



Dynamic School Recycling through Partnership & Coordination

Lisa Perschke-Recycle Ann Arbor
Katy Adams- The Ecology Center
Jeff Krcmarik-Washtenaw County



Washtenaw County



- Solid Waste Division within the Office of the Water Resource Commissioner.
- In the midst of amending current solid waste plan.
- Worked with schools in the past through chemistry lab clean out project.
- Have reached out to provide media support promote and assist in education.
- Funding through community host agreement.

Recycle Ann Arbor



- **Founded in 1977**
- **Non-profit**
- **First community in MI to have curbside recycling**
- **Four different divisions and community engagement**

Ecology Center

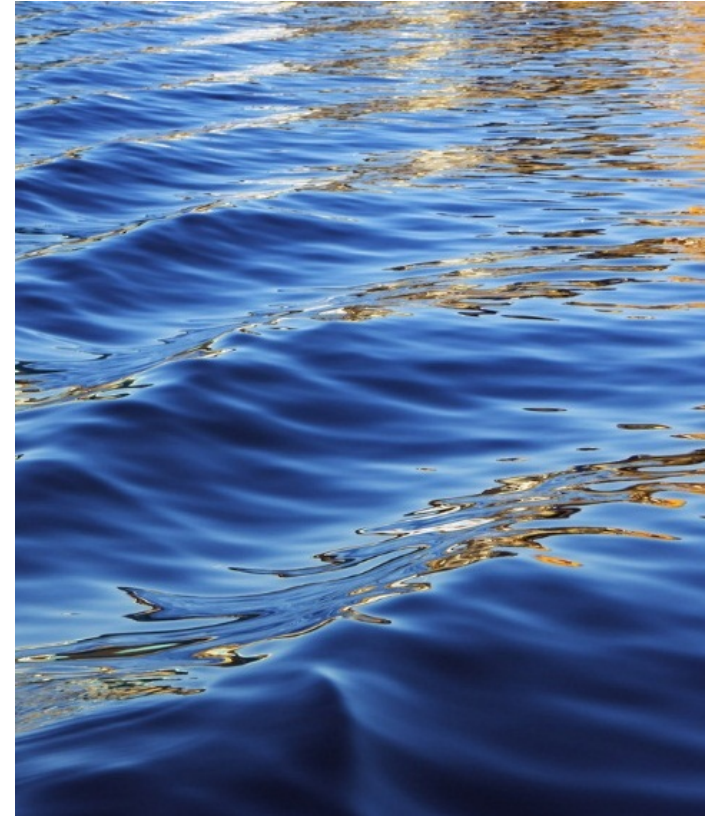


- **Founded in 1970**
- **Non-profit**
- **Healthy people, healthy planet**
- **Policy, market transformation, community action, and education**
- **40-years experience with K-12 education**



Small Group Chat

Fundamental characteristics of a successful program



6 Elements to Successful Recycling Program



Topics

- **Public –Private Partnership Coordination**
- **Collection: Service Measurements and Participation**
- **Education: School staff and student education**
- **Communication**





Public-Private Partnership Coordination

Jeff Krcmarik (Washtenaw County)



2015 DEQ Pollution Prevention Grant

- Washtenaw Intermediate School District (WISD) oversees 13 school district in Washtenaw County
- Operations Director Randy Trent convenes all facility directors from each school monthly.
- Recycle Ann Arbor, Ecology Center, Waste Management, WISD, Washtenaw County propose to revive existing school recycling and offer to schools without support. (Public, Private, Non-Profit Partnership)
- Grant total \$57,000 awarded \$32,000



Goals of Project

- Integrate recycling and education with support through the grant to at least 8 schools; 4 schools service with a dual stream recycling and 4 service with a single stream recycling program.
- Decrease school waste increase diversion to 30%.
- Assess and improve school attitudes towards recycling.



WISD School Recycling Pilot Program 2015-2016

Waste Management Serviced Schools

4 schools --Dual Stream Recycling

- Serviced with recycle dumpster only
- Bagged paper and containers separately
- Two separate indoor boxes per trash
- Separate recycle guidelines for each
- Corrugated cardboard loose loaded
- Custodians left holding the program (not student lead)
- Schools struggled with collection inside



