The ZERO² PLAN

Progress Report #4 on Zero Hunger & Zero Waste Solutions

New Initiatives & Opportunities
September 2023 through August 2024

Prepared in Partnership With

The ZERO² PLAN

Progress Report #4 on Zero Hunger & Zero Waste Solutions

Project Contacts

For more information about The Zero² Plan, contact:

<table>
<tr><td rowspan="2">Saint Paul
Public Schools</td><td>Saint Paul Public Schools
Nutrition Services</td><td>Saint Paul Public Schools
Facilities Department</td></tr>
<tr><td>Stacy Koppen, MS, RD, LD
Director of Nutrition Services
1930 Como Avenue
Saint Paul, MN 55108
651-603-4945
stacy.koppen@spps.org</td><td>Chelsea Moody
Environmental Specialist
1930 Como Avenue
Saint Paul, MN 55108
651-744-4086
chelsea.moody@spps.org</td></tr>
<tr><td colspan="2">EcoConsilium™
FISCALLY SMART. SUSTAINABLE SOLUTIONS.</td><td>Jodi Taitt, MS
Founder / TRUE Zero Waste Advisor
8457 Meadow Lake Road North
Minneapolis, MN 55428
763-504-2445
jodi@ecoconsilium.com</td></tr>
</table>

The ZERO^2 PLAN

Progress Report #4 on Zero Hunger & Zero Waste Solutions

New Initiatives & Opportunities
September 2023 through August 2024

Table of Contents

I. ZERO^2 PLAN HISTORY

Zero^2 Plan Adopted October 2019

In October 2019, SPPS Nutrition Services (NS) adopted The Zero^2 Plan in partnership with the Facilities Department. The goal of this ten-year project is to operate federally funded meal programs in a manner that embraces zero hunger and zero waste solutions.

The original Zero^2 Plan established a set of Phase 1 Goals organized into three categories:

- NS Environmentally Preferable Purchasing Guidelines (EPP Guidelines)
- NS Environmentally Preferable Purchasing Goals (EPP Goals)
- Reuse, Recycling, and Compost Collection for the NC and Schools

These goals establish a financially and environmentally sustainable foundation for future project phases designed to end hunger and reduce waste for SPPS students and the Saint Paul community at large.

Progress Reporting

NS and Facilities Department have published three progress reports:

- Progress Report #1 on Phase 1 Goals: Zero Hunger & Zero Waste Solutions During a Pandemic (September 2019 through August 2021)

- Progress Report #2 on Phase 2 Goals: Zero Hunger & Zero Waste Solutions Back to School During a Pandemic (September 2021 through August 2022)

- Progress Report #3 on Phase 3 Goals: Zero Hunger & Zero Waste Solutions The Post-Pandemic School Paradigm (September 2022 through August 2023)

Each year the team documented goals achieved, objectives delayed, and unexpected accomplishments. The purpose of Progress Report #4 is to summarize NS and Facilities Department outcomes for Phase 4 Goals.

Phase 4 Goals: September 2023 to August 2024

Phase 4 Goals are grouped into three main categories: EPP Guidelines; EPP Goals; and Reuse, Recycling and Compost Collection for the NC and Schools.

NS Environmentally Preferable Purchasing Guidelines (EPP Guidelines)

1. Collaborate with vendors to establish meaningful vendor commitments that support the Zero^2 Plan.

2. Collaborate with vendors to establish an annual plan to decrease waste, and measure vendor performance with the new annual scorecard that will be shared with vendors as part of regular communication and partnership.
3. Utilize new RFP language to establish new meaningful vendor commitments that support the Zero^2 Plan.
4. NS and vendors may shift during the contract period to new environmentally preferable products when such products are readily available at a competitive cost, satisfy performance requirements, and adhere to the contract terms.
5. Utilize the new monitoring and tracking system tool to validate vendor compliance with these guidelines, which will include an annual scorecard for vendors.
6. Update multi-year goals and implementation schedule based on priorities, difficulty, and upcoming Requests for Proposals.
7. Report achievements under EPP Guidelines annually.

NS Environmentally Preferable Purchasing Goals (EPP Goals)

1. Find suitable containers that will allow the NC to transition from cardboard boxes to a reusable packaging system.
2. Develop a new breakfast container program for schools that will result in the least amount of waste generated and discarded as trash (by allowing schools to select plastic, compostable or reusable containers based on their school's breakfast waste management).
3. Complete a baseline for supply chain discards in the lunch program.
4. Update multi-year goals and implementation schedule based on the baseline for supply chain discards in the lunch program and other findings.
5. Find suitable containers that will allow NS to eliminate one-way transport packaging for produce and expand the use of reusable containers for other food products when possible.

Reuse, Recycling, and Compost Collection for the NC and Schools

1. Maintain daily use of the food rescue program in schools and the NC and collaborate with Second Harvest to identify solutions that address transportation and staffing barriers.
2. Monitor disposable trays and cutlery use during meal service at schools.
3. Launch best management system for trash, recycling, and organics collection at EOS.
4. Create additional training content for NS supervisors and NSAs.
5. Re-launch a best management system for trash, recycling, and organics collection in school cafeterias.
6. Pilot a centralized collection system for trash, recycling and organics in office and administrative buildings.
7. Pilot a centralized collection system for trash, recycling and organics to capture B2Go waste.
8. Work with Purchasing Department to establish a methodology to add private and charter schools to the hauler contract for trash, recycling, and organics services.

II. NEW INITIATIVES & OPPORTUNITIES

District-Wide Sustainability

Over the last four years, SPPS established new committees and groups to advance district-wide sustainability efforts.

SPPS Board of Education Sustainability Advisory Committee

In July 2024, the Board of Education adopted a resolution to establish a Sustainability Advisory Committee. The purpose of this committee is to advance district-wide sustainability efforts and is made up of a broad range of stakeholders, including high school students, educators, administrators, operational staff, and community members and partners.

Rooted in years of collaboration across multiple groups advocating for sustainability, this committee is a significant milestone in the school district's ongoing commitment to climate action and environmental stewardship and will be a culmination of district-wide sustainability efforts including:

- SPPS Energy Action Team
- SPPS Climate Action Network
- SPFE Climate Action Group

The Sustainability Advisory Committee creates a new structure for planning, cross district engagement, and accountability by defining its mission, establishing goals, and meeting quarterly to ensure transparency, accountability, and continued progress toward climate resilience.

