



Saint Paul Public Schools

Annual Sustainability Report

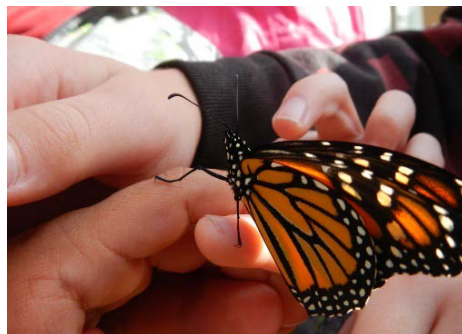
FISCAL YEAR 2017

A School District's Continued Commitment to Sustainability



The Staff and Students at St. Paul Public Schools (SPPS) recognize the personal and collective efficacy of protecting the environment. SPPS pledges its commitment to environmental stewardship by fostering healthy and sustainable schools that positively impact our students' learning experiences and prepares them to be environmentally literate leaders of tomorrow.

Sharing a border with the city of Saint Paul, SPPS is one of the largest school district in Minnesota. This annual report is to share a snapshot of the District's accomplishments, initiatives and projects for Fiscal Year 2017.



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GROWING WITH COMMUNITIES

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DISTRICT AT A GLANCE

37,478 Students

5,727 Staff

68 Schools

4 Support Buildings

7.3 Million Sq. Ft. of Building Space

465 Acres of Land

This report was prepared by the Environmental Services Group (ESG) based in the Facilities Department at SPPS. ESG oversees Waste Management, Energy, Indoor Air Quality, Health & Safety, Playgrounds, Liability & Insurance, and Stormwater for the district.



WASTE DIVERSION

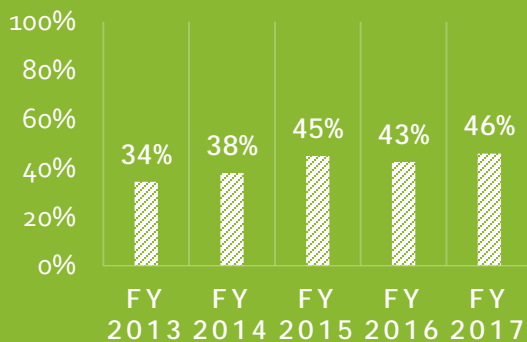
St. Paul Public Schools works to minimize solid waste generation through source reduction, recycling, reuse & composting, in order to divert as much waste as possible from the landfill. This is accomplished through programs such as cafeteria recycling & organics, classroom recycling, E-waste, books, paint, fluorescent bulbs, batteries and metal recycling. The success of the District's recycling program is dependent on all staff & student's enthusiasm, participation and continued support.



Decrease in Overall Waste from FY 2016



WASTE DIVERSION BY FISCAL YEAR



THE FACTS

46% Actual

FY 2017 Diversion Rate

60% Goal

Diversion Rate by 2020

SINGLE SORT RECYCLING

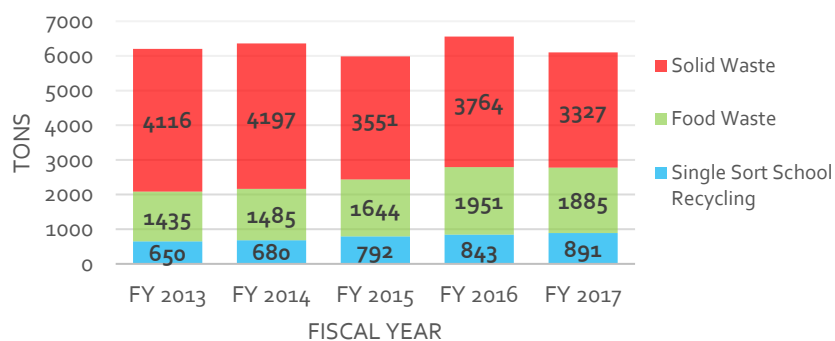
The City of St. Paul participates in a single-sort recycling program in which paper products as well as plastic, metal & glass are collected together to increase the efficiency and accessibility to recycling. This resulted in **891 Tons** being diverted in FY 2017.

