



greenBVSD

SUSTAINABILITY MANAGEMENT SYSTEM
FIVE YEAR UPDATE

2015



“We have a lot to be proud of in our accomplishments over the past 5 years, meeting nearly all the short-term goals set in the SMS and firmly establishing our path toward meeting our long-term sustainability goals. Our next steps will establish us a leader in sustainable schools, fostering high performing buildings and students who are knowledgeable about sustainability.”

-Laurie Albright, Board of Education, President

In 2014, Boulder Valley School District earned the U.S. Department of Education Green Ribbon Schools award for its progress toward sustainability.



Table of Contents

Letter from the Superintendent	4	Buildings	12
About this Document	5	Material Flows	15
Our Overall Vision for Sustainability	6	Transportation	18
Climate	7	Taking Action and Measuring Performance	21
Health	8	Glossary	23
Education	9	Acknowledgments	24

Boulder Valley School District would like to thank Impact on Education for its generous support of the update of the Sustainability Management System.





Dear Readers,

Boulder Valley School District (BVSD) has been a pioneer over the past decade in the integration of sustainability into its buildings, operations, administration, and curriculum. Guided by a belief that healthy and engaged children, healthy classrooms, and a healthy planet go hand-in-hand, BVSD is committed to continuing its work toward achieving a long-term vision of sustainability for the District.

In 2009, BVSD developed its first Sustainability Management System (SMS), a mechanism to holistically coordinate existing efforts and to define a vision and goals around sustainability at the District level. The District has made great strides to incorporate sustainability at every level and has successfully met many of the goals from the 2009 SMS. Results of this work include:

- Decreased energy and water use;
- Increased use of renewable energy;
- More composting and recycling;
- Revamped food services and expanded school gardens to support healthier choices; and
- More safe and active ways for students to travel to school.

It is gratifying to see that staff and students have embraced sustainability as an organizational value. Sustainability has been integrated into District curriculum, classroom experiences, and other learning opportunities, leading to students being well equipped to create a better future. In 2014, BVSD was one of just nine school districts in the nation recognized by the U.S. Department of Education as a District Sustainability Awardee in its Green Ribbon Schools program.

Credit for these many successes goes to the entire BVSD community, including all of the students, parents, staff, organizations, local governments, and other interested citizens who have supported the District's sustainability goals and efforts over the years.

The mission of BVSD is to create challenging, meaningful, and engaging learning opportunities so that all children thrive and are prepared for successful, civically engaged lives. Sustainability efforts support this mission by creating healthy and productive learning environments, leading students by example to engage in responsible management of resources, and engaging students in a whole school approach to sustainability that includes learning, experiencing, and doing.

This update of the SMS celebrates all BVSD has achieved to date and charts a course for the next chapter in District sustainability programs and practices. The following pages highlight progress, lay out revised visions and goals, summarize potential next strategies and actions, and articulate how progress will be measured. The SMS will remain a living approach that keeps the District moving forward, continually exploring innovations as pioneers in the journey toward a more sustainable future.

Sincerely,

Bruce K. Messinger, Ph.D., Superintendent

Deirdre Pilch, Ed.D., Deputy Superintendent

About this Document

It has been five years since the District completed its first Sustainability Management System (SMS) with vision statements, 5-year goals, and specific strategies to achieve these goals.

Building on the foundation of the 2009 SMS, this update provides revised vision statements, 5-year goals, and ideas for potential strategies for our four primary sustainability topic areas – Education, Buildings, Material Flows, and Transportation – and integrates throughout the overarching topics of Climate and Health.

The SMS update is the product of input from a wide range of staff members and departments, parents, leadership, and community stakeholders who contributed their feedback and ideas through a series of workshops and follow-up input. This collaborative effort ensures this update is inclusive and reflects needs and priorities across the District.

The original SMS and this update are well aligned with and supportive of the District's Strategic Plan and our Educational Facilities Master Plan. They support high-performing school buildings to provide students healthy and productive learning environments. Education for sustainability encourages whole school approaches that equip students with leadership, critical thinking, and participatory skills to confront local and global challenges.

While the District is proud of its achievements, there is still much more work to do to achieve our overall sustainability vision. This includes making green and high performance building the standard across the District, further formalizing and expanding sustainability education, expanding efforts to use fewer materials and divert more from landfills, and reducing automobile traffic to and from schools. This update lays out the next steps to accomplish this important work.

IN 2013, THE DISTRICT CREATED ITS FIRST SUSTAINABLE ENERGY PLAN WITH A LONG-TERM GOAL OF ZERO-NET ENERGY CAPABLE BUILDINGS BY 2050.



