



November 2009

Policy Brief

Green Schools: An Overview of Key Policy Issues

Executive summary

“Green schools” minimize the impact of their operations on the environment through more efficient use of energy and other natural resources, reduced use of toxic materials and efforts to improve indoor/outdoor air quality.

These practices have been found to produce a number of health, academic, financial and environmental benefits, including reduced rates of asthma, respiratory tract infection and disease, allergic reactions and other negative health conditions; improved student attendance and academic performance; cost savings on utilities and buildings over time; lower emissions of pollutants; and conservation of natural resources.

Districts and county offices of education are encouraged to involve stakeholders from the schools and community in developing comprehensive, coordinated strategies to enhance green school operations. Such strategies might include:

- **Energy and water conservation.** To operate school facilities in the most energy-efficient manner possible, districts/COEs should begin with an energy audit to determine current energy use, identify priorities for energy-related projects and select appropriate measures to address those needs.
- **Waste management.** Districts/COEs can help conserve natural resources through the “four ecological R’s” that apply to waste management: reducing the purchase and use of materials; reusing materials; recycling; and rotting (i.e., composting) organic waste.
- **Environmentally preferable purchasing.** Green schools use products that have lower levels of pollutants, odors and hazardous substances and higher levels of postconsumer recycled content.
- **Green cleaning.** The use of less toxic, “green cleaning” supplies and more effective cleaning equipment can

reduce the need to use chemicals. It is important to provide maintenance staff with staff development in the proper use, storage and disposal of cleaning supplies and in effective, safe cleaning practices.

- **Integrated pest management.** State law encourages the use of effective, least toxic pest management practices for the control and management of pests at school sites.
- **Site acquisition/green building.** When selecting sites for the construction of new school facilities, districts/COEs may be required to comply with the California Environmental Quality Act and other environmental investigations. Then, the design, construction and modernization of facilities provide an opportunity to incorporate green building features.
- **Reduction of vehicle traffic.** Reducing vehicle traffic in the vicinity of schools, such as by promoting walking, bicycling and other forms of active transport to and from school, helps reduce air pollution.
- **Food services.** Districts/COEs can help reduce students’ exposure to pesticides and other chemicals by serving fresh, unprocessed, organic food.
- **Environmental education.** Student education about environmental issues is a central element of the green school philosophy.

There are opportunities for governing boards to encourage and facilitate green school operations through each of the board’s major areas of responsibility: setting direction for the community’s schools, establishing an effective and efficient structure, providing support, ensuring accountability to the public and acting as community leaders.

An increasing number of school districts and county offices of education are taking steps to establish and maintain “green schools” in order to provide healthier school environments, save money and model environmentally responsible behavior. Green schools minimize the impact of their operations on the environment through more efficient use of energy and other natural resources, reduced use of toxic materials and efforts to improve indoor/outdoor air quality.

This policy brief discusses the benefits of green schools and outlines actions that districts/COEs can take to encourage, implement and monitor green school operations. Also see CSBA’s sample board policy BP 3510 - Green School Operations for optional policy language that can be modified to meet the needs and goals of the district/COE.

The benefits of green schools

Health and academic benefits

Green schools minimize the use of toxic and unhealthy products while improving ventilation, natural lighting and acoustics, resulting in health benefits for students, staff and visitors.

Exposure to indoor air pollutants and toxic chemicals has been linked to short- and long-term health problems such as asthma, respiratory tract infection and disease, allergic reactions, headaches, nasal congestion, eye and skin irritations, coughing, sneezing, fatigue, dizziness and nausea. Children are especially vulnerable to contaminants because their smaller and immature body systems accumulate greater amounts of toxic substances per pound of body weight and are less able to handle toxins.¹

These negative health effects can result in lower student attendance, teacher productivity and student achievement. For example, asthma is the leading cause of school absenteeism attributed to chronic conditions nationwide.² The American Lung Association found that American children miss more than ten million school days a year because of asthma exacerbated by poor indoor air quality. Schools serving low-income communities suffer disproportionately from poor indoor air quality.³ (For further information about the link between indoor air quality and asthma, see CSBA’s policy briefs *Indoor Air Quality: Governing Board Actions for Creating Healthy School Environments* and *Asthma Management in the Schools* at www.csba.org/pab.aspx.)

