



CSFC Annual Summit 2023

Greening School Sites: Big Impact with Limited Resources

Thursday, September 28, 2023

2:15-3:00 pm



California's Five Major Climate Hazards

Specific results:


- ▶ Higher average temperatures and periods of extreme heat
- ▶ More frequent and intense droughts
- ▶ Increased risk of floods
- ▶ More severe wildfires
- ▶ Coastal flooding and erosion



Let's talk


- ▶ What impacts have you and your schools had from climate hazards?






Increasing Temperatures

On average, the Los Angeles region is expected to warm 4° to 5° by mid-century. Heat waves could last longer and become more frequent. The number of *heat days* (when temperatures are over 95°F) are expected to triple in coastal areas and central Los Angeles, while the San Fernando and San Gabriel Valleys will see an almost quadruple increase. Heat days in the desert and mountain areas will increase five to six times the current number.




Decreased Snowfall

The mountains could see a 42% reduction in annual snowfall by mid-century. Winter snowpack is also expected to melt more than two weeks earlier as a result of rising temperatures. Changes in snowfall could reduce fresh water supplies throughout the county.



More Extreme Weather

Changes in climate could increase the frequency, intensity, and duration of extreme weather events such as rain storms. More erratic storms during the winter months could also affect stream flows and cause greater flooding.



Rising Sea Levels

Climate scientists have predicted that sea level will rise along the California coast 5 to 24 inches between 2000 and 2050. Tides and storm surge can cause coastal flooding in Southern California, especially when big wave storms occur at high tides.



LACOE's Green Schools Symposium 2023

- ▶ Eagle Rock Elementary
- ▶ Urban oasis
- ▶ Facilities improvements
- ▶ Research-based approach as a collaboration between LAUSD, PTA, various local organizations
- ▶ School has a waiting list of students

<https://www.youtube.com/watch?v=ZEMbbGXLx1w>

LACOE's 2023 Green Symposium: Experiencing Nature with Rex Miller



What can I do?



▶ Telecommute one day each week to save on gas, car maintenance, and stress while reducing greenhouse emissions related to driving a car



▶ Change lightbulbs to energy-efficient bulbs which use less energy and last longer

▶ Buy locally-produced foods to reduce on transportation of produce, meats and other foods



▶ Adjust thermostat to 78 degrees Fahrenheit in winter to save on energy

▶ Get involved in recycling and inspire others to do the same

Let's talk

- ▶ What can facilities professionals do?



Urban Heat Island Reduction



- Areas that are artificially hotter due to surfaces that absorb heat (like roofs and pavements) and a lack of vegetation, particularly trees.
- Causes people in cities to suffer from higher temperatures simply because of where they live.
- Low-income communities and many communities of color are most impacted.



CalFIRE Urban and Community Forestry Program

- ▶ 1st Round Funding: \$47M
- ▶ 2nd Round Funding: \$73M including 14 projects related to schools for planning or implementation (Anaheim Union HSD, El Monte City SD, La Mesa-Spring Valley SD, Oakland USD, Porterville USD, etc.)
- ▶ Remaining Funding: \$30M for non-childcare facilities
- ▶ Application due 12/1/23 by 3 pm
- ▶ Offered 2 webinars on 9/18 and 9/21, finalizing application, will open application portal soon