Our Overall Vision for Sustainability

“The Boulder Valley School District is committed to becoming a leader in environmental sustainability by creating healthy learning environments, while providing students with the skills to address the systemic challenges faced by the world in this century.”

In 2010, the Board of Education updated policy ECF, to further support sustainability work in the District, and specifically the SMS:

“It shall be the policy of the Board of Education to educate students about lifestyles and technologies that limit our negative impact on the environment and use natural resources in a manner that maintains quality of life and reduces consumption to a sustainable level. In order to lead by example and to be good stewards of the public’s trust, the district will establish and operate healthful, safe and productive learning environments while practicing environmental and fiscal responsibility.

To accomplish these goals, the Board of Education directs the superintendent to maintain a Sustainability Management System (SMS). The SMS will define a vision, goals and strategies for achieving district-wide environmental sustainability, and it will serve as a road map for integrating these concepts into our curriculum and operations. The board further directs the superintendent to monitor, evaluate and report on the district’s progress toward environmental sustainability, including the cost effectiveness of relevant programs. These periodic reports will be presented to the Board of Education and the public.

The Board of Education strongly encourages each district employee and student to work toward environmental sustainability and resource conservation through the implementation of the SMS.”

The District at a Glance

BVSD stretches from the peaks of the Continental Divide to the suburbs of Denver.

55 schools made up of 29 elementaries, nine middles, four K-8s, one K-12, two 6-12s, one accredited online 6-12 school and nine high schools, plus a career and technical education program bring total enrollment to approximately 29,500.

The communities calling Boulder Valley their home include Boulder, Broomfield, Gold Hill, Jamestown, Lafayette, Louisville, Nederland, Superior, Ward, as well as parts of the Town of Erie and Boulder and Gilpin counties.

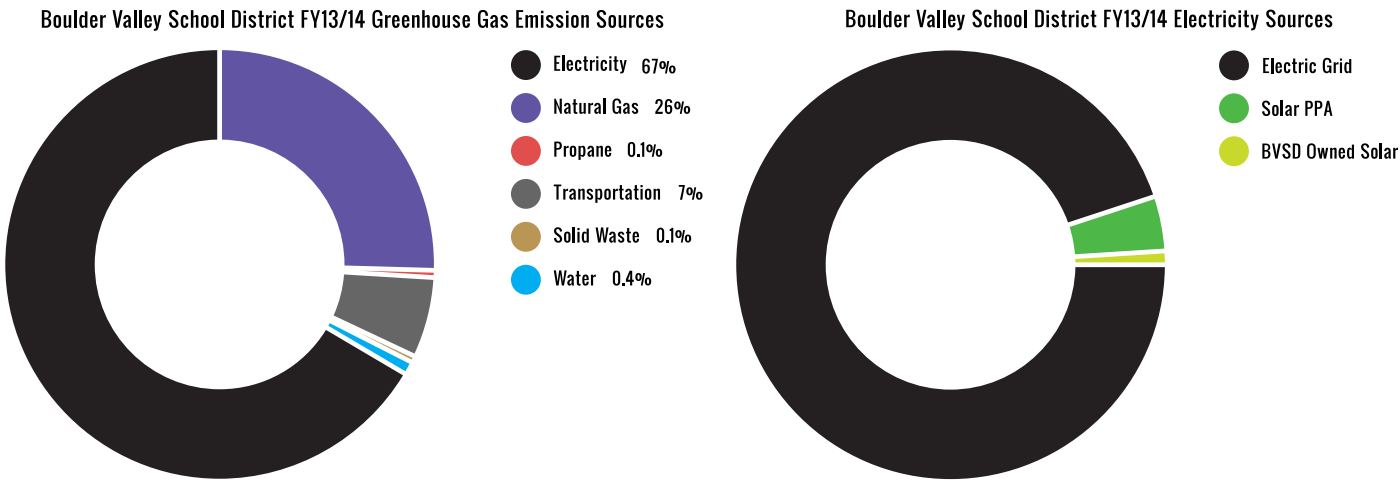
BVSD HAS 10 SCHOOLS THAT ARE QUALIFIED UNDER THE U.S. ENVIRONMENTAL PROTECTION AGENCY’S ENERGY STAR PROGRAM.

Climate

The topic of climate change underpins all of the topics addressed in the SMS. A changing climate affects not only the District, but extends to our region, state, nation, and planet. As a result, we are committed to reduce our greenhouse gas (GHG) emissions as well as prepare for the future in a changing climate.