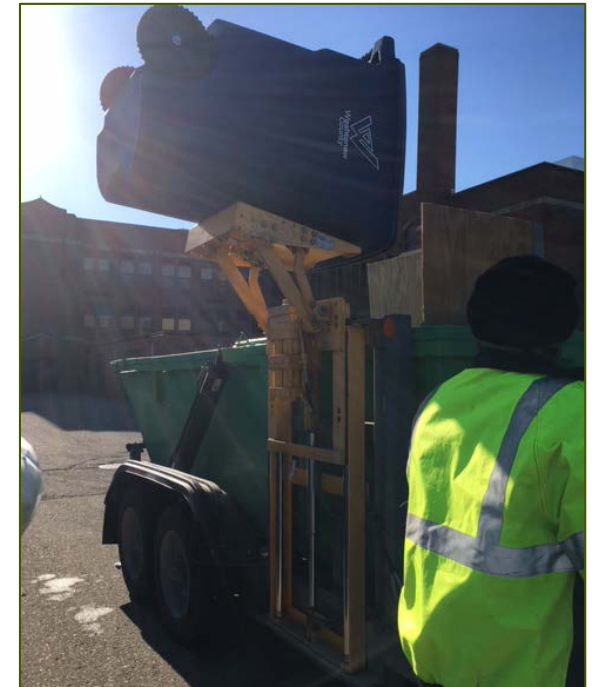
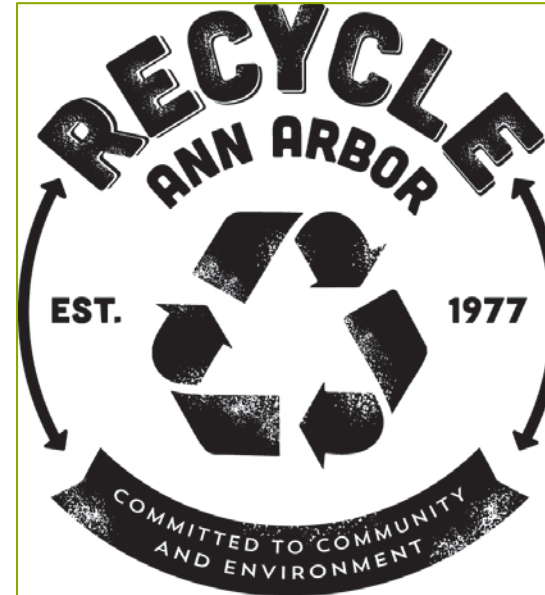
WISD School Recycling Pilot Program 2015-2016

Continued...

Recycle Ann Arbor Serviced Schools

4 schools --Single Stream Recycling

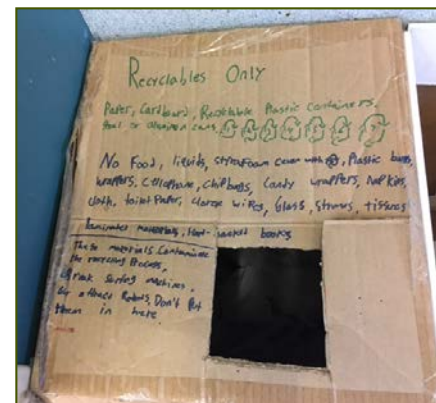
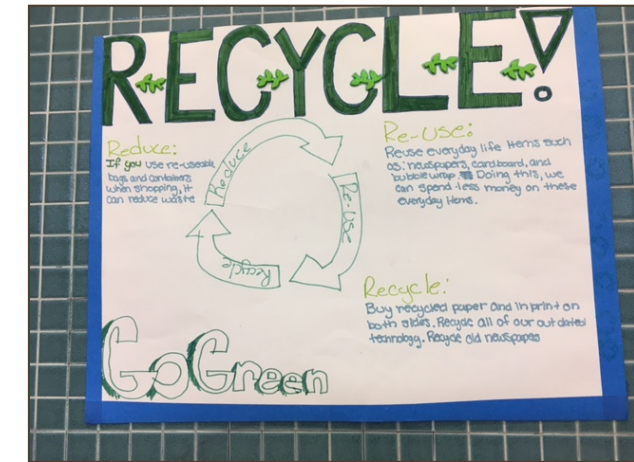
- Serviced with both carts and recycle dumpster
- No separating nor bags needed
- One indoor recycling box needed
- One recycle guideline type needed
- Corrugated cardboard loose loaded
- Teacher and student managed program (empowered/ownership)
- Home recycling program same as school program



Washtenaw County School Recycling Program 2016-2017

Things learned from P2 Grant Pilot:

- Dual recycling program more difficult to manage.
- Waste Management “cardboard only” recycle dumpster at each school (a lot of cardboard)
- Recycle Ann Arbor serviced carts at each school (small indoor materials)
- Each school is uniquely different
- Signage –kid friendly (less words, pictures of accepted items only).
Enlarge with lamination



