Fiscal Year 2019

Sustainability Highlights

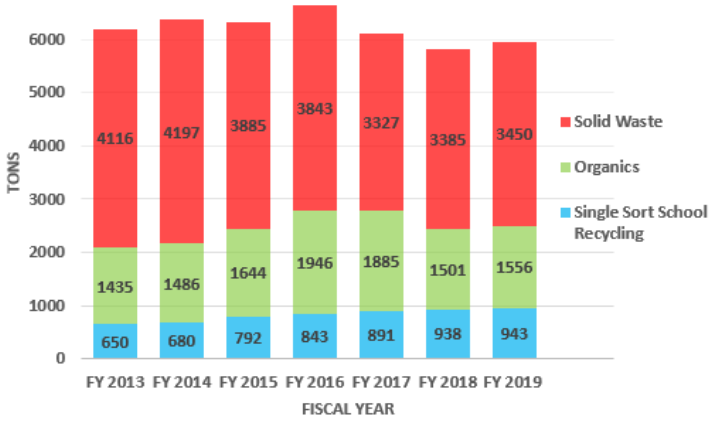
Saint Paul Public Schools works to minimize our environmental impact. Here's a look into some of the sustainability happenings around the District over the last year.

WASTE, RECYCLING, ORGANICS

SPPS continued to participate in the compost organics program in our school cafeterias for the 2018-2019 school year. Beyond the classroom and cafeteria we participate in recycling Electronic waste, paint, scrap metal, fluorescent bulbs, batteries, toner, and donate or recycle all old library or textbooks.

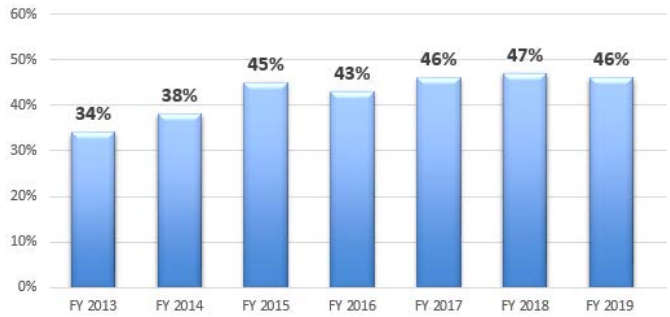
In Fiscal year 2019, Saint Paul Public Schools succeeded in capturing more organics and single sort recycling compared to last fiscal year, but there was also an increase in trash which resulted in an overall increase in total waste.

SCHOOL WASTE, ORGANICS, RECYCLING TOTALS



Districtwide diversion has hovered at 46-47% for the last several years. As a district we appear to be leveling off in making strides in more waste diverted with our current collection system and need to begin looking at reducing waste not just managing waste.

DISTRICTWIDE WASTE DIVERSION BY FISCAL YEAR



Percent of Total District waste either recycled or composted

When analyzing waste it is important to look at both upstream variables such as purchasing and packaging received from vendors and downstream of managing discards into compost, recycling and trash. This fiscal year there has been interest by some schools in targeting or eliminating upstream waste.

A few schools have worked to find solutions to some of the waste being created by purchasing choices and have begun targeting Breakfast to go (B2Go) waste. Jie Ming Chinese Immersion was moved from its shared space at Hamline Elementary to its own building in the Highland Park neighborhood (in the former Homecroft building). Jie Ming wants to instill a zero-waste culture in their school. In a largely parent/PTA driven effort, staff worked with Facilities to develop a B2Go collection program for their new school.

Breakfast sorting station at Jie Ming Elementary

Four bin sorting stations for waste are set up in main hallways for students to sort their breakfast waste into liquids, recycling, organics and trash. Parents help with monitoring the stations and taking care of the milk/liquids bucket. Other non-traditional items are also collected such as wrappers that are sent to terracycle and plastics bags are sent to trex, resulting in money back to the school for working on these specialty recycling programs.

As Jie Ming is working towards zero waste, paper towels are also being collected in the bathroom and composted. This is a true schoolwide effort, which highlights the support that is needed to start to manage breakfast to go discards.


