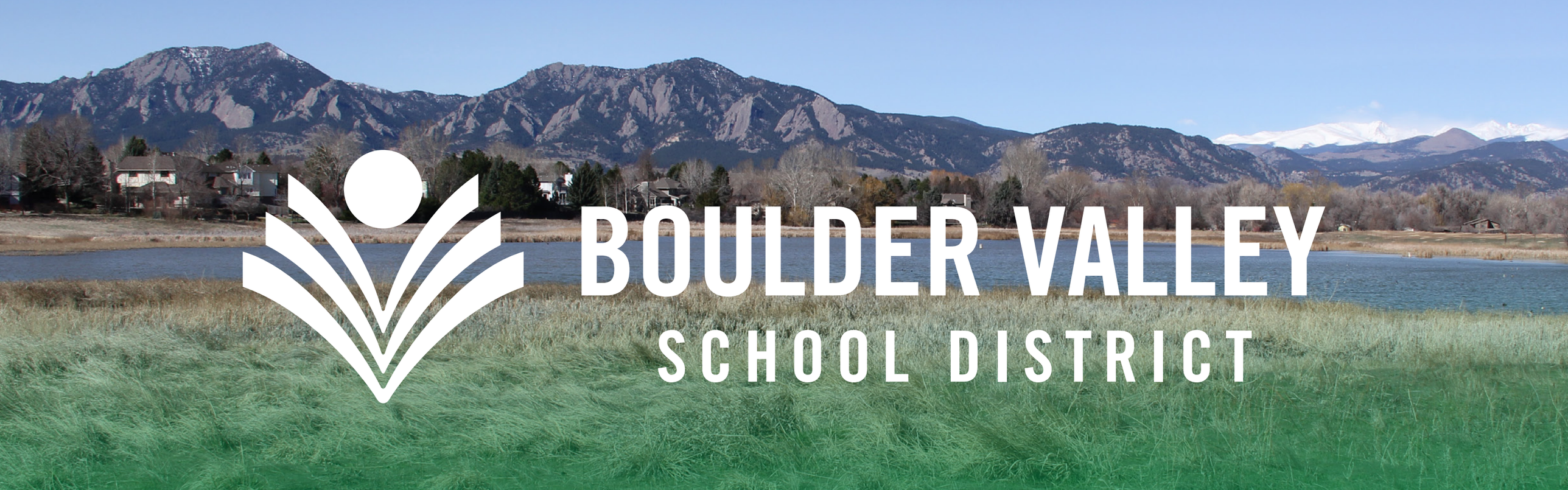
GreenBVSD

BVSD PROGRESS REPORT

on the 2015 Sustainability Management System (SMS)

April 2021



Board of Education Policy ECF, January 2010

"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

Located in the foothills of the Rocky Mountains, Boulder Valley School District (BVSD) stretches from the peaks of the Continental Divide to the suburbs of Denver.

The 56 schools in the district, spread across an area of more than 500 square miles, serve approximately 31,000 students and employ more than 4,000 people.

Towns included in the district include Boulder, Gold Hill, Jamestown, Lafayette, Louisville, Nederland, Superior, Ward, and parts of Broomfield and Erie.

BVSD stands as a leader in academic excellence with outstanding classroom teachers, exemplary schools, and programs that support student achievement.

A Message from Dr. Anderson

April 2021

Dear Readers,

BVSD is pleased to share this report on our progress toward the goals established in the 2015 Sustainability Management System (SMS). We are proud of the progress we've made, while remaining mindful that there is still more work to do. Since BVSD first adopted a Sustainability Management System in 2009, formally embracing our role to lead by example and our responsibility to prepare our students to live sustainable lives, we have seen climate change move from the realm of scientific theory to reality. Record-breaking wildfire seasons have brought the reality home, with flames chasing Boulder Valley residents from their homes and smoke-filling our skies for days. The imperative need for substantial, productive action to address climate change is abundantly clear.

Although current conditions amplify the necessity and urgency for the sustainability work we are doing, I am heartened and hopeful when I see what we have accomplished and the goals we have set. Since our SMS was last updated in 2015, BVSD has reduced our greenhouse gas (GHG) emissions by 13%, and we are targeting another 14% reduction over the next five years. Through our bond-funded construction program, we have improved our overall energy efficiency by 24%. This work has positioned us to move toward being Zero Energy and climate neutral by 2050. Through this work, we have continued to prioritize student and staff health and indoor environmental quality. What gives me the greatest hope is seeing how BVSD students are mobilizing to contribute to this work. Over the last five years, every school in the district has had some form of Green Team that supports activities like gardens, recycling programs, energy competitions, and more.

With the release of our new Action Plan in September 2021, we are evolving how we fulfill our sustainability mission. Moving forward, our work will take place in four strategic priority areas: Leadership, Facilities and Operations, Curriculum and Instruction, and Climate and Culture. In education, we know at our core that the way to touch the future and make an impact is by preparing students to meet the challenges of their world. This is all the more true as we face the threat of climate change. As we continue to lead by example, we will prioritize this work and stay focused on equipping students with the knowledge and skills needed to empower them to co-create a sustainable future.

Dr. Rob Anderson
Superintendent

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Executive Summary

In January 2010, the Board of Education passed BVSD Board Policy ECF, one of the first K-12 school districts in the nation to acknowledge the importance of preparing students to co-create a sustainable future. This policy also required the Superintendent to "monitor, evaluate, and report on the district's progress toward environmental sustainability, including the cost effectiveness of relevant programs." This report synthesizes BVSD's progress toward the goals defined in the 2015 Sustainability Management System.

The report is organized using the cross-cutting themes and focus areas that were delineated in the 2015 Sustainability Management System Update. The report begins with an overview of each of the two cross-cutting themes, climate and health, and a description of key actions BVSD has taken in the last five years to affirm its commitment. Following these overviews, there is a section for each of the four focus areas: Education, Buildings, Materials Flow, and Transportation. Within each focus area, we highlight accomplishments and challenges for the district to continue the ongoing journey of transforming into a healthy, equitable, and sustainable school district where all faculty, staff, and students "work toward environmental sustainability and resource conservation through the implementation of the SMS." (BVSD Board Policy).

Guided by the BVSD Sustainability Coordinator, the Green Schools National Network team interviewed diverse stakeholders, reviewed key documents, and analyzed data related to key performance indicators to develop a Preliminary Report. This Preliminary Report was shared with 53 stakeholders at a virtual Sustainability Leadership Summit on March 4, 2021. The GSNN review team was impressed by the commitment of BVSD personnel and their community partners. The review team also noted that progress toward the goals related to Buildings, Materials Flows, and Transportation were being addressed using industry standards and best practices resulting in responsible "use (of) natural resources in a manner that maintains quality of life and reduce(s) consumption to a sustainable level" (BVSD Board Policy ECF). The review team also identified challenges yet to be addressed resulting in competing priorities that are limiting access to high-quality learning opportunities to "educate students about lifestyles and technologies that limit our negative impact on the environment" and engage "each district employee and student to work toward environmental sustainability and resource conservation through the implementation of the SMS" (BVSD Board Policy ECF). These challenges will shape the 2021– 26 Sustainability Management System Action Plan that will be submitted to the Board of Education in June 2021.

GreenBVSD

Climate

In 2020, the citizens of Colorado experienced the seventh warmest and third driest year on record, resulting in a series of severe weather events that some say are indicative of climate change. A rare derecho in June brought significant rain, but not enough moisture to saturate the ground. Then, by the end of the year, Colorado experienced three of the largest wildfires on record, burning over 530,000 acres. Continued warming and drought is something that students will likely be addressing throughout their lives.

State policy makers recognize this. In January 2021, Governor Jared Polis released a comprehensive Greenhouse Gas Pollution Reduction Roadmap, setting a course for Colorado to cut greenhouse gas pollution in half by 2030. The plan prioritizes equity by making a commitment to implement policies in ways that reflect the concerns of disproportionately impacted communities while also improving local air quality.

In 2009, BVSD stepped into a leadership role in the K-12 community by identifying climate change as a critical issue, and establishing goals to reduce greenhouse gas emission by 80 percent and to become climate neutral by 2050. The baseline data from which to measure this key performance indicator related to greenhouse gas emissions was determined by the Brendle Group in collaboration with BVSD. That initial baseline was determined by compiling district-wide energy and water consumption, solid waste generation and diversion rate, and fuel consumption from fleet transportation. The Brendle Group again assessed GHG emissions in 2015. For this report, BVSD provided the data to GSNN and the GHG was calculated using the EPAs Greenhouse Gas Equivalency Calculator. The table below reflects the three GHG calculations side by side so that comparisons progress toward decreasing GHG emissions, a key performance indicator, for the SMS.

As shown in Figure 1, the initial baseline in (FY) 2007/08 was 43,157 metric tons of carbon equivalent (MTCO2e). In (FY) 2013/2014, the district's total GHG emissions increased by 5 percent to 45,240 metric tons of carbon equivalent (MTCO2e); and in (FY) 2018/19 Greenhouse Gas (GHG) emissions **decreased by 13 percent from the initial baseline to 37,527 metric tons of carbon equivalent (MTCO2e).** That is equivalent to taking approximately 1,621 cars off of the road for each of the five years of this SMS or carbon sequestered per year by 9,801 acres of US forests.[1] This 13 percent reduction represents decreased emissions in the areas of electricity, natural gas, and transportation. These numbers indicate that the 2014 Energy Plan and the 2014 Bond Program has helped BVSD continue to make progress toward becoming a climate neutral school district.

	FY 2007/08	FY 2013/14	FY 2013/14 Difference from FY 2007/08 Baseline	FY 2018/19	FY 2018/19 Difference from FY 2007/08 Baseline
Electricity	28,638	30,100		23,169	
Natural Gas	10,585	11,800		11,170	
Propane	54	NA		NA	
Fleet Fuels	3,746	3,100		2,895	
Solid Waste	67	40		40	
Water	67	200		253	
TOTALS	**43,157***	**45,240****	**-2,083**	**37,527*****	**5,630**
		Reduction since 2009	5% increase in emissions		13% decrease in emissions

Figure 1: Carbon dioxide (measured in millions of tons - MTCO2e) equivalents produced by BVSD in 2007/08; 2013/14 and 2018/19.

[1] These figures were obtained using the Greenhouse Gas Equivalencies Calculator at: https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator. The figure of 7,505 MTCO2e was determined by dividing the total of 37,527 MTCO2e by five for each of the 5 years of the SMS, 2013-2018.

* 2009 SMS p. V
** 2015 SMS p. 7
*** Data sources include the Energy/Water excel report sent from District Energy Manager (Jeff Medwetz) and transportation metrics came in an email from Transportation Manager (Kevin Cole).

Health

The health and well-being of students, families, and the community is the second of the cross-cutting concepts of the BVSD Sustainability Management System. Again, as stated in the Board Policy ECF, “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.” Since the inception of this Board Policy, operations have steadfastly improved to support the physical, social, emotional and academic health and well-being of all who work, learn, and play in BVSD schools. From transportation to the food prepared in cafeterias, from indoor air quality to outdoor recreation equipment, and from academic to extracurricular programs, BVSD has sustained its commitment to the community

The 2014 Bond and Construction Program allowed BVSD to make improvements in all schools related to Indoor Air Quality (IAQ). Heating, ventilation, and cooling (HVAC) systems have been upgraded, and all projects have been commissioned, which ensures that all systems are operating as they should, maximizing comfort and efficiency.

In addition, the district-wide Indoor Air Quality Team was appointed by the BVSD Board of Education to work with the air quality consultants on this initiative. The purpose of the team is to disseminate air quality information, register air quality complaints and direct responses, and communicate air quality issues and status at district schools to school administration, staff, students, and parents. The team includes 19 volunteer members, including district staff, principals, teachers, parents and community members. The work through the IAQ Initiative and the IAQ Advisory Team put BVSD in a better position than most school districts to respond to the COVID-19 pandemic. The IAQ team has developed standard operating procedure recommendations that will be incorporated into practice in 2021. The team is also working on recommendations for non-toxic school supplies and ensuring that green cleaning and non-toxic products are used throughout the district.

Also through the 2014 Bond Program, the BVSD’s Food Services department, The School Food Project, moved into a new $16.4 million Culinary Center in the fall of 2020. The 33,000-square-foot facility supports the district’s partnerships with local farmers and regional purveyors of fresh, whole foods by producing up to 17,000 scratch-cooked meals per day. In addition, BVSD was named the first REAL Certified school district in the country. This award is presented to restaurants and food service providers that are committed to promoting health and sustainability. The department has also received 39 awards from the USDA’s Healthier U.S. School Challenge program, a voluntary certification initiative recognizing schools that have created healthier environments through promotion of nutrition and physical activity.

Throughout the past year, with the Coronavirus pandemic disrupting school as usual, BVSD has pivoted to ensure that students, faculty, and staff are safe at school. BVSD created guidelines and protocols to support teachers in facilitating outdoor learning experiences. Such experiences may continue to be an integral part of education in the district well into the future, even when social distancing is no longer necessary. Broad-based efforts to improve air quality, the food students eat, and the outdoor education program reflect a holistic approach to sustainability, one that recognizes the critical connection between human health and sustainability.

EDUCATION

VISION

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

Goal 1

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.

This goal supports the implementation of BVSD Board Policy ECF to "educate students about lifestyles and technologies that limit our negative impact on the environment" and engage "each district employee and student to work toward environmental sustainability and resource conservation through the implementation of the SMS." While the collaborative efforts and enthusiasm of both faculty and staff within BVSD and their community partners is robust, the infrastructure to support this goal has yet to be established. Nevertheless, a few classes, including a Garden to Table class offered by the Food Services department and Sustainability and Energy Management courses offered by the STEM department have been offered.