In (FY) 2013/2014, the District’s total GHG emissions were 45,240 metric tons of carbon equivalent (MTCO₂e). As shown in the chart, in 2013 the District’s emissions came mainly from energy use in our buildings (30,100 MTCO₂e from electricity and 11,800 MTCO₂e from natural gas), followed by transportation (3,100 MTCO₂e), water (200 MTCO₂e), and solid waste (40 MTCO₂e). Note that the scope of transportation related emissions of this inventory includes all District fleet vehicles. Future inventories could be expanded to include the use of non-District vehicles for student, staff, and faculty for travel between home and District facilities.

Our revised goals in the Buildings, Material Flows, and Transportation sections, while not in all cases directly addressing climate, will contribute to continuing to reduce the District’s GHG emissions. The District will also continue its efforts to increase the use of renewable solar energy from photovoltaics (PV) by both directly purchasing systems as well as using Power Purchase Agreements (PPAs) to finance installation of PV systems. As of 2013, 5 percent of BVSD’s electricity is generated by PV compared to 1.1 percent of Xcel Energy’s electricity use in Colorado and the overall national average of 0.2 percent. Even our Education goals and strategies will support GHG emissions reductions across all areas as students, teachers, and staff actively engage in sustainability initiatives.



Health

Like climate, the theme of health cuts across all of the District's sustainability efforts – from how students get to and from school to the food they eat, the quality of the indoor and outdoor environment, and overall physical and emotional health.

The District's commitment to the health and wellness of students is evidenced by the adoption of a new Vision and Mission, Values, and Goals that include addressing the intellectual growth, health and physical development, and social emotional well-being of students. The District has demonstrated its commitment to these values by employing a full-time Health and Wellness Coordinator who oversees and implements the Coordinated School Health (CSH) program. Within the CSH program, each component directly impacts student and staff wellness.

Food Services is leading the way to ensure student and staff have access to healthy, wholesome food. This includes removing processed food and purchasing local, healthy and fresh foods; providing salad bars in all school cafeterias; and hosting educational events.

The District's Operations Department also is actively striving to reduce environmental impacts and improve the health and wellness of its students, staff, and visitors. This includes finding safe, low-toxicity products and materials for cleaning, maintaining high quality indoor air in schools, and pursuing integrated pest management to reduce herbicide and insecticide use. The Transportation Department encourages and supports the health and safety of the entire BVSD Community by promoting walking, biking, carpooling, public transit, and school busing.



18 BVSD SCHOOLS WITH OVER 7,700 STUDENTS PARTICIPATE IN GARDEN TO TABLE PROGRAMS IN PARTNERSHIP WITH GROVE FOUNDATION AND PARENT VOLUNTEERS.

1,908,288 MEALS ARE PREPARED ANNUALLY BY BVSD FOOD SERVICES.

BVSD STUDENTS ARE GETTING 1,160 MINUTES OF PHYSICAL ACTIVITY A MONTH THROUGH RECESS AND PHYSICAL EDUCATION ALONE, WHICH IS ALMOST DOUBLE THE STATE REQUIREMENT OF 600 MINUTES A MONTH.

Education



What's Been Accomplished

One of the greatest accomplishments to date has been the integration of sustainability into student curriculum and co-curricular activities. The District exceeded the goal of establishing green teams in 50 percent of our schools, in part through a successful Energy Challenge program, Farm to Table, the Green Star Schools Program, and the establishment of several school gardens and recycling teams. The support of partners such as the City of Boulder, Eco-Cycle, and the Conservation Resource Center have allowed the District to expand such educational activities.

In 2009, the District began formally integrating sustainability into the curriculum, with a goal of creating curriculum to achieve the vision of sustainability-literate graduates. A set of recommendations on sustainability have been largely integrated into District curriculum. Educators are actively participating in broader regional initiatives, such as the Boulder County-wide collaborative with the Thorne Nature Experience, with a metric of hours of environmental education per student to track success.

Of the remaining original District Education goals, more work is left to be done on goals three and four – to develop both a formal green jobs training program and staff training to support District sustainability goals. The District was successful in achieving its fifth Education goal, to provide communications support and increase visibility of BVSD's sustainability initiatives, although this will be an ongoing and continually improving effort.

As students, parents, teachers, and staff demonstrate leadership in countless individual projects, the District's annual Earth Day Honor Roll recognizes outstanding efforts toward meeting the goals of the SMS, including Education. Learning projects recognized as part of the 2014 Honor Roll include the agriculture focused Growing Dome at Columbine Elementary; a healthy transportation program at Bear Creek Elementary complete with walking school buses and costumes; and various schools using students to conduct energy audits, crunch the numbers, and even "police" the school to save energy. All graduating BVSD seniors are given the opportunity to make a "green graduation" pledge.