SPPS Energy Action Team

In 2020, SPPS adopted an Energy Action Plan, which established a comprehensive framework for energy conservation, operational efficiency, and education across facilities, operations, and the broader SPPS community. A key strategy within the Plan identified the need to align energy and sustainability efforts with senior leadership and the Board of Education. Recognizing that sustainability extends beyond energy and encompasses environmental, social, and economic factors; the Energy Action Team recommended the formation of a Sustainability Advisory Taskforce to advise the School Board and senior leadership. Sustainability requires intentional, long-term planning and structured coordination with active engagement from diverse stakeholders. The Taskforce would enable the school district to build upon the success of energy initiatives while broadening its impact across all areas of sustainability.

SPPS Climate Action Network

In September 2023, a collaborative working group was formed consisting of union members of the Saint Paul Federation of Educators (SPFE) and SPPS Facilities staff. This group, now known as the SPPS Climate Action Network (SPPS CAN), meets monthly to collaborate on sustainability and climate action efforts across the school district. SPPS CAN serves as a convening body for passionate staff, to share resources, highlight best practices, and foster student leadership in climate initiatives. Since its formation, the group has grown to include representatives from additional departments such as Nutrition Services and Transportation, further strengthening cross-departmental collaboration on sustainability. The Network collaborates on supporting implementation of the Energy Action Plan and the Zero^2 Plan; promotes climate literacy and outdoor education; and facilitates knowledge-sharing among colleagues.

Saint Paul Federation of Educators Climate Action Group

In 2020, the Saint Paul Federation of Educators formed the SPFE Climate Action Group dedicated to advancing climate action and advocating for climate justice within Saint Paul. This group laid the foundation for deeper educator engagement in sustainability efforts and played a critical role in elevating the urgency of climate-related work within the school district. Building on this momentum, during the October 2023 SPFE contract negotiations, the union formally initiated the establishment of a district-level Climate Action Committee, similar to the Taskforce proposed in the Energy Action Plan. In response, the school district issued a letter of intent in February 2024 affirming its commitment to green, healthy public schools and expressing support for the formation of such a committee. In July 2024, members of SPPS CAN and SPFE Climate Action Group presented to the Board of Education, which subsequently adopted a resolution to establish the SPPS Board of Education Sustainability Advisory Committee.

Plastic Free Lunch Day

Additional engagement with staff, students, and families was organized through the first district-wide celebration of Plastic Free Lunch Day on April 19, 2024. Plastic Free Lunch Day is an initiative where school cafeterias and students work to reduce or eliminate plastic packaging and utensils during school lunch. It's a way to raise awareness about plastic pollution and reduce the environmental impact of school lunches. The NS team developed a menu that eliminated the need for disposable silverware, utilized bulk condiment service, and was carefully selected to minimize packaging waste. The event was promoted through student-facing materials, school-wide communications, and curriculum support to help educators tie sustainability into classroom learning. Media coverage amplified the impact, with stories featured by KARE 11, KSTP, and Sahan Journal.

Minnesota Pollution Control Agency (MPCA) Grant Awards

NS submitted two grant proposals to MPCA for innovative projects that are geared towards waste reduction. NS received an award for each proposal in support of these waste prevention projects.

MPCA Statewide Waste Reduction & Reuse Grant Program

NS is honored to launch The Zero^2 Plan: Reusable Transport Packaging Solutions for Saint Paul Public Schools under the first of the aforementioned MPCA grant initiatives. The goal of this project is to demonstrate positive financial and operational outcomes from replacing one-time-use cardboard boxes with reusable plastic containers (RPCs) under a partnership with BIX Produce. The project is comprised of two steps: (1) launch an RPC system between the Nutrition Center and BIX Produce; and (2) expand the use of RPCs by local farms. This project started on August 1, 2024, and it is anticipated that 17 tons of one-time-use cardboard boxes will be reduced a year by making the switch to RPCs at the Nutrition Center and schools.

MPCA Statewide Prevention of Wasted Food & Food Rescue Grant Program

In addition, NS is demonstrating the commitment and ability to eliminate food waste through the inception of The Zero^2 Plan: Glean for Good; a project approved by MPCA on July 29, 2024, and signed into agreement on November 1, 2024. This project allows NS to build a comprehensive food rescue program, which will address the pressing issues of food waste and local food insecurity in schools and community by focusing on three strategies: 1) creating an internal system of reliable, safe, and measured food recovery, 2) direct edible food to local non-profit organizations, and 3) developing systems and procedures to track waste against goals. It is projected that successful implementation of this plan will reduce a projected 71 tons of food waste per year.

III. SCHOOL LUNCH PROGRAM SUPPLY CHAIN

The school lunch program supply chain is a collection of steps that NS takes to transform food ingredients, food products and foodservice supplies into school lunch meal events. These steps include:

Procurement

- Design diverse menu options that are in accordance with USDA regulations.
- Purchase food products and foodservice supplies in accordance with local, state and federal requirements.
- Receive food and foodservice supplies from a variety of sources including the Nutrition Center.

Food Production & Packaging

- Produce lunch menu items from scratch at the Nutrition Center.
- Package lunch menu items produced from scratch at the Nutrition Center.

Shipping & Receiving

- Transport food products and foodservice supplies from vendors and suppliers to the Nutrition Center.
- Transport menu items and food products from the Nutrition Center to schools.
- Transport food products and foodservice supplies from vendors and suppliers directly to schools.

Warehousing

- Store food products and foodservice supplies at the Nutrition Center.
- Store lunch menu items produced from scratch and packaged at the Nutrition Center.

Staging & Routing

- Build pallets and fill routing carts with menu items, food and foodservice supplies for each SPPS truck route at the Nutrition Center.
- Stage pallets and routing carts for daily distribution to each school.

School Kitchens & Cafeterias

- Store food products and foodservice supplies received at schools in coolers, freezers and storerooms.
- Prepare and serve lunch program meals at schools.
- Guide students to sort school lunch waste to liquid, recycle, compost, and trash collection containers.

Highlights of the school lunch program supply chain follow.