Studies from Carnegie Mellon University and the U.S. Green Building Council show a 38.5 percent reduction in asthma rates in green buildings, as well as a 33 percent increase in the number of students testing at grade level for reading and math after they were moved to a green school.⁴

Financial benefits

Some districts/COEs have been reluctant to build green schools or institute green school practices because of concerns about costs. Research has demonstrated that construction costs for a new green school are about two percent higher than a conventionally designed school; however, a green school yields financial benefits that are 10 times the size of the initial investment over the life of the school.⁵

In addition, districts/COEs can save 20 to 40 percent on annual utility costs for new schools and 20 to 30 percent for renovated schools when they incorporate green school design criteria.⁶ Rebate incentives may be available to help lower the cost of certain retrofits. The transition to green cleaning products and practices is generally cost-neutral and in some cases can save money.⁷

Green schools provide additional financial benefits due to increased student attendance, staff productivity, higher student achievement, lower workers’ compensation costs, property loss prevention and other factors that are harder to quantify.

Environmental benefits

Besides having direct benefits for students, staff and school districts/COEs, green schools have short- and long-term benefits for the community and the environment. According to the U.S. Green Building Council, green schools use 33 percent less energy (resulting in lower emissions of pollutants caused by burning fossil fuels), save 32 percent more water and reduce solid waste by 74 percent.⁸

Implementing green school practices provides an opportunity to make positive environmental change, increase environmental awareness among others and serve as a role model of responsible citizenship for students and the community.

Strategies to create greener schools

Districts/COEs are encouraged to review the following strategies, obtain additional information from the agencies and organizations listed in the Resources section on page 10, and involve stakeholders from schools and the community in developing comprehensive, coordinated strategies to enhance green school operations.

Energy and water conservation

To operate school facilities in the most energy-efficient manner possible, districts/COEs should begin with an energy audit to determine current energy use, identify priorities for energy-related projects and select appropriate measures to address those needs. Regular inspection of facilities and operations should be scheduled to assess maintenance and capital expenditures which may help the district/COE reach its conservation goals.

Best practice

Conducting an energy assessment

CSBA, in partnership with Innovative Energy Services, assists districts/COEs with energy conservation through the Smart Assessment Energy Program. Smart AssessmentSM will develop a step-by-step implementation plan for saving energy and money. The program provides a detailed assessment of lighting, controls, heating, air conditioning, computer management, thermal solar and photovoltaic systems and other energy conservation strategies for all district sites. The program also provides recommendations, projections of cost and savings estimates, and information about available funding sources and rebate programs. For further information, visit www.csba.org/Services/Services/DistrictServices/Energy.aspx.

Examples of strategies to reduce the consumption of energy and water include:

- **Considering energy and water use when designing or modernizing facilities.** Energy consumption can be reduced by maximizing the use of natural lighting and ventilation through larger windows or skylights. Using trees to shade buildings can reduce the demand for air conditioning. Water consumption can be reduced by using low-water, low-maintenance landscaping and high-efficiency irrigation systems.

- **Installing more efficient heating, ventilation and air conditioning (HVAC) systems, lighting fixtures and water equipment.** Green schools may use high-efficiency appliances and technology, increased insulation, automatic faucet shut-off controls or other measures to lower energy and water use and cost while providing a comfortable, healthy learning environment for students and staff.
- **Turning off lights, other electrical appliances and water when not in use.** The district/COE can promote a “turn it off” campaign and get staff and students involved with saving energy. For ideas, see the Alliance to Save Energy’s Web site at <http://ase.org>.
- **Exploring renewable energy technologies.** Solar, wind and geothermal power offer alternative sources of energy that are considered cleaner and more eco-friendly than electricity which requires burning of gas or coal in power plants. Some cities and school districts/COEs across the nation are also exploring alternative-fuel transportation systems, such as using biodiesel (made from vegetable oil) or hybrid-powered buses, in order to decrease air pollution in communities and around schools.