FOOD TO HOGS ORGANICS

St. Paul Public Schools participates in an Organics program in which leftover food from the cafeteria is sorted and hauled off for pig feed. This waste is the largest & heaviest so it has the most impact on the diversion rate. **1,885 Tons** was diverted throughout FY 2017.



TONS OF SCHOOL TRASH, FOOD WASTE & RECYCLING



UNIVERSAL WASTE & HAZARDOUS WASTE

St. Paul Public Schools is a Very Small Quantity Generator (VSQG) of hazardous waste. The District manages its waste using an outside contractors licensed for transport, recycling, or disposal. To reduce the stream of hazardous waste, the District continuously strives to reduce the generation of these wastes by choosing alternative, safe & green products.

Universal wastes generated across the District include E-waste, fluorescent bulbs, paint, and mercury containing devices, like batteries. These wastes are picked up and recycled by licensed recyclers.

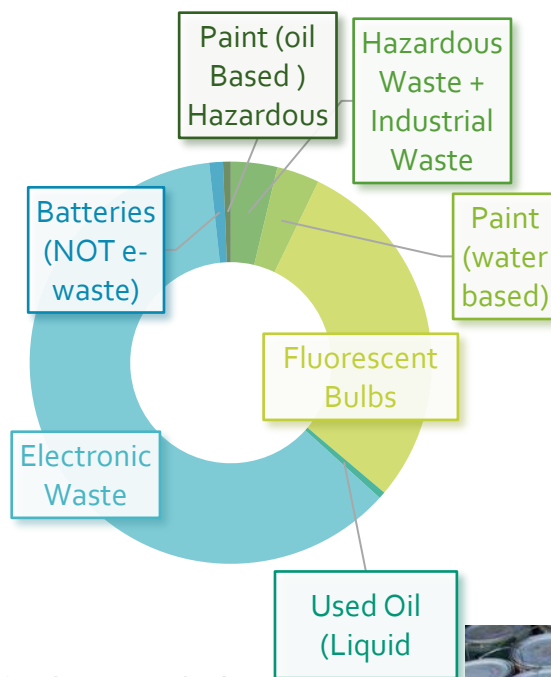
E-WASTE RECYCLING

Electronic waste is generated as the District upgrades to stay current with technology advances. This school year, **27 tons** were collected by SPPS and recycled. E-waste is sent to Dynamic Recycling where glass, plastic & electronic parts are broken into separate components to be repurposed into new products.

98% Universal Waste Recycled

46 Tons of Universal Waste produced in Fiscal Year 2017

UNIVERSAL WASTE BY MATERIALS



The Fiscal Year marked a decrease in amount of hazardous waste produced, from 5.8 tons to **only 1.7 tons!**



OTHER RECYCLED MATERIALS & PROGRAMS

Many Programs have been put in place for items that previously had found their way to the landfill instead of being recycled.

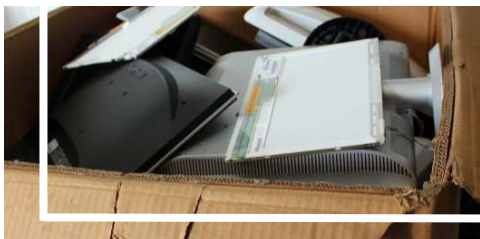
PLAYGROUNDS

It is important to use recycled resources whenever possible, this is why SPPS works with 2 local companies; Flagship & Landscape Structures to build our playgrounds. Our partners work with Global ReLeaf Program of American Forests to purchase trees to offset the CO₂ generated in the manufacturing of their play structures. The estimated carbon footprint of a playground is 19.35 tons of CO₂; 58 trees are planted to offset this.

Of the playgrounds built this school year 35% of materials used were from recycled sources. Of that recycled content 25% was from



Post-Consumer recycled materials. Total recycled content is material recovered or diverted from the landfill. Post-Consumer recycled content are materials generated by households, commercial, industrial or institutional which are at their end use for intended purpose. This is then made into recycled plastic lumber and recycled-core permalene.





COMPOST PROGRAM

Three schools & the District Service Building participated in the "Blue Bags" Compost program. This was introduced for compostable trays, which cannot be put into the "Food-to-Hogs" Organics program. The blue bags go into the regular trash dumpster and are sorted out by the hauler at pick up.