Outdoor Learning Environments

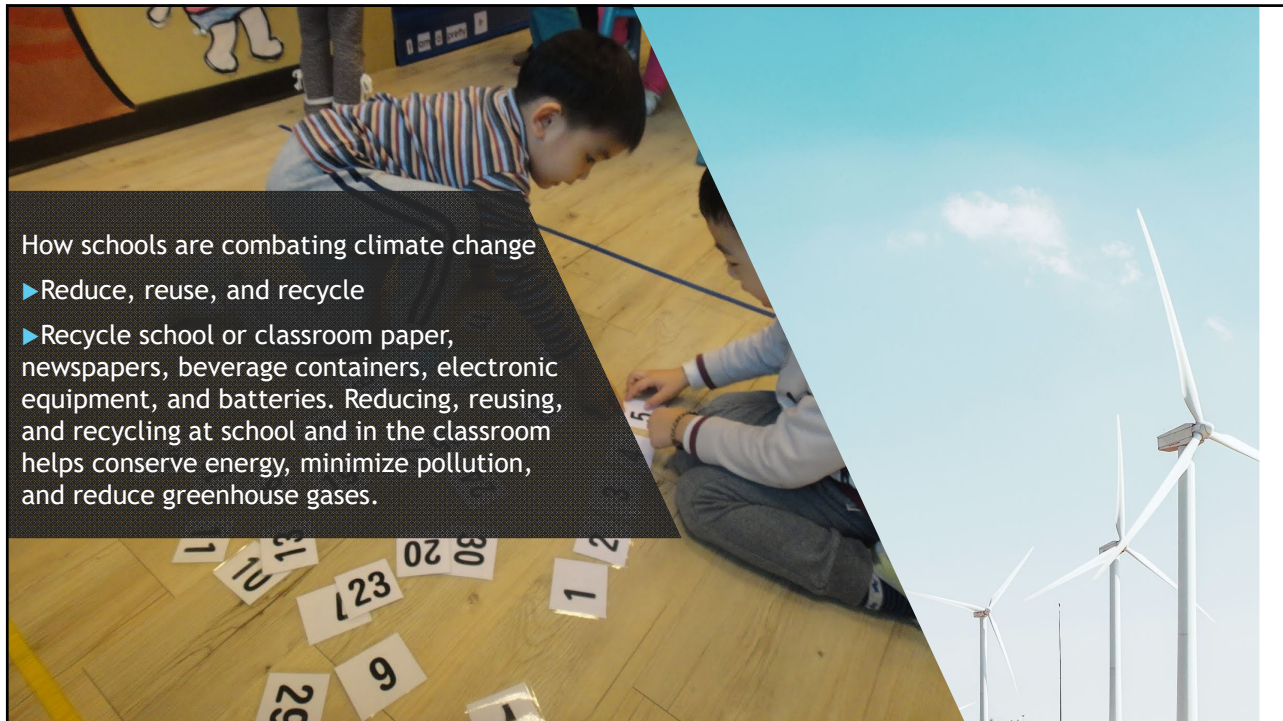
- ▶ Paradigm shift
- ▶ Engagement with school staff and families
- ▶ Projects in design development or public bidding
- ▶ Procurement of outdoor furniture
- ▶ Use of reflective paint in courtyards wherever possible (affordability)
- ▶ Colorful sails/shade in courtyards



Let's talk

- ▶ How many of you applied to CalFire's program?
- ▶ Do you have opportunity to improve or install green spaces?





How schools are combating climate change

- ▶ Reduce, reuse, and recycle
- ▶ Recycle school or classroom paper, newspapers, beverage containers, electronic equipment, and batteries. Reducing, reusing, and recycling at school and in the classroom helps conserve energy, minimize pollution, and reduce greenhouse gases.

What can facilities professionals do?



Inform

...and engage the general public about the nature of climate change and the health co-benefits associated with taking action to reduce carbon emissions.



Promote

...local planning, land use, transportation, water, and energy policies that reduce carbon emissions and support the design of healthy and sustainable communities.



Provide

...guidance on climate preparedness to local government and community partners to reduce health risks and create more resilient communities.



Build

...the capacity of Departmental staff and programs to monitor health impacts, integrate climate preparedness, and improve climate response.



Adopt

...best management practices to reduce carbon emissions associated with Departmental facilities and internal operations.