Several schools have also looked for a solution to the plastic bags used by students to carry their breakfasts to their classrooms each morning including Cherokee Heights and Highland Elementary. The Minnesota Department of Health previously recommended having a newly washed reusable bag for breakfast each meal, but has now changed recommendations to be more sustainable, now only requiring the bags washed when they appear soiled. The art teacher at Highland, Seth sewed color coded bags for every classroom at his school. He then helped the teachers develop a system for the bags.

Breakfast to Go (B2Go) Waste Study

Breakfast to Go (B2Go) is how most students start their school day, and SPPS Nutrition Services serves almost 21,000 B2Go breakfasts a day. B2Go meal service allows students to select breakfast foods they carry away in a bag and eat it in the classroom while teachers take attendance, collect homework, read, or complete administrative tasks.

The most important goal is to have breakfast offered and available to all students. Having breakfast in the cafeteria limits breakfast access to the amount of students that can fit in the school cafeteria. There is also a minimal amount of time in the mornings to serve breakfast.


Photo Credit: John Mbanda

The challenge with B2Go meal service is managing the waste that is generated in classrooms spread throughout entire school buildings. While SPPS currently operates recycling and compost collection systems in all schools, students are not currently separating their B2Go recyclables and organics from the waste stream at most schools, and B2Go student discards are managed as trash.

In response to a growing concern within the Saint Paul community about the amount of B2Go student waste being thrown in the trash and efforts made by select schools, SPPS Nutrition Services and Facilities Department partnered with the consulting firm, EcoConsilium, to form a Project Team. This team set out to develop a three-year Environmentally Preferable Purchasing Plan to redesign, reduce and reuse inbound and outbound food packaging materials; and a best management practices reuse, recycling and compost program for the Nutrition Center and schools to manage downstream materials after B2Go meal events.

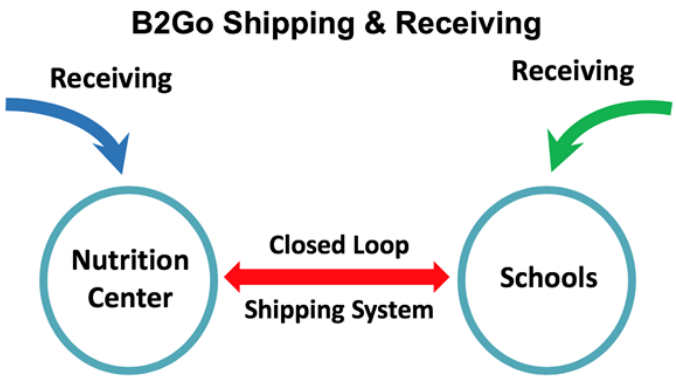
To guide developing an environmentally preferable purchasing plan that eventually leads to waste being separated and diverted from the waste stream, four outcomes were identified:

B2Go Waste Study Outcomes

1) Identify opportunities to reduce and reuse before recycling and composting
2) Identify products or supplies that have excessive or unnecessary packaging
3) Explore opportunities to design out or eliminate waste from vendors
4) Identify opportunities to optimize the use of existing recycling and compost collection systems in schools to manage B2Go student waste.

Looking through the lens of these four outcomes, several initial steps were taken to collect data over one year to establish a baseline to quantify the financial and environmental benefits of ongoing reduction, reuse, recycling and composting efforts.

This began with documenting all USDA commodities, commercial products and supplies purchased from vendors and suppliers for the B2Go Program. Next was to document step-by-step logistics of receiving and moving USDA commodities, commercial products and supplies throughout the SPPS district-wide B2Go Program supply chain and identify the sources and types of waste generated at each step. This was done in order to identify all sources and types of discards and where opportunities exist for improvement.



After documenting every discard, from every menu item in the B2Go program, 600 Tons of waste was estimated to come from the Breakfast program every year.

600 tons of total B2Go waste:

- 334 Tons packaging/supplies Discards
- 126 Tons Food Waste
- 140 Tons Milk Waste

It is clear that packaging makes up over half of breakfast discards. Facilities and Nutrition Services are using this baseline data to create purchasing goals for upstream strategies to reduce waste reduction before students consume B2Go meals and downstream strategies to capture recyclables

and organics for compost after students consume B2Go meals.