Some BVSD teachers and schools have participated in professional learning opportunities offered by local environmental or sustainability organizations as follows:

1. Cal-Wood provides environmental education at their 1,200-acre outdoor classroom. All Cal-Wood programs are customized to meet the academic, social, and linguistic needs of each school. Expert staff lead students through hands-on, field-based exploration of local plants, animals, snow science, fire ecology, forestry, geology, and pond ecosystems.

2. Growing up Boulder (GUB) is a program of the University of Colorado Boulder's Community Design and Engagement Center (CEDaR). Growing Up Boulder's mission is to empower Boulder's young people with opportunities for inclusion, influence, and deliberation on local issues that affect their lives. They have provided support for teachers interested in place-based and project-based learning.

EDUCATION

3. The E Movement is a collective of teachers, schools, local governments and nonprofits, collaborating to increase environmental literacy and build a stewardship ethic within today's youth and tomorrow's leaders. The collaborative has created a website that provides guidelines for a scaffolded, whole-child approach to environmental education and provides a way for teachers to find providers and community partners to implement units and lessons that focus on local ecosystems and topics. 45 teachers and 7 administrators representing 31 schools receive the newsletter.

4. Over the past five years, Eco-Cycle provides annual water conservation education to 15 classes (15 teachers and 400 students) with City of Boulder funds and watershed/nonpoint-source pollution education to 32 classes with Boulder County funds (32 teachers and 850 students). They have also provided annual training for BVSD custodians. All BVSD schools recycle. In addition, faculty, staff and students at 40 BVSD schools currently strive towards Zero Waste as part of the Green Star Schools Program.

5. The Garden to Table provides ongoing instructional resources and support, approximately 350 teachers at 20 schools.

6. The City of Boulder's Open Space and Mountain Parks (OSMP) supports environmental literacy among children and teachers. Within the five years of this report, OSMP has worked with 25 schools and has had contact with 206 teachers and 33,357 students.

7. Thorne Nature Center partners with schools and supports teachers to develop lessons that supplement the experiences provided on-site. Thorne Nature Center also supports the Nature Kids Lafayette Program at Emerald and Pioneer Elementary Schools. This program, designed to connect students and their families with the natural world, is supported by 38 additional organizations and garnered significant grant and matching funds to increase accessibility for one of BVSD's least resourced communities.

Goal 2

Create active and formalized Green Teams with specific and coordinated achievement standards in 100 percent of schools.

Figures 2-5 provide an overview of BVSD Schools and some of their site-based initiatives related to sustainability. During the past five years, 83 percent (n = 43) of the 52 schools identified in the tables below have had active Green Teams.

High School	$hared $avings	Green Star	Garden	E-mov	Green Team
Arapahoe Ridge					
Boulder					
Broomfield					
Centaurus					
Fairview					
Monarch					
New Vista					

Middle School	$hared $avings	Green Star	Garden	E-mov	Green Team
Angevine					
Broomfield Heights					
Casey					
Centennial					
Louisville					
Manhattan					
Nederland Middle/Senior					
Platt					
Southern Hills					
Summit					

Elementary	$hared $avings	Green Star	Garden	E-mov	Green Team
Aspen Creek (K-8)					
Bear Creek					
Birch					
Boulder Community School of Integrated Studies					
Coal Creek					
Columbine					
Montessori					
Creekside					
Crest View					
Douglass					
Eisenhower					
Eldorado (K-8)					
Emerald					
Fireside					
Flatirons					
Foothill					
Gold Hill					
Heatherwood					
High Peaks					
Horizons (K-8)					
Jamestown					
Kohl					
Lafayette					
Louisville					
Mapleton (Pre-K)					
Meadowlark (K-8)					
Mesa					
Monarch					
Nederland					
Escuela Bilingüe Pioneer					
Ryan					
Sanchez					
Superior					
University Hill					
Whittier					

EDUCATION

DISTRICT TOTALS

	$hared $avings	Green Star	Garden	E-mov	Green Team
HS Totals	2	5	2	6	7
HS %	29%	71%	29%	86%	100%
MS Totals	6	8	3	5	6
MS %	60%	80%	30%	50%	60%
Elementary Totals	11	27	29	18	30
	31%	77%	83%	51%	86%
District Totals	**19**	**40**	**34**	**29**	**43**
Disctrict %	**37%**	**77%**	**65%**	**56%**	**83%**

Figures 2-5: School Participation in Identified Sustainability Education Programs

All of the programs listed in Figures 2-5 are available to each school. Figure 2 provides totals for elementary school participation; Figure 3 provides totals for middle school participation; Figure 4 provides totals for high school participation; and Figure 5 provides totals for overall district participation. All but one BVSD school had an active green team or groups of students participating in one of these programs in the last five years. This includes students working and learning in gardens, student teams leading composting efforts at schools through the Green Star program, classes and teams participating in the shared savings energy program competing to reduce energy, and much more. Sometimes these groups are part of a class or extra curricular activities, such as student council. All of the opportunities help support and build a culture of sustainability and learning in our schools, using real world-hands and meaningful opportunities for creating positive change.

The $hared $aving Program is designed to engage students, faculty, and staff in energy conservation. Faculty and students teams from eligible schools track electricity usage and implement strategies to change behaviors that support conservation of energy and cost savings. Participation allows the school to earn a cash reward from their electricity bill savings. 37% of BVSD schools are engaged in this program.

The Green Star Schools Schools is a partnership with Eco-Cycle. The Green Star Schools strive toward zero waste by implementing composting school-wide, increasing recycling efforts, hosting special events around waste reduction and implementing other waste reduction activities in the schools.

According to the School Food Project, 34 BVSD schools have school gardens, many of them created and supported by Garden to Table. Typically, schools plant and tend their garden plot with participation from students, teachers, and many parents.

As stated earlier, the E Movement is a collective of teachers, schools, local governments and nonprofits collaborating to increase environmental literacy and build a stewardship ethic within today's youth and tomorrow's leaders. 45 teachers and 7 administrators representing 31 schools are engaged with the E-Movement collaborative.

Green Teams are extracurricular teams of faculty, staff, and students who have an interest in learning about and doing more to support environmental and conservation initiatives at their schools. These teams often support the $hared $aving Program, the Green Star Schools Schools, and other school-wide initiatives.

Goal 3

Develop an interdisciplinary, formal green jobs training program with community partners.

At the current time, BVSD does not have any Career and Technical Education (CTE) programs that focus on sustainability. Sustainability can be wrapped into current programs; for example a teacher at Boulder TEC integrates sustainability concepts into courses on residential construction. However, this focus is uncommon and incidental in CTE courses, rather than an intentional, comprehensive focus to build the skills, knowledge, and mindsets needed to succeed in green jobs.

Goal 4

Provide orientation and ongoing professional learning support on sustainability to 100 percent of all new hires.

Currently there are only a few slides about the Sustainability Management System in the new employee orientation.

Eco-Cycle schedules meetings with new principals and custodians at every school to ensure they are engaged with the Green Star School Program.

Goal 5

Leverage all of BVSD's sustainability goals, events, and initiatives with effective communications, internally and externally, that use multiple channels and celebrate student success.

The Sustainability Coordinator has been updating the entire BVSD community through a bi-annual newsletter designated specifically for news about the SMS. Recently, the district has done an overhaul of communications and the sustainability news has been integrated into district communication channels. The green BVSD website is still a robust site with information on the district's sustainability plans and ongoing initiatives. The district publishes an annual Earth Day Newsletter, and sustainability has also been featured in some of the new communication tools, including the district's podcast "I heard if from Sam" and weekly wake-up livestream events.

A number of community partners continue to document and report on BVSD's successes through their own newsletters. These include multiple newsletters and reports from Eco-Cycle and a quarterly newsletter published by the E Movement.

BVSD staff have regularly presented at national forums the SMS programs.

Goal 6

Develop a sustainability literacy assessment at the middle and high school levels and begin to assess student sustainability proficiency.

Assessing students' proficiency on knowledge, skills, and mindsets related to sustainability will enable the district to know what students know and can do, and also how to strengthen and resource programs designed to teach sustainability. A sustainability literacy assessment is a key component of successful implementation of the SMS. While the district has not completed this goal, it aligns well with the Integrated work that has been done to identify the Essential Skills for all graduates. In addition these Essential Skills (Figure 6) are being used in the Strategic Plan that is redesigning and refreshing the teaching model and curriculum of the district. Sustainability is listed explicitly as an essential skill under Global Citizenship and also links to all of the other areas. Common assessments will be focused on content knowledge and essential skills. As these Common Assessments are developed BVSD will have a robust model for assessing sustainability literacy.

Figure 6: Essential Skills

BUILDINGS

VISION

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

Goal 1

With a balanced water management plan, reduce fiscal year 2008 potable water consumption by 50 percent in existing buildings.

Water management practices that have been implemented over the past five years include:

1. Managers of schools and bond projects were asked to take water reduction measures where relevant, including installing more efficient fixtures. However, increased water use was needed for new landscaping and flushing buildings.

2. Synthetic athletic fields have replaced natural turf at all high school and middle schools and a few elementary school playgrounds to reduce the need for irrigation. All new irrigation systems have been optimized for evapotranspiration. These newly installed irrigation systems are sub-metered.

3. Maintenance uses 3-inch mowing standards to reduce the need for irrigation.

In spite of these actions, domestic tap water use has risen 15 percent, and overall cost has risen more than 40 percent since 2015. Figure 7 reflects tap water use and cost; Figure 8 reflects external irrigation use and cost, and Figure 9 shows that the district-wide average cost in 2019 of water per student was $49.78, and the district average cost of water per square foot was $0.31.

All of the charts include air cooling degree days which add additional strain on water supply. A cooling degree day (CDD) is a standard measurement designed to quantify the demand for energy needed to cool buildings. Water use tends to be higher in drier areas of the country that rely more on irrigation for outdoor watering than in wetter parts of the country that can rely on more rainfall days. In years where there are a higher number of cooling degree days, it is common to see higher water usage. Over the past five years, there have been more cooling degree days than in the previous five years, so water use is expected to be higher.

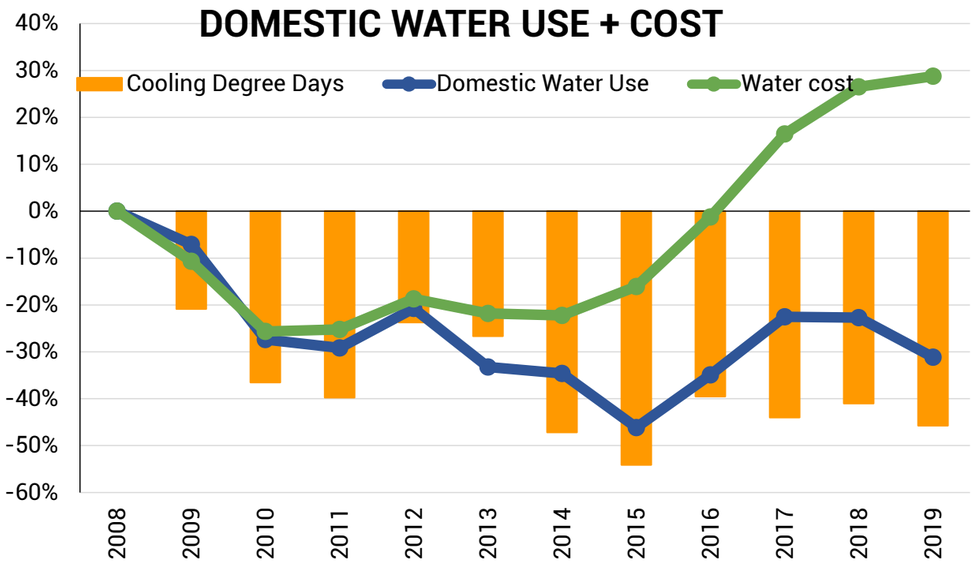


Figure 7: Domestic water Consumption vs Cost. The chart also reflects the number of air cooling days.

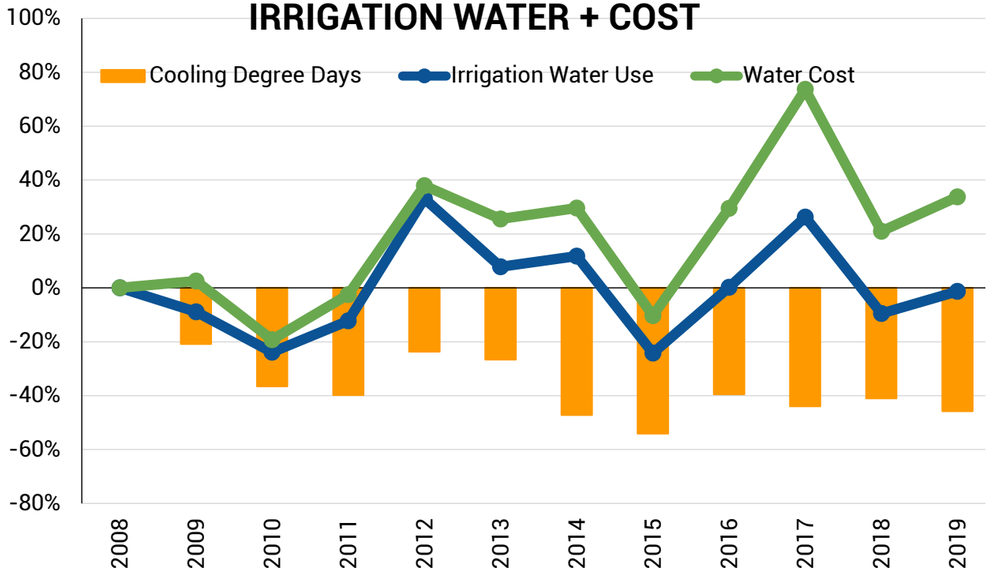


Figure 8: Irrigation use vs Cost. The chart also reflects the number of air cooling days.