Washtenaw School Recycle Program

<p>PAPER AND PAPER BOARD</p>	<p>CARTONS</p>	<p>METAL</p>
<p>Place all shredded paper into closed clear plastic bags when placing into carts.</p>	<p>Place all flattened, empty cardboard boxes into the large Waste Management recycle dumpster!</p>	<p>PLASTICS</p>



Public & Private Collaboration

PUBLIC FUNDING

COLLECTION

SCHOOL RECYCLING INITIATIVE

EDUCATION

Establish service perimeters among haulers & MRF

Audit individual school needs for service

Purchase containers and establish collection schedule

Recycling pick-ups & ongoing monitoring of recycling quantity & quality

Inform next year

Develop suite of educational lessons and resources

Identify individual school needs and schedule programs

Conduct staff and student workshops/assemblies

Ongoing monitoring of recycling questions & follow-up education support

Collect data: written surveys, cart audits, interviews, MRF feedback
Share data: analysis and reporting



Service Measurements and Participation

Lisa Perschke (Recycle Ann Arbor)



Standardized-Service Measurements Dumpsters and Carts (Weekly)

Start time —load the empty carts on truck:	_____ am/pm
Time - Left RAA (office) for first school:	_____ am/pm
Time - Arrived at First School:	_____ am/pm
Name of School Serviced first:	_____ School
1. Check Recycle Dumpster	
How full is it?	_____ %
Contaminated, with wrong materials ? Describe what you see inside dumpster...	
2. Check Trash Dumpsters	
How full is each dumpster (label each dumpster onsite)?	_____ % / _____ %
Is recyclable materials in the bags or free in dumpster? Describe what materials you see inside...	
Recycling Carts...please remember the following a. Please adjust materials in all carts before documenting... b. Number each cart (on following sheet) c. How full is each cart? Give percentage (total fillage rate) d. Give the percent of each type of material in each cart? (All materials in cart should = 100%)	

3. WISD Recycle Carts Documentation				
Cart #	% full	Materials inside cart	Scale actual gross weight	What unaccepted items were found inside cart?
Cart 1	%	_____ % of _____ & _____ % of _____ & _____ % of _____	_____ lbs	
Cart 2	%	_____ % of _____ & _____ % of _____ & _____ % of _____	_____ lbs	
Cart 3	%	_____ % of _____ & _____ % of _____ & _____ % of _____	_____ lbs	
Cart 4	%	_____ % of _____ & _____ % of _____ & _____ % of _____	_____ lbs	
GROSS Weight		Total gross weight of all carts here (please double check these figures three times to ensure accuracy.)	_____ lbs	
Tare Weight		total tare weight here. (Double check figures)	(--) _____ lbs	
NET WEIGHT		Subtract tare weight from gross weight = TOTAL NET WEIGHT (Double check figures!)	_____ lbs	

Standardized-Service Measurements

Time and Weight Sheets (Weekly)

MRF Time Sheet/End Time	
1st Trip to MRF----	
Time -Left route to dump at MRF	_____ am/pm
Time -Arrived at MRF:	_____ am/pm
Total Net weight on truck:	_____ lbs.
Time -Left MRF to go back to route:	_____ am/pm
2nd Trip to MRF----	
Time -Left route to dump at MRF	_____ am/pm
Time -Arrived at MRF:	_____ am/pm
Total Net weight on truck:	_____ lbs.
Time -Left MRF to go back to route:	_____ am/pm
Time -Arrived back at RAA (dropped	_____ pm
Finish time-End of service	_____ pm

WISD CARTS Weight:		
NET WEIGHT of 1st School	TOTAL NET WEIGHT	_____ lbs
NET WEIGHT of 2nd School	TOTAL NET WEIGHT	_____ lbs
NET WEIGHT of 3rd School	TOTAL NET WEIGHT	_____ lbs
NET WEIGHT of 4th School	TOTAL NET WEIGHT	_____ lbs
NET WEIGHT of 5th School	TOTAL NET WEIGHT	_____ lbs
NET WEIGHT of 6th School	TOTAL NET WEIGHT	_____ lbs
WISD School Total Net Weight (at WWRA MRF)	Grand Total Net Weight	_____ lbs
OCC CARTS weight:		
NET WEIGHT of 1st School	TOTAL NET WEIGHT	_____ lbs
NET WEIGHT of 2th School	TOTAL NET WEIGHT	_____ lbs
OCC Program Total Net Weight (At WWRA MRF)	Grand Total Net Weight	_____ lbs