ENERGY

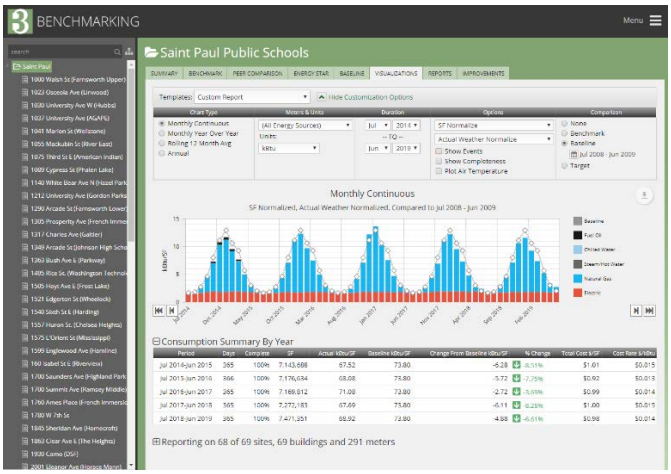
Saint Paul Public Schools (SPPS) is committed to minimizing our environmental impact and saving money through energy efficiency projects and practices. The Facilities Department employs cost-effective, proven best practices to ensure that energy projects are successful and the savings persist. The Facilities Department has traditionally reduced energy use by improving efficiency. We achieve this by replacing failed or failing HVAC equipment, using more efficient technologies, and by optimizing controls:

Four years ago the district realized that the high failure rate of steam traps located in over half of the schools at SPPS needed to be addressed. An in-house pipefitting crew was formed to replace all steam traps in schools with especially high natural gas use and a high incidence of trap failures. This work has proven to be a cost effective way to save energy and prolong equipment service life. The program was expanded to include the replacement of faulty thermostats and control valves, which also directly affect the efficiency and functionality of a heating system. In the last year and a half the steam traps, thermostats, and valves in 4 buildings were replaced.

Replacing inefficient lighting with LED lighting has also been a high priority for SPPS. In 2018/19, SPPS began the process of systematically replacing 4-foot T8 fluorescent lamps with LED lamps. LED plug-n-play lamps were installed in every classroom, office, and hallway of 7 schools. Not only did this lead to energy savings, but also reduced maintenance costs and improved lighting levels. SPPS will continue to convert a few buildings each year from T8 to LED lighting. Also in 2018/19, the exterior lighting at 11 schools was replaced with LED lighting and 4 interior LED lighting projects were completed, including a pool lighting retrofit, a rec center lighting retrofit, and a gymnasium lighting retrofit.

When our buildings undergo major construction projects, such as a renovation or addition, we leverage Xcel Energy's Energy Design Assistance and Energy Efficient Buildings programs. In 2019, 2 schools were enrolled in the EDA process and 2 schools were enrolled in the EEB process. These projects are a great opportunity to not only improve the learning and working environment in our schools but also improve comfort, indoor air quality, and energy efficiency.

When implementing an energy efficiency project, we track the energy use before and after using the B3 Benchmarking website. Benchmarking allows us to target buildings that would benefit from energy efficiency upgrades and also see how the building performs after the upgrade.



In 2018, SPPS participated in the City of Saint Paul's Race to Reduce initiative. The City of St Paul is encouraging large commercial, multifamily, and public buildings to benchmark their energy usage and implement energy efficiency strategies. All 70 SPPS buildings were enrolled and benchmarked in this voluntary program in 2018.

SPPS has also begun to upgrade our Building Automation System (BAS) across the district, allowing for the implementation of far more sophisticated control strategies such as outside air resets, improved scheduling, and automatic electric load shedding. Over half of our buildings have the new BAS installed, 10 of which were completed in the last year and a half.

An example of a successful energy project is at Groveland Park Elementary, we replaced all of the 4' linear fluorescent lamps with LED lamps

throughout the school and additionally upgraded the automation system. This resulted in a reduction of 10,800 kWh, or a 6.6%, decrease in electricity consumption since the work was completed.

Also, at Harding Senior, a new burner was installed on one of the boilers which improved the boiler controls. This was paid for by the District Revolving Energy Efficiency Fund (REEF). Since the work was completed, we've saved 15,800 therms of natural gas or $8,400 annually.