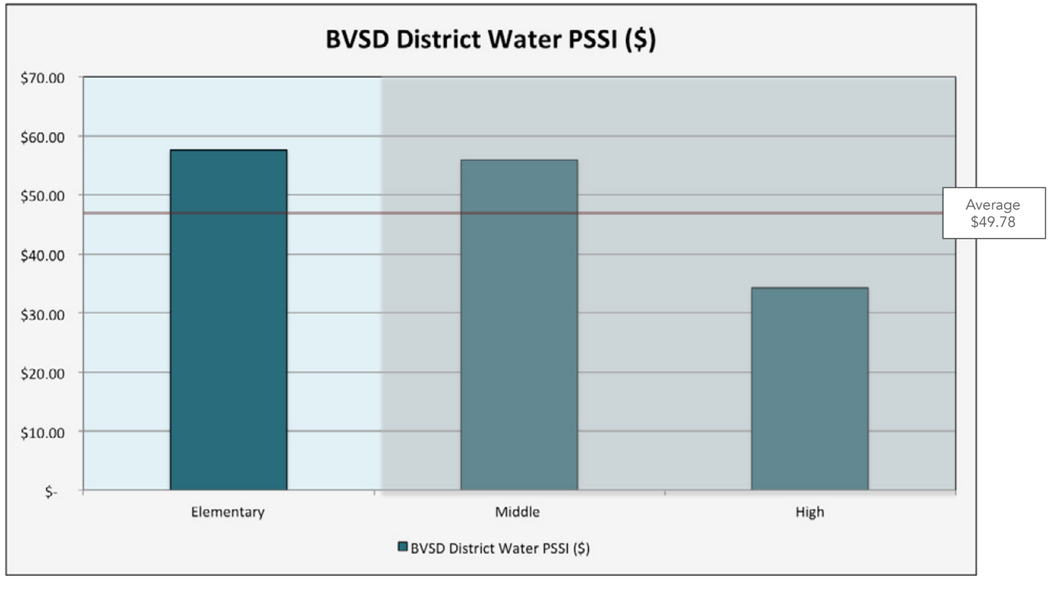


Figure 9: District-wide average cost in 2019 of water per student across BVSD's elementary, middle, and high school groups based on GSNN/Benecras analysis. (Source: Zac Ziebarth, Benecras Insight Report, Appendix A).

Goal 2

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.

The 2014 Bond Program provided an opportunity to advance energy efficiency through three types of projects:

1. Zero-net-energy-capable projects will be designed so that renewables can be added to offset the utilities at a later time. This category includes all new buildings. These projects used the goal of 25 EUI.

2. Deep energy retrofit projects targeted a 50 percent energy reduction.

3. Retro-commissioning upgraded systems with a 20 percent reduction target.

BVSD currently has shifted from kBtu per square foot to the industry standard of Energy Use Intensity (EUI), as the key performance indicator. The data represented in this report reflect this change.

The overall trend of district EUI is downward. The EUI for 2018/19 reflects a 17 percent reduction in EUI since 2008, decreasing from 74.7 EUI to 57.7 EUI. Figure 10 reflects the Weather-Normalized EUI between 2008 and 2020. Normalized energy is best suited to evaluate energy use from one year to the next. It is based on the energy BVSD would have used if it had experienced 30 year average temperatures in each of the comparison years.

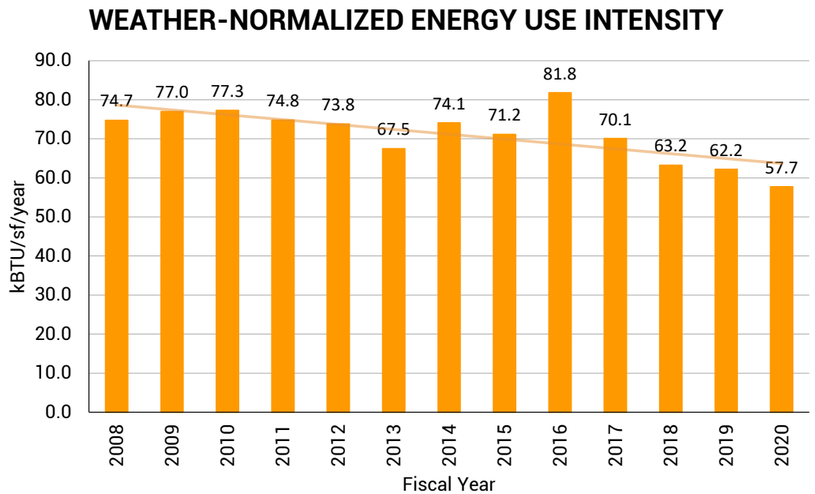


Figure 10: Key Performance Indicator of EUI compared to Weather Normalized EUI (Source: Jeff Medwetz. August 2020 Energy Star Portfolio Manager).

Another way to look at energy is per square foot and per student. While not an industry standard, these costs are sometimes easier to understand for the general consumer. Figure 11 and Figure 12 show that these costs are trending down as well. Average district energy costs in 2019 were $150.91 per student and $0.95 per square foot.

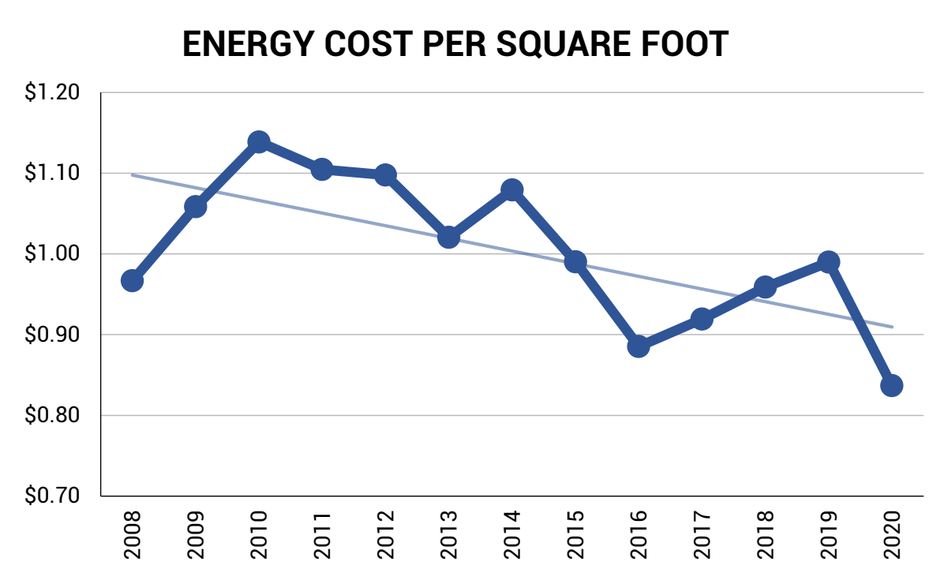


Figure 11: Total Energy Cost per Square Foot (Source: Jeff Medwetz. August 2020 from Utility Manager Pro).

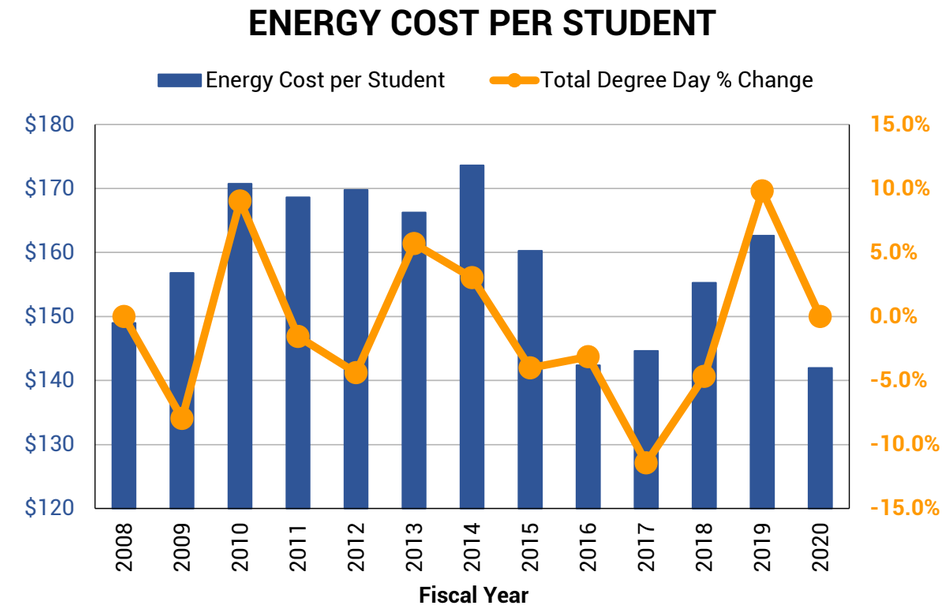


Figure 12a: Total Energy Cost per Student. (Source: Jeff Medwetz. August 2020 from Utility Manager Pro).

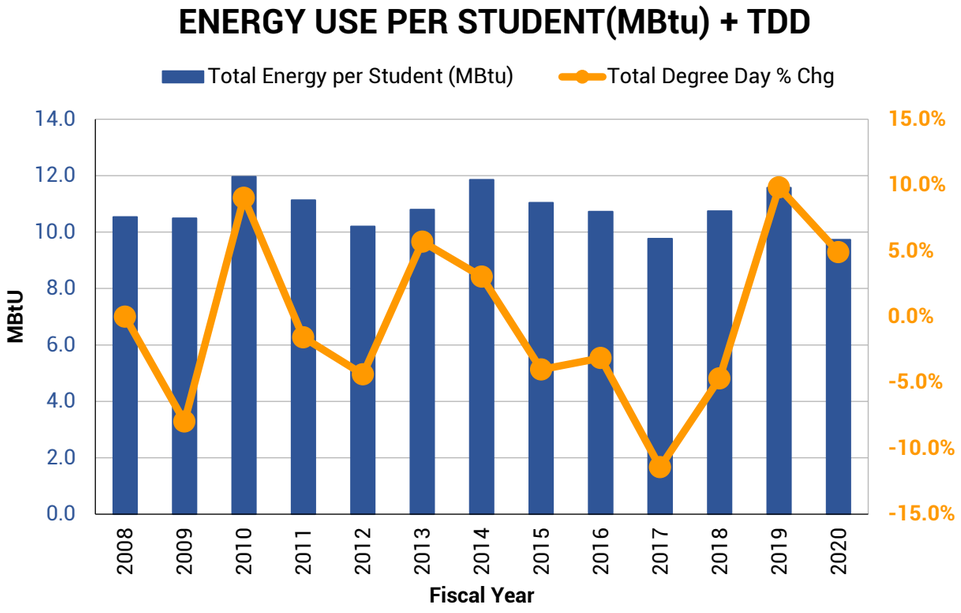


Figure 12b: Total Energy Use per Student. (Source: Jeff Medwetz. August 2020 from Utility Manager Pro).

In the Operations Department, the Energy Team monitors progress on the BVSD energy initiatives. This team meets monthly to review data from the real-time energy dashboard. These data allow the team to monitor the impact of automation systems that have been implemented, for example:

- Boilers with more advanced programming systems have allowed boiler setpoints to be automated based on actual building occupation patterns instead of manual adjustments made based on outdoor air temperature (OAT) readings. This has increased energy efficiency.
- HVAC systems with occupancy sensors are set for temperature increases or decreases based on real-time occupancy.
- Air handling units (AHU) are now used based on variable air volume (VAV) instead of fixed set points based on cooling needs. This process of demand control ventilation (DCV) ensures good indoor air quality, saves energy, and allows for more standardized control over cubic feet per minute (CFM) air exchange rates.

Finally, additional efforts have been made within BVSD to support understanding and behavior modifications needed to achieve the energy consumption goal. For example, Eco-Cycle provides 50 classes each year with Energy Conservation programming funded by Boulder County that reach 50 teachers and 1,300 students.

Goal 3

Increase BVSD's renewable electricity capacity to provide 20 percent of total electricity consumption.

In the past five years, BVSD has not added renewable energy technologies, therefore the offset of electricity from renewables has stayed at 5 percent.

The solicitation for new schools in the 2014 Bond Project included zero-net-energy specifications. Unfortunately, building zero-net-energy schools was cost prohibitive. However, all new buildings are now designed to be solar ready, and Bear Creek was designed to be ready for a wind turbine; additional renewable energy technologies may be possible in the future.

The district has had many conversations with Solar Garden companies, but to date none of the opportunities have made financial sense.

BUILDINGS

Goal 4

Design new buildings or additions to meet the 2009 Leadership in Energy and Environmental Design (LEED) gold standard for schools, new construction, and major retrofits 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.**

Sustainability was integrated into the 2014 Bond Program planning process, which established aggressive goals for waste diversion, indoor air quality, water and energy reduction, and outdoor accessibility. These goals were articulated to all project teams and tracked throughout the projects.

Figure 13 highlights a Bond Diversion Rate, on average, of slightly more than half (51 percent) of construction materials that were recycled rather than sent to the landfill. In addition to construction waste, BVSD worked in partnership with our furniture company to recycle and repurpose 272,535 lbs of furniture. Through the partnership with Metech and Apple, BVSD recycled close to 232,620 lbs of electronics.

BOND WASTE DIVERSION DATA

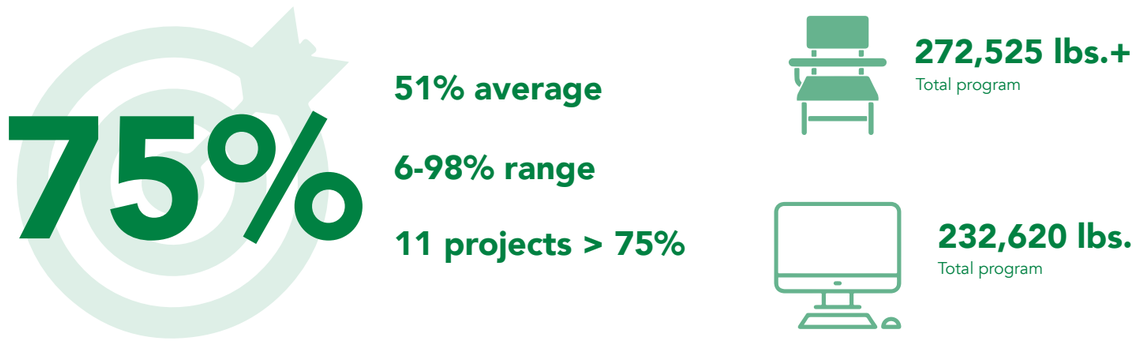


Figure 13: Bond Waste Diversion Rates (provided by Ghita Carroll from the Citizens' Bond Oversight Committee Report, November 18, 2020)

In August 2016, the district created a Green Building Guiding Principles document that overlays the district sustainability goals as they relate to bond and construction work, with goals for new construction and renovations.