Monthly-Volume weight estimation of recycle and trash dumpsters

WM Serviced Schools													Page 1									
Arrived at school at:																						
Left school at:																						
Name of School																						
RECYCLING Dumpster																						
Survey Date	FILL % of each recycling cart (Check box that applies)				Estimated volume of materials in dumpster In Pounds	Which recycled material do you see most in each recycling dumpster?			Which unaccepted items do you see most in each recycle dumpster? (Check box that applies)													
	25%	50%	75%	100%		card board	paper	cans	food	candy wrappers	chip bags	napkins	plastic bags	styrofoam								

Recycle Ann Arbor and WM Serviced Schools													page 2									
Name of School																						
TRASH Dumpster																						
Survey Date	Identify which trash dumpster		FILL % of trash dumpster (Check box that applies)				Estimate volume of dumpster materials In Pounds	Which recyclable items do you see in trash dumpster (that shouldn't be in there?)														
	Example; left trash dumpster		25%	50%	75%	100%		bottles	cans	cardboard	paper	paperboard										

Recycle Ann Arbor Serviced Schools													page 3										
Name of School													Driver name:										
RECYCLING Carts																							
Survey Date	Cart number	FILL % of each recycling cart (Check box that applies)				Actual gross weight	Subtract cart tare weight (34 lbs)	Net weight of materials in pounds	Which recycled material do you see most in each recycling cart? (Check box)			Which unaccepted items do you see most in each recycle dumpster? (Check box that applies)											
		25%	50%	75%	100%				card board	paper	cans	food	candy wrappers	chip bags	napkins	plastic bags	styrofoam						
	Example; W0 000 001																						



School by School Comparison Reports and Graphs

WIHI/WIMA

In the school year 2015-2016, Washtenaw International High School and Washtenaw International Middle Academy housed the middle and high school, their building containing 50 classrooms and office spaces. They have a total of 180 WIMA and 500 WIHI students (total of 680 students).

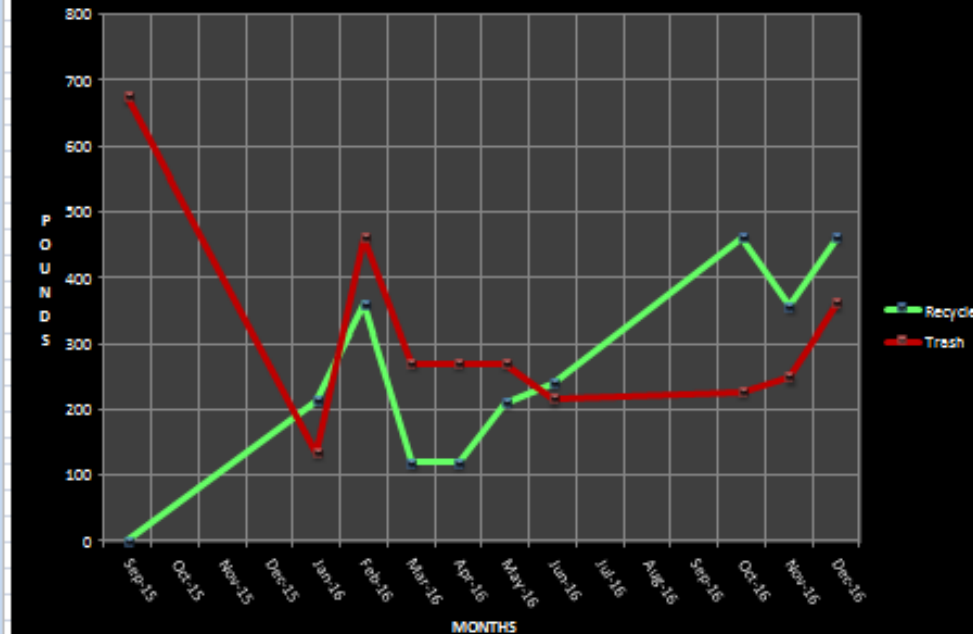
Recycle Ann Arbor met with Steve Burgess (Ypsilanti School's facility manager) on August 20, 2015 and found that the staff was collecting their recycling inside the school and putting it into the onsite "blue Republic steel trash dumpster" to be recycle but Recycle Ann Arbor found out it was actually being collected as trash.