Best practice

Increasing energy efficiency

Natomas Unified School District has implemented a variety of energy efficiency strategies. Its new H. Allen High Learning Center has thick, well-insulated walls; double-paned windows; and an HVAC system which exceeds federal standards for air circulation and quality. Inderkum High School has solar roof panels and also uses geothermal energy for heating and cooling. Radiator-like water pipes buried deep in the ground keep the school’s HVAC units cool, and a venting system in the central atrium and cafeteria draws fresh, chilled air up through the floor and out a set of open columns. All the district’s high schools have been retrofitted with synthetic track and field because it takes less water and maintenance than turf and will be less expensive over an eight-year period. The roof of the district’s administration building is covered with a foot of dirt and planted with plants that can help cool the building, buffer urban noise and clean the atmosphere. These strategies, plus abundant use of daylight in the classrooms, reduce energy consumption and utility bills.

—Patt, M.J., Green schools grow in Sacramento, *District Administration*, March 2009

CSBA provides a sample board policy and administrative regulation (BP/AR 3511 - Energy and Water Management) which address the development of a resource management program and a storm water management plan.

Waste management

The California Integrated Waste Management Board, the Green Schools Initiative and other advocates encourage the “four ecological R’s” that apply to waste management: reduce, reuse, recycle and rot. In order of preference, districts/COEs can help conserve natural resources by:

- **Reducing the purchase and use of materials.** The leading waste product coming from schools (making up nearly half of all school waste) is paper.⁹ Although paper is a necessary educational product, there are steps that can be taken to reduce the amount used by districts/COEs, such as using electronic resources in order to streamline operations, give students access to information and communicate with parents and the community. CSBA’s GAMUT Online policy service and *AgendaOnline* board agenda preparation service are examples of ways that governing boards can reduce the use of paper in board operations.
- **Reusing materials.** Reuse of materials for their original purpose or a similar purpose prevents materials from becoming waste. Used paper and scrap materials can be reused to make art projects, reusable plastic storage containers can take the place of disposable storage bags, and schools can seek donations of used computers and other equipment. When making purchases, staff should make efforts to replace disposable materials with reusable materials whenever possible and should give consideration to the durability of materials to ensure that they will be long-lasting.
- **Recycling.** Recycling materials is a relatively easy way for schools to contribute to resource conservation. Schools can set up bins for students and staff to place paper, cardboard, plastic and aluminum products for collection and transport to a recycling center. Districts/COEs can take a further step by purchasing recycled products, as described below.
- **Rotting (i.e., composting) organic waste.** Composting is an environmentally friendly way to dispose of food scraps in school cafeterias. It produces a rich soil additive that is useful for school gardens or landscaping or can be given to community members.

Best practice

Composting food waste

Soquel High School in Santa Cruz City High School District participates in Santa Cruz County’s composting program. Food scraps are put into separate bins and picked up twice a week by Green Waste, which transports them to the landfill for composting. The high school’s Environmental Club assisted in educating students about the program. In addition, the food services program has purchased compostable eating utensils that can be disposed of with the food waste.

—Santa Cruz City Schools, Green Schools Committee
First Annual Earth Day Report, 2008

CSBA provides a sample board policy and administrative regulation (BP/AR 3511.1 - Integrated Waste Management) which outline measures to reduce waste.

Environmentally preferable purchasing

Environmentally preferable purchasing is the procurement or acquisition of goods and services that have a lesser or reduced effect on human health and the environment when compared with competing goods or services that serve the same purpose.