TERRACYCLE

Several elementary schools participate in "Drink Pouch Recycling" & "Foil-lined Wrappers Recycling" through the Terracycle program. These items, which are not accepted in single-sort recycling, are cleaned and melted into hard plastics to make new recycled products.

RICOH PRINTERS The District has switched to a printer system which is tied to employee ID #s. With the quick swipe of staff's badge the printing can be released. This reduces accidental printing & over printing, giving the user more



control over what actually gets printed, reducing the amount of paper waste. This has resulted in a 20% reduction in paper use.

BREAKFAST 2 GO BAGS

SPPS has a breakfast program which includes a quick grab n' go bag that can be brought to the classroom. These "Super-Wave" bags are made by Encore Recycling using the recycled plastic agriculture waste of various growers. The plastic sheeting and drip irrigation lines are washed, shredded into flakes, and made into resin pellets which are then turned into these heavy duty bags.



PLASTIC WRAP RECYCLING

The District collects and recycles its polyethylene stretch wrap & shrink wrap from pallets and case goods through a partnership with Merrick Inc. Merrick is a local nonprofit company that supports adults with developmental disabilities by finding them work opportunities. The plastic wrap is sorted and sent to Trex Company to be recycled into composite lumber for decking.



BOOK RECYCLING

St. Paul Public Schools redirects old curriculum and library books to Books for Africa, a Saint Paul based company that sorts and sends useable books to Africa. Any unused books are then recycled. 27.5 tons were recycled in the 2016-2017 school year!

ON THE HORIZON



COMPOST ORGANICS

During the 2017-2018 School year, SPPS will make the switch to a full compost organics program. This will allow the District to increase the types of waste diverted from the landfill including paper towels, napkins, and compostable trays.



DOWN WITH STYROFOAM

While most schools use reusable trays on a daily basis, sometimes Styrofoam gets used. With the start of the new Compost organics program, the District will only use compostable trays on days when disposable trays are needed.



ENERGY MANAGEMENT

Xcel Energy is the provider of SPPS's utilities. Energy usage is tracked on B3 Benchmarking software. This helps the District identify & recommend building upgrades & retrofits. During the past year, projects were implemented in areas such as lighting, boiler upgrades, & steam trap replacements. This work was largely funded by the District's Revolving Energy Efficiency Fund. (REEF)

SWITCHING TO LED

When current bulbs burn out SPPS plans to switch to LEDs over the current T-8 fluorescent bulbs. During the last school year testing was done to decide on the correct intensity for productivity and comfort, which was defined as a 12w 4k LED bulb. LEDs are rated to have 50,000 hours whereas the current 32w T8 is rated to have 28,000 hours. SPPS has 2,000 lighting hours per year used during open building hours. This would result in a life expectancy jump from 14 years to 25 years! A savings of 20 watts and an estimated 11 years more life per bulb!

At SPPS fluorescent T8's have not performed even close to their rated lighting hours. On average T8's only tend to last 3-5 years so the increase in efficiency is expected to be more than double. This will result in increased money & energy savings, and increased safety for the staff who will spend less time on ladders installing new bulbs.

B3 BENCHMARKING

An online tool for tracking energy usage, A **Baseline** is a site's (school's) comparison to itself over a certain time period. A **Benchmark** predicts how much energy the site would use if it were built to meet today's energy standards. Benchmarks are used to compare actual data versus predicted energy usage data to help identify sites for energy retrofit projects and potential savings.

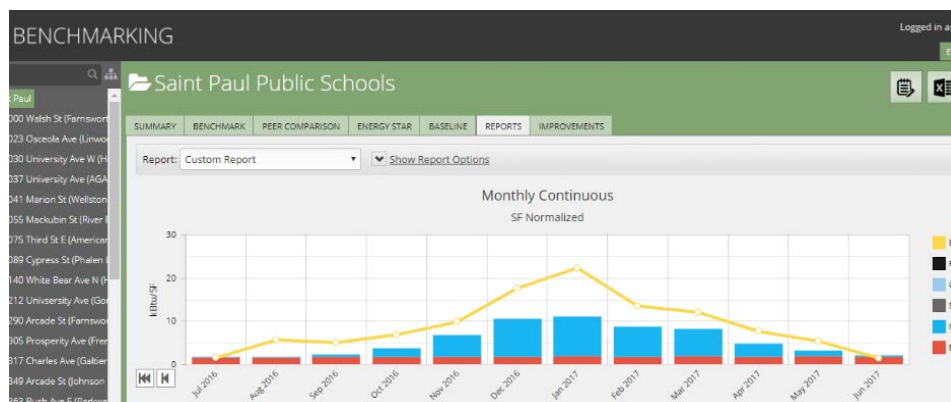
B3 Benchmarking developed a personalized website for SPPS staff, teachers & students to track & view utility data. Check it out at: spps.b3benchmarking.com/Report