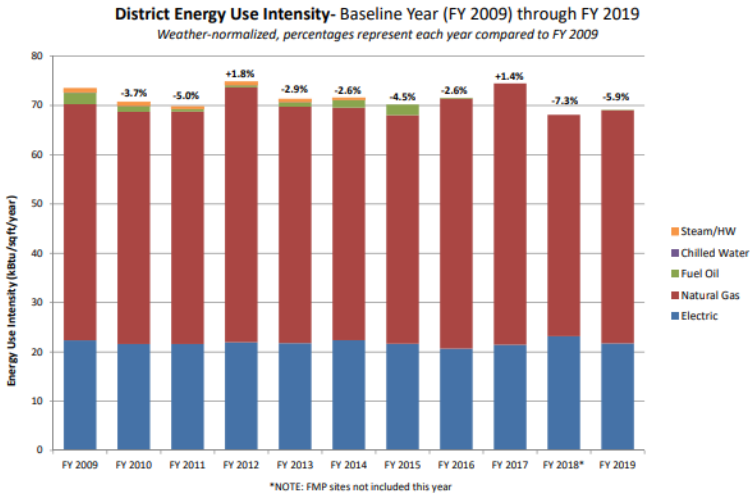
SPPS will continue to implement common sense strategies because we've experienced many benefits beyond energy savings. These efforts enhance the learning environment, improve equipment reliability, reduce maintenance costs, improve safety, and prolong equipment service life.

Energy Rebates

This Fiscal Year SPPS hit the 2 Million dollar mark for rebates received from XCEL Energy for building retrofits. In Fiscal Year 2019, $281,223 in rebates have been applied for.

SPPS has received the Xcel Energy Recognition of Excellence Award for the third year in a row!

Saint Paul Public Schools uses 5.9% less energy than Fiscal 2009 when we began tracking District energy use. Energy use is calculated based off of weather normalization. This is important especially in a state like Minnesota where one winter to the next can be extremely different. We need to make year to year data comparable otherwise we would only be comparing weather between years. This past year we had several "polar vortex" days resulting in boilers running overtime, whereas some winters were mild and less heating was needed.



STORMWATER

Brand new installed rain garden at LEAP High School

LEAP High School Rain Garden

LEAP High School installed a new rain garden in the school's courtyard to address ongoing drainage issues. Prior to the rain garden, rain water would sit against the building and flood the gym, slowly ruining the gym flooring. In collaboration with Ramsey County Water and Soil and SPPS Environmental Services, LEAP High School received a grant to install a rain garden that included the necessary drainage features to prevent further flooding.

In addition, the garden includes an outdoor space where classes can meet and learn about native plants, pollinators, rain gardens, and storm water sustainability. While the plants are young and small now, they will grow into a beautiful space to be used by the school and enjoyed by the community.

LEAP high school's overgrown courtyard garden before installation of rain garden

PROMOTING HEALTHY EATING

Grow our Own

"Grow Our Own" is a project that aims to increase the food & agriculture educational opportunities for all students within the District by connecting school gardens, the cafeteria, and the classroom. This project is a collaboration of SPPS-Nutrition Services and Youth Farm to put food and agriculture education at the forefront of the student experience making it available to every student by supporting school garden development and curriculum integration. Multiple SPPS departments, including Facilities, Wellness, and Office of Teaching and Learning, are involved, and partnership is growing with the addition of Renewing the Countryside.

This is an innovative project that will unlock the potential of school gardens as a tool for health education, social-emotional learning, and community connections.

This connects well in 3 SPPS Strategic focus areas: Family and community engagement, Positive school and district culture and College and Career Paths

The goals of this project are:

1. Increase understanding of food production and nutrition among youth, teachers, and families through agricultural education, classroom lessons, and school meals.
2. Increase community understanding of food production, purchasing and preparation through nutrition education and engagement in the garden project to support community health and self-reliance.
3. Increase access to diverse, fresh food options in order to support healthy communities.
4. Create a scalable and replicable partnership model for supporting school communities in food skills, nutrition, youth development, and agricultural education.

The District provides curriculum, professional development opportunities and technical assistance for schools. Partners (Youth Farm and Renewing the Countryside) provide engagement activities and community connections, increasing healthy food access, and educational opportunities.