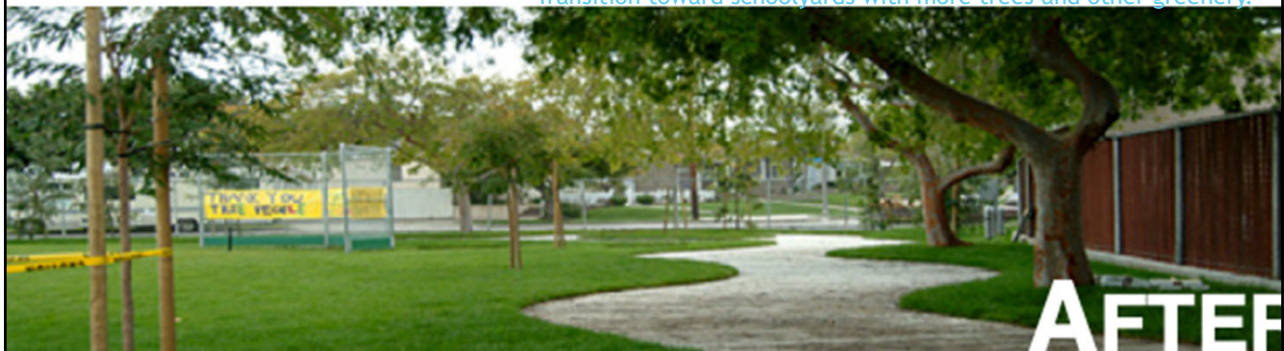


Built Environment and Nature-based Interventions

- ▶ Improve school building envelopes (e.g., insulation, double-paned windows, window shading, and air sealing along with lead, mold, and asbestos remediation).
- ▶ Install cool roofs on schools.
- ▶ Plant trees to provide shade outdoors, both for the buildings and play areas.
- ▶ Install other outdoor shade structures, such as shade sails over playground equipment, outdoor dining, and other outdoor common areas.
- ▶ Decrease asphalt cover and increase permeable surfaces and natural ground cover, like gardens.
- ▶ Install or improve cooling equipment (i.e., air conditioners or heat pumps), prioritizing energy efficient equipment whenever possible.



Transition toward schoolyards with more trees and other greenery.




Behavioral Interventions


- ▶ During high-heat periods, modify activities, move inside to suitably cooled facilities, or reschedule outdoor activities (e.g., sports practices, games, outdoor play).
- ▶ Move children to air-conditioned rooms or cooler parts of buildings.
- ▶ Encourage children to take preventative behaviors, such as drinking water to stay hydrated.





10 Things You Can Do to Reduce Climate Change

Changes in normal levels of heat, cold, rain, and wind are known as climate change. Using fossil fuels such as crude oil, natural gas, or coal affects our climate. That's because burning these fuels disturbs the balance of greenhouse gases in our earth's atmosphere (gas envelope that covers the earth). Follow one or more of these tips to reduce climate change.

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1. Change your light bulbs.
Use CFL (compact fluorescent light) or LED (light-emitting diode) bulbs. Both use at least 75% less energy than regular bulbs and last much longer. If 20 million light bulbs were changed to CFLs, we could all save more than \$118 million in energy costs. It would also prevent releasing greenhouse gases equal to that of more than 150,000 cars each year. Greenhouse gases change our earth's temperature. You can buy CFLs and LEDs at your local hardware or discount stores.
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2. Make less trash—reduce, reuse, recycle.
Use reusable products instead of things you throw away. Make sure to recycle paper, plastic, newspaper, glass, and aluminum cans. Recycling...
 - A soda can uses less energy than making a new one. The energy you save could power your television for three hours.
 - Saves families up to \$22 a month if they take items to their local recycling center. Find a recycling center near you: <http://tinyurl.com/RecyclingCenters>
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3. Use less water.
Most people in LA County use 123 gallons of water a day. Most families pay \$51 per month for water. Use these tips to save water and money:
 - **Take showers instead of baths.** A four-minute shower uses 20-40 gallons of water. A bath uses more than double that amount of water.
 - **Turn off the water while you brush your teeth.** You'll save up to 200 gallons a month.
 - **Make sure your toilet works.** Almost all high water bills are due to a leaky or running toilet. Think about installing a water-saving toilet. It can save up to \$110 in costs and 13,000 gallons of water each year.
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4. Keep your home at the right temperature.
More than half of all the energy we use in our homes comes from heating and cooling. You can save 10-15% on your energy bill if you set your thermostat to 68°F in winter and 78°F in summer. This will also help one home make 2,000 pounds less carbon dioxide each year. This gas is made when we burn fossil fuels, like natural gas, coal, and crude oil. Carbon dioxide is one of the main gases that change our earth's temperature.



5. Walk and bike more.

Leave your car at home two days a week. This will lower the amount of greenhouse gases we release by about two tons each year. Walking and biking also helps keep you healthy. California spends about \$34 billion each year in medical costs for heart disease, obesity, and other diseases that come from people being overweight and not exercising enough.



6. Drive less to work.

The American Automobile Association (AAA) found that a 40-mile round trip commute costs an average of...

- \$22.08 per day
- \$463.68 per month
- \$5,564.16 per year

Lower your stress and decrease your time in traffic. Ask your boss about working from home or working a modified schedule. You can also take public transit or join a carpool. Find a carpool near you:

Dial 5-1-1 or visit <http://tinyurl.com/CarpoolVanpool>



7. Buy food that's grown close to home.

Most fruits and vegetables travel about 1,500 miles from the farm to your supermarket. When you buy produce from local farmers, you support your local economy and lower air pollution from transportation.