Vision

BVSD is striving to have all students literate in sustainability upon graduation and all staff incorporating sustainability into their positions and practices.

Five-year Goals

- Provide professional learning opportunities to 100 percent of teachers on how to holistically integrate sustainability across the curriculum with a focus on elementary teachers and secondary social studies and science teachers.
- Create active and formalized green teams with specific and coordinated achievement standards in 100 percent of schools.
- Develop an interdisciplinary, formal green jobs training program with community partners.
- Provide initial orientations and ongoing professional learning support on sustainability to 100 percent of all new hires.
- Interweave all of BVSD's sustainability goals, events, and initiatives with effective communications, internally and externally, that utilize multiple channels and celebrate student success.
- Develop a sustainability literacy assessment at the middle and high school levels and begin to assess student sustainability proficiency.

BVSD HAS GONE FROM VIRTUALLY NO ACTIVE GREEN TEAMS TO OVER 50 PERCENT OF OUR SCHOOLS WITH STUDENTS WORKING TO CREATE A MORE SUSTAINABLE SCHOOL ENVIRONMENT THROUGH ENERGY USE REDUCTION, RECYCLING, GARDENING, EATING LOCAL LUNCHES, AND MORE.

“BVSD is fortunate to have support from top to bottom for incorporating sustainability into District operations and education. It is a great honor and privilege to be part of this fulfilling and meaningful work, and engage with this community in setting, meeting, and exceeding aggressive sustainability goals.”

- Ghita Carroll, PhD., Sustainability Coordinator, Boulder Valley School District

Potential New Strategies

- Develop and deliver teacher professional learning on whole-school integration of sustainability in the classroom and beyond.
- Connect sustainability to curriculum areas beyond the sciences.
- Develop a methodology to assess student sustainability proficiency.
- Provide green team start-up kits for schools without green teams.
- Develop a system to track environmental hours of curriculum per student.
- Track the outcomes of graduates participating in green jobs training courses.
- Include BVSD case studies as examples for the curriculum.
- Expand green jobs programs to more multi-disciplinary topics and hands-on opportunities, such as facility tours and shadowing.
- Embed career technical education curriculum into career clusters.
- Incorporate more learning outcomes in District communications.
- Create a learning community of green teams.

Buildings



What's Been Accomplished

The voter approved bond in 2006 was a critical element in moving the District towards implementation of sustainable practices for all new and existing building construction and operations. With Casey Middle School reaching the highest target of the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) certification program, the lessons learned were shared for subsequent projects. Initiatives such as better lighting and controls, designing for improved acoustics, improved daylighting, and measuring and optimizing water and energy consumption are making big differences in our schools. Meeting the District's energy goals and targets early was largely a function of building savings (many initiated by our green teams), and also from implementing best practices around how heating and air conditioning systems function.

The District is also more tuned into the availability of rebates and other means to implement efficiency measures, trying to reach for deeper levels of efficiency while being cost-effective. Going beyond the low hanging fruit of better light fixtures and concepts such as programmable thermostats to really explore ways to achieve significant long-term paybacks and energy reductions has become the new normal. The District now has the knowledge to push architects and contractors to think harder and push further, and keep the built environment on pace with best practices nationwide.

The energy goals of this section align with BVSD's Sustainable Energy Plan (SEP) created in 2013. In BVSD's original 2009 SMS development, fiscal year 2008 was established as the baseline year to be consistent with similar local and statewide initiatives. Both the SEP and the building goals in this SMS update retain fiscal year 2008 for a baseline.

The District far exceeded its original SMS goals to reduce water use 10 percent on a square foot basis and reduce potable water use. The use of water for outdoor irrigation, however, will require continued effort and a balanced water management plan that takes into account watering needs and water reduction. The original SMS also included a number of specific building performance goals established for the 2006 bond, which the District achieved. Moving forward, the District is aiming for the LEED certification standard with a focus on aggressive energy goals.

Vision

BVSD will create healthy built environments for learning that strive for net zero energy and towards comprehensive integration of green building principles.

SINCE 2008 BOULDER VALLEY SCHOOL DISTRICT HAS DECREASED WATER USE BY 34 PERCENT. ENERGY USE HAS DECLINED 18 PERCENT SINCE 2010.

THE DISTRICT HAS EXPANDED THE USE OF SOLAR ENERGY FROM FIVE SCHOOLS AND FACILITIES TO 28, INCREASING SOLAR ELECTRICITY GENERATION BY 460 PERCENT!