Green schools use products that have lower levels of pollutants, odors and hazardous substances (e.g., lead, polyvinyl chloride found in common plastics, toxic art supplies). They also seek out products that contain postconsumer recycled content and produce a low amount of waste.

According to the Green Schools Initiative, the easiest and most widely available postconsumer recycled products used by schools are recycled copy paper, hand towels, toilet seat covers and toilet tissue. Other school supplies and goods made with postconsumer recycled materials include lunch trays, lunch bags, pens, pencils, rulers, clipboards, ink jet and toner cartridges and more.¹⁰

Eco-friendly products may be identified by the universal recycling logo, information about the percentage of postconsumer recycled content, or certification by an independent third party that the product meets health and environmental standards. They may also be identified by labels such as “odorless,” “non-toxic” or “biodegradable,” although districts/COEs should be cautious because sometimes such labels can be misleading or inaccurate.

Best practice

Identifying eco-friendly products

There are a number of sources that provide information about environmentally preferable purchasing as well as lists of certified products:

California Integrated Waste Management Board, Buy Recycled Program has produced a Recycled-Content Product Directory listing thousands of products containing recycled materials (www.ciwmb.ca.gov/buyrecycled).

California Department of General Services provides an online *EPP Best Practices Manual* (www.green.ca.gov/EPP).

U.S. Environmental Protection Agency's Environmentally Preferable Purchasing Program includes information on recommended recycled content, fact sheets on environmentally preferable products and case studies (www.epa.gov/opptintr/epp).

National Association of Counties has developed the *Environmental Purchasing Starter Kit* which contains an overview of environmentally preferable purchasing, guidance in the procurement process and a model environmental procurement policy resolution (www.naco.org).

Environmentally preferable purchasing is addressed in CSBA's sample BP 3510 - Green School Operations. Also see BP/AR 3514.1 - Hazardous Substances and BP 6161.3 - Toxic Art Supplies.

Green cleaning

Along with purchasing other environmentally preferable products as described above, the use of less toxic, "green cleaning" supplies (e.g., multipurpose cleaners, glass cleaners, floor and carpet cleaners, degreasers) can reduce health and environmental concerns. In selecting maintenance products, districts/COEs can review the product's Material Safety Data Sheet (a widely used system for cataloging information on chemical substances) or select a product that has been independently certified (e.g., certified by Green Seal or EcoLogo). Products packaged in aerosol containers should be avoided because they can result in increased exposure to cleaning chemicals that are dispersed in a fine mist.

In addition, purchasing more effective cleaning equipment can reduce the need to use chemicals. Microfiber mops and cloths have been shown to be more effective at removing dirt than traditional mopping methods and to cut chemical use by about half and water use by about 95 percent.¹¹ Backpack vacuums, compared to upright vacuums, are less likely to throw a significant amount of dust into the air. Static-cling dusters also can be effective in removing dust. When cleaning products are needed, using concentrates with dilution equipment that automatically measures and dispenses the correct amount of cleaning product can minimize exposure to chemicals.

Equally important is to provide maintenance staff with staff development in the proper use, storage and disposal of cleaning supplies and in effective, safe cleaning practices. Reading and following labels, and using non-chemical cleaning methods whenever possible, should be emphasized.

Green cleaning is addressed in CSBA's sample BP 3510 - Green School Operations.

Best practice

Green cleaning

At the beginning of the 2008-09 school year, Fresno Unified School District began pilot testing green cleaning products (a window cleaner, an all-purpose cleaner and a degreaser) at four school sites under the supervision of the district's maintenance service manager. Despite early resistance among some school custodians, the initiative ultimately involved and received the support of the custodians' union, the purchasing director, the chief financial officer, the superintendent and the board.

The pilot test demonstrated that the green cleaning products were safer, easier to use and at least as effective as the conventional cleaners. Also, the cost of custodial supplies did not increase and, in fact, the district estimated that it could save 8-10 percent off future maintenance costs due to the effectiveness and efficiency of the new cleaning products.