Grow Our Own began a partnership with 2 SPPS schools, Jackson elementary and Global Arts Plus+ Lower (formerly Linwood-Monroe Arts Lower) targeting a one grade team at each. At Jackson elementary fourth graders have raised beds that were revamped and planted to have items that could be served in the cafeteria, while also focusing on vegetables that are familiar to Hmong students and families. Global Arts Plus+ just finished major renovation of their school so their previously existing garden was removed. To kick off the program, 2 temporary stock tank gardens were installed for the first graders. OTL's Health specialist has developed k-5 garden based health curriculum that is now available for all schools on Schoology for interested teachers.

SPPS School Garden Harvesting guidelines

School garden programs provide a unique opportunity for students to grow fresh vegetables, eat healthy food, and share their harvest with the rest of their school district by donating or selling it to the school cafeteria. When students play an active role in growing fresh produce that is served to their peers, it gives them a sense of accomplishment and pride.

In harvesting for other people, staff need to implement food safety protocols for their school garden in order to avoid making other people sick. These protocols are best practice for care and safety of people who work with or benefit from the garden. They are adapted from federal and state guidelines for Good Agricultural Practices (GAP) and Good Handling Practices (GHP).

The garden to cafeteria protocol was successfully piloted at Murray Middle and Bruce Vento elementary this school year with many more schools interested to get their produce into their school's cafeteria.

Murray middle school and Como Park senior partnered to create some tasty creations. Mr. Chase's environmental inquiry class grew and harvested veggies from the Murray school garden and Ms. Gbolo's class at Como used the veggies in their culinary lab.

STUDENT STUDYING OUR ENVIRONMENT

Tulip Test Gardens

Many Saint Paul Public Schools planted Red Emperor tulip bulbs in Journey North Test Gardens to monitor seasonal change in a scientific way. In the spring, when plants emerge and bloom, student gardeners reported their observations and data. Students learn about the relationship between climate, geography, and the arrival of spring. To read more about the project. Visit: www.Journeynorth.org

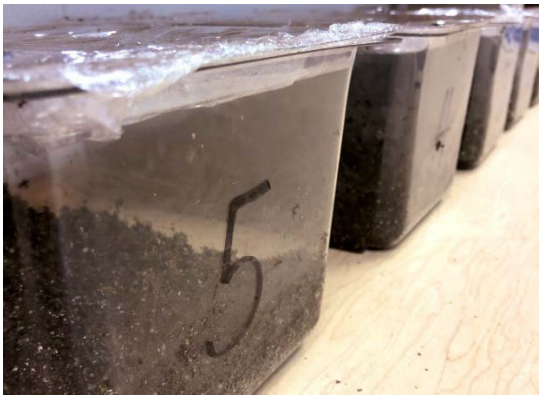
Citizen Scientists

Technology is helping engage students with their environment. New citizen science apps like eBird and iNaturalist allow users to interact with nature while contributing to science.

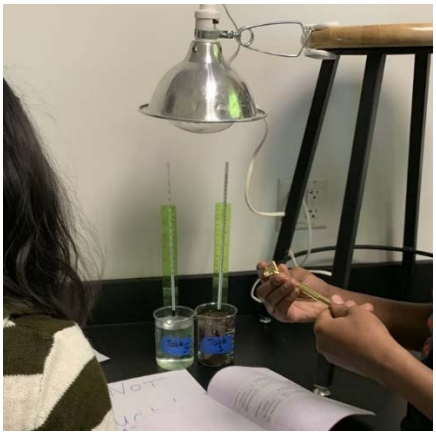
Citizen science is when the general public aids in collecting data from their surroundings for scientific analysis, usually through a research project with professional scientists. Projects range from migration patterns of monarch butterflies to identifying plant species for phenology research. There are also apps that track rainfall and snowfall events. This gets students interested in science, playing an important part in research, and helps teachers to change up routine curriculum.

The process works like this: A student spots something, such as a bird, they snap a picture of it. But exactly what kind of bird is it? They can upload that image to an app that identifies the image, geotags the photo and uploads it to a larger database. This database is then used by scientists for research.

One of the goals of citizen science apps is to get students more involved in the educational process by turning the outdoors into an interactive learning environment.



How does road salt affect the growth of seeds in a terrarium? Wellstone scientists try to find out! They used snow from the side of the road to help create the experimental conditions in half of the containers.



Global Arts Plus+ student's research how land and water heat differently, learning about heat capacity, climate and weather.