Guiding Green Building Principles affirm Goal 4 in requiring that new buildings meet 2009 LEED standards, although the district will not pursue certification. Four new schools built as part of the 2014 bond met the LEED gold requirements, and Casey Middle in the prior bond was certified as LEED Platinum.

In addition, the Principles mandate that where possible, all projects should use materials that "are durable, repairable, and reusable or recyclable; limit toxins and indoor air pollutants; are made with high post-consumer recycled content; and are resource and energy efficient in their manufacturing, use and disposal."

The district's Sustainable Energy Plan also informed the successful implementation of a wide variety of energy conservation measures. Figures 14 and 15 reflect the positive impact of having energy specifications for the design and build teams. With an energy plan in place, the 2014 Bond Program was 24% more efficient than the 2006 Bond Program.

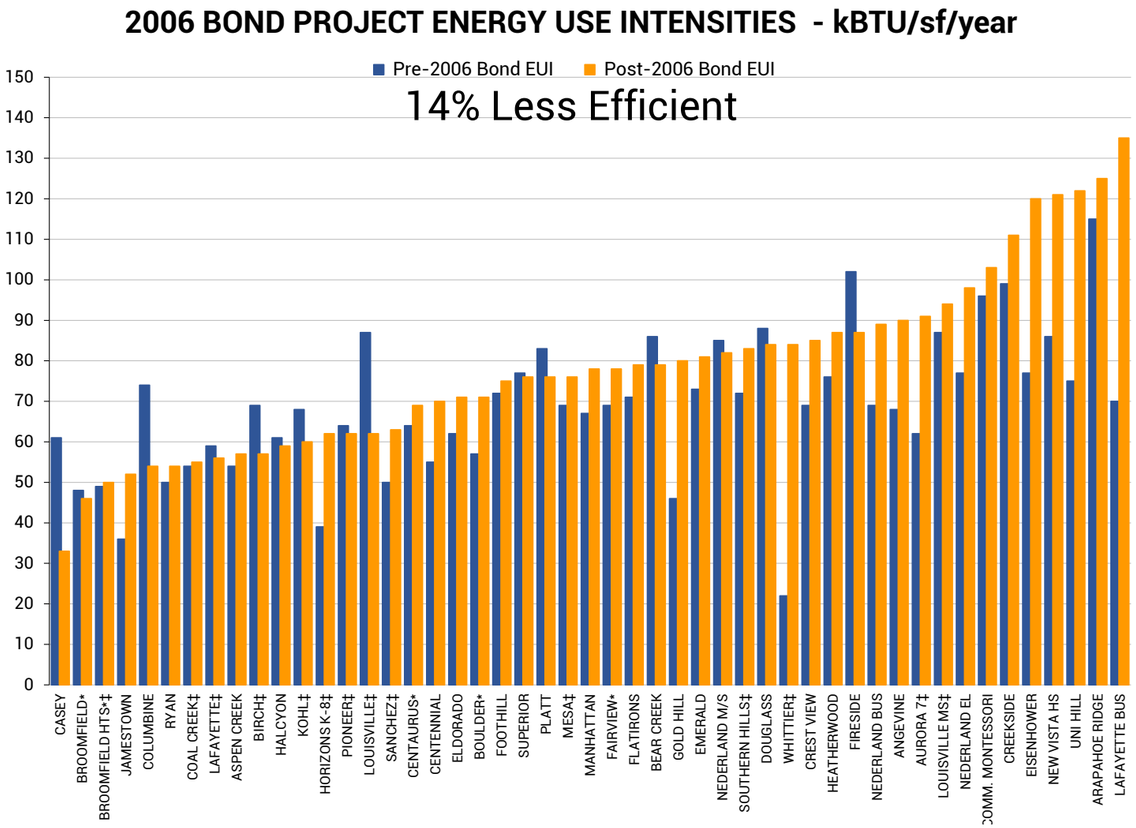


Figure 14: Energy Efficiency Bond Program 2006 Projects. (Source: Jeff Medwetz. August 2020 from Utility Manager Pro)

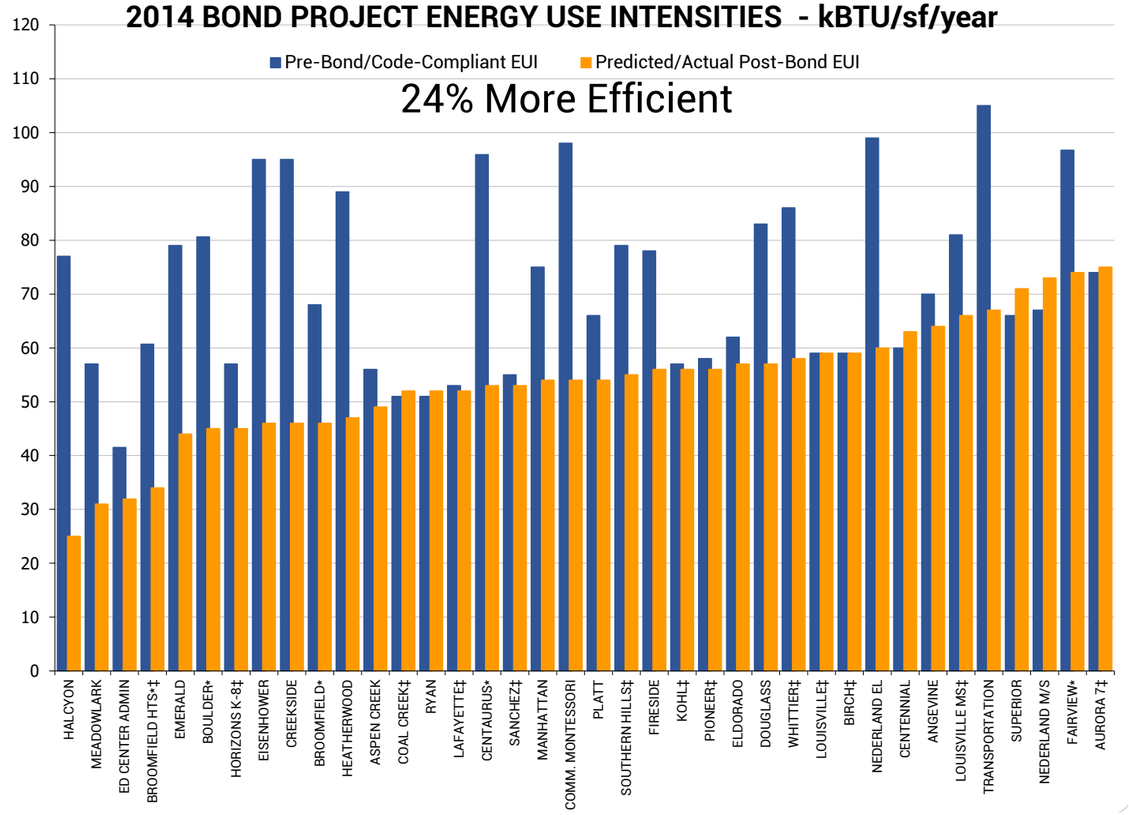


Figure 15: Energy Efficiency Bond Program 2014 Projects. (Source: Jeff Medwetz. August 2020 from Utility Manager Pro)

MATERIALS FLOW

VISION

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

Goal 1

Through source reduction, composting, reuse, salvage, and recycling, achieve 50 percent waste diversion district-wide.

BVSD continues to make diverting waste from landfills a priority. All schools participate in recycling. A waste audit conducted in 2018 with the waste hauler, based on observation of the average fullness of exterior waste receptacles, revealed the average diversion rate per BVSD campus to be 51 percent. The Benecras Insight Report, done in 2020, used a different methodology that looked at dumpster capacity. This analysis suggests that the district's diversion capacity rates in 2019 were 25 percent for BVSD high schools, 41 percent for middle schools, and 34 percent for elementary schools.

The following programs are supporting efforts to reduce waste:

- Eco-Cycle supports the Green Stars Schools program that captures compostable waste from classrooms and bathrooms.
- Eco-Cycle also supports recycling in all BVSD schools and sites, coupled with educational programming and training to improve the reduce-reuse-recycle behaviors of students and staff.
- The Food Services department has increased their use of Leanpath apps to track kitchen and food waste. They also only use reusable containers, trays, and plates.
  Note: The secondary schools went to disposables during the COVID-19 pandemic but will restart the use of durables once it is safe to do so.
- All buildings have recycle and water bottle filling stations.
- Used light bulbs are collected and sent to hazardous waste facilities.

Goal 2

All goods procured from vendors, including green cleaning products and services used in all district facilities, meet sustainability criteria.

Most departments are currently using sustainability standards for procurement. Highlights include:

Food Services

- The Food Services department uses the standards set by the Center for Good Food Purchasing. It has received the Good Food Provider seal, a coveted marker of positive impact within the sustainable food system. As part of BVSD's participation in this program, an analysis of our food supply chain is completed in five areas: Local Economies, Environmental Sustainability, Valued Workforce, Animal Welfare, and Nutrition.
- Board Policy ADF-R is continually being updated to reflect sustainable and ecological procurement standards for the Food Services program.
- All packaging is recyclable.
- Reusable containers are used when possible, including for delivery and storage of all beef, produce, and some chicken.
- Kitchen equipment is purchased based on vendors' sustainability commitment.

Facilities/Custodial

- Has teamed with county health departments to determine what the best products are for use in schools, including an hydrogen peroxide based solution and other products that are a 0 on the Hazardous Materials Identification System (HMIS)
- Has shifted to micro fiber cleaning with a color code system to make sure each cloth one is used in proper places.
- Is using Oxiver TB disinfectant, the industry standard for killing the virus which produces COVID-19.
- Most schools have installed hand dryers to replace paper towels. (Note: During the COVID-19 pandemic, hand dryers were temporarily disabled and paper towel dispensers reinstalled.)

Technology and Purchasing

- IT equipment is recycled through Eco-Cycle and partnership with Apple
- All paper procured meets a 50 percent post-consumer content standard.

Goal 3

Create a coordinated, district-wide, Integrated Pest Management Plan following recognized protocols to be implemented within five years.

Integrated Pest Management (IPM) is a standard operating procedure for BVSD and has been used by facilities staff since the creation of the SMS in 2009.

In 2016, the Board of Education initiated a long-term project now known as the Indoor Air Quality Initiative. The district-wide Indoor Air Quality Team was appointed to disseminate air quality information, register air quality complaints and direct responses, and communicate air quality issues and status at district schools to school administration, staff, students, and parents. The IAQ Advisory Team frequently partners with experts at University of Tulsa Indoor Air Program and key personnel from the University of Colorado, with support from Harvard and the National Institute of Occupational Safety and Health (NIOSH), to engage in research and field data that can improve indoor air quality (IAQ) in BVSD schools. This team created a detailed standard operating procedure recommendation for IPM that will be implemented in 2021.

Goal 4

Establish best management practices for measuring and monitoring indoor air quality.

BVSD has improved indoor air quality by making improvements to the HVAC system and commissioning all projects, which ensures that all systems are operating to maximize comfort and efficiency. As part of the 2014 Bond Project, BVSD provided new schools with guidelines for maintaining indoor air quality, including restricting personal furniture, plants, and pets in the first year to minimize allergens, dust, and mold. Before and after all bond-funded projects, the district and an IAQ consultant collected data on thermal conditions (temperature, relative humidity), ventilation adequacy (carbon dioxide), and cleaning effectiveness (adenosine triphosphate) as an indicator of cleanliness on desktops. Visual inspections in each building reviewed 26 different items, including odors, trash, carpet conditions, pest infestations, pets, and plants in the classrooms.

In addition, surveys distributed to faculty and staff across the district have identified potential problems that may negatively impact indoor air quality in classrooms. The district also collects health data as a part of absentee notices and reviews that data for any correlation between IAQ and health.

The purpose of collecting this data prior to renovation was to establish a baseline and provide guidance on how to improve overall indoor air quality.

The pre-bond audit resulted in two recommendations:

1. Focus efforts to increase operational and school staff's awareness of indoor air quality.
2. Improve facility conditions through the bond renovation work at each school.

The post bond audit, further observed:

1. New HVAC systems were installed through the bond renovation and need to be constantly monitored and adjusted to ensure adequate air exchange is occurring to add fresh air and reduce carbon dioxide in classrooms. (Minor programming changes, fixing malfunctioning equipment, and modifying cubic feet per minute set points has reduced carbon dioxide levels in schools that have had adjustments).
2. Cleaning of high touch surfaces, mainly desktops, has not improved. This continues to be a persistent issue in all of the buildings as indicated by data throughout the study.
3. Thermal comfort issues are still being noted especially among staff/teacher surveys.
4. The IAQ Advisory Team has observed reduced clutter in classrooms and increased awareness of IAQ.
5. Operations has implemented new standard operating practices on how to handle indoor environmental concerns and is working with the IAQ Advisory Team to draft new standard operating procedures.
6. The district hired a third party consultant to do testing and investigation on complex indoor air quality concerns.

Goal 5

25 percent of school food purchases are local, unprocessed, hormone-free, and/or antibiotic-free.