Five-year Goals

- With a balanced water management plan, reduce fiscal year 2008 potable water consumption by 50 percent in existing buildings.
- Reduce fiscal year 2008 baseline energy consumption on average by 20 percent in thousand British Thermal Units (kBtu)/per square foot (SF), including capital construction projects.
- Increase BVSD's renewable electricity capacity to 20 percent of total electricity consumption.
- Design new buildings or additions to the 2009 LEED for Schools New Construction and Major Retrofits Gold standard with related energy and waste performance goals as follows:
 - New buildings or additions will be designed as zero net energy (ZNE) or zero net energy capable (ZNEC), targeting 25 kBtu/sf using the Integrative Design Process.
 - Deep energy retrofits will reduce existing average kBtu/SF to the following levels, which represent an average reduction of approximately 50 percent:
 - § High Schools: 40 kBtu/SF
 - § Middle Schools: 35 kBtu/SF
 - § Elementary Schools: 35 kBtu/SF
 - New buildings or additions will achieve a 75 percent construction waste material diversion rate.

“A comfortable, healthy environment is the essential foundation for learning. Building green creates schools where students and staff can excel. It makes sense for students, our bottom line, and the environment.”

- Don Orr, BVSD Assistant Superintendent of Operations

Potential New Strategies

- Install ground source heat pump heating and cooling systems.
- Offset addition of air conditioning to schools with renewable energy or commensurate energy efficiency improvements on site.
- Develop a balanced water management plan that fully utilizes water rights (e.g., non-potable irrigation source for irrigation), and includes design standards for efficient and effective landscape design.
- Study District-wide renewable energy feasibility, including total potential capacity from roof space and other solutions, and publish a plan to achieve the renewable energy goal.
- Optimize evapotranspiration irrigation system.
- Expand installation of dedicated irrigation water meters.
- Use life-cycle costing to evaluate design options.
- Integrate sustainability throughout District technical specifications documentation.
- Ensure an Integrative Design Process is integrated into contracting efforts.

Material Flows



What's Been Accomplished

In the BVSD context, addressing the issue of waste means addressing a full “continuous loop” cycle for materials that flow into as well as out of the District. The strides the District has made in waste reduction include, among other initiatives, partnering with Eco-Cycle, and embracing the concept of zero waste. There are 28 schools in the Green Star program as of last count, and their compostable materials collected have increased by an average of 55 percent. Old classroom furniture is being recycled and donated along with textbooks and library books, and waste diversion has become integrated into daily life District-wide.

Food waste has been addressed at the source, with three production kitchens that can bulk order healthy food and then prepare meals without the pre-packaged, ready-made food products that are still the norm in most school kitchens today. Moving to regional kitchens also allowed green initiatives to be concentrated; food scraps are sent to a local farm as pig feed, cooking grease is recycled into tractor fuel, and all kitchens are composting. In addition, more of the food comes directly from one of 28 school gardens and local farms, cutting out fuel and packaging waste, and providing healthier options for students. The District is using its influence to spread the impact further, asking vendors to use more reusable containers, including low waste criteria in ordering and contracts, and working with community partners such as Community Foodshare to find ways to reuse materials like cardboard boxes wherever possible.

Overall, the District has had measured success across its original Material Flows goals, although there is opportunity to keep them moving forward. The greatest opportunity for progress is continued focus on goals for reducing indoor air pollutants, implementing Integrated Pest Management (IPM) practices, and further defining and incorporating best green practices into procurement solicitations District-wide.

Vision

BVSD will be a national leader in sustainability practices related to the full lifecycle of materials, including procurement, food, and zero waste practices, that preserve resources and support healthy environments for occupants at all BVSD properties.

HALF OF THE DISTRICT'S SCHOOLS NOW COMPOST SCHOOL-WIDE, AND ALL OF OUR SCHOOLS RECYCLE PAPER AND COMMINGLED CONTAINERS.

IN 2013, BVSD DIVERTED 522,996 POUNDS OF RECYCLING AND 225,849 POUNDS OF COMPOST FROM THE LANDFILL.

Five-year Goals

- Through source reduction, composting, reuse, salvage, and recycling, achieve 50 percent waste diversion District-wide.
- 100 percent of procurement solicitations of goods, including green cleaning products, and services used in all District facilities meet sustainability criteria.
- Create a coordinated District-wide Integrated Pest Management Plan following recognized protocols and begin implementation in 5 years.
- Establish measurement and evaluation best management practices for protecting and improving indoor air quality to ensure health.
- 25 percent of school food purchases are local, unprocessed, hormone-free, and/or antibiotic-free.
- Maintain and sustain gardens at 75 percent of the District's schools.