In April 2009, use of the green cleaning products expanded to the district's eight high schools and 13 middle schools. Elementary schools are being added as existing non-green supplies are used up.

—Regional Asthma Management and Prevention,
*Breathing Easier: School Districts Make the Switch to
Certified Green Cleaning Products*

Integrated pest management

Education Code 17608-17613 encourage the use of effective, least toxic pest management practices for the control and management of pests at school sites. “Integrated pest management” is a strategy that focuses on long-term prevention or suppression of pest problems through a combination of techniques including pest population monitoring, using nonchemical practices to make the habitat less conducive to pest development, improving sanitation and employing mechanical and physical controls. Pesticides that pose the least possible hazard to people, property and the environment are used only after careful monitoring indicates they are needed according to pre-established guidelines and treatment thresholds.

State law (Education Code 17612) also requires notifications to staff and parents, as well as posting of warning signs, regarding pesticide applications at school sites.

Integrated pest management is addressed in CSBA’s sample AR 3514.2 - Integrated Pest Management.

Best practice

Reducing use of pesticides

The Ventura Unified School District received an Innovator Award from the California Department of Pesticide Regulation in 2003 for its innovative techniques to reduce the use of pesticides and save money on pest management. Indoor pesticides are restricted to pastes, gels and baits. Teachers and other district staff control ants by eliminating their trails, using plastic spray bottles filled with a soapy solution. Weeds are controlled with a hot water device that works as effectively as a popular herbicide. Owl nesting boxes on school property help control rats, mice and gophers.

—California Department of Pesticide Regulation, Model Programs, http://apps.cdpr.ca.gov/schoolipm/model_programs/main.cfm

Site acquisition/green building

When selecting sites for the construction of new school facilities, districts/COEs may be required to comply with the California Environmental Quality Act (Public Resources Code 21000-21177) to assess the potential impact of the project on the environment and may be

subject to other environmental investigations. The site acquisition process should also include consideration of nearby environmental hazards as well as access to transportation and safe walking/bicycling routes.

Then, when designing and constructing the facilities, districts/COEs have an opportunity to incorporate green building features such as increased use of natural lighting, smart lighting and other energy conservation measures; durable, nontoxic building materials; materials with recycled content; and low-water landscaping and facilities.

There are two popular rating programs which certify school buildings as green schools, also known as “high-performance schools”:

- **Collaborative for High Performing Schools (CHPS).** Especially designed for K-12 schools, the CHPS program provides a comprehensive system of environmental standards and benchmarks in six categories: sustainable sites (e.g., site selection, transportation, outdoor lighting, etc.), water, energy, materials, indoor environmental quality, and policy and operations. Districts/COEs or schools can self-certify that the school has met the point value required to qualify as a high-performing school, or may seek third-party verification.
- **Leadership in Energy and Environmental Design (LEED).** Developed by the U.S. Green Building Council, the LEED certification system recognizes building performance in five areas of human and environment health: sustainable site development, water savings, energy efficiency, materials selection and indoor environmental quality. LEED has a specific rating system for schools which addresses design and construction issues such as classroom acoustics, master planning, mold prevention and environmental site assessment.

State facilities funding provided under the Kindergarten-University Public Education Facilities Bond Act of 2006 (Proposition 1D) includes funding for High Performance Incentive Grants based on criteria modeled after the CHPS standards. Eligible new construction and modernization projects will be awarded incentive grants through the Office of Public School Construction on a first-come, first-serve basis until the funding runs out.

Environmental impact reports and other site selection issues for new construction are addressed in CSBA’s sample BP/AR 7150 - Site Selection and Development. Retrofitting existing facilities to improve energy efficiency is addressed in AR 7111 - Evaluating Existing Buildings.