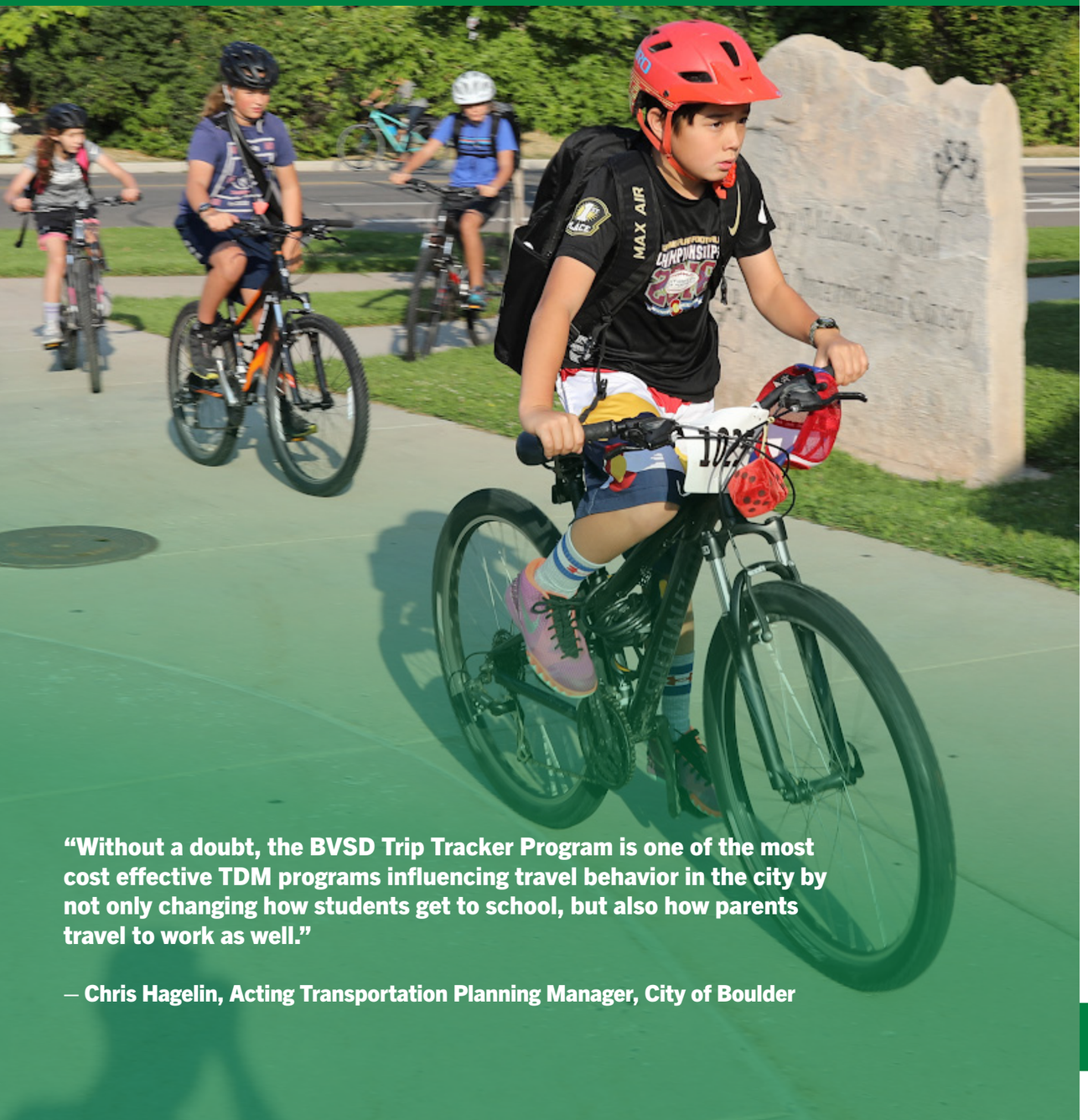
This goal has been achieved!
The district continues to prioritize local and organic foods when possible. (See p. 6 in the section on the cross-cutting theme of Health)

Goal 6

Maintain and sustain gardens at 75 percent of the BVSD schools

As shown in Figures 2 through 5 on pages 16-18, 71 percent (N=37) of the schools at BVSD have school gardens. According to date provided by the School Food Project, 19 of these schools partner with Garden to Table are considered to be active. The others have varying level of use by students and teachers.

TRANSPORTA-



“Without a doubt, the BVSD Trip Tracker Program is one of the most cost effective TDM programs influencing travel behavior in the city by not only changing how students get to school, but also how parents travel to work as well.”

— Chris Hagelin, Acting Transportation Planning Manager, City of Boulder

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.

Goal 1

Decrease community Vehicle Miles Traveled (VMT) and emissions associated with BVSD by 10 percent. Promote multiple modes (bus, public transit, walking, and biking) and reduce single-occupant mode share to and from District schools and facilities.

The district has a robust Safe Routes to School Program and has implemented multiple student-centered transportation programs that promote alternative modes of transportation. Highlights include:

- 5,000 students participate in the Trip Tracker program which rewards students and families for using alternatives to single family car transportation to BVSD schools. Program was extended to include all school bus riders.
- 12 traffic gardens, hosted by Safe Routes to School
- Bicycle education is provided through videos and on-site instruction. In the fall of 2020, 3,000 students participated.
- Every municipality has made infrastructure improvements to make walking and biking safer.
- The City of Boulder’s master plan has language about safe routes, maps, resources for families, and more organized school zones for walking and biking.
- The district wellness policy includes both bicycle education and safe routes to school.
- Continue to promote the Way2Go program and other carpooling and car sharing options.

Goal 2

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.

The district has a strong relationship with the Regional Transportation District (RTD), which provides transportation for approximately 1000 students. Together, RTD and BVSD serve all neighborhoods. RTD has also put extra busses on line where needed to align with BVSD bell times and increased ridership for those students who do not qualify for district transportation.

The district has also continued to explore options with RTD and municipal partners to expand Eco Pass opportunities for students, including the development of a community-wide Eco-Pass program.

The district conducts bike counts annually at 25-30 schools.

The district has partnered with local entities to perform surveys of transportation habits and preferences of students, parents, and staff. These partners meet regularly and share data and methodologies on tracking transportation.

TRANSPORTATION

Goal 3

Reduce overall fleet-related emissions and increase fleet fuel efficiency by 10 percent. Improve bus routing, purchase alternative fuel vehicles, and replace inefficient vehicles with more efficient ones.

Projects funded through the 2014 bond have ensured access to new buildings site for all modes of transportation, with priority for sustainable modes of transportation including biking, walking, carpooling, and busing. When redesigning existing sites, where reasonable, BVSD has increased accessibility for sustainable modes of transportation including biking, walking, carpooling and busing. Infrastructure to support electric vehicle charging and bicycling (e.g. bike racks) has been added where possible.

BVSD substantially increased electric vehicle infrastructure, paid in part by a grant for $349,800. The district now has the following:

- 50 sites with EV stations
- 55 EV stations
- 110 EV ports
- 3 electric vehicle sedans assigned to departments for employee use

The district continues to 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. The district is slowly diversifying its bus fleet. The fleet currently has 255 buses; in 2017, 33 white gasoline buses were purchased; in February 2021, the district acquired its first electric bus.

The district has used GPS data to improve school bus routing efficiency. Baseline data was not available to identify how much it has improved.

Acknowledgments

This SMS review would not have been possible without the input and support from staff, parents, teachers, and community partners. In particular, BVSD would like to thank the following individuals who participated in data gathering and interviews:

Interviews

Amy Thompson, School Transportation Coordinator, BVSD
Ann Cooper, (Former) Director of Food Services, BVSD
Anthony Skala, Director of Transportation, BVSD
Arlie Huffman, Career and Tech Ed Director, BVSD
Bill Sutter, Chief Financial Officer, BVSD
Carey Jensen, Assistant Director of Facilities, BVSD
Curry Rosato, Open Space and Mountain Parks, City of Boulder
Cyndra Dietz, Eco-Cycle
Erica Fine, E Movement
Peter Hurst, Transportation, BVSD
Jamie Inzerillo, Professional Learning Specialist, BVSD
Jeff Medwetz, Project Manager of Energy Systems, BVSD
Katie Mills, Director of Professional Learning, BVSD
Keith Desrosiers, Thorne Nature Center
Kelly Sain, Director of STEM, SW, BVSD
Kim Orr, Eco-Cycle
Kristen Donley, STEM Director NW, BVSD
Landon Hilliard, Safe Routes to School Coordinator,BVSD
Mara Mintzer, Growing Up Boulder
Molly McLoughlin, Director of Facilities, BVSD
Rafael Salgado, Calwood
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Ryan Sealey, Building Control Analyst, BVSD
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Stephanie Dobbie, Garden to Table
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Travis Cook, HVAC Manager, BVSD

Prepared with the support of Green Schools National Network

For more information about the Sustainability Management System, visit the Office of Sustainability web page: https://www.bvsd.org/departments/operational-services/sustainability/sustainability-management-system
or contact the Office of Sustainability:
Phone - 720.561.5181

GREEN SCHOOLS NATIONAL NETWORK

BOULDER VALLEY SCHOOL DISTRICT

BENECRAS

Green Schools National Network

Insight Report

Prepared For:

Boulder Valley School District

Data Reflective of the 2019 Calendar Year

foreword

This report has been developed by Benecras in partnership with the Green Schools National Network, Inc. whereas the contents of this report are confidential and must not be communicated to any other party outside of the Green Schools National Network and the district without the prior written approval.

Benecras has prepared this report based on the information made available to it during the initial sustainability assessment process. Other factors outside the knowledge or control of Benecras may impact the overall findings contained in this document. The statements in this document are qualified accordingly.

The following notice applies to this document and shall not be reproduced or reconstructed.

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Overview
Introduction to the Insight Report

BENECRAS

purpose

Green Schools National Network

"Through data we can more effectively tell the story of the sustainable schools movement"

In 2020, the Green Schools National Network (GSNN) made it a strategic goal to assist catalyst partners like BVSD in gathering and interpreting the operational sustainability data of schools. In doing so, the goal(s) of this work are to:

- Show Evidence-Based Progress
- Tell the 'Sustainable Schools' Story at Scale
- Develop Baselines Data
- Inform Decision Making for GSNN Catalyst Partners

overview

The Benecras Insight Report provides a comparative evaluation of your schools metrics surrounding key operational sustainability indicators. This report is a powerful tool that can be used to identify opportunities for operational efficiency and to develop long-term strategic sustainability objectives for your district.

The following three (3) operational Indexes have been evaluated in this report:

Operational Indexes

- I. Energy Efficiency
- II. Water Conservation
- III. Waste Management

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sustainability index

Per Student Sustainability Index (PSSI)

PSSI is a performance index used to measure the sustainability performance of a campus using a **per student** accounting & metric system.

Calculation: Annual Index Cost \ Enrollment = PSSI

Operational Index	PSSI	PSFI
Energy Efficiency	Annual Cost or Impact/Enrollment	Annual Cost or Impact/Sq Ft
Water Conservation	Annual Cost or Impact/Enrollment	Annual Cost or Impact/Sq Ft.
Waste Management	Annual Cost or Impact/Enrollment	Annual Cost or Impact/Sq Ft.
Overall PSSI	Sum ($) of Index PSSIs	Sum ($) of Index PSFIs

Energy Efficiency
PSSI & PSFI Results

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energy efficiency – elementary

Findings

Elementary Totals:	Annual ($):	$2,028,774
	PSFI ($):	$0.96 /sq foot
	PSSI ($):	**$142.28 / student**

Analysis

BVSD currently averages an annual district energy cost of $2,028,774 between its thirty four (34) elementary campus locations serving students, with an average annual PSSI of $142.28/ student.

High Achiever: Ryan Elementary has an average PSSI of $84.41/ student, the lowest Energy PSSI among elementary schools across the district.

Opportunity Campus: Mapleton has an average PSSI of $303.70/ student, the highest Energy PSSI among elementary schools across the district.

energy efficiency – middle

Findings

Middle Totals:	Annual ($):	$917,323.00
	PSFI ($):	$0.87 /sq foot
	PSSI ($):	**$169.44 / student**

Analysis

BVSD currently averages an annual district energy cost of $917,323.00 between its ten (10) middle school campus locations serving students, with an average annual PSSI of $169.44/ student.

High Achiever: Casey Middle School has an average PSSI of $139.99/ student, the lowest Energy PSSI among middle schools across the district.