REEF: REVOLVING ENERGY EFFICIENCY FUND (REEF)

An internal fund managed by SPPS that carries over from fiscal years to provide capital for projects that reduce operational costs & environmental impact. Energy savings are tracked from previous energy projects and then used to replenish the fund for the next round of energy efficiency investments.

STEAM TRAP REPLACEMENT

More than half of SPPS buildings use steam boilers for heat. For steam to be efficient at heating, it relies heavily on steam traps in the piping to function correctly. These traps separate steam from water after steam condenses and cools. With age these traps begin to fail resulting in energy waste and cold classrooms. During FY2015 the Facilities Department started a program to survey, inspect and repair all steam traps in the district. During FY2017, all of the steam traps at 7 schools were replaced.



DISTRICT ENERGY USE INTENSITY (EUI) ACTUAL DATA

Using the baseline year of 2009 to compare data, the District used 11.1% less actual energy in FY 2017. EUI is measured by energy used per sq. ft. per year. SPPS has over 7 million sq. ft. of building space; therefore EUI is calculated for the District as a whole. To get a more accurate picture of energy use, SPPS accounts for differences in weather between years by weather normalizing the data. This shows if the District is more efficient or warm weather caused the need for less energy.

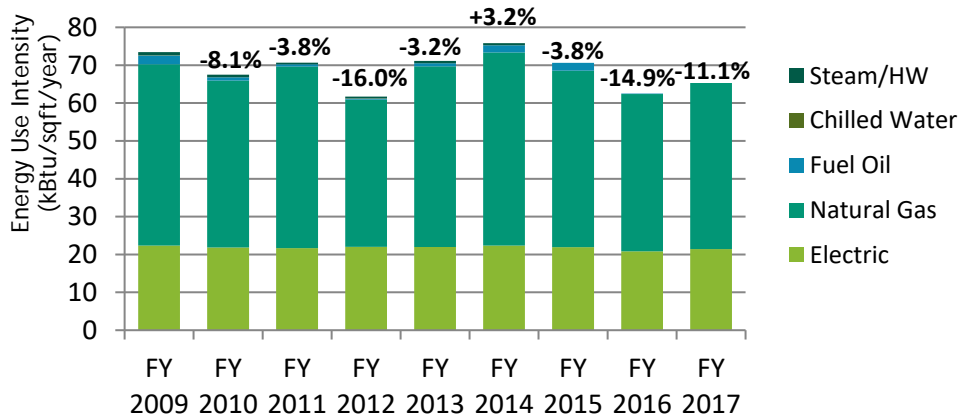
DISTRICT ENERGY USE INTENSITY (EUI) WEATHER NORMALIZED

When looking at the District's energy use normalized for weather, SPPS had a 1.4% increase in energy usage per sq. ft. in FY2017. Although the actual data compared to the baseline was lower, when accounting for a warmer winter, comparatively less energy should have been used. This is the first year in the last five that the District has been over the baseline.

