specified elements, including, an inventory of the state's public elementary and secondary school buildings and grounds and a set of priorities, benchmarks, and milestones for health, resilience, and decarbonization of public school campuses and support facilities.

SB 499 (Menjivar) of the 2023-24 Session would require 1) all schoolsites and child care facilities to develop and implement an extreme heat action plan to planting shade trees, install a school garden, and plant a coniferous tree barrier; 2) the CDE, in consultation with the Department of Social Services, to develop a template for an extreme heat action plan, make available a model program guidebook; and, 3) the Department of Social Services to identify a liaison for child care facilities.

SB 515 (Stern) of the 2023-24 Session would exempt the installation of shade structures on the Division of the State Architect's (DSA's) approved pre-check design list from requiring LEAs to also provide an accessible path of travel under the California Building Standards Code.

AB 2566 (Calderon) of the 2021-22 Session would have required the Cal FIRE to develop a competitive grant program to support school greening projects. AB 2566 was vetoed by the Governor, with the following message:

I share the author's commitment to school greening projects and my Administration is proud that the 2022-23 Budget included \$150 million over two years for this purpose (\$117 million in 2022-23 and \$33 million in 2023-24). This funding will be administered through the existing Urban and Community Forestry Program. Additionally, Cal FIRE is able to update program guidelines to support implementation of this program and can incorporate program

implementation elements outlined in this bill, as appropriate. Accordingly, neither the program nor the fund that would be established by this bill are necessary to administer the funding authorized in the Budget. Moreover, the budget agreement allocated one-time funds for this purpose, but this bill codifies an ongoing commitment not provided for in the budget.

With our state facing lower-than-expected revenues over the first few months of this fiscal year, it is important to remain disciplined when it comes to spending. We must prioritize existing obligations and priorities, including education, health care, public safety and safety-net programs.

The Legislature sent measures with potential costs of well over \$20 billion in one-time spending commitments and more than \$10 billion in ongoing commitments not accounted for in the state budget. Bills with cost pressure, such as this measure, should be considered and accounted for in the annual budget process.

AB 1535 (Nunez), Chapter 427, Statutes of 2006, provided \$15 million for a grant program administered by the SPI. Kindergarten through grade 8 schoolsites were eligible to receive a maximum of \$2,500 and high schools were eligible to receive a maximum of \$5,000. Funds were used for instructional school garden equipment or supplies and professional development for teachers, garden volunteers and food service staff.

**REGISTERED SUPPORT / OPPOSITION:****Support**

The Trust for Public Land

**Opposition**

None on file

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