“I’m proud to be part of a district where sustainability is so important!”

- Mara Mintzer, BVSD Parent

Potential New Strategies

- Develop a comprehensive baseline of materials disposed of in the District to enable tracking of the waste diversion target.
- Build on BVSD's green cleaning program to develop standard practices in addition to cleaner products in 100 percent of schools.
- Identify additional potentially hazardous products on school supply lists, and develop a "Green Back to School" guide.
- Track durable goods and formerly single use reusable items purchased in addition to material disposed of, to demonstrate progress towards the diversion target.
- Deepen collaboration with Eco-Cycle to reach Green Star Certification in all schools.
- Modernize website/web-based tools to replace paper communication.
- Pilot national green procurement language in new contracts and seek feedback from vendors and end users to help determine which to keep.
- Identify additional sources and volume of food to be produced by school facilities to meet the local food goal.
- Examine product choices holistically including financial analysis to ensure sustainable value.
- Maximize recycled content of recycled office paper (with a minimum of 50 percent post-consumer content) for all District facilities and encourage schools to sign on as well.
- Update sustainability criteria for District procurement solicitations.
- Evaluate the Health Checklist Generator of the U.S. Environmental Protection Agency's Energy Savings Plus Health: Indoor Air Quality Guidelines for School Building Upgrades, for use in all bond projects.

Transportation



What's Been Accomplished

As the District continues to move towards more sustainable transportation solutions, there have been many successes. All District staff can now take advantage of EcoPass, an annual Regional Transportation District (RTD) pass that provides employees free, unlimited access to buses and light rail in the Denver metro area. A host of measures are being implemented to make school buses more efficient, including using global positioning system (GPS) technology to track routes and mileage. Under the District's TO School Program, the continued emphasis on walking and biking has resulted in a significant reduction of car trips, and the District's Trip Tracker Program – which encourages and rewards students for walking, biking, carpooling, or riding the bus has eliminated 200,000 car trips to and from 17 schools. The program was expanded to 31 total schools in 2015. Combined with Safe Routes to Schools projects and partnerships with the City of Boulder and Boulder County to continue to improve crosswalks, mode shifting should continue to increase.

With all of these successes, it has been difficult to measure the outcomes of the District's seven original Transportation goals, particularly those related to vehicle miles traveled (VMT) in the community. Goals to decrease community VMTs and increase school bus and RTD transit ridership have been difficult to achieve with many other influencing community factors. Anecdotally, the District has achieved the goal of increasing the number of students walking and biking to school. For the District's fleet, it remains a work in progress to reduce VMT, increase the number of alternative fuel vehicles, and decrease fleet age and improve efficiency due to the availability and cost of replacement vehicles.

As the District confronts its transportation challenges, community partnerships are becoming increasingly critical. Working with RTD, the City of Boulder, and Boulder County has been a rewarding partnership that is synchronizing efforts to realize both increased transit use as well as alternative means of commuting to school. The District was a key participant in the City's 2014 Transportation Master Plan update, and is working to implement additional Transportation Demand Management (TDM) strategies to increase both the health and economic benefits from these partnerships.

"Trip Tracker, a program created by our Transportation Department, is projected to have over 3,000 students participating monthly at 31 schools by the end of 2014-15. In the 2013-14 school year with 17 schools participating, Trip Tracker was responsible, according to parent surveys, for a reduction of 200,000 car trips to school."

-Peter Hurst, BVSD Transportation

Vision

The BVSD community of students, staff, and parents will demonstrate leadership in sustainable transportation by reducing its collective vehicle emissions, decreasing school zone traffic congestion, increasing fleet operational efficiencies, and choosing safe and healthy transportation options to access schools and related activities.



TO School Program
BVSD Transportation

“Boulder County is supportive of the BVSD Sustainability Management System. We look forward to continued collaboration with BVSD, the local community, and governments to collaboratively address regional transportation and sustainability goals.”

- Jared Hall, Boulder County Senior Transportation Planner

Five-year Goals

- Decrease community vehicle miles traveled (VMT) and emissions associated with BVSD by promoting multiple modes (bus, public transit, walking, and biking) and reducing single-occupant mode share to and from District schools and facilities by 10 percent.
- Collaborate with the City of Boulder, Boulder County, and other entities to identify suitable and replicable measurement protocols to track District-specific transportation performance measures, including VMT associated with trips to and from schools and other facilities.
- Reduce overall fleet-related emissions and increase fleet fuel efficiency 10 percent through strategies that address bus routing, alternative fuel vehicles, and replacement with more efficient vehicles.