Food Production & Packaging

During the 2023 – 2024 school year, the Nutrition Center produced 26 lunch menu items from scratch and packaged them for shipment to schools in two types of food packaging:

1. **Primary Packaging** is the first layer of packaging that directly touches a food product. It is designed to protect the food from contamination, maintain its quality, and provide food labeling information.

2. **Transport Packaging** protects food products during transportation, ensuring they arrive safely at schools.

Table 1 summarizes the primary packaging used at the Nutrition Center including one-time-use plastic pouches, resealable plastic bags, parchment paper, paper boats, plastic film, and plastic food wrappers. Transport packaging includes: (1) reusable metal trays, plastic racks, metal routing carts; and (2) one-time-use cardboard boxes. Select photos of lunch menu items produced from scratch and packaged at the Nutrition Center, including cardboard box assembly, are provided in Figures 1, 2, 3 and 4.

Table 1.
Nutrition Center Food Production & Packaging

<table>
<tr><th>TRANSPORT PACKAGING</th><th>PRIMARY PACKAGING

ONE-TIME-USE</th><th>NUTRITION CENTER FOOD PRODUCTION

26 LUNCH MENU ITEMS</th></tr>
<tr><td rowspan="3">REUSABLE

Metal Trays

Plastic Racks

Metal Routing Carts</td><td>Plastic Pouches</td><td><u>Sauces (12)</u>: Alfredo, Basbaas, BBQ, Bulgogi, Cheddar Cheese, Galaxy, Marinara, Orange, Pizza, Teriyaki, Tzatziki, Meat Sauce

<u>Meat & Beans (2)</u>: Taco Meat, Refried Beans

<u>Gravy (2)</u>: Poultry Gravy, Beef Gravy</td></tr>
<tr><td>Resealable Plastic Bags</td><td><u>Specialty Spice Kits (5)</u>: Burrito Bowl, Como Street Chicken, Hamari, Taco Spice Burrito Bowl, Yellow Rice</td></tr>
<tr><td>Paper, Plastic Film</td><td><u>French Bread (1)</u>: Parchment Paper, Plastic Film
<u>Garlic Butter (1)</u>: Paper Boats, Plastic Film</td></tr>
<tr><td>ONE-TIME-USE

Cardboard Boxes</td><td>ONE-TIME-USE

Plastic Food Wrappers</td><td><u>Baked Goods (3)</u>: Chocolate Chip Cookies, Oatmeal Raisin Cookies, Cornbread Muffins</td></tr>
</table>

Figure 1.
One-Time-Use Primary Packaging

Plastic Pouches (Poultry Gravy)	Resealable Plastic Bags (Spice Kits)	Plastic Film & Parchment Paper (French Bread)
		

Figure 2.
Reusable Transport Packaging

Metal Routing Carts	Plastic Racks (Garlic Butter)
	

Figure 3.
One-Time-Use Plastic Food Wrappers & Cardboard Boxes

Cookies	Muffins
	

Figure 4.
Cardboard Box Assembly

Shipping & Receiving

To transport products and foodservice supplies for the school lunch program, SPPS NS operates three types of shipping and receiving systems as illustrated in Figure 5:

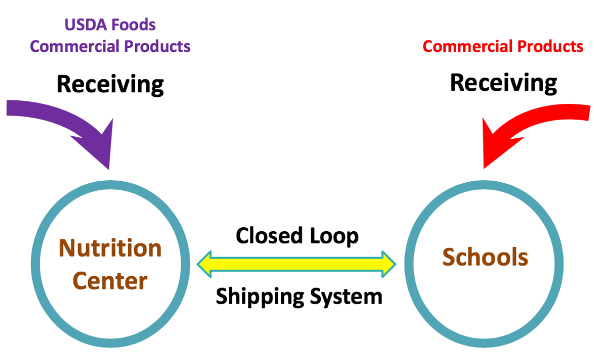
1. **An open loop shipping system** where products and foodservice supplies are shipped from vendors and suppliers to the Nutrition Center (purple arrow).

2. **A closed loop shipping system** where delivery carts and pallets of food products and foodservice supplies are shipped from the Nutrition Center to 73 schools on seven truck routes. Empty delivery carts and pallets are returned to the Nutrition Center to begin the entire process again (yellow arrows).

3. **An open loop shipping system** where products and foodservice supplies are shipped from vendors and suppliers directly to schools (red arrow).

Also in Figure 5, Nutrition Center staff have loaded a truck with routing carts and pallets of food products and foodservice supplies to be transported to schools. Custom-size pallets are required for shipments.

Figure 5.
School Lunch Program Shipping & Receiving

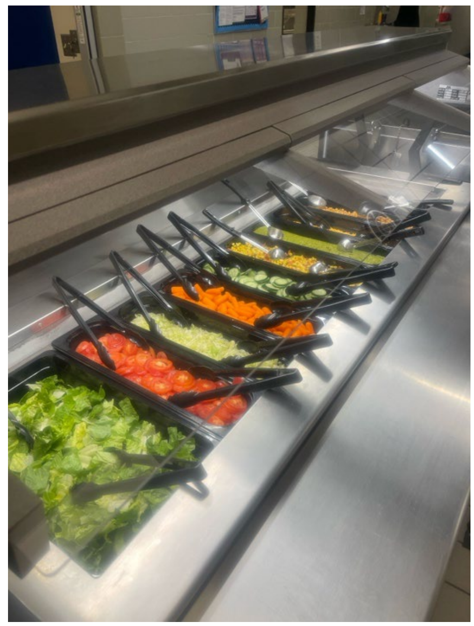
Three Types of Shipping & Receiving Systems	SPPS Truck Loaded for Shipment to Schools
	

School Lunch Meal Service

At SPPS, school lunch is served in a way that honors student choice, cultural relevance, and good nutrition through the USDA's *Offer Versus Serve (OVS)* model. This approach allows students to select from multiple menu items and helps to reduce food waste while empowering students to build meals that suit their tastes and preferences. Reflecting the rich cultural diversity of the district, menus feature a variety of scratch-made options that incorporate globally inspired flavors and familiar comfort foods, ensuring all students can find meals that are both nourishing and meaningful. Meals are served through organized cafeteria serving lines, and each school features a *Choice Bar*—NS' version of an "all you care to eat" salad bar—stocked daily with fresh fruits, vegetables, accompaniments, and condiments. These bars not only support balanced nutrition but also give students the opportunity to customize their meals in a way that supports independence and reduces pre-packaged waste (see Figure 6).

To further minimize food waste and encourage peer-to-peer sharing, many of our cafeterias offer *Share Tables*, where students can place unopened, wholesome food and drinks they choose not to consume. These items are then available for other students to take if they are still hungry.

Figure 6.
School Lunch Meal Service

Serving Line	**Choice Bar**
	

School Lunch Discards

At the end of each meal, students are expected to responsibly dispose of food and foodservice ware waste—an important final step in reinforcing sustainability and environmental responsibility as part of the dining experience. When students are done eating lunch, they separate their discards at a Best Practices cafeteria sort table into four streams: milk and beverage waste (liquids bucket), recycling, organics, and trash (see Figure 7).

Figure 7.
Best Practices Cafeteria Sort Table

IV. BASELINE FOR SCHOOL LUNCH PROGRAM SUPPLY CHAIN DISCARDS

To establish a baseline for the school lunch program supply chain discards, the Project Team:

- Inventoried the inbound, outbound and downstream waste generated from the school lunch program during the 10-month period, September 1, 2023, through June 30, 2024.
- Conducted a food and milk waste study during school lunch meal events at one elementary school, one middle school, and one high school.

A description of the methodology the Project Team employed, and the baseline results for the discards generated by the school lunch program follow.

Inventory of School Lunch Supply Chain Discards

To inventory the inbound, outbound and downstream supply chain discards for the school lunch program, the Project Team:

- Developed a list of all recipes for the school lunch program.
- From the recipes, developed a list of all food and ingredients purchased.
- Developed a list of all foodservice supplies purchased.
- Developed a list of all food production and distribution supplies purchased.
- Calculated quantities of all food, ingredients, foodservice supplies, and food production and distribution supplies purchased.
- Conducted a 22-day study at the Nutrition Center to identify each point in the inbound, outbound and downstream supply chain where packaging discards are generated for food, ingredients, foodservice supplies, and food production and distribution supplies. Documented each discarded packaging item with a photograph and its weight.
- Conducted a pallet, shrink wrap, and cardboard slip sheet and liner study.
- Catalogued weight and quantities for each inbound, outbound and downstream discarded item in an inventory database.

Sample photographs documenting the discarded items are provided in Appendix A.

Summary of Items Inventoried

To produce school lunch meals between September 2023 and June 2024, SPPS NS purchased a total of 253 types of food products and supplies comprised of:

- 222 menu items and recipe ingredients.
- 7 foodservice supplies (forks, spoons, bowls, lunch trays, napkins and two sizes of paper boats).
- 24 food production and distribution supplies (e.g., vinyl gloves, hairnets, NC labels, etc.).

For this 10-month period, 532 unique types of packaging discards were generated and photographed, weighed and cataloged by quantity and weight. Over 600 photographs of packaging discards were taken, and sample photographs are provided in Appendix A. As summarized in Table 2, these packaging discards weighed a total of 497 tons.

Table 2.
Packaging Discards Generated by the SPPS School Lunch Program
September 2023 to June 2024

Type of Food Products & Supplies	Number of Products Purchased	Number of Packaging Discards Generated	Packaging Discards Weight (Tons)
Menu Items & Ingredients	222	442	410
Foodservice Supplies	7	21	71
Food Production & Distribution Supplies	24	69	16
TOTAL	**253**	**532**	**497**

Table 3 summarizes the estimated number of pallets and pallet-related discards generated by the school lunch program supply chain, which weigh a total of 55 tons.

Table 3.
Pallets & Pallet-Related Discards Generated by the SPPS School Lunch Program
September 2023 to June 2024

Type of Discards	Estimated Number of Pallet-Related Discards	Weight (Tons)
Pallets	2,872	52
Shrink Wrap	2,872	1
Cardboard Slip Sheets & Liners	2,128	2
TOTAL	**7,872**	**55**

Food & Milk Waste Study

For a five-day period, the Project Team weighed the food and milk waste discarded by students and NS staff during school lunch meal events at Bruce Vento Elementary, Murray Middle School, and Central High School. Data was gathered from five streams of discards:

<u>Serving Lines</u>

- Steam Table
- Choice Bar
- Share Table

<u>Cafeteria Sorting Bins</u>

- Food plate waste
- Milk waste

A summary of the elementary school, middle school, and high school data is provided in Table 4.

Table 4.
Food & Milk Waste Study Data

School Type	Food Waste Collected During Study (Pounds)	Milk Waste Collected During Study (Pounds)	# Lunch Meals Served During Study	Total # Lunch Meals Served 2023 – 2024 SY
Elementary	936.53	336.8	2,309	2,321,443
Middle School	623.35	91.7	1,888	229,158
High School	870.08	182.2	3,562	535,182
TOTAL	**2,430**	**610.7**	**7,759**	**3,085,783**

<u>Elementary School</u>

a. Estimated food waste generated per meal: 936.53/2,309 = 0.406 lbs.
b. Estimated food waste generated per year: 0.406 x 2,321,443 = 942,506 lbs. (471 tons)

c. Estimated milk waste generated per meal: 336.8/2,309 = 0.146 lbs.
d. Estimated milk waste generated per year: 0.146 x 2,321,443 = 338,931 lbs. (170 tons)

<u>Middle School</u>

a. Estimated food waste generated per meal: 623.35/1,888 = 0.330 lbs.
b. Estimated food waste generated per year: 0.330 x 229,158 = 75,622 lbs. (38 tons)

a. Estimated milk waste generated per meal: 91.7/1,888 = 0.049 lbs.
b. Estimated milk waste generated per year: 0.049 x 229,158 = 11,229 lbs. (5.6 tons)

High School

c. Estimated food waste generated per meal: 870.08/3,562 = 0.244 lbs.
d. Estimated food waste generated per year: 0.244 x 535,182 = 130,584 lbs. (65 tons)

e. Estimated milk waste generated per meal: 182.2/3,562 = 0.051 lbs.
f. Estimated milk waste generated per year: 0.051 x 535,182 = 27,294 lbs. (13.6 tons)

Baseline for School Lunch Program Supply Chain Discards

From September 2023 to June 2024, the school lunch program generated an estimated 1,315 tons of supply chain discards (see Table 5). The top three discards by weight are:

1. Cafeteria food waste (44%)
2. Food packaging waste (31%)
3. Cafeteria milk waste (15%)

Food and milk waste generated in school cafeterias are estimated to be 59% of all supply chain discards.

Table 5.
School Lunch Program Supply Chain Discards
September 2023 to June 2024

Lunch Supply Chain Discards	Annual Weight (Tons)	Percent
Food Packaging (NC & School Cafeterias)	410	31%
Foodservice Supplies & Packaging (School Cafeterias)	71	5%
NC Food Production, Distribution Supplies, & Packaging	16	1%
NC Pallets, Shrink Wrap, Slip Sheets & Liners	55	4%
Food Waste (School Cafeterias)	574	44%

Milk Waste (School Cafeterias)	189	15%
TOTAL	**1,315 (2,630,000 lbs.)**	

Estimated Discards Per Lunch Meal: 2,630,000/3,085,783 = 0.85 lbs. per meal

Student Sorting Observations During Study

During the Food & Milk Waste Study, the Project Team recorded observations of students sorting single-serve packaging. Single-serve packaging appeared to complicate the sorting process and resulted in some cross-contamination of discarded materials. As summarized in Table 6, milk cartons, juice cups, fruit cups, condiment packets and cups, and individually wrapped fruit generate significant amounts of discarded materials.

Table 6.

Food & Milk Waste Study
Observations of Students Sorting Single-Serve Packaging

<table>
<tr><th>Menu Item</th><th>Observations</th><th>Usage
2023 – 24 SY</th><th>Tons
Discarded</th></tr>
<tr><td><u>Milk</u>
Lowfat 1%
Chocolate Milk</td><td>Students consistently empty & recycle milk cartons. Most are placed in the correct organics or trash collection containers.</td><td>7,774,000
Milk Cartons</td><td>97 tons
Milk Cartons</td></tr>
<tr><td><u>Juice Cups</u>
Apple & Orange</td><td rowspan="2">Removing the foil lid on juice cups was difficult for some students and often messy due to liquid under pressure.
Many students drink the juice from fruit cups and discard the remaining fruit.
Students reported confusion about whether juice should be disposed of in the liquids container or the organics bin.</td><td>4,792,608
Juice Cups</td><td>7.5 tons foil lids
30 tons plastic cups</td></tr>
<tr><td><u>Fruit Cups</u>
Strawberry, Peach, Pear, Orange, Mixed Fruit</td><td>906,336
Fruit Cups</td><td>1.2 tons foil lids
7.5 tons plastic cups</td></tr>
<tr><td rowspan="2"><u>Condiment Packets</u>
Ketchup, Cholula, Caesar & Italian Dressings, Mayonnaise, Mustard, Sweet Relish, Soy Sauce, Sriracha Sauce, Tartar Sauce, Sour Cream</td><td rowspan="2">Students often take more condiment (packets) than they consume. Some students leave unused packets on the Share Table, but many edible portions are discarded in trash and organics barrels (packets contaminate organics collection).</td><td>2,517,000
Ketchup Packets</td><td>1.6 tons
packets</td></tr>
<tr><td>1,541,648
All Other Packets</td><td>1.4 tons
packets</td></tr>
<tr><td rowspan="3"><u>Condiment Cups</u>
Syrup, Ranch Dressing, BBQ Sauce</td><td rowspan="3">Students were observed taking multiple condiment cups and using only a portion of each.

Students were unsure whether to empty condiment cups and recycle the plastic or discard the entire cup in the organics bin (also leading to contamination).</td><td>654,000
Ranch Cups</td><td>0.33 tons foil lids
1.4 tons cups</td></tr>
<tr><td>549,200
Syrup Cups</td><td>0.17 tons foil lids
0.9 tons cups</td></tr>
<tr><td>44,800
BBQ Sauce Cups</td><td>0.02 tons foil lids
0.09 tons cups</td></tr>
<tr><td rowspan="2"><u>Individually Wrapped Fruit</u>
Apple Slices,
Grapes</td><td rowspan="2">Younger students showed difficulty opening individually wrapped fruit, removing all food from containers, separating food from packaging, and correctly sorting the resulting waste.</td><td>762,000
IW Apple Slices</td><td>1.43 tons
plastic wrappers</td></tr>
<tr><td>600,150
IW Grapes</td><td>0.94 tons
Plastic wrappers</td></tr>
</table>

V. A SUMMARY OF BASELINE SUPPLY CHAIN DISCARDS FOR B2GO & LUNCH PROGRAMS

Since 2018, the Project Team has examined the following programs and operations:

- Breakfast to Go Program (B2Go)
  Supply Chain Discards Study – September 2018 to August 2019

- School Lunch Program
  Supply Chain Discards Study – September 2023 to June 2024

- Nutrition Center Operations

- School Recycling and Compost Operations

Table 7 provides a summary of findings for the supply chain discards studies.

Table 7.
A Summary of Findings
Baseline Studies for B2Go & Lunch Programs Supply Chain Discards

	Study Dates	# Meals Served During Study	Estimated Annual Weight of Supply Chain Discards	Estimated Weight of Supply Chain Discards Per Meal	Type of Waste Management System Currently Operating in Schools
B2Go Program[1]	Sept 2018 to August 2019	3,372,422	633 tons or 1,266,000 lbs.	0.40 lbs.	All B2Go discards generated from meals served in classrooms are managed as trash.
Lunch Program	Sept 2023 to June 2024	3,085,783	1,315 tons or 2,630,000 lbs.	0.85 lbs.	School cafeterias operate a 4-stream sorting system: trash, recycling, organics, and milk/beverage waste. This mature sorting system was launched in 2004.

[1]Source: The Zero² Plan: Zero Hunger & Zero Waste Solutions (October 19, 2019)

These findings suggest the following next steps:

- Rethink B2Go Program Discards: (1) the B2Go program generates less than half of the weight of discards per meal served when compared to the lunch program; and (2) there is no sorting system operating in schools to divert B2Go recyclable and compostable discards from the waste stream.

- Focus on Lunch Program Discards: (1) the lunch program generates more than twice the weight of discards per meal served when compared to the B2Go program; and (2) there is a mature waste sorting system operating in school cafeterias that divert recyclables and compostables from the waste stream.

SPPS decisions on next steps are directly related to the current SPPS hauler contract for:

1. Hauling and disposal of municipal solid waste (MSW);

2. Collection, transportation and composting of source separated organics (SSO); and

3. Collection, transportation and marketing of source separated recyclable materials in a single stream recycling system (SSR).

This contract is managed by the Facilities Department.

SPPS Hauler Contract

Under the current SPPS hauler contract, the school district's source separated organics are collected loose and non-compacted in front-end-load dumpsters at the Nutrition Center and schools. The hauler transports SSO to Specialized Environmental Technologies, Inc., a commercial compost facility, located in Rosemount, Minnesota where it undergoes controlled microbial degradation pursuant to Minn. Statute, Section 115A.03 Subd. 32(a).

Under SPPS hauler contract terms, the definition of SSO is food waste; non-recyclable paper products such as paper towels, tissues and napkins; uncoated paper plates, cups, and food containers; and compostable products certified by a third-party verification of ASTM standards for compostable products in North America.

SET provides a list of materials that it can and cannot accept for SSO recovery on its website. To comply with the terms and conditions of the SPPS hauler contract – and not contaminate the SET compost stream – all SPPS NS compostable foodservice products must be certified compostable by one of two independent third party entities: (1) Biodegradable Products Institute (BPI); or (2) Compost Manufacturing Alliance.

Rethink B2Go Program Discards

Because most schools do not have sorting systems in place to divert B2Go compostable or recyclable packaging from the landfill, NS may discontinue some of these materials and explore alternative options. Decisions to switch products will be based on environmental impact, cost, and other relevant factors. As illustrated in Table 8, this primarily targets plastic bags, compostable rice bowls and lids, and compostable cutlery for consideration.

Table 8.
Foodservice Supply Considerations for B2Go Program

Compostable B2Go Bag Usage: 3,372,422 Weight: 0.018 lbs. 30.35 tons		**Switch to Plastic B2Go Bags Usage: 3,372,422 Weight: 0.012 lbs. 20.23 tons**
Compostable Forks Usage: 130,000 Weight: 0.00625 lbs. Discards: 0.41 tons		**Switch to Plastic Forks Usage: 130,000 0.00688 lbs. Discards: 0.45 tons**
Compostable Spoons Usage: 762,000 Weight: 0.00625 lbs. Discards: 2.38 tons		**Switch to Plastic Spoons Usage: 762,000 Weight: 0.00563 Discards: 2.14 tons**
Compostable Rice Bowl & Lid Usage: 130,000 Weight: 0.023 lbs. Discards: 1.5 tons		**Switch to Non-Compostable Rice Bowl & Lid Usage: 130,00 Weight: unknown Discards: unknown**

Focus on Lunch Program Discards

Since the lunch program generates more than twice the amount of waste per meal compared to the B2Go program—and because a well-established sorting system is already in place in school cafeterias—Nutrition Services will focus its waste reduction efforts on lunch program discards. Initial strategies include:

- **Reviewing all foodservice products** used in the lunch program to verify they are certified compostable or recyclable. As shown in Table 9, this includes items such as paper boats, compostable trays, other bowls and lids, cutlery, muffin cups, 12-ounce plastic cups and lids, and 2-ounce portion cups and lids.
- **Transitioning to bulk containers or dispensers** where feasible, to minimize packaging waste and support more accurate portioning.
- **Eliminating individually wrapped items from Choice Bars** to significantly reduce both packaging waste and uneaten, discarded portions.

Table 9.

Foodservice Supply Considerations for School Lunch Program

Paper Boats (2 lbs.)	**Paper Boats (5 lbs.)**	**Lunch Trays & Bowls**
		
Muffin Cups	**Compostable Forks & Spoons (Black)**	
		**Switch to Certified Compostable White or Cream Colored Forks & Spoons Black Plastic Utensils Are Trash (Not Recyclable) Black Compostable Utensils Are Confused with Trash**

VI. PROGRESS ON ENVIRONMENTALLY PREFERABLE PURCHASING GUIDELINES

EPP Guidelines encompass principals and intended outcomes directly associated with purchasing food and supplies. A summary of the goals written for the EPP Guidelines, from September 2023 to August 2024, is provided in Table 10.

Table 10.
NS Progress in Achieving Environmentally Preferable Purchasing Guidelines

PHASE 2 GOALS (UPDATE FOR PHASE 3 GOALS)	PROGRESS
#1 – Collaborate with vendors to establish meaningful vendor commitments that support the Zero^2 Plan.	Task completed. A produce vendor provided a letter of support for the MPCA Statewide Waste Reduction & Reuse Grant Program, and has agreed to partner on the The Zero^2 Plan: Reusable Transport Packaging Solutions for SPPS initiative.
#2 – Collaborate with vendors to establish an annual plan to decrease waste, and measure vendor performance with the new annual scorecard that will be shared with vendors as part of regular communication and partnership.	Task completed. Prime vendor for produce converted several items to RPC (reusable plastic containers); a switch from one-time-use cardboard boxes. NS is continuing to collaborate with this vendor to convert additional items to RPCs.
#3 – Utilize new RFP language to establish new meaningful vendor commitments that support the Zero2 Plan.	Task completed. RFP language established in the spring of 2022 was utilized to formulate advertisements contract renewals beginning spring 2024. New contracts that include this language, used in the 2024-25 school year, were issued for groceries, non-food supplies, Farm To School, and bakery items.
#4 – NS and vendors may shift during the contract period to new environmentally preferable products when such products are readily available at a competitive cost, satisfy performance requirements, and adhere to the contract terms.	Task completed. A produce vendor was able to transition from individual boxes to cardboard gaylords and reusable plastic containers to distribute fresh produce to the Nutrition Center.
#5 – Utilize the new monitoring and tracking system tool to validate vendor compliance with these guidelines, which will include an annual scorecard for vendors.	Task completed. The annual scorecard was distributed and utilized in focused discussions with each vendor in FY25. Two produce vendors took beginning steps to transition to RPCs. The prime vendor for food agreed to work with their internal teams to develop goals and strategies to propose for future work. And, the supply vendor worked diligently to source sustainable supplies within NS' price range.
#6 – Update multi-year goals and implementation schedule based on priorities, difficulty, and upcoming Requests for Proposals.	Task completed.
#7 – Report achievements under EPP Guidelines annually.	Task completed.

VII. PROGRESS ON ENVIRONMENTALLY PREFERABLE PURCHASING GOALS

EPP Goals encompass methods and intended outcomes directly associated with internal and external supply use, food packaging, and food transport. Internal goals primarily result in waste reduction from the NC to schools. External goals primarily result in waste reduction from companies who provide food and supplies to SPPS. A summary of the outcomes for the EPP Goals, from September 2023 to August 2024, is provided in Table 11.

Table 11.
NS Progress in Achieving Environmentally Preferable Purchasing Goals

PHASE 2 GOALS	PROGRESS	
#1 – Find Suitable Containers That Will Allow the NC to Transition from Cardboard Boxes to a Reusable Packaging System **Targets the reduction of:** • **3.7 tons of cardboard a year** • **153 staff hours to flatten & recycle cardboard boxes at schools a year.**		NS built and tested multiple new models, which included metal baskets, plastic bins, collapsible containers, and airplane-quality options to replace cardboard boxes for NC production. Operational and food quality concerns required the team to discontinue use. Durability and freezer burn were the foremost issue. The team sought vendors and packaging professionals, but could not find a viable solution. This goal will be discontinued.
#2 – Develop a New Breakfast Container Program for Schools that will Result in the Least Amount of Waste Generated & Discarded as Trash (By Allowing Schools to Select Plastic, Compostable or Reusable Containers Based on their School's Breakfast Waste Management) **Targets the reduction of 25.3 tons of plastic and 1.8 tons of cardboard boxes a year.**		NS worked with a supply vendor to build a compostable breakfast bag that was suitable for B2Go. The manufacturing process and lead time consumed several months of SY 22-23. The first order of compostable bags was delivered on May 17, 2023; however, due to staffing and capacity at the schools the Facilities department was not able launch or support a hallway compost program, which has resulted in discontinuing this goal at this time.

#3 – Establish a Baseline for Supply Chain Discards in the Lunch Program **#4 – Update Multi-Year Goals and Implementation Schedule Based on the Baseline for Supply Chain Discards in the Lunch Program and Other Findings**		This task is completed. Findings from this study will be used to continue to to update multi-year goals.
#5 – Find suitable containers that will allow NS to eliminate one-way transport packaging for produce and expand the use of reusable containers for other food products when possible.		In progress. As mentioned, this work is funded by the MPCA Statewide Waste Reduction & Reuse Grant mentioned. The project is comprised of two steps: (1) launch an RPC system between the NC and BIX Produce; and (2) expand the use of RPCs by local farms. The project started on August 1, 2024.

VIII. PROGRESS ON REUSE, RECYCLING & COMPOST COLLECTION GOALS

Reuse, Recycling, and Compost Collection for the NC and Schools Goals encompass the methods and intended outcomes directly associated with waste management by students and staff. These goals target reuse and collection systems for trash, recycling, organics, and food donations. A summary of the outcomes for these goals, from September 2023 to August 2024, is provided in Table 12.

Table 12.
NS and Facilities Progress in Achieving Reuse, Recycling & Compost Collection Goals
September 2023 to August 2024

REUSE, RECYCLING & COMPOST COLLECTION PHASE 2 GOALS	PROGRESS
#1 – Maintain daily use of the food rescue program in schools and the NC and collaborate with Second Harvest to identify solutions that address transportation and staffing barriers	Task completed. NS collaborated with Second Harvest and other stakeholders to design a food rescue program that will be more reliable and efficient. This led to proposing The Zero^2 Plan: Glean for Good; a project approved by MPCA on July 29, 2024, and signed into agreement on November 1, 2024. This project allows NS to build a comprehensive food rescue program by focusing on three strategies: 1) creating an internal system of reliable, safe, and measured food recovery, 2) direct edible food to local non-profit organizations, and 3) developing systems and procedures to track waste against goals.
#2 – Monitor Disposable Trays & Cutlery as Normal Meal Service Resumes at Schools	Task completed. Within the scope of this project, NS updated the Use of Disposable Products standard operating procedure to provide more clarity surrounding the expectations to use reusable trays and cutlery on a daily basis, and to ensure disposable products are reserved for use during emergencies or staffing shortages that warrant a temporary substitution. Approval is required prior to substituting reusable trays and cutlery with disposable products. Staff received training in September 2024 and March 2025.
#3 – Launch best management system for trash, recycling, and organics collection at EOS	In progress. The team used the “spaghetti diagram” to develop a best practices collection container system, container placement plan, and a budget estimate to purchase new containers and equipment. This budget estimate will be included in the work scope and budget for a Ramsey County grant to support waste reduction and recycling projects at public school districts.
#4 – Create additional training content for NS supervisors and NSAs.	Task completed. NS supervisors and NSAs received Back to School training in September 2024, which included new and refresher training for key performance indicators, share tables, food donations, and reusable trays and cutlery. In addition, all staff were provided Glean for Good food rescue training in November 2024 (Nutrition Center and pilot sites) and January 2025.
#5 – Re-Launch a Best Management System for Trash, Recycling & Organics Collection in School Cafeterias	Cafeteria waste sorting has been reinstated at elementary and middle schools; high schools remain a challenge with varying levels of participation. Cafeteria Organics sorting table signs were updated to include photos of compostable service ware provided at schools. To support continued progress, the Facilities Department will host a Minnesota Greencorps member during the 2024–2025 program year, beginning

	in September 2024. A key focus of this role will be to enhance waste sorting education and resources for school cafeteria waste sorting.
#6 – **Pilot a centralized collection system for trash, recycling and organics in office and administrative buildings**	In progress. The team: (1) conducted a baseline Time & Motion Study to document the amount of time and physical movement for custodial staff to serve the existing de-centralized collection system for trash and recycling in the Facilities office area at EOS; and (2) developed a pilot centralized collection system for trash, recycling and organics in the Facilities office area; comprised of three centralized sort stations and the addition of organics in the employee breakroom and bathrooms (paper towels). The pilot will launch in October 2024.
#7 – **Pilot a centralized collection system for trash, recycling and organics to capture B2Go waste.**	Progress delayed. The team wants to demonstrate success in launching a centralized collection system for trash, recycling and organics in office and administrative buildings before piloting a centralized collection system for trash, recycling and organics for B2Go waste in schools. Staffing level at buildings, and capacity for new initiatives is limited at this time.
#8 – **Work with Purchasing Department to establish a methodology to add private and charter schools to the hauler contract for trash, recycling, and organics services**	Task completed. A process is in place for coordinating with waste hauler, satellite school, Purchasing, and Legal. Three satellite schools have since been added, SPPS will continue to add satellite schools as opportunities arise.

Create a Best Management System for Trash, Recycling & Organics Collection at EOS

The purpose of creating a best management system is to modernize and elevate to best practices the existing trash, recycling, and organics collection system at EOS:

- Use the Spaghetti Diagram and container placement plan to launch a best practices trash, recycling, and organics collection system at NC.
- Launch a building-wide centralized trash, recycling and organics collection container system at EOS.
- Lean logistics and daily operations.
- Expand the organics collection system at NC (paper towels) and the entire EOS facility (food scraps, food-soiled paper, and paper towels).
- Draft a Standard Operating Procedure for EOS that describes the step-by-step process taken to optimize the recovery of recyclables and organics from the waste stream.
- Educate all staff on how to use the best management system for trash, recycling and organics collection at EOS.

IX. SUMMARY & NEXT STEPS

The 2023–2024 school year marked meaningful progress for the Zero^2 Plan, with a renewed focus on setting clear goals and achieving practical outcomes. The Project Team conducted a thorough analysis of the school lunch program and reassessed the feasibility of hallway sorting in the B2Go program. As a result, the district shifted its focus toward the more established and effective waste sorting systems already in place in school cafeterias.

In addition, SPPS secured funding from the MPCA for two major sustainability projects that will be highlighted in future reports. These innovative efforts not only bring new opportunities for advancing food distribution and recovery systems, but also equip the district with tools to further its commitment to environmental justice—supporting the health and well-being of both our students and the broader community.

Next Steps

To honor the intent of the Zero^2 Plan, the team developed Phase 5 Goals, which are listed below. The team will complete Progress Report #5 to summarize NS and Facilities Department outcomes for the reporting period, September 2024 through August 2025.

NS Environmentally Preferable Purchasing Guidelines (EPP Guidelines)

1. Collaborate with vendors to establish meaningful vendor commitments that support the Zero^2 Plan.
2. Collaborate with vendors to establish an annual plan to decrease waste, and measure vendor performance with the new annual scorecard that will be shared with vendors as part of regular communication and partnership.
3. Utilize RFP language to establish new meaningful vendor commitments that support the Zero^2 Plan.
4. NS and vendors may shift during the contract period to new environmentally preferable products when such products are readily available at a competitive cost, satisfy performance requirements, and adhere to the contract terms.
5. Utilize the monitoring and tracking system tool to validate vendor compliance with these guidelines, which will include an annual scorecard for vendors.
6. Update multi-year goals and implementation schedule based on priorities, difficulty, and upcoming Requests for Proposals.
7. Report achievements under EPP Guidelines annually.

NS Environmentally Preferable Purchasing Goals (EPP Goals)

1. Continue implementation and advertisement of contract agreements for The Zero^2 Plan: Reusable Transport Packaging Solutions for Saint Paul Public Schools project.
2. Finalize contract with MPCA to support and launch The Zero^2 Plan: Glean for Good food rescue project.
3. Gather information and make decisions on compostable and recyclable foodservice supplies for B2Go and the school lunch program identified in data analysis for

consideration (plastic bags, compostable rice bowls and lids, compostable cutlery, paper boats, compostable trays, other bowls and lids, cutlery, muffin cups, 12-ounce plastic cups and lids, and 2-ounce portion cups and lids).

4. Monitor disposable trays and cutlery use during meal service at schools.
5. Engage with stakeholders on projects, goals, and commitments.

Reuse, Recycling, and Compost Collection for the NC and Schools

1. Participate in Plastic Free Lunch Day.
2. Continue established work scope for The Zero^2 Plan: Reusable Transport Packaging Solutions for Saint Paul Public Schools project that replaces one-time use cardboard boxes with RPCs for fresh produce distribution.
3. Launch The Zero^2 Plan: Glean for Good food rescue project in all schools, collect data, and formulate next steps.
4. Transition condiment services in secondary schools to bulk containers or dispensers to minimize packaging waste and support more accurate portioning.
5. Eliminate individually wrapped items from Choice Bars to significantly reduce both packaging and food waste.
6. Launch best management system for trash, recycling, and organics collection in Nutrition Center at EOS.
7. Re-launch a best management system for trash, recycling, and organics collection in school cafeterias.
8. Launch centralized collection system for trash, recycling and organics in office and administrative buildings.
9. Develop a comprehensive Request for Proposal (RFP) for District Trash, Recycling, and Organics Hauler Services that supports the Zero2 Plan's commitment to sustainable waste management and operational efficiency.

Appendix A.

Sample Photographs Documenting Supply Chain Discards for Lunch Program

Food Packaging

Mandarin Orange Cups
(Plastic Cups & Foil Lids)

Sliced Cucumbers
(Plastic Trays)

Chicken Drumsticks
(Plastic Pouch)

Honey
(Plastic Pail)

Sugar
(Paper Bag)

Tomato Ketchup
(Metal Can)

Onion Power
(Plastic Bag)

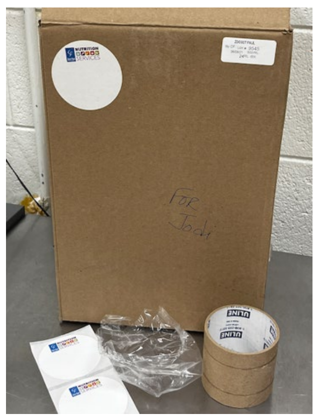
Mustard
(Plastic Packets)

Strawberries
(Plastic Clamshell)

Foodservice Supplies & Packaging

Lunch Tray	Paper Boat	Fork
		

Food Production Supplies & Packaging

Muffin Trays	NC Label	Gloves
		

Transport Packaging

Pallets	Shrink Wrap	Pallet Slip Sheets