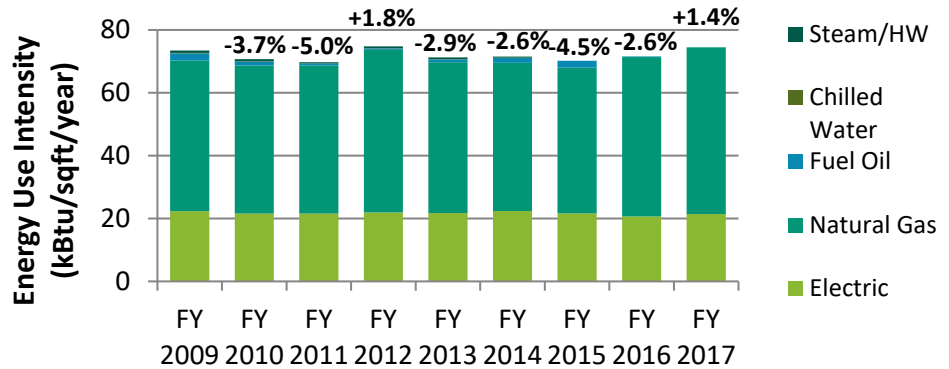
ENERGY REBATES

Xcel Energy, the District's utilities provider, offers rebate opportunities to its natural gas & electricity customers for installing equipment that is expected to save energy. During Fiscal Year 2017, SPPS applied for \$195,256 in rebates. The District is

District Energy Use Intensity- Baseline Year (FY 2009) through FY 2017
ACTUAL USAGE (not weather-normalized)

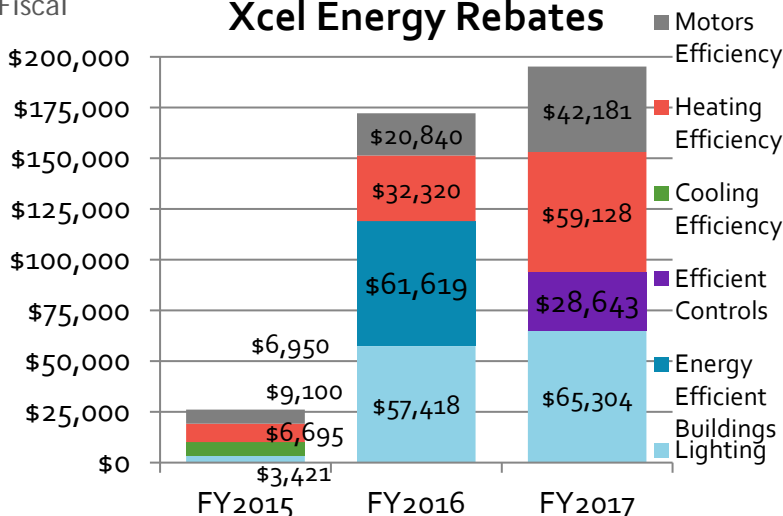


District Energy Use Intensity- Baseline Year (FY 2009) through FY 2017
WEATHER NORMALIZED



eligible for the rebates based on switching appliances and lighting to energy efficient options. This fiscal year SPPS has applied for \$23,059 more in rebates than last year. The largest area of focus for last fiscal year was on lighting.

Xcel Energy Rebates



XCEL ENERGY XCELENCE AWARD

SPPS won Xcel Energy's award in the Commercial Business Natural Gas category, making it the first school district to win the award. This award honors businesses that have made significant strides in energy savings initiatives during the past year. SPPS was recognized for steam trap replacement work and boiler upgrades, which are estimated to save over 273,000 therms in natural gas annually.



WATER CONSERVATION

SPPS recognizes the impact a large school district can have on water resources. The District saves resources by tracking water usage, reducing water waste and managing stormwater. In fiscal year 2017, SPPS installed rain sensors, hydration stations, and several projects for better stormwater management

SPRINKLERS RETROFITTED WITH RAIN SENSORS

Most SPPS high schools have irrigation systems that are on timers. This results in the school sometimes watering unnecessarily. Rain sensors were installed by the Grounds Department staff and connected to the sprinkler valves to sense moisture levels and turn off in mere minutes when it begins to rain. This allows the District to not waste water and personnel's time.



COMO SENIOR'S NEW FIELD

With the installation of a new football field at Como Park Senior High, a new chamber system stormwater feature was added underneath the field due to proximity to the parking lot and being a short walk from Como Lake. This will allow the stormwater to be managed properly and efficiently.

HYDRATION STATIONS

An initiative began with students in 2011 to promote drinking more water and reduce plastic bottle waste by installing hydration stations: a water fountain with a bottle filling station. By the end of FY 2017 every school in the district had a hydration station, and the Environmental Services Group is continuing this work with the intent to install at least two at every school. Hydration Stations are expected to provide 10-20% water savings over a regular water fountain.