Opportunity Campus: Nederland Middle/Senior has an average PSSI of $358.40/ student, the highest Energy PSSI among middle schools across the district.

energy efficiency – high

Findings

High School Totals:	Annual ($):	$1,431,446.00
	PSFI ($):	$1.00 /sq foot
	PSSI ($):	**$153.36/ student**

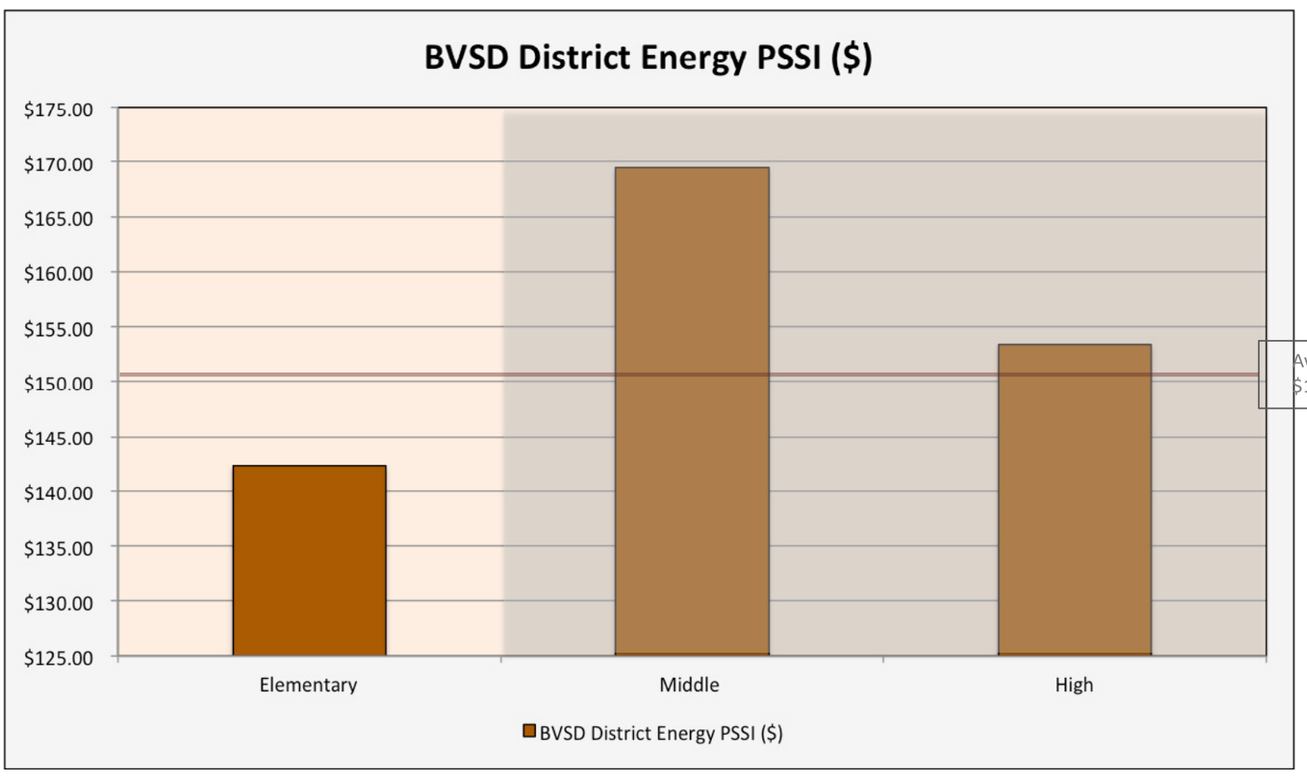
Analysis

BVSD currently averages an annual district energy cost of $1,058,027.60 between its eight (8) high school campus locations serving students, with an average annual PSSI of $153.36/ student.

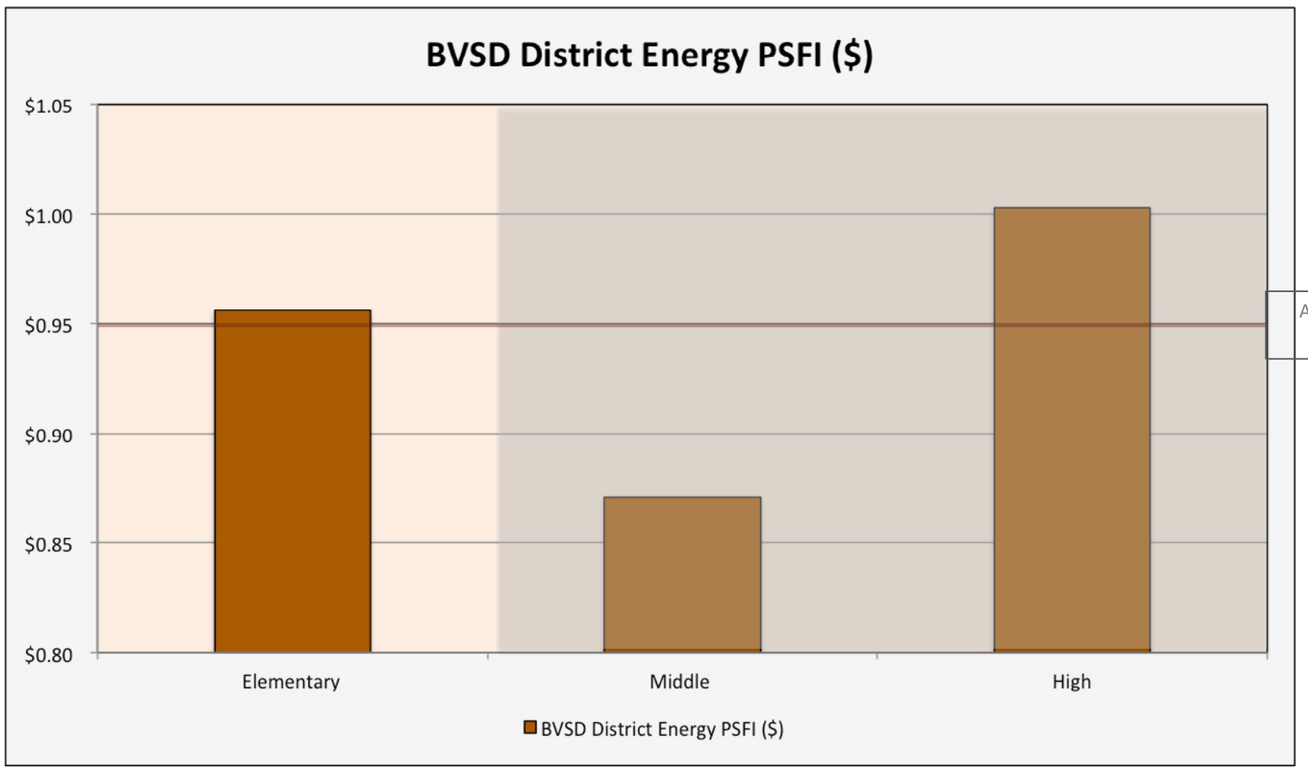
High Achiever: Monarch High has an average PSSI of $91.88/ student, the lowest Energy PSSI among high school campuses across the district.

Opportunity Campus: Arapahoe Campus has an average PSSI of $1,589.62/ student, the highest Energy PSSI among high schools across the district.

energy efficiency – district comparison



energy efficiency – district comparison



Water Conservation

PSSI & PSFI Results

BENECRAS

water conservation – elementary

Findings

Elementary Totals:	Annual ($):	$821,424.00
	PSFI ($):	$0.39/ sq foot
	PSSI ($):	**$57.61 / student**

Analysis

BVSD currently averages an annual water cost of $821,424.00 between its thirty four (34) elementary campus locations serving students, with an average annual PSSI of $57.61/ student.

High Achiever: Ryan Elementary has an average PSSI of $19.52/ student, the lowest Water PSSI among elementary schools across the district.

Opportunity Campus: Community Montessori has an average PSSI of $142.20/ student, the highest Water PSSI among elementary schools across the district.

water conservation – middle

Findings

Middle Totals:	Annual ($):	$302,968.00
	PSFI ($):	$0.29/ sq foot
	PSSI ($):	**$55.96/ student**

Analysis

BVSD currently averages an annual water cost of $302,968.00 between its ten (10) middle school campus locations serving students, with an average annual PSSI of $55.96/ student.

High Achiever: Casey Middle School has an average PSSI of $32.02/ student, the lowest Water PSSI among middle schools across the district.

Opportunity Campus: Southern Hills Middle School has an average PSSI of $96.24/ student, the highest Water PSSI among middle schools across the district.

water conservation – high

Findings

High School Totals:	Annual ($):	$319,502.00
	PSFI ($):	$0.22/ sq foot
	PSSI ($):	**$34.23/ student**

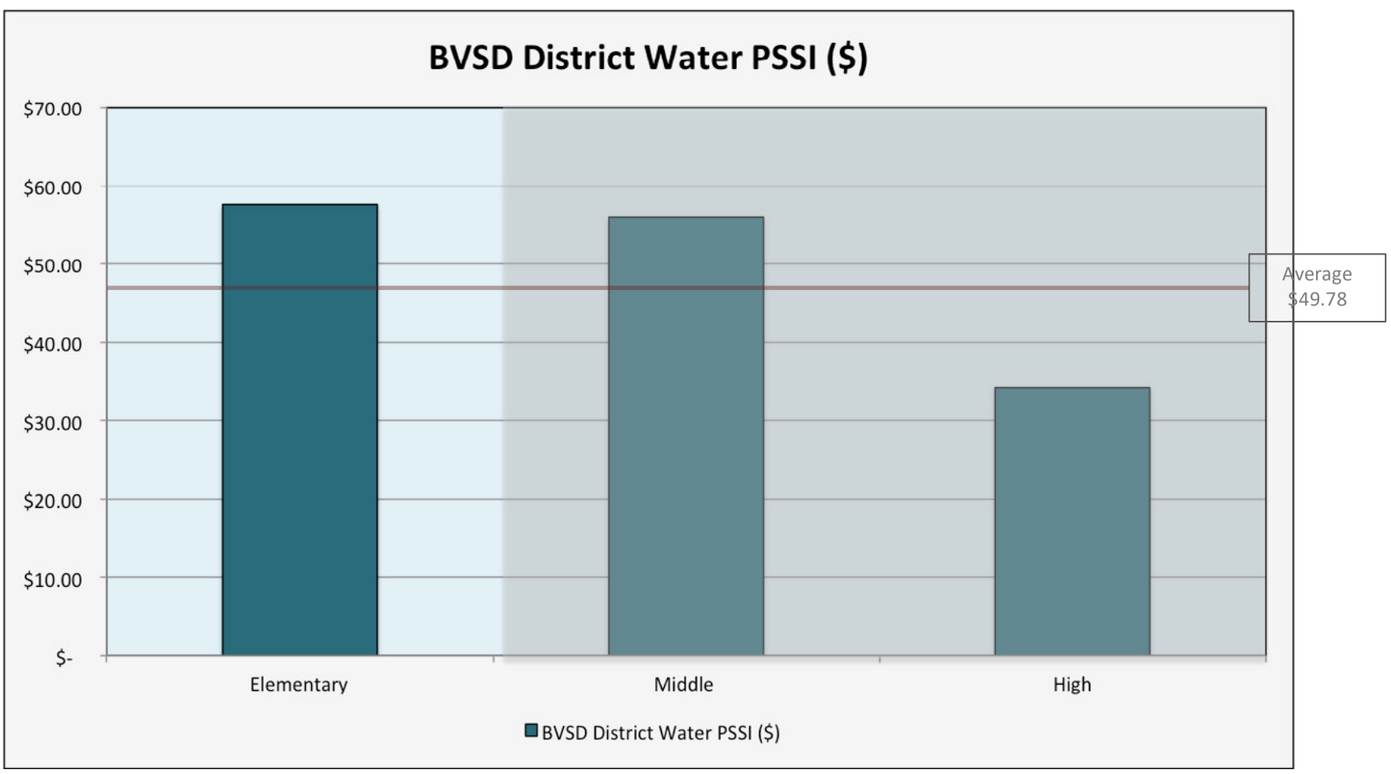
Analysis

BVSD currently averages an annual water cost of $319,502 between its eight (8) high school campus locations serving students, with an average annual PSSI of $34.23/ student.

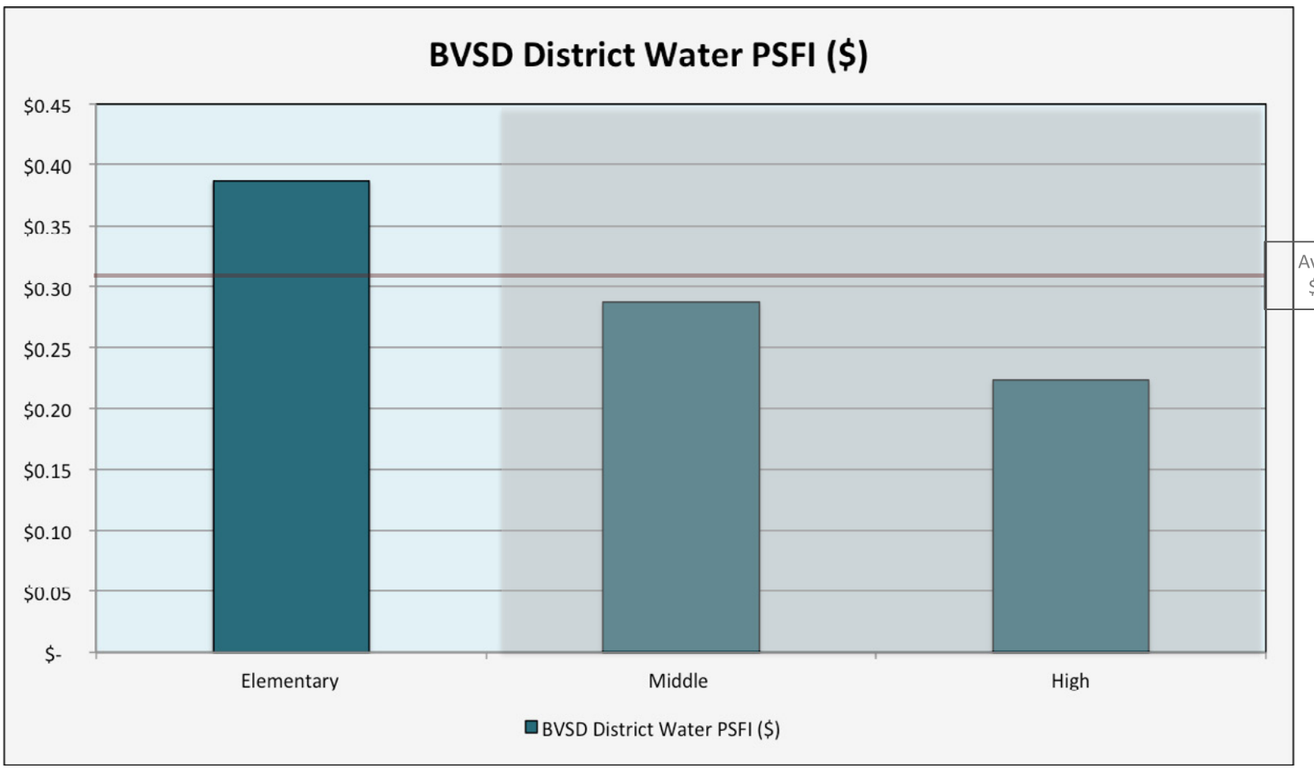
High Achiever: Monarch High has an average PSSI of $11.35/ student, the lowest Water PSSI among high schools across the district.