Find a Farmers' Market near you: <http://tinyurl.com/FindFarmersMarkets>



8. Eat more vegetables.

Having one meatless meal each week helps your heart, wallet, and the earth. Livestock, like cows, create greenhouse gases and use up a lot of water and land. By eating more vegetables, you lower the demand for livestock and save at least \$237 each year on meat-related costs. Many studies have shown that eating less meat can lower your risk of heart disease and some forms of cancer. Find ways to eat more veggies: www.cdc.gov/family/minutes/tips/fruitsveggies/index.htm



9. Plant a tree.

Planting a tree is good for the air and the earth. It also saves you money on cooling costs by making shade for your home. The U.S. Department of Energy reports that putting just three shade trees in the right place can save homes about \$100-250 in energy costs each year. Trees also absorb carbon dioxide and other harmful gases. Trees can increase property value and improve the neighborhood. Make it a family activity and plant a tree every year. Learn about planting a tree at www.arborday.org



10. Share these tips.

Ask your friends, family, and neighbors to do one thing from this list. If we work together, we can all enjoy a healthier Earth.



Community Schoolyards Project

Before & After: Converting asphalt schoolyards into colorful spaces teeming with trees, gardens, artwork, and play features yields all kinds of benefits for students and the wider community, centering on health, education, climate, and park access.

Watch us, We are Changing



Investing in renewable energy



Cutting emissions at our sites



Recycling the things we value



Reducing your carbon footprint

Five-Points to Keep in Mind



1. Understand your assets and where they are - how your direct operations affect biodiversity.



2. Think supply chains - the upstream impact. For example, furniture manufacturers should consider where their raw materials are coming from and how their producers impact the environment locally.



3. Think where your goods and services are going - the downstream impact. For example, schools should think about what happens to the plastic packaging that students take off their food products. How does that waste impact nature?



4. Set targets at a district level, so that appropriate training and budgets are triggered. Understanding and changing how you operate is going to require training and is going to require finance allocated toward capacity building.



5. Use this data and these targets to inform school districts and individual schools how schools operate - a process of adaptive management. It is a long-term process that will take time and long-term buy-in.



Develop A COE Guide

- ▶ Connect with your county sustainability office
- ▶ File a motion or resolution to protect students from extreme heat at schools
- ▶ Secure grant funding (e.g., California Resilience Challenge, Alliance for a Better Community)
- ▶ Draft a toolkit that addresses your local needs and recommendations
- ▶ Engage the community
- ▶ Partner with local universities for research and your green building council

Let's talk

- ▶ Have you taken one or more of these actions?
- ▶ What are some of your ideas to maximize resources?



Resources

- ▶ LAO, Climate Change Impacts Across California, K-12 Education
<https://lao.ca.gov/Publications/Report/4586>
- ▶ The Nature Conservancy, Choose It, or Loose It
https://www.nature.org/en-us/about-us/where-we-work/united-states/california/stories-in-california/climate-future/en_txn1=p_g.ch_ca.ex.x.rsa.donor23&gclid=EAlaQobChMx9OC57qzeQMVzZxaBR0DWAYLEAAyAAAEgK9-D_BWE
- ▶ Climate Change and Health Equity Strategies for Action Report, LA County
chrome-extension://efaidnbmnnnibpcjpcglclefindmkaj/http://publichealth.lacounty.gov/eh/docs/climatechange/climate-change-health-equity-strategies-action-report.pdf
- ▶ UCLA Brief
chrome-extension://efaidnbmnnnibpcjpcglclefindmkaj/https://innovation.luskin.ucla.edu/wp-content/uploads/2023/05/Protecting-Californians-with-Heat-Resilient-Schools.pdf
- ▶ Article on reflective paint
<https://news.artnet.com/art-world/scientists-have-developed-the-whitest-white-paint-ever-so-reflective-it-can-cool-surfaces-2338779>
- ▶ Watch us, We Are Changing
https://www.basf.com/us/en/who-we-are/change-for-climate.html?at_medium=display&at_campaign=COM_BAW_US_EN_Climate-Protection_TRA_Google-Generic-Phrase-2023&at_creation=Search_Google_EN_Text-Ad_FY23-Generic-Google-Climate-Protection&at_channel=Google&at_format=Text-Ad&at_variant=Climate-Protection_1x1_EN-Generic-Google-Climate-Protection&gclid=EAlaQobChMx9OC57qzeQMVzZxaBR0DWAYLEAAyAAAEgIVEvD_BwE&gclidsrc=aw.ds

A decorative graphic on the right side of the slide, composed of overlapping, semi-transparent blue triangles and polygons of various shades, creating a modern, abstract geometric pattern.

 **Los Angeles County
Office of Education**

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Director Facilities and Construction