In Fiscal Year 2017 Eight Schools have had work rebuilding or installing stormwater maintenance systems.

STORMWATER MANAGEMENT FEATURES

82.6 Acres of paved parking areas & playgrounds
56 Million Gallons estimated annual rainfall
4 Rain gardens
2 Retention ponds
6 Roof drainage systems
5 Underground tanks
2 Filtration basins
10 Chamber systems
1 Drain tile system
3 Pervious pavers & pavement
1 Tree trench





TRANSFORMING CENTRAL

Transforming Central is a community effort to reshape the urban landscape of Central High School in order to improve the students' daily experience, address the environmental impacts of the campus, and connect with the vibrant community that embraces the school. The all-volunteer coalition of parents, students, faculty and neighbors has been working together since 2011 to address some of these issues by creating a more sustainable community green space at Central's front door. This was made possible largely from fundraising as well as significant grants and guidance from the Capitol Region Watershed District and the Minnesota Board of Water and Soil Resources. The construction phase was finished this summer.

IMPROVED LANDSCAPING & STORMWATER MAINTENANCE

The installation of a chamber system, tree trench & permeable pavers will result in **434,000 gallons of runoff each year being filtered** through the ground instead of flowing untreated to the Mississippi River. Additionally, **1,367 pounds of sediment** will no longer erode and **423 pounds of phosphorous** will no longer enter the Mississippi River watershed.

BIKE RACKS Thanks to the leadership of Central's student environmental awareness group: Roots and Shoots, there are now covered bike racks in the unused alcoves in front of the building!

A RAIN GARDEN was installed at the corner of Lexington and Marshall Avenue.

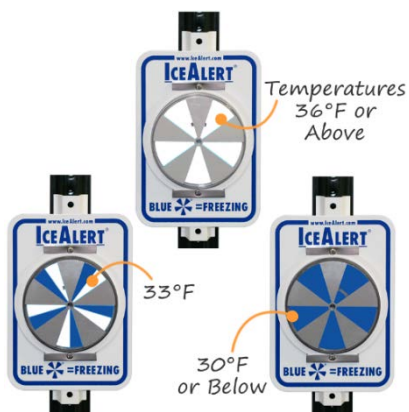
A NEW OUTDOOR CLASSROOM

was constructed as a result of direct input from the teachers. This offers space for both formal and informal gatherings of students.

Two science teachers secured a \$42,000 educator's grant from the Capitol Region Watershed District to purchase curriculum and measurement tools to study the environmental impact of the new stormwater system.

Transforming Central received **The Water Quality and Conservation Sustainable Saint Paul Award** from Mayor Coleman and the Saint Paul City Council Members.





ICE ALERT SIGNS

12 Sites with high incidents of employee injuries due to snow or ice have had ice alert signs placed near the entrance to parking lots as a reminder to be cautious. These signs turn a blue color when ice can be expected due to cold conditions outside.

GREEN CLEANING

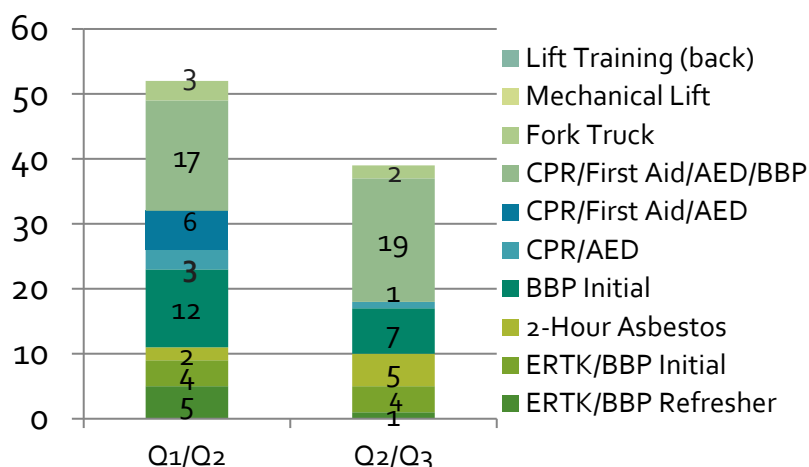
In an effort to ensure high-quality indoor air, the operations Department implemented green cleaning policies and practices. The department uses Green Seal products whenever possible. These products are certified to ensure a safe and healthy work environment for both students and staff. Chemical mix stations in the custodial closets make certain chemicals are mixed at correct, safe levels every time.