Best practice

Meeting green building standards

In 2001, the Los Angeles Unified School District adopted the first of two green building policies mandating that all future schools meet CHPS criteria. The first school to be completed under the green building program, Cahuenga New Elementary School #1, incorporates more than 35 specific green building measures that enhance the building and student performance. Among the green features are high-efficiency irrigation systems; use of recycled content in acoustic tile, insulation and concrete; all classrooms meeting the CHPS daylight factor; operable windows; cool roof to reduce heat absorption; and day and occupancy sensors to reduce energy use. The annual savings in energy costs is estimated at \$60,000, with a 2.9 year payback on the initial investment.

One of the lessons learned is that even if the plans and specifications are very specific regarding green features and materials, often contractors and subcontractors make last-minute substitutions. It is necessary to clearly specify the green attributes, ensure that everyone is aware of the effort to use green materials and monitor to ensure that CHPS requirements are met.

—Global Green USA, *Healthier, Wealthier, Wiser: A Report on National Green Schools*

Reduction of vehicle traffic

Reducing vehicle traffic in the vicinity of schools helps reduce air pollution and increase safety. One way to do this is to promote walking, bicycling and other forms of active transport to and from school.

“Safe routes to school” programs are designed to support related infrastructure and/or noninfrastructure projects, often implemented in partnership with other local agencies and organizations. For example, schools may become involved by increasing students’ awareness of the benefits of active transportation, instructing students in pedestrian and bicycle safety skills and promoting special events such as a Walk to School Day or a “walking school bus.”

There are a number of state, federal, local and private funding sources that may be tapped to support related activities. See CSBA’s policy brief *Safe Routes to School: Program and Policy Strategies* at www.csba.org/pab.aspx.

Strategies for promoting and facilitating active transportation to and from school are addressed in CSBA’s sample BP/AR 5142.2 - Safe Routes to School Program.

Food services

Although it may be practical for food services programs to use pre-prepared foods that only need to be heated and served, the practice may result in students consuming more highly processed foods and fewer fresh foods. Districts/COEs can help reduce students’ exposure to pesticides and other chemicals by serving fresh, unprocessed, organic food.

Some schools purchase produce from local farmers to include in school meals (i.e., farm-to-school or farm-to-cafeteria programs) and some have partnered with local farmers to bring farmers markets or fresh produce stands to school grounds. Others have begun to grow their own food in school gardens or “green schoolyards.” Along with providing healthier foods, such programs educate students about nutrition and environmental stewardship (and often math, science and other topics).

Nutritional standards are addressed in CSBA’s sample BP/AR 3550 - Food Services/Child Nutrition Program and BP 5030 - Student Wellness.

Best practice

Serving healthier foods

In 2004 the Berkeley Unified School District’s governing board adopted a policy directing the district’s nutrition services director to develop and implement a plan for integrating organic food into the meals served to students and eliminating potential harmful food additives and processes. The policy also encourages staff to utilize food from school gardens and local farmers.

Accomplishments have included salad bars in all district schools, an organic salad bar at the high school, daily servings of fresh fruits and vegetables, hormone- and antibiotic-free milk, most food made from scratch, organic bread and dinner rolls, and the majority of food being purchased locally.

—Berkeley Unified School District Web site

Environmental education

Student education about environmental issues is a central element of the green school philosophy. The instructional program can help students understand and appreciate the natural world and take personal responsibility and leadership for changing the environment for the better.

Education Code 51210 and 51220 require the course of study for students in grades 1-12 to include instruction on the “relations of persons to their human and natural environment” and on “the place of humans in ecological systems.” In grades 1-6, the course of study also must include instruction on the “wise use of natural resources.” These topics are addressed in the state’s content standards and curriculum framework for science.

As schools implement and evaluate green school activities and projects, there will be opportunities to involve students. For example, students might be included on related district/COE or school committees, form an environmental club, help plan an Earth Day celebration, tend to the school garden, help evaluate their school’s energy use and/or advocate for energy/water efficiency in their school, home or community.