Opportunity Campus: Halcyon has an average PSSI of $593.65/ student, the highest Water PSSI among high schools across the district.

water conservation – district comparison



water conservation – district comparison



Waste Management

PSSI & PSFI Results

BENECRAS

waste management – elementary

Findings

Elementary Totals:	Annual ($):	$86,329.00
	PSFI ($):	$0.04 /sq foot
	PSSI ($):	**$6.05/ student**

Analysis

BVSD currently averages an annual district waste management cost of $86,329.00 between its thirty four (34) elementary campus locations serving students, with an average annual PSSI of $6.05/ student.

High Achiever: Aspen Creek has an average PSSI of $3.66/ student, the lowest Waste PSSI among elementary schools across the district.

Opportunity Campus: Jamestown Elementary has an average PSSI of $32.50/ student, the highest Waste PSSI among elementary schools across the district.

waste management – middle

Findings

Middle Totals:	Annual ($):	$35,876.50
	PSFI ($):	$0.03 /sq foot
	PSSI ($):	**$6.63/ student**

Analysis

BVSD currently averages an annual district waste management cost of $35,876.50 between its ten (10) middle school campus locations serving students, with an average annual PSSI of $6.63/ student.

High Achiever: Platt Middle School has an average PSSI of $4.18/ student, the lowest Waste PSSI among middle schools across the district.

Opportunity Campus: Nederland Middle/Senior has an average PSSI of $14.72/ student, the highest Waste PSSI among middle schools across the district.

waste management – high

Findings

High School Totals:	Annual ($):	$62,786.00
	PSFI ($):	$0.04 /sq foot
	PSSI ($):	**$6.73/ student**

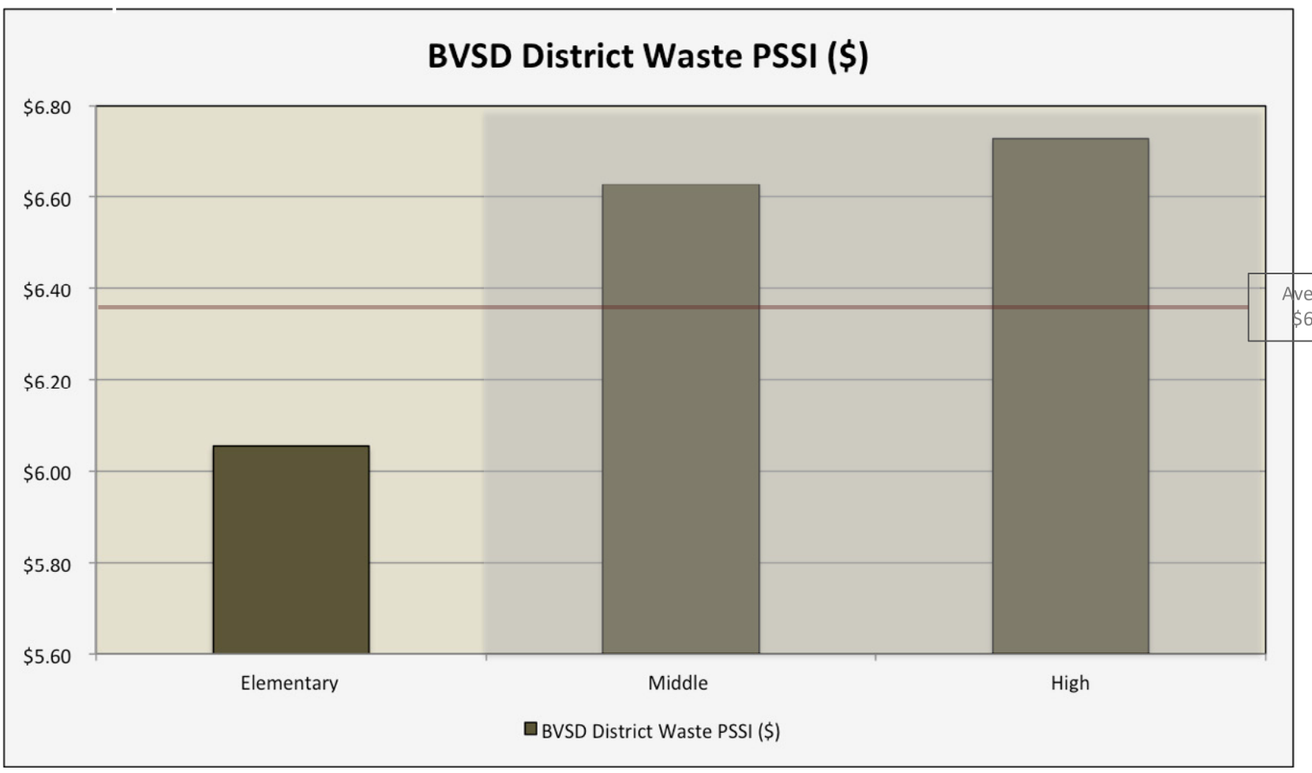
Analysis

BVSD currently averages an annual district waste management cost of $62,786.00 between its eight (8) high school campus locations serving students, with an average annual PSSI of $6.73/ student.

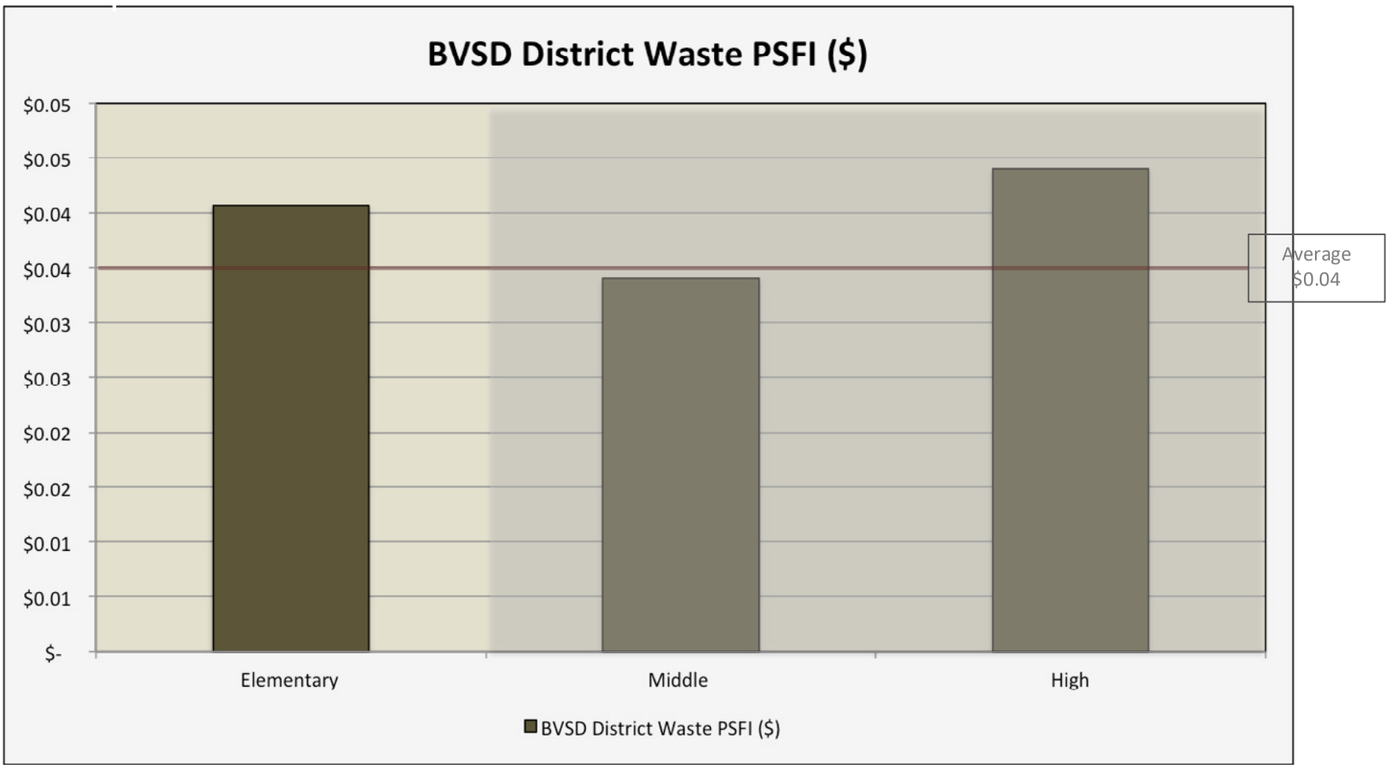
High Achiever: Boulder High l has an average PSSI of $4.88/ student, the lowest Waste PSSI among high schools across the district.

Opportunity Campus: Arapahoe Campus has an average PSSI of $38.94/ student, the highest Waste PSSI among high schools across the district.

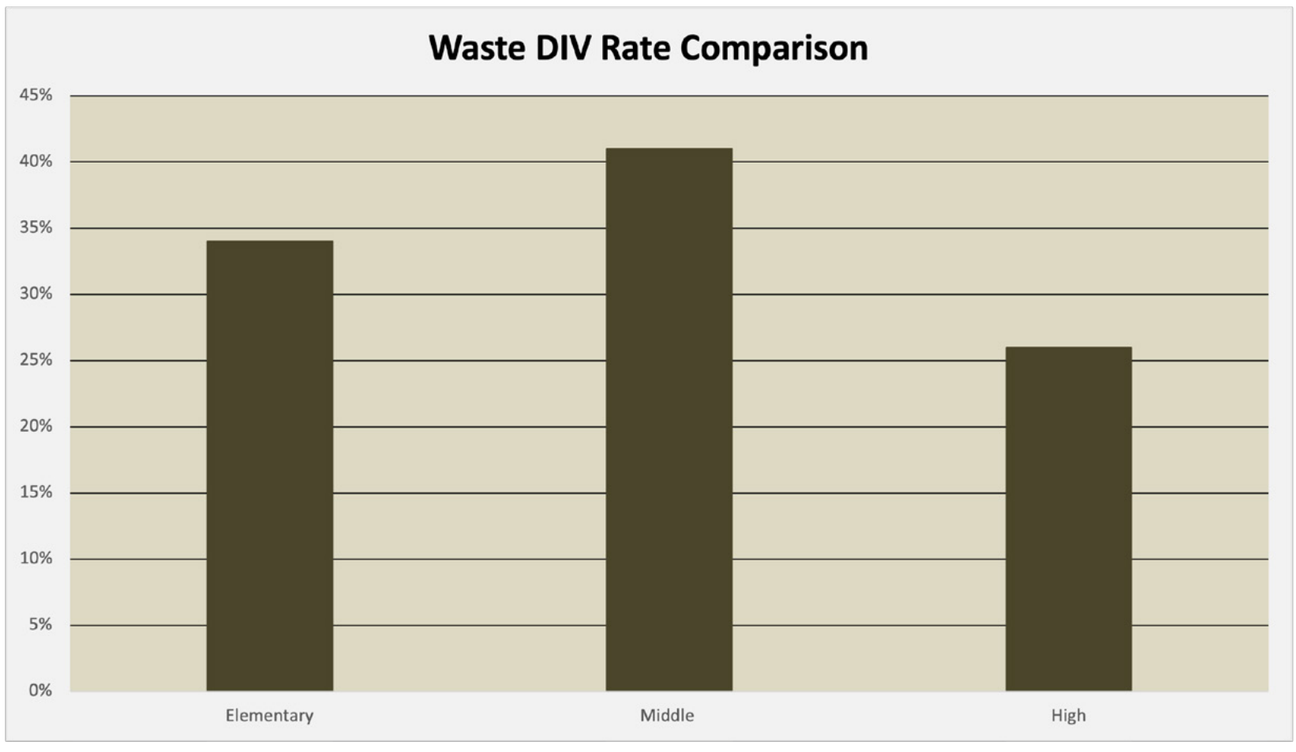
waste management – district comparison



waste management – district comparison



waste management – district comparison



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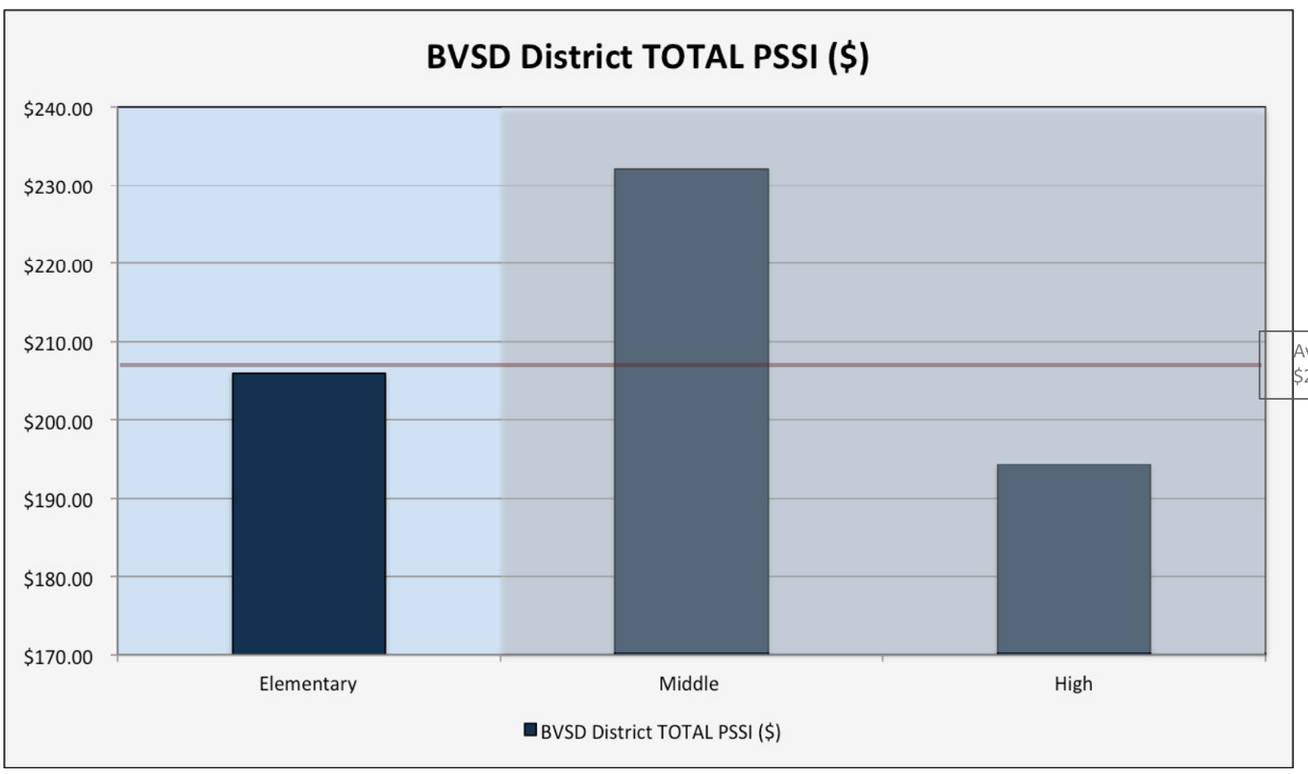
Overall
Combined PSSI & PSFI Results