CUSTODIAL STAFF

The District has 234 Custodial staff who shovel miles and miles of sidewalk before school starts, pick up tons of trash during the day and they make sure everything is cleaned up and safe for the kids.

The Custodial staff are essential for ensuring the buildings run smoothly every single day.

Health & Safety Training Sessions



HEALTH & SAFETY TRAININGS

Trainings coordinated by the Environmental Services Group (ESG) are paramount to keeping SPPS staff safe. In fiscal year 2017 more than 100 training sessions were provided over a variety of different subject areas. Additional types of training are provided as more is learned about ways to keep staff safer in their everyday work.



PROMOTING HEALTH & SAFETY

St Paul Public Schools prides itself

in providing safe, comfortable

environments inductive to learning.

This includes factors such as indoor

air quality, access to healthy foods

& information on nutrition, and

providing staff trainings & personal

protective equipment to employees.

All of these factors are vital to

keeping SPPS staff & students

happy and healthy.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Safety gear is provided by Environmental Services Group for all trades, custodial, nutrition services & special education staff. The type of equipment provided is largely based on injury reports received or job safety analysis sessions done.



NUTRITION SERVICES SUMMER MEALS

Though kids may not be in class during the summer, Nutrition Services hosts a summer lunch program to ensure students continue to have access to a nutritious meal. This is offered at partner recreation centers, summer school sites and even a food truck!

WALK & BIKE TO SCHOOL

More than 3,000 SPPS students and staff participated in National Walk/Bike to School Day on May 10, 2017. Whether on two wheels or two feet, participants found fun, environmentally-friendly and healthy ways to get to school. One School even participated in a walk to school day in the cold of the winter!

SPPS FOOD PHILOSOPHY

Saint Paul Public Schools students consume **1/2 to 2/3 of their daily calories** from school foods. In order to give students the energy they need to perform academically, it is extremely important that the food offered is both healthy and delicious.



WELLNESS CHAMPIONS

For each District building there is a wellness champion. The wellness champion helps by spreading awareness of wellness opportunities to all staff in their building and encouraging participation in wellness initiatives. For many buildings this is the school nurse.

The District served about 8 million meals last school year, including breakfast, lunch and supper, plus more than a million snacks!

FRESH FRUIT & VEGETABLES PROGRAM (FFVP)

21 schools participate in the FFVP, a federal program that provides a fresh fruit or vegetable snack to qualifying K-8 schools. The goals of FFVP are to provide the youngest students with an extra serving of fruit or vegetables outside regular meals, and to introduce and encourage them to try a variety of fruits and vegetables.

NUTRITION SERVICES TASTE TESTING

Nutrition Services, with support from Kowalski's Markets, held kale salad taste testing at Adams Spanish Immersion, American Indian Magnet and Phalen Lake Hmong Studies Magnet. Taste testing included food and nutrition education where students got the chance to be introduced to new foods.



GROWING WITH COMMUNITIES

The District is built on the people: staff, students, parents and community members. This is what defines the District. A large part is connecting with communities throughout the school district. This connection is formed by giving back to the community through community builds, volunteering, gardens, & community partnerships.



HIGHWOOD HILLS PLAYGROUND
Highwood Hills Elementary received a new playground thanks to the efforts of SPPS, community members, KaBOOM & Delta Airlines. Community members helped with everything from input on designing the playground to mixing and pouring concrete.

URBAN BOAT BUILDERS
Parkway Montessori celebrates their partnership by taking a ride with the boats & paddles they crafted in class.



PLANTING AT THE CAPITOL
Chelsea Heights students take a break from the classroom and lend their time planting & beautifying the capitol.

NEW PARK BEHIND GORDON PARKS HIGH SCHOOL
Students organized a community gathering which saw hundreds of community members turn out to help decide the future of the 5-acre park behind Gordon Parks School. The event had dozens of booths representing community groups, food, and performances by SPPS students. The idea for the park began when students recognized the need for green space around their school. This site will benefit SPPS and the surrounding community.

