The background of the slide is a light gray gradient with several realistic water droplets of various sizes scattered across it. The droplets have highlights and shadows, giving them a three-dimensional appearance.

The Dayton Regional

**S T E M**

School

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THE DAYTON REGIONAL  
STEM SCHOOL

**ZERO WASTE PLAN**

# BACKGROUND - 2013

## Sustainability Course – Russ Nelson & Brittany Shores

- wrote letters
- Field trip to recycling facility
- Identified strategies to achieve Zero Waste – 5 R's
- Created website



# BACKGROUND - 2014

Montgomery County Solid Waste District...  
provided funding for Zero Waste Plan



# PROCESS for ZWP DEVELOPMENT

- **Meetings** with Russ Nelson, Brittany Shores, school administrators, custodial staff, Montgomery County Solid Waste District staff
- Building **walk-throughs** (inventory)
- Discussions with **Rumpke**
- Explored **food waste options**
- **Information** from Montgomery County Solid Waste District



# ZERO WASTE PLAN: INITIAL DEVELOPMENT

- Mission Statement

“...minimize the impact of school operations on the environment, and reduce our environmental footprint...”

- Strategic Plan

- Definition of Zero Waste



*Source: Niagara Sustainability Initiative*

# ZERO WASTE PLAN SECTIONS

## Section 1

- Introduction

## Section 2

- Inventory

## Section 3

- Strategic Plan

## Section 4

- Moving Toward Zero Waste

## Section 5

- A Model for Other Schools

## Appendices

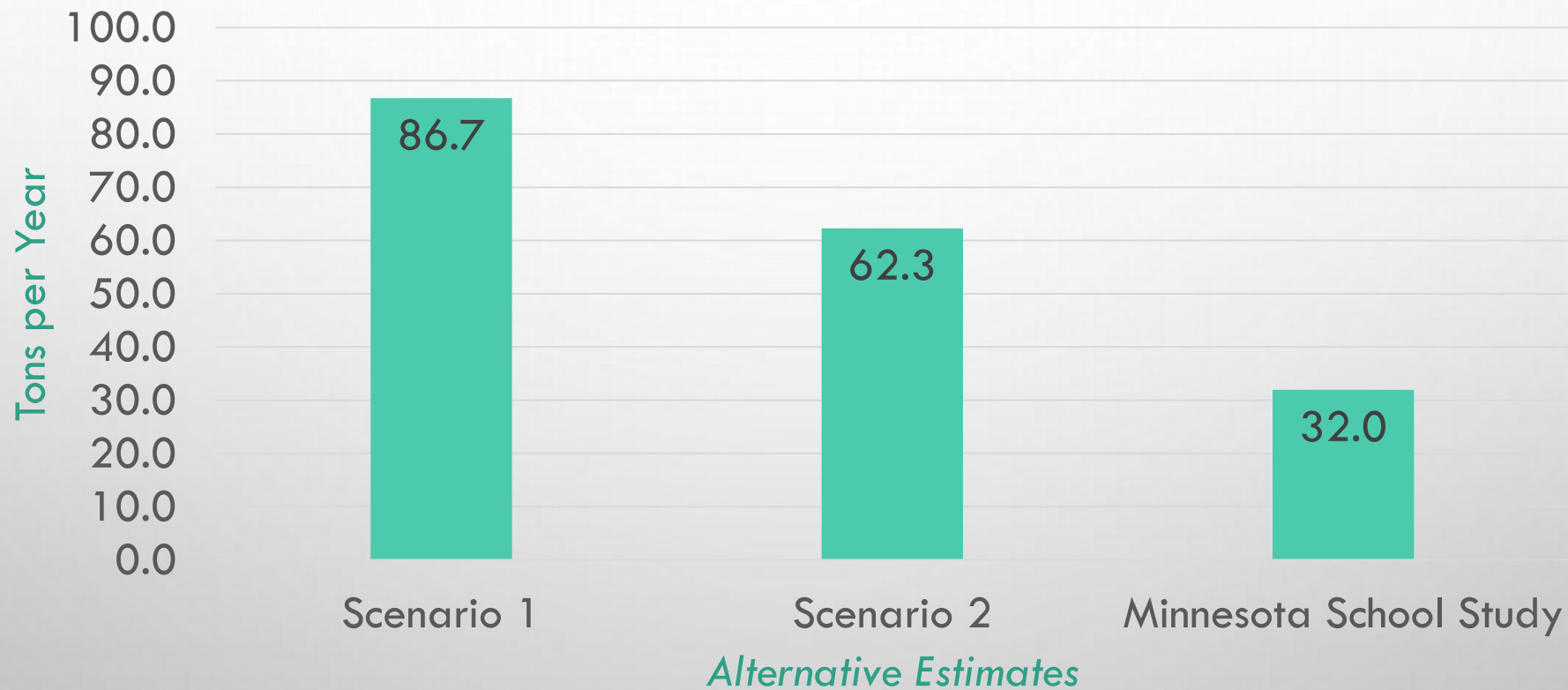
## SECTION 2 - INVENTORY

- Recycling containers
- Cafeteria wastes
- Hard-to-recycle items (Terracycle brigades)
- Natural gas and electricity usage



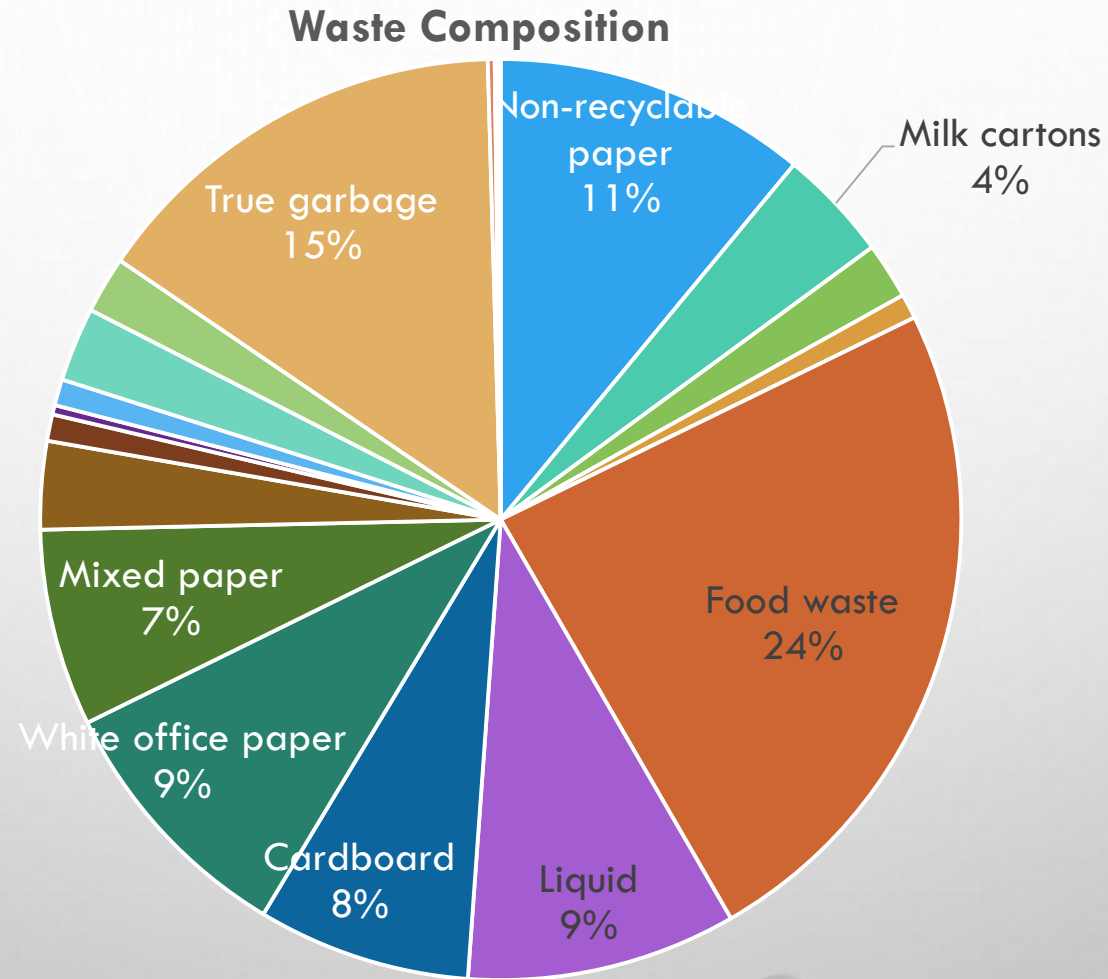
# SECTION 2 – INVENTORY

Waste Generation Estimates





# SECTION 2 – INVENTORY



Source: "Digging Deep through School Trash", Minnesota Pollution Control Agency, 2010