total PSSI – district comparison



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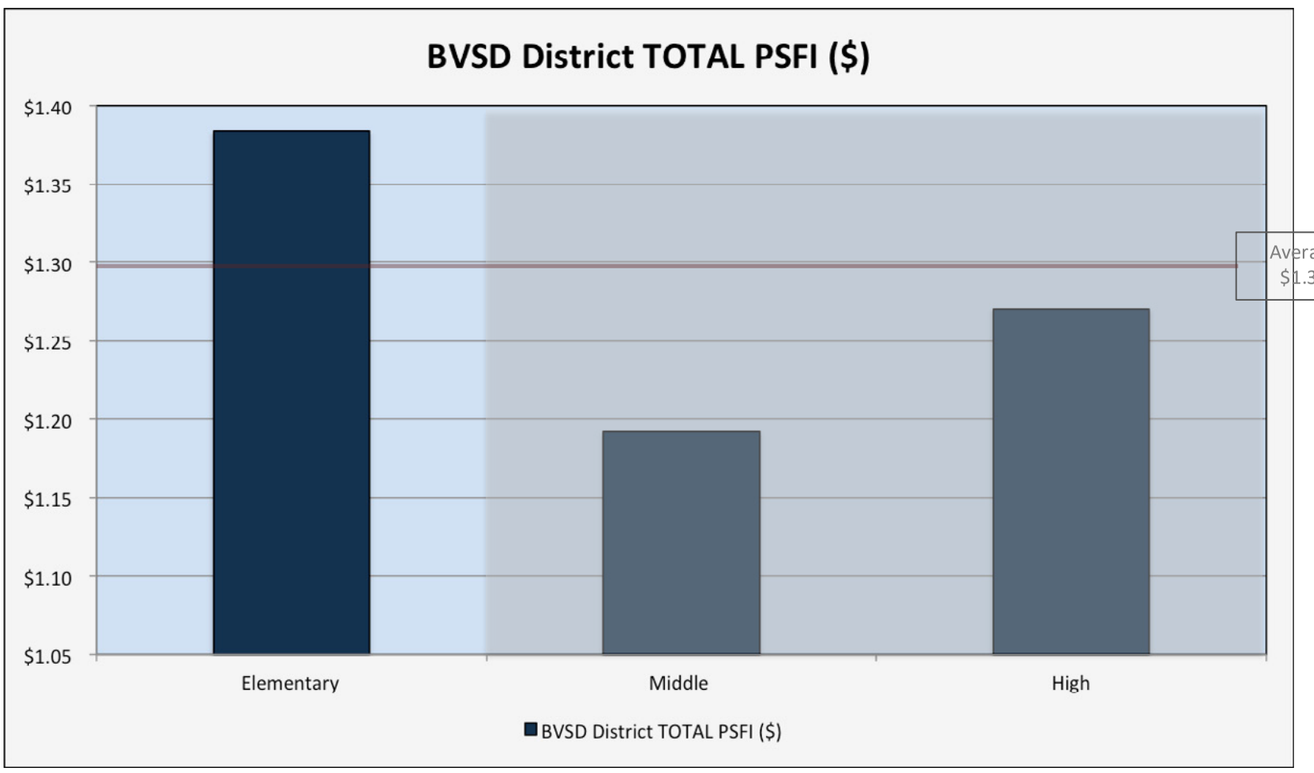
total PSSI – district comparison



BVSD Geographic
Insight Data

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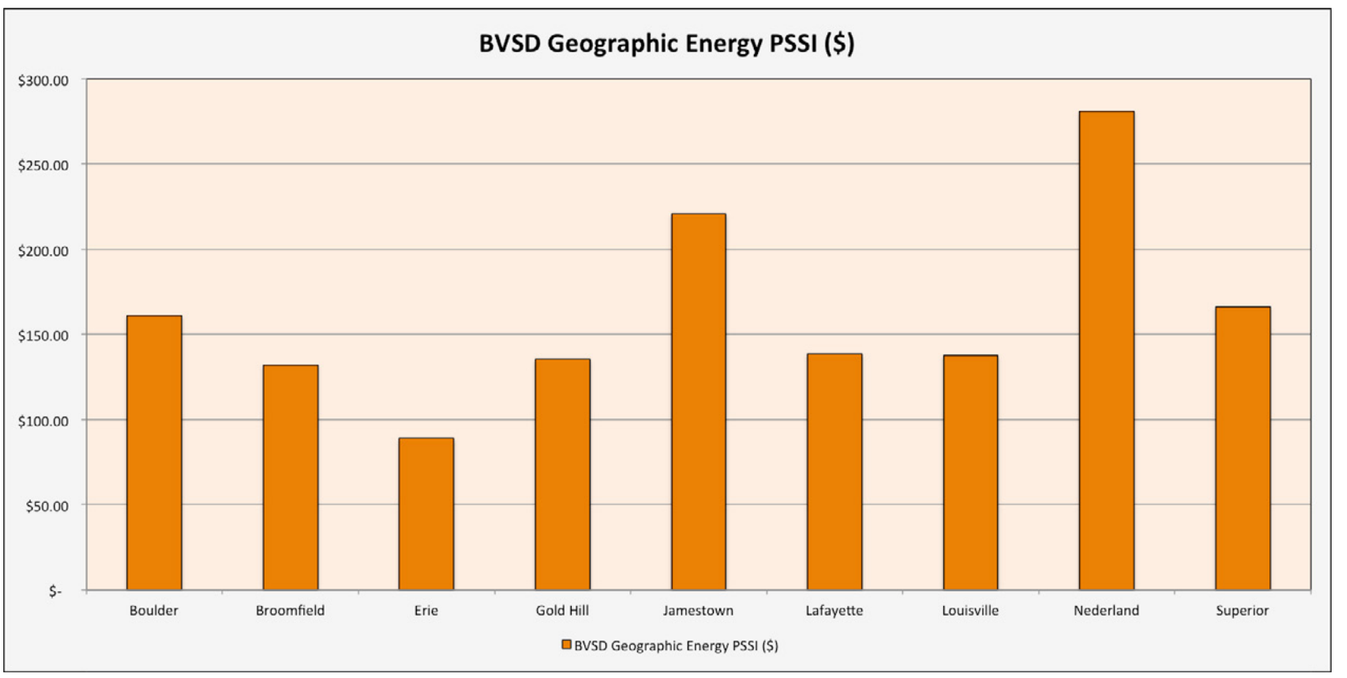
Energy Efficiency
PSSI Results

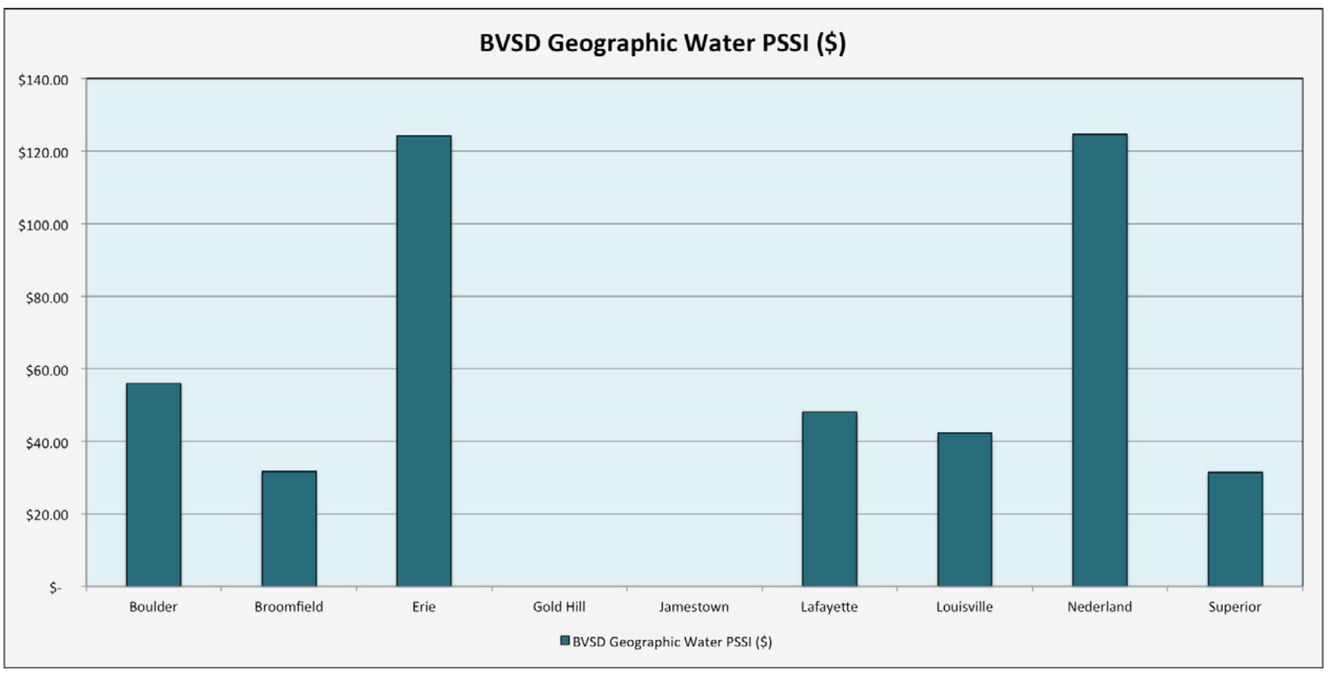
energy efficiency – geographic comparison



Water Conservation
PSSI Results

BENECRAS

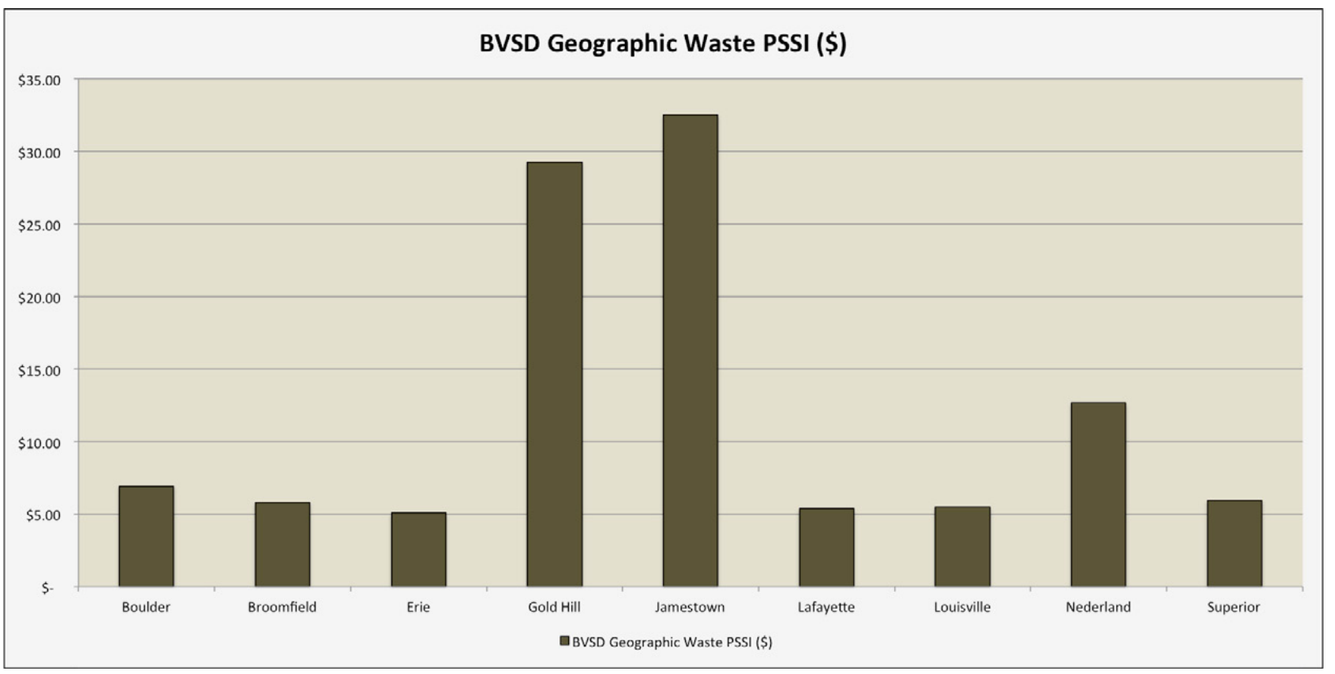
water conservation – geographic comparison



Waste Management
PSSI Results

BENECRAS

waste management – geographic comparison



Overall
Combined PSSI Results

BENECRAS

total overall geographic