MURRAY MIDDLE GARDEN
Finding their garden produced more than was needed, the school formed a partnership with a local food shelf. As a result, 30 pounds of extra produce was donated in one harvest!



YOUTH FARM PARTNERSHIP
SPPS has a partnership with the non-profit Youth Farm at three schools, and more on the horizon. This is a program based around leadership, learning how to grow food & manage a garden. Cherokee Heights even has a greenhouse for year-round growing!



CROSSROADS AQUAPONICS LAB
In a partnership with Spark-Y, Crossroads Elementary has an aquaponics lab. This is a closed loop system with 3 components: fish, bacteria & plants, where students observe and learn the connectedness of all parts of the system.



CONNECTING WITH NATURE



NATURE'S PLAYGROUND FOR ST PAUL PUBLIC SCHOOLS

Belwin Outdoor Science in Afton, MN has 225+ acres dedicated to land preservation and education for SPPS students. Belwin manages the land, while SPPS designs and manages the curriculum. Belwin Outdoor Science is integrated into the SPPS science curriculum and lessons are closely aligned to Minnesota state science standards. More than 10,000 students visit the site each school year in all types of weather. Students get a chance to connect with nature and spend a day outdoors exploring the natural world.

In 1971 the very first SPPS students arrived at Belwin from Roosevelt Elementary on St. Paul's west side. In 1970, Charlie and Lucy Winton Bell began working with the St. Paul Public Schools District to formally establish the Belwin Outdoor Education Laboratory with a cooperative agreement signed by both parties that year. In the agreement, the Bells agreed to provide and maintain the land and facilities. For its part, SPPS would be responsible for providing personnel, transportation of the students and instructional materials. No money has ever changed hands with this agreement. Every 5th and 2nd Grade student in the district spends a whole day in the oak savanna, woodlands, tallgrass prairie, wetlands or studying the water ecosystems.



OUTDOOR LEARNING SPACES

Many schools have outdoor learning spaces, and schools without have plans in the future to continue adding these types of spaces giving students a chance to learn in varying environments.



EARTH DAY ACTIVITIES

Many schools participate in Earth Day activities. At LEAP High School this means focusing on “global goals” for the year 2030. This included a trash clean up on Earth Day & a project for Nigeria where students raise funds for a Nigerian’s school to have access to clean water & sanitation. Global citizenship involves taking care of the earth.



TROUT IN THE CLASSROOM

Several schools have participated in this program partnered with MN Trout Unlimited and the MN DNR to raise and study trout while the fish grow. Students learn how to sample water chemistry and temperature, and learn about fish biology. In spring, after the DNR certifies they are disease free, students release the trout in the Vermillion River.



KIDS WIND CHALLENGE

In May 2017 students from Two SPPS Schools; Washington Tech & Farnsworth Aerospace Magnet competed in The Kid Wind Challenge. These teams travelled to Anaheim, CA after qualifying from the state challenge. The teams worked to design and, construct small wind turbines to explore and learn about wind energy



BUTTERFLY RELEASE

Chelsea Heights kindergarteners watch butterflies grow observing their full life cycle. At the end of the cycle the Painted Lady butterflies are released backed into nature.

SPPS SUSTAINABILITY RESOURCES



HOW TO CHECK SCHOOL WASTE DATA

Information is available on the SPPS sustainability website about accessing Green Halo, the waste and recycling data tracking system. You can see information by school about monthly trash, recycling & organics. Visit the site directly by visiting spps.wastetracking.com



HOW TO CHECK ENERGY & WATER DATA

Monthly and annual data about water usage and energy usage for each school is available from B3 Benchmarking, the District energy and water use data tracking system. Visit the site directly at <http://spps.b3benchmarking.com/Report>

The Environmental Service Group (ESG) keeps information on the Saint Paul Schools Sustainability Page about efforts and programs across the district.

Visit the District Sustainability website at: www.spps.org/sustainability

If your school has a garden, is experimenting with energy conservation, reducing waste, or learning about sustainability, please let us know. Send an email to

ESG@SPPS.ORG