



Berkeley Unified School District

Sustainability and Resiliency Proposal

Health, Linked Learning, Next Generation Science

Climate Change Action and Adaptation

Proposal from Susan Silber, Independent Consultant

INTRODUCTION

This proposal offers a comprehensive plan for the Berkeley Unified School District to reduce the environmental footprint of schools and promote environmental literacy, which we believe are fundamental to a high-quality 21st century education. We applaud the District's world-class gardening programs, its efforts to install solar panels and energy efficient lighting, and commitment to promoting alternative transportation as role models for other school districts.

But in the face of the climate change crisis, the federal administration's assault on science and environmental policies, and emerging needs for building more resilience as a community, there is so much more that Berkeley schools can and should do.

We must ensure that all Berkeley students have access to healthy, green school buildings and grounds and hands-on environmental and outdoor education.

The following proposal outlines a year-long process that will result in a multi-year, multi-stakeholder **Sustainability and Resiliency Master Plan (SRMP)** and begin its implementation to achieve these important outcomes. **Through these efforts, the District will:**



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Save money: Cost savings from energy conservation programs alone could result in cost savings of tens (even even hundreds) of thousands of dollars.

Case Studies

BUSD: Waste Reduction Efforts (2011-15): The Green Schools Initiative (*co-led by Susan Silber*) saved an estimated **\$60,000** for the District from reduced garbage fees, after three years of a comprehensive program involving education with students, funding for infrastructure (recycling, composting bins) and professional development for teachers and custodians.

NOTE: The District terminated this program in June 2015.

OUTSIDE THE DISTRICT: Arlington Independent School District Conserves Energy and Saves Hundreds of thousands of dollars

Budgeted to spend over \$15 million on utilities this year for its 74 campuses, Arlington ISD is finding that little changes can add up to big savings. The “Turn It Off” campaign emphasizes the importance of flipping the switch. Turning off classroom lights for an hour when they’re not needed results in \$25 saved. Shutting down all computers at night (instead of just putting them in “sleep” mode) adds up to **\$30,000 saved**. During the previous school year, the district saved over **\$280,000** during just Thanksgiving, winter, and spring breaks alone, simply by ensuring that energy use was cut to minimum levels. ***From Eco-Schools website***

Support Next Generation Science Standards and Best Practices in Educational

Learning: Environmental education programs provide numerous opportunities for hands-on learning, linked learning, community service and other best practices in education. Students from lower-income families do not often get the opportunity to participate in field trips or nature-based learning. The SRMP will detail opportunities for outdoor and environmental education for ALL students, including linking green facilities to lesson plans that support schools as learning labs for students.



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Case Studies

BUSD: Several years ago (before the school installed comprehensive solar panels) Rosa Parks Elementary received grant funding from PG&E that paid for a small solar panel that powers their pond, and supported the organization of a school-wide Solar Fair. Students studied extensively about solar energy, from baking cookies in the solar ovens they designed to conducting solar-based science experiments.

Two years ago, Susan Silber wrote a grant to provide 10 teachers with mini-grants to design and implement eco-literacy projects, which they presented with great enthusiasm during an Eco-Hero Night attended by more than 300 students and teachers.

OUTSIDE THE DISTRICT: Students at Acton-Boxborough Regional High School spearhead an effort to save energy and green their campus

In September 2010 Kate Crosby, Energy Advisor for the Acton-Boxborough Regional School District, brought together a group of students at the local high school who were interested in understanding energy conservation. They helped to design such projects as **Power Down Fridays**, in which students designed and made colorful door tags to hang on classroom and office doors to remind staff to power down equipment on Friday afternoons. In addition, students wrote emails that went out to all staff, created posters and contributed morning announcements to help promote powering down on Fridays. Students also organized **energy audits** for every classroom and office and left hand-written notes for teachers and staff with tips and advice for reducing their energy consumption. These audits were conducted three times over the school year, with a steady improvement in the number of rooms that were successfully powered down and consequently saved the District thousands of dollars. **(from Eco-School website)**

Reduce greenhouse gas emissions and the District's environmental footprint: Climate change is one of the greatest challenges humanity has ever faced. It's time for BUSD to show its commitment to implementing environmental solutions. Lower-income families and neighborhoods are also often the first communities affected by climate change and pollution. By addressing climate change and planning resiliency plans, the Plan also supports the District's commitment to equity.