In partnership with the City of Boulder and the University of Colorado at Boulder, during Fall 2014 the BVSD participated in an employee transportation survey for the first time. We are thrilled that we had a 30 percent participation rate in this study, which helps collect important information. First, it provides key information towards understanding the District’s collective transportation choices and the needs of the school community. Second, the survey results will give a clearer picture of the District’s achievements and gaps in meeting District sustainability goals. Third, the survey results allow the district and the District’s partners to make transportation improvements that will benefit individual commuters and the environment for years to come.

Potential New Strategies

- Extend Trip Tracker to all school bus riders and increase bus ridership.
- Increase RTD transit ridership for those students who do not qualify for District transportation.
- Implement rotating walking school buses and similar strategies to encourage utilization of alternative modes.
- Identify matching funds, cost efficiencies, and partnerships to purchase more new and fuel efficient buses and decrease the average age of buses to 7.5 years through a 15-year replacement cycle.
- Use GPS data to improve school bus routing efficiency.
- Perform regular surveys of transportation habits and preferences of students, parents, and staff.
- Continue to implement Safe Routes to Schools projects.
- Work with the City of Boulder and Boulder County to improve crosswalks.
- Increase the number of alternative fuel vehicles that reduce lifecycle greenhouse gas emissions in the support fleet.
- Leverage partnerships to share data and methodologies on tracking transportation.
- Increase awareness of the Way2Go program and other carpooling and car sharing options.
- Consider parking management strategies to decrease the amount of free parking available to staff and students and generate revenue for high schools and the Education Center, for example, by piloting paid parking or parking “cash-out” systems.
- Continue to explore options with RTD and municipal partners to expand Eco Pass opportunities for students including the development of a Community-Wide EcoPass Program.
- Provide infrastructure to support electric vehicles (e.g. charging stations and parking locations).

Taking Action and Measuring Performance



While this SMS update highlights what we've done and where we want to go with vision statements and goals, making actual progress will require strategies and specific implementation steps. Each of the four topical sections – Buildings, Education, Material Flows, and Transportation – includes a preliminary list of strategy ideas for further discussion.

The next phase of the SMS update will include sorting, filtering, and prioritizing strategies to identify those that can most effectively contribute to progress toward the new 5-year goals. Once priority strategies are identified, the District will then work with staff and community stakeholders to further identify action steps, responsible parties, and resources needed for implementation.

“It is great to be part of such a progressive school district pushing hard to be green!”

- Philip G. Taylor, BVSD Parent



SCHOOL
BVSD



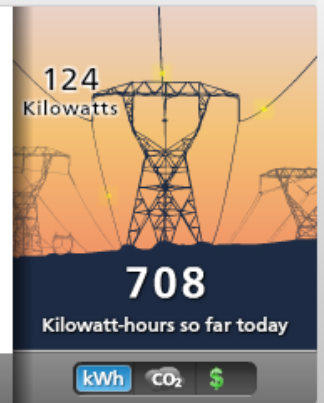
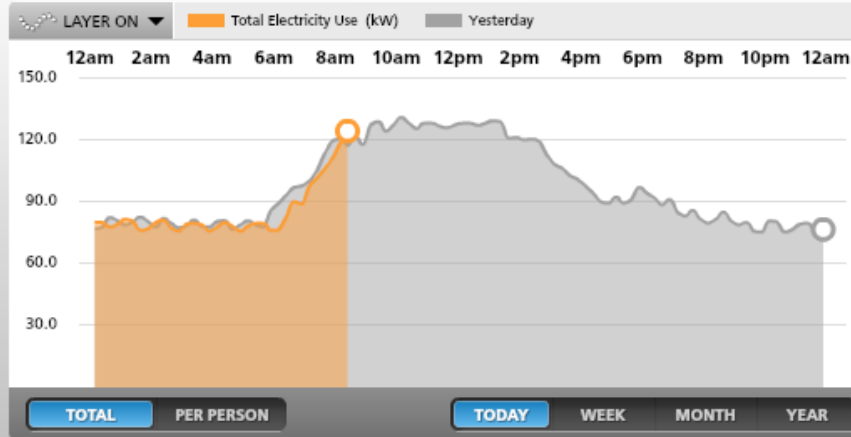
ELEMENTARY SCHOOL
Superior

Find buildings



553 occupants

Electricity



Homepage



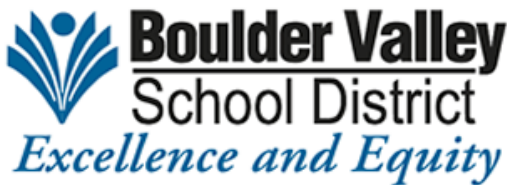
Comparison



Green Features



Competition



Welcome to the Boulder Valley School District's Building Dashboard! The Dashboard displays real-time electricity use for 50 District buildings to help the BVSD community save energy and money. It provides teachers with a resource to integrate energy efficiency and sustainability into existing classes and helps students and staff communicate and reach energy reduction targets.