Recycle Ann Arbor met with Jessica Garcia (Assistant WIMA School Principal) on September 22, 2015. Recycle Ann Arbor documented a green 6 cubic yard trash and a blue Republic 6 cubic yard trash dumpster onsite. When we met with Kathy, food service director, she explained that they had been completely filling the blue dumpster 3 times a week.

At the beginning of the grant, WIHI was to be serviced by Recycle Ann Arbor because they were new to recycling but after the assessment meeting, Recycle Ann Arbor asked the WISD group to change this school to a WM serviced school so their cardboard recycling needs would be fully taken care of.

Recycle Ann Arbor received the delivery of the WISD School recycling indoor boxes on November 16, 2015. Recycle Ann Arbor set up the indoor bins with Tammy Church on December 3, 2015. Per Kathy and Tammy's request, Recycle Ann Arbor provided 2 free 65-gallon carts for the kitchen to use to wheel their recycling out to the recycle dumpster, which were delivered the following week.

WIHI/WIMA (Sept 2015-Dec 2016)



Washtenaw International Middle Academy

School by School Comparison Reports and Graphs

Ypsilanti Middle School (Willow Run)

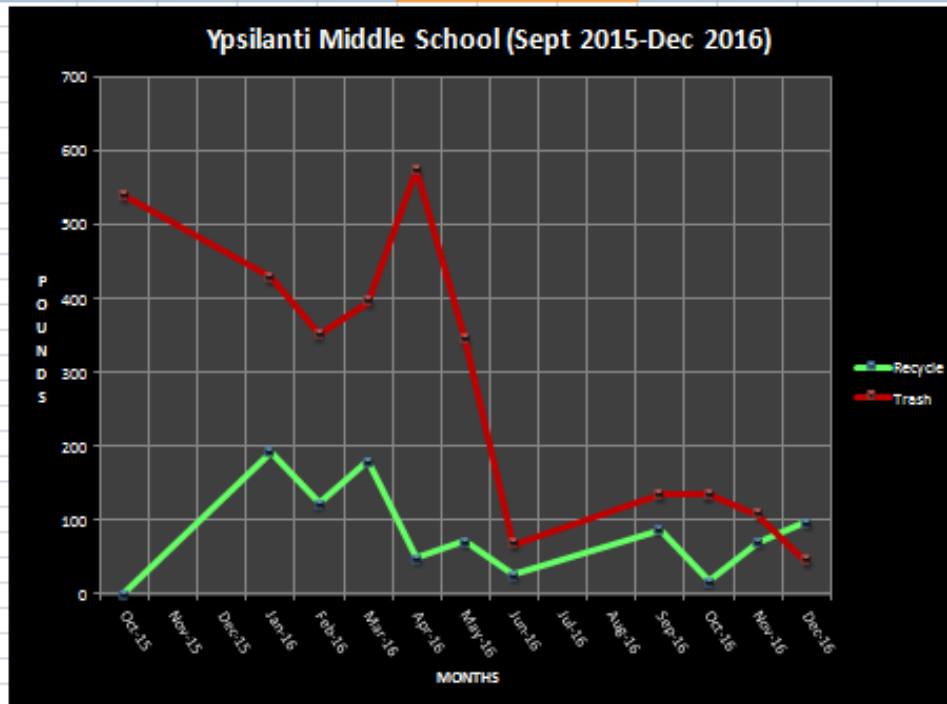
In the school year 2015-2016, Ypsilanti Middle School (Willow Run) housed the 5th-8th grades, with a total 16 classrooms and a total of 475 students.

Recycle Ann Arbor and the Ecology Center met with the school on October 28, 2015. Recycle Ann Arbor documented the size, volume and estimated fill rates for both their onsite trash dumpsters (2, 6 cubic yard trash dumpsters are onsite). Later I found out that the High School had one 8 cubic yard trash and one 8 cubic yard recycle dumpster that the middle school sometimes uses, so I began including these into the middle schools totals since the high school has been vacant for several years.

Recycle Ann Arbor received the delivery of the WISD School recycling indoor boxes on November 16, 2015. RAA worked to set up indoor bins at Ypsilanti Middle School on December 11, 2015. We also delivered this school 8, WISD recycling carts.

Recycle Ann Arbor started servicing Ypsilanti Middle School's recycling carts beginning January 6, 2016. Every week of service since then, Recycle Ann Arbor has been documenting (weighing during warm weather but estimating by volume during the winter. On average this location only filled between 1-4 carts weekly.

Recycle Ann Arbor performed a once per month dumpster survey at all four WM serviced schools, WIH/WIMA being one of those schools. Recycle Ann Arbor visited this site on January 25, 2016, February 14, 2