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Case Studies

BUSD: Oxford Elementary School's Jackie O'Mania was inspired by the Green Schools Initiative's waste reduction program and has since become one of the state's biggest advocates for green waste and environmental education. Her class spearheaded large-scale composting program in collaboration with the Green Schools Initiative, and last year she worked with her class to develop a zero-waste classroom. Jackie's class worked on a variety of topics related to sustainability and zero waste; they made a film called "The Zero Waste Classroom", went on various field trips, and integrated the required BUSD reading and writing topics into a themed curriculum that she called "Sustainability." During the unit the class met with solar engineers and observed Project Sunroof to learn about the usable sunlight hours that fall on our school's roof and then, with facts in hand, each student wrote a persuasive letter which will be delivered to the school's redesign committee. The classroom's zero waste results were impressive.

She said, "From the first day of school in September, to the last in mid-June, we made 5 bags, or 20 gallons of trash. In terms of plastic bags, we used 355 less than an average classroom. Plastic bags are a very problematic material- as we saw on our trip to Altamont landfill. The Earth cannot digest plastic. Most classrooms will use 360 plastic bags for trash and those will contain 500 to 900 gallons of trash. In other terms, an average classroom generates enough trash to fill a 4 cubic yard dumpster every year. In our first try, we were significantly able to reduce this amount of waste."

OUTSIDE THE DISTRICT: Whether by recycling reading glasses, sponsoring a wolf, or promoting drought tolerant landscaping, the students of Suzanne Middle School (SMS) are creatively making a difference in their Southern California community. SMS is located in the Los Angeles suburb of Walnut and is a member of Eco-Schools USA, an international program hosted in the United States by the National Wildlife Federation. This green schools program provides a free framework for students and teachers who want to implement cost- and energy-saving projects at their school. SMS social studies teacher Alan Haskvitz is one of several teachers at the middle school who want to show that the Eco-Schools program helps engage students in hands-on, cost-saving projects that cut carbon emissions, green school grounds, and connect students to the community. The school reduced energy consumption by 15 percent this year, achieved by shutting off lights, using in-house developed computer shutdown software, closing doors to conserve hot or cool air, and shutting down the school's air conditioning and heating 15 minutes after the school day ends. *(From Eco-Schools website)*

PROPOSAL DELIVERABLES

This year-long proposal will include the following deliverables:



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- 1) 5 months of work to research and draft a comprehensive Sustainability and Resiliency Master Plan, including focus groups with target audiences in the District, surveys and comprehensive Internet research about successful environmental education and green facilities projects and programs
- 2) Final draft of the Plan
- 3) Professional development for teachers and other target audiences to jumpstart the implementation of the plan
- 4) Begin Phase I of the Plan
 - Energy Conservation campaign that will likely result in thousands of dollars of savings
 - Kick off school Green Teams and District-wide Sustainability Council
- 5) Fundraising research and support to raise funds for the Plan through Phase I

PLAN OUTLINE

Themes:

The Plan will incorporate the following sustainability themes:

- Waste
- Water
- Energy
- Transportation
- indoor air quality and toxins
- food
- green schoolyards and gardens

It will focus on the following topics:

Teaching and learning, including:

- Education and engagement of students and staff in sustainability
- Professional development opportunities for teachers, administrators and custodians
- After school program integration of environmental topics and classes
- Analysis of local non-profits who have been and could bring their environmental education programs to the District
- Field trip ideas



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Infrastructure and operations, including:

- Energy and water use, and energy efficiency in District buildings, schools and operations
- Solid waste and recycling
- Fuel consumption by the District's buses and other vehicles
- Integrating sustainability into purchasing decisions
- Considering sustainability in operations such as cleaning and food services
- Indoor air quality
- Design and renovation of schools

Culture and implementation:

- District policies
- Positive behavior and incentives (contests, grants) to encourage sustainability practices
- Development of District-wide Sustainability Council
- Analysis and continuation of School Green Teams
- Funding: analysis of costs and savings from the Plan

The Plan itself will also include:

The Plan in Phases:

- Phase I: easy implementation
- Phase II: moderate planning and implementation
- Phase III: long-term planning and implementation
- The costs of such programs
- The potential savings from said programs
- Assessment of potential sources of funding to pay for this program
- Outline of whom will be implementing which pieces of the Plan (after extensive analysis), including administrators, teachers, students, after school programs, community groups, custodians, and parents



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PLAN DEVELOPMENT STRATEGIES

Assessment of current operations and programs:

- Baseline metrics of pre-plan (November 2017) numbers of environmental impacts of facilities, including energy, waste, water and transportation.
- Review of current environmental and outdoor curriculum within BUSD, including professional development, teacher-led projects and science programs
- Facilities infrastructure, including energy efficiency, renewable energy, waste management and water conservation
- Review of outside partners and organizations who are currently collaborating with BUSD to offer sustainability education and features
 - Field trips and curricula
 - Professional development opportunities

Assessment of Potential Programs and Collaborations:

- Assessment of exemplary programs and best practices from both neighboring districts (Oakland, San Francisco) and districts across the country who have already developed and currently implementing sustainability plans and programs
- Inventory and selected interviews with the City of Berkeley and other public agencies (eg, EBMUD, stopwaste.org) offering sustainability programs
- Survey and inventory of non-profits who could be partnering with BUSD
 - Curriculum
 - Field Trips
 - Professional Development opportunities
- Analysis of potential involvement in various existing state and federal programs, including the CHPS and Green Ribbon programs
 - The anticipated cost savings of proposed programs, including an energy conservation program and more robust waste conservation

Comprehensive Stakeholder Engagement:

- Surveys with stakeholders
- Visioning Contest with students
- Development of Ad-Hoc Sustainability Council, who will meet three times to contribute to the Plan's development
 - Council will be comprised of interested teachers, non-profit organizations, high school students and representatives from the School Board
- Meetings/focus groups with teachers, students, administrators and organizations who provide their visions and help to develop the plan and implementation



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- Who is already engaging in sustainability practices?
- What are some inspiring sustainability practices that they are engaging in already, related to Waste, water, energy, food, food systems?
- What is the status of the the waste education program and Green Teams?
- What are the main barriers to integrating more sustainability practices into the work of these stakeholders more robustly, and how could these barriers be overcome?
- Who would be interested and able to participate in a District-wide Sustainability Council starting in 2018-19?
- Meetings with climate action groups and research to assess future risks and needed resilience planning as it relates to school facilities

TIMELINE

November-April

Kick-off Meeting with Ad-Hoc Sustainability Council (selected stakeholders who agree to meet three times over the course of 5 months)

- Develop sub-committees

Collect stakeholder input:

- District-wide survey
- Visioning Contest: What does a sustainable school look like?
- Focus groups with stakeholders: teachers, students, administrators, etc.

Research best practices and programs:

- Do research to collect best practices and programs from other districts
- Interview selected individuals from said programs

Take an inventory of the District's sustainability efforts

- Collect metrics from facilities
- Do an assessment of the District's current sustainability programs and projects

Develop first draft of Plan

April:

- Second Stakeholder meeting, to show draft of the Plan
- Revise the plan

May:

- Present the Plan to stakeholders

June:



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- 2-day Professional Development training for representatives from each school (teachers, parents and administrators) to support implementation of Phase I

Summer 2018:

- Prepare materials for Phase I implementation

September 2018:

- Kick-off meeting for new Sustainability Council and Phase I

Sept.-November 2018:

- Turn It Off Campaign and other rollouts of Phase I

One Year Budget

- Consultant Stipend: \$3,000/month (estimated \$55/hour) x 12 months = **\$36,000**
- UC Berkeley Interns: **\$4,500** (spring and summer semester internships)
- Food, printing and other incidentals for May rollout of Plan: **\$1,000**
- School signage and posters for energy conservation and waste: **\$1,000**
- 2-day Professional Development Workshop in June or August: **\$5,000**
- Fall Training Workshop for Green Teams: **\$1,000**
- Teachers Stipends for Ad-Hoc Sustainability Council/Planning Team: **\$1,500**

TOTAL: \$50,000

About Susan Silber (independent consultant)

Susan Silber has been an environmental educator, program manager and community organizer for the past 25 years. She has introduced thousands of youth to the natural world through nature education programs, has written five eco-literacy curricula for schools, and coordinated a variety of school-based programs to integrate environmental themes into classrooms. She has founded and managed a number of environmental education and community resilience programs, including the Nature's Voices Project, Safe Routes to Schools, Green Star Schools Program and NorCal Community Resilience Network. In 2011 she wrote grants in collaboration with the Green Schools Initiative to create and implement a waste reduction program in collaboration with the Berkeley Unified School District. She helped to organize and evaluate the program at 16 schools, including teacher training workshops, a 3-month internship program with the Berkeley High School Green Team, and a mini-grants program. The program saved the district close to \$60,000 and increased the district's waste diversion rate from 35% to 56%.