# SECTION 3 – STRATEGIC PLAN

## *Mission Statement*

### *Primary Goals*

- Recycle Food Waste
- Communication Plan
- Data Collection
- Education
- 90% Diversion

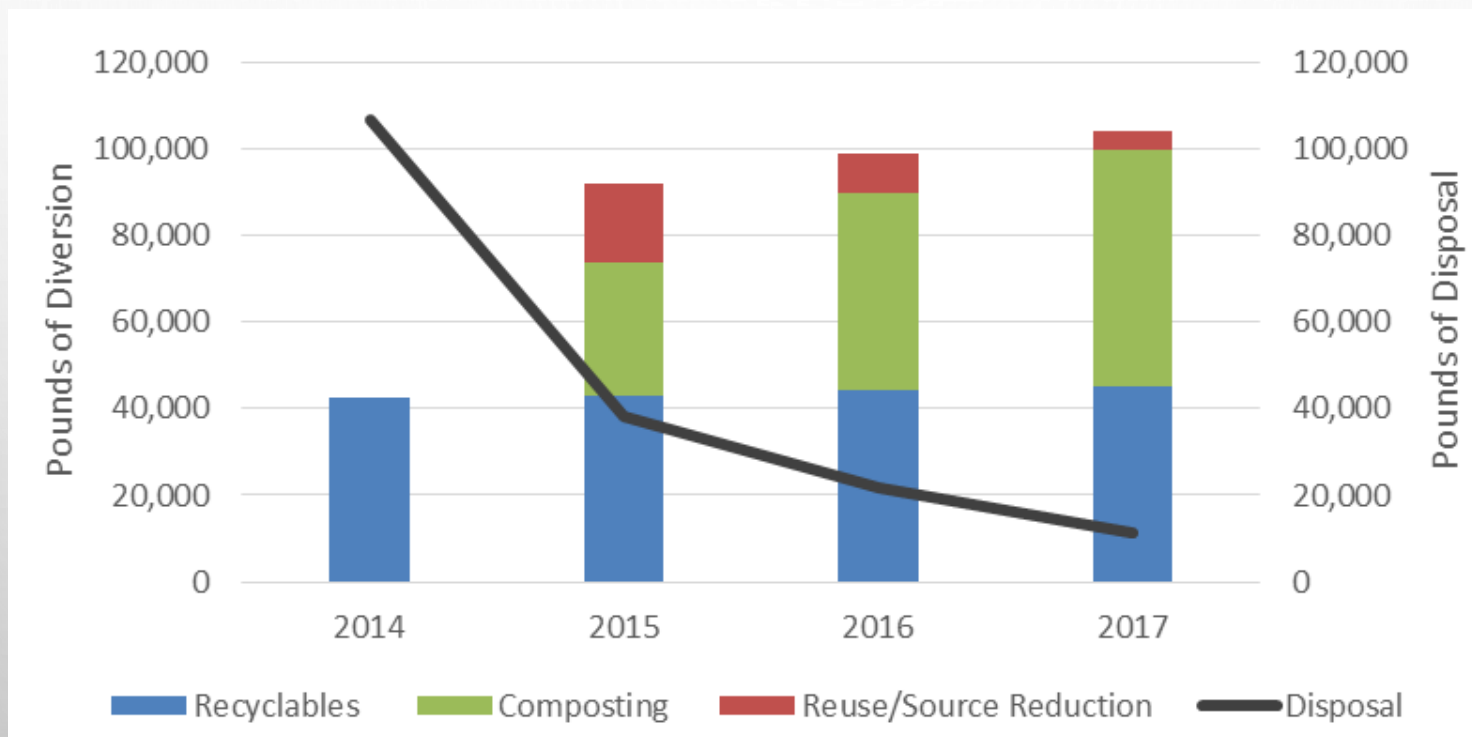


# SECTION 3 – STRATEGIC PLAN

## Leadership for Zero Waste Plan Implementation...



# SECTION 4 – MOVING TOWARD ZERO WASTE



# SECTION 4 – MOVING TOWARD ZERO WASTE

## Three Phases:

Phase I: 2014/2015

Phase II: 2015/2016

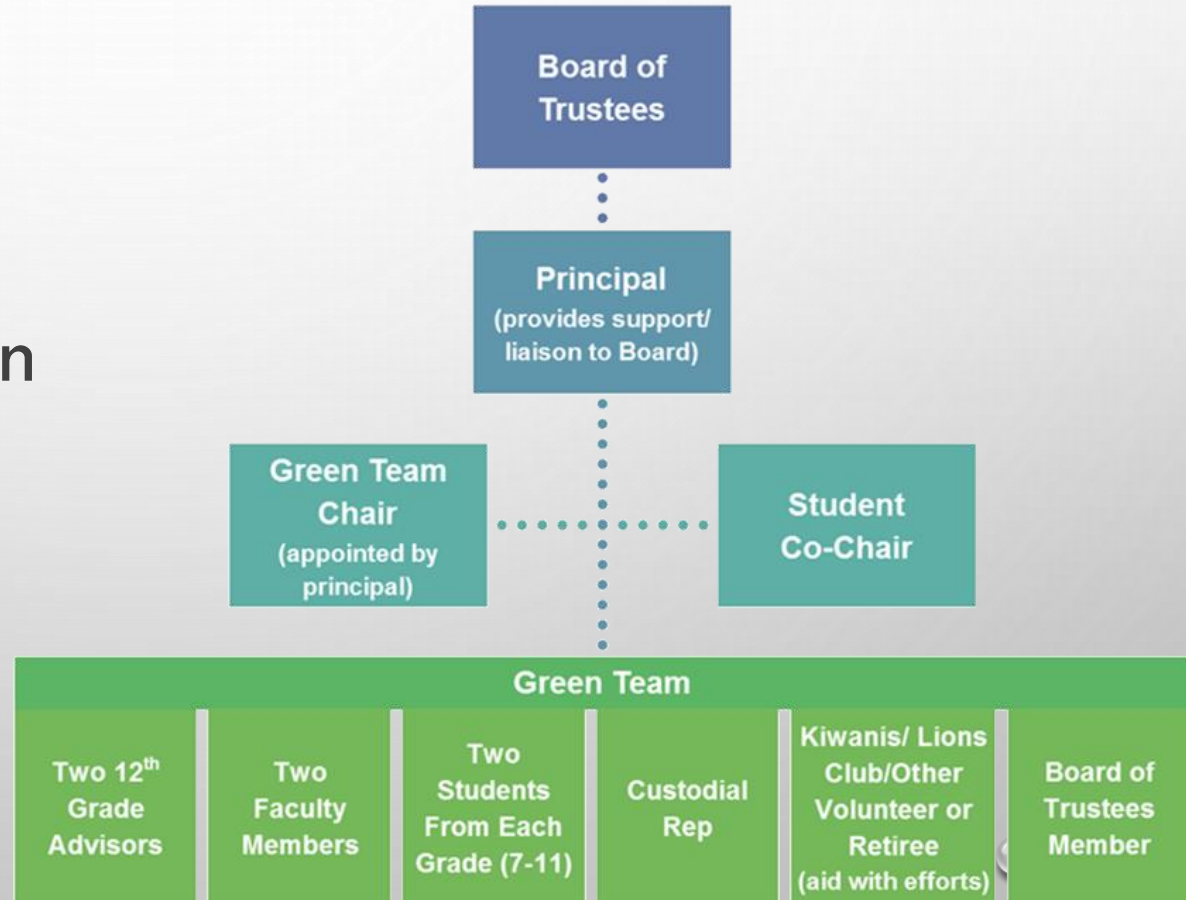
Phase III: 2016/2017  
and beyond

Summary of Waste Reduction and Recycling Programs			
Program #	Description	Year Initiated	Responsible for Implementing
1	Green Team Establishment & Leadership	2014	DRSS
2	Implement Strategic Plan	2014	DRSS
3	Interior Recycling & Trash Containers	2014	Green Team
4	Exterior Recycling & Trash Containers	2014	Green Team
5	Waste Audits & Sorts	2014	Green Team
6	Communication Plan	2014	Green Team
7	Data Collection & Management	2014	Green Team
8	Food Waste Options	2014	Green Team
9	Reuse & Source Reduction Programs	2014	Green Team
10	Special Wastes (electronics, fluorescent bulbs, chemistry lab. wastes)	2015	Green Team
11	Environmental Planning for Special Events	2015	Green Team/DRSS
12	Environmentally-preferable Purchasing Policies	2016	Green Team/DRSS
13	Local Outreach	2016	Green Team
14	Including Zero Waste in School Curriculum	2016	Green Team/DRSS
15	Paper Towels vs. Air Dryers	2016	Green Team
16	Improving Energy Efficiency	2016	Green Team
17	Zero Waste Plan Updates	2014	Green Team