Measuring Success

To track and understand how well the District is doing in meeting its 5-year goals it will be important to measure progress toward the goals on a regular basis. This will allow the District to decide whether to stay the course, accelerate efforts, or change course in the strategies and actions used to pursue goals.

Some examples of metrics that can be used to measure success include:

- Building energy and water use per square foot or per student.
- Percentage of energy provided by renewable energy sources.
- Percentage of students, staff, and teachers traveling to and from school by mode (single occupant vehicle, carpool, bus, transit, walking, biking).
- Waste generated (pounds) and waste diverted from landfill by recycling and composting.
- Number of active green teams.
- Student proficiency in sustainability.
- Electronic Waste (e-waste) savings.

Measuring the success of the SMS will help the District ensure a path of continuous improvement. The Sustainability Coordinator, or designee, will direct the related tracking process and coordinate with District staff. At a minimum, designated District staff will report to the Coordinator on an annual basis. Additionally, the Sustainability Coordinator will engage the Board of Education with a minimum of two updates per year with at least one update occurring in person.

BUILDING AUTOMATION

Centralized, interlinked, networks of digital hardware and software that monitor and control building environments

CLIMATE

A measurement in patterns of weather over long periods of time

CONTINUING TECHNICAL EDUCATION

Academic and vocational education preparing students for jobs in applied science and modern technology

DAYLIGHTING

Designing the built environment for maximum effective use of daylight including such factors as glare, evenness of light, and coordination with electric lighting

DIVERSION RATE

The percentage of waste material that is diverted from being disposed of in a landfill

FOSSIL FUELS

Fuels such as gasoline, coal, and oil that come from non-renewable energy sources

GREEN BUILDING

Holistic approach to buildings that prioritizes environmental effects of design, construction, and operation

GREEN TEAM

A term applied to groups at schools and the district level that are formed to tackle environmental challenges

GREENHOUSE GASES (GHG)

Gases such as carbon dioxide, usually measured in tons, which trap the Earth's heat, contributing to climate change; often abbreviated as GHG

INTEGRATED PEST MANAGEMENT (IPM)

A strategy of controlling insects, rodents, and other pests using an ecosystem based approach of least toxic alternatives, physical as opposed to chemical controls, habitat manipulation, etc.

kBTU

A measurement of heat created by burning any material. One British Thermal Unit (BTU) is the amount of heat necessary to raise the temperature of one pound of water by one degree Fahrenheit. A kBTU equals 1000 BTUs and is a standardized measurement of energy used to capture both electrical energy and heating fuel energy

LEED

Leadership in Energy and Environmental Design, a family of rating systems designed to evaluate the green building characteristics of a variety of different building types and functions, from the most-used LEED for New Construction, to a host of others such as LEED for Homes, LEED for Existing Buildings: Operations and Maintenance, and LEED for Neighborhood Development

LOW HANGING FRUIT

An industry term used to define sustainability measures with rapid paybacks and ease of implementation

MODE SHIFT

The percentage of transportation users that use means of transportation other than driving single occupancy vehicles

MTCO_{2e}

Equivalent metric tons of carbon dioxide, a standard measure for greenhouse gases

NET ZERO ENERGY

Term used to define a building (typically) that either offsets or generates an amount of energy equal to the amount of energy it consumes

RENEWABLE ENERGY

Energy that comes from non-fossil fuel-based sources that do not run out, such as wind and solar

SAFE ROUTES TO SCHOOL

A Federal grant program designed to promote safety in bicycling and walking to schools administered in the state by the Colorado Department of Transportation

SUSTAINABILITY MANAGEMENT SYSTEM (SMS)

An integrated and ongoing approach managing sustainability efforts that includes setting goals and targets, measuring progress, and identifying new opportunities for an organization to implement sustainability measures

TRANSPORTATION DEMAND MANAGEMENT

Practice of quantifying, evaluating, and implementing various strategies to increase mode shift and reduce total vehicle miles traveled

VEHICLE MILES TRAVELED (VMT)

A standard measurement of miles driven used in most forms of transportation analysis

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For more information about the SMS, visit the Office of Sustainability web page: <http://www.bvsd.org/green> or contact the Office of Sustainability:

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