Student education on environmental issues is addressed in CSBA’s sample BP 6142.5 - Environmental Education.

Best practice

Involving students in environmental efforts

At Alta Loma Junior High School in the Alta Loma Unified School District, students learned about energy as part of the science curriculum and then became advocates for conservation at the school. They periodically surveyed classrooms, making sure to check for unnecessary electrical equipment and lights left on in unoccupied rooms. The class posted small reminder cards on every teacher’s computer to remind the students to turn off their computers and other electrical devices. During the winter season, students made and used meters to detect wind drafts in the classroom and at home, making sure to fix the ones they could by covering them up. They held monthly meetings to generate ideas on ways to spread the word about energy conservation to the community. The school newsletter included articles on energy awareness at home and students set up a green schools booth at the school’s open house to educate the community about energy efficiency.

—Alliance to Save Energy, *Students Leading the Way 2007-2008: Energy Saving Success Stories from Southern California*

The governing board’s role

By encouraging and facilitating green school operations, the board can provide safer schools, reduce long-term costs and make an impact on the environment. There are opportunities to provide leadership through each of the board’s major areas of responsibility:

Setting direction for the community’s schools

The board is responsible for adopting a long-range direction and goals for the district/COE. To incorporate environmental responsibility within this vision, the board can:

- Increase its understanding of green school issues and of the impact of environmental factors on student health and achievement through staff reports, special study sessions, publications or participation in board development opportunities.
- Engage the staff and community in discussions of green school issues.
- Involve staff, students, parents and community members in setting goals, strategies and priorities for green schools,

Establishing an effective and efficient structure

The board must ensure that structures and resources are in place to enable staff to implement strategies that will achieve the vision and goals. The board can:

- Adopt policy that provides direction on green school operations and align policies on individual topics such as energy and water management, waste management, integrated pest management, site selection and development and hazardous substances.
- Adopt curriculum for environmental education which meets state and district academic standards and prepares students to be environmentally responsible citizens.
- Encourage the superintendent to explore grants and other alternative funding sources for green school projects and activities.
- Adopt a budget that is aligned with the established goals and priorities for green schools and considers both initial costs and long-term savings.

- When making decisions about the siting and design of new school facilities, consider environmental risks and impact.

Providing support

Although the board does not implement policies or programs, it must support the staff's efforts to carry out the direction of the board. The board can:

- Ensure that the board takes into consideration, when appropriate, the potential health and environmental impact of board decisions (e.g., when setting specifications for new construction, adopting a master facilities plan).
- Serve as a role model by practicing environmentally responsible behavior, such as by reducing the use of paper for board meetings and setting up recycling bins in the board meeting room.

Ensuring accountability to the public

The board is accountable to the public for the performance of the community's schools. To ensure fiscal and program accountability, the board can:

- Work with the superintendent and other staff as appropriate to determine what indicators will be used to assess the effectiveness of green school policies and programs in achieving their intended purposes (e.g., impact on resource conservation, cost savings, improved student/staff health, improved educational outcomes).
- Communicate its expectations as to how often the board wants to receive reports from the superintendent or designee regarding progress.
- Communicate evaluation reports to the public.
- Recommend program modifications, if needed.

Acting as community leaders

The board has a responsibility to communicate with and involve the community in the schools in meaningful ways. To garner community support for green school operations, the board can:

- Establish a citizens advisory committee with representatives from various stakeholder groups

to provide policy input and assist with program evaluation.

- Initiate or participate in partnerships with local government agencies, health organizations and nonprofit organizations to develop and implement cross-jurisdictional strategies (e.g., safe routes to school, waste management).
- Provide information to students, parents and community members about district/COE programs and about ways they can conserve energy, water and other resources at home.
- Advocate for environmental initiatives at the local, state and national levels.

Resources

California School Boards Association: www.csba.org

CSBA issues sample board policies and administrative regulations, policy briefs, advisories and fact sheets on a variety of topics related to facilities, conservation, environmental safety and student health, including indoor air quality and asthma management. CSBA also partners with Innovative Energy Services to provide the Smart Assessment Energy Program.

Alliance to Save Energy: <http://ase.org>

School Operations and Maintenance: Best Practices for Controlling Energy Costs, A Guidebook for K-12 School System Business Officers and Facilities Managers (2004) provides detailed guidance on how school districts can plan and implement enhancements to their current operations and maintenance programs in order to reduce energy costs.

California Department of General Services, Green California: www.green.ca.gov

The Environmentally Preferable Purchasing Best Practices Manual describes core principles of environmentally preferable purchasing and contains specific product recommendations.

California Department of Pesticide Regulation: www.schoolipm.info

The department has established an integrated pest management program for use by school districts/COEs, including a model program guidebook and a Web site containing a comprehensive directory of resources.

California Department of Public Health: www.cdph.ca.gov
The department provides health information about asthma, environmental health and related issues.

California Integrated Waste Management Board:

www.ciwmb.ca.gov

CIWMB provides resources on environmentally preferable purchasing, including product lists.

California's Coalition for Adequate School Housing:

www.cashnet.org

C.A.S.H. publishes the *Environmental Mitigation Handbook* (February 2009), *Planning for Energy Efficiency* (May 2009) and other related publications and offers workshops and conferences that often address green schools issues.

Collaborative for High Performance Schools: www.chps.net

CHPS sets voluntary standards for green building. See the *CHPS Best Practices Manual*.

Global Green USA: www.globalgreen.org

Global Green USA provides a variety of resources, including *Healthier, Wealthier, Wiser: A Report on National Green Schools*.

Green Schools Initiative: www.greenschools.net

This organization supports actions to improve the environmental health and ecological sustainability of California schools. Resources include the *Green Schools Buying Guide*.

Healthy Schools Campaign:

www.healthyschoolscampaign.org/programs/gcs

This nonprofit organization addresses a variety of school environment issues, including environmental health. It publishes *The Quick and Easy Guide to Green Cleaning in Schools*.

National Wildlife Federation, Eco-Schools USA Program:

www.nwf.org/ecoschools

Eco-Schools USA provides a framework to help schools effectively “green” their facilities, grounds and curriculum. Schools that implement the program may apply for a bronze, silver or “green flag” award recognizing their accomplishments.

Regional Asthma Management and Prevention:

www.rampasthma.org

A project of the Public Health Institute, RAMP serves as a clearinghouse of asthma-related information and coordinates Community Action to Fight Asthma, a statewide network of asthma coalitions.

U.S. Environmental Protection Agency: www.epa.gov

EPA developed the *Indoor Air Quality (IAQ) Tools for Schools* program to help schools maintain a healthy environment in school buildings by identifying, correcting and preventing indoor air quality problems.

U.S. Green Building Council, LEED Green Building Rating

System: www.usgbc.org

LEED is a voluntary certification process for green building.

Endnotes

- 1 Centers for Disease Control and Prevention. (2005). *Third National Report on Human Exposure to Environmental Chemicals*. www.cdc.gov/exposurereport. Also U.S. Environmental Protection Agency. (2003). *America's Children and the Environment: Measures of Contaminants, Body Burdens, and Illnesses*. www.epa.gov/economics/children
- 2 Smart, B.A. (Fall 2004). The costs of asthma and allergy. *Allergy and Asthma Advocate*. American Academy of Allergy, Asthma and Immunology. www.aaaai.org/patients/advocate/2004/fall/costs.stm
- 3 Schneider, M. (November 2002). *Do School Facilities Affect Academic Outcomes?* Washington, DC: U.S. Department of Education, National Clearinghouse for Educational Facilities. www.edfacilities.org/pubs/outcomes.pdf
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