# SECTION 4 – MOVING TOWARD ZERO WASTE

Program #	Description	Year Initiated	Team
1	Green Team Establishment & Leadership	2014	DRSS

- ✓ Time available
- ✓ Support of administration
- ✓ Leadership



# SECTION 5 – A MODEL FOR OTHER SCHOOLS

Develop a Core Interest Group

Share Your Interest with Others at the School

Establish an Informal Working Group

Draft an Environmental Mission Statement

Develop a Set of Goals

Gain Support from School Administrators

Launch Zero Waste Project

Establish a Green Team

Green Team Drafts an Outline for the ZW Project

# SECTION 5 – A MODEL FOR OTHER SCHOOLS

Green Team Drafts an Outline for the ZW Project

Perform a Waste Audit

“Flesh Out” Each Program in the Outline

Develop a Detailed Communication Plan

Identify Funding Options

Measure the Impact

Involve the Community

What’s on Your Report Card?



# What have we completed so far towards Zero Waste:

- Sustainability Class and curriculum
- Cafeteria collection program called TAS (throw away system)  
– with data collected
- Establishing of “Green Team”
- What do we do next?

# 6th Grade Sustainability Class



- Creating Curriculum to educate students on how to become more sustainable
- Green Week - Educated the Entire School on what “Zero Waste” is in December of 2014
- Using 6<sup>th</sup> grade Students to Manage the TAS (Throw Away System)
- Curriculum designed to open 6th graders eyes to the real world of Consumerism through videos, discussions and field trips.

# Throw Away System



Liquid waste

Terracycle (5 bins)

whole fruit/food

compost

silverware

recycling

landfill



**TERRACYCLE**

Products that are designed for the dump are up cycled into new projects

- Chip Bags
- Lunchable containers – tray, plastic film and cardboard box
- Candy Bar wrappers
- Capris Sun pouches
- Energy bar and Granola Bar wrappers
- Little Bites
- GoGo Squeezes
- (NO Clear or white Plastic Packaging or Zip Lock Bags – this is regular trash)



# Where is our Compost?



Our Compost is  
behind the school  
near the Fitness Space

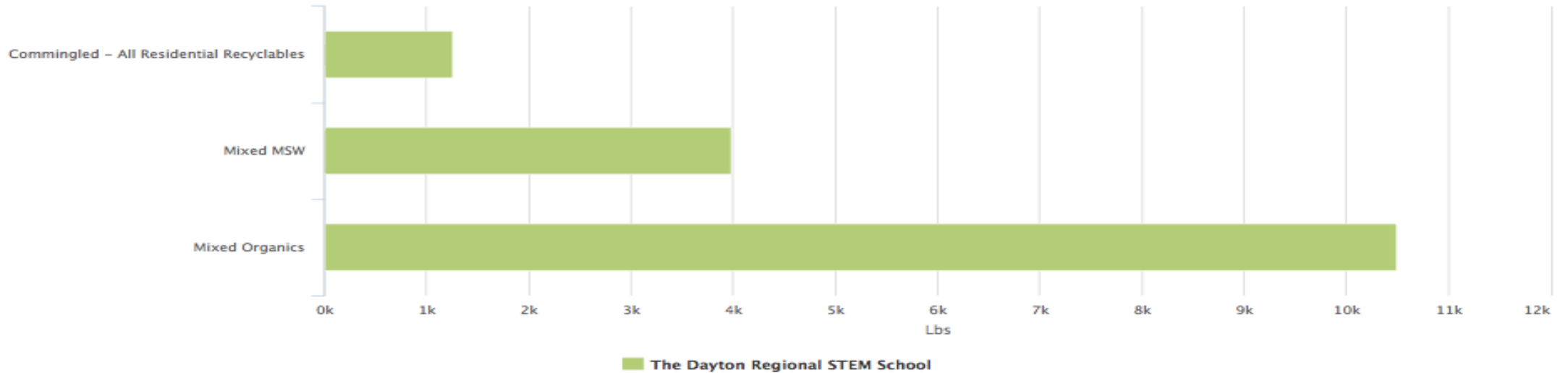
Things that do not belong in  
the compost:

- Plastic silverware
- Styrofoam bowls
- Ketchup packets
- Plastic wrap/packaging



# Data Collection – for TAS

Snapshot Summary (Pounds)  
August 20, 2014 – June 10, 2015



<i>Materials</i>	<i>Pounds</i>
<b>The Dayton Regional STEM School</b>	
Commingled - All Residential Recyclables	1,256.79
Mixed MSW	3,984.81
Mixed Organics	10,499.07
<b>Total:</b>	<b>15,740.67</b>

# Where have all of our Materials gone?

## Material Management Rate (Pounds and %)

August 20, 2014 - June 10, 2015

<i>Materials</i>	<i>Composted</i>	<i>Landfilled</i>	<i>Recycled</i>	<i>Reused *</i>
<b>The Dayton Regional STEM School</b>				
Commingled - All Residential Recyclables	0	0	1,256.79	0
Mixed MSW	0	3,984.81	0	0
Mixed Organics	9,740.07	0	0	759.00
<b>Total:</b>	<b>9,740.07</b>	<b>3,984.81</b>	<b>1,256.79</b>	<b>759.00</b>
<b>Rate (%)</b>	<b>61.88</b>	<b>25.32</b>	<b>7.98</b>	<b>4.82</b>

**\***

The **REUSE items** include **apples and oranges** placed in the “Whole Food Box” for others to enjoy at school or donated to food pantry instead of ending up in Compost – also **milk** that was donated to food pantry so that it would not expire before it could be Served to students (REUSE items’ this data was only started in March)



# Green Team



- After “Green Week” students began meeting weekly to work on projects around the school – January 2015
- Students and staff interested in being the hands and feet of change in our school
  - Sorting and Shipping Terracycle
  - Re-evaluating TAS
  - Advertising with PSA’s and Posters
  - Speaking with their classmates to influence changes



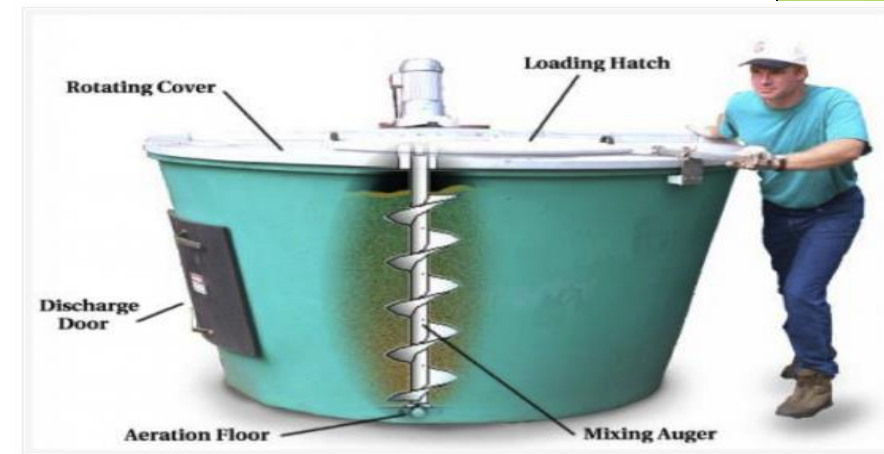
# What do we do next?

- Implement new Receptacle in Classrooms and common spaces with signage - bought through Buy Recycled Grant from MCSWD (pic of what will be arriving at our school this summer – to be ready for the fall)
- Begin “Waste Data” collection from classrooms and common spaces



# What Do We Do Next?

- Begin Collection of other Waste Streams - batteries, light bulbs, etc.
- Apply for Grant with Technical Writing Class at DRSS for “Earth Tub” Composter by Green Mountain Technologies - matching grant through EPA. (see picture to right)
- New Printing and Photo copying at school with “PaperCut” – estimated to save the school \$20,000+ a year in printing cost, paper, wasted ink)



PaperCut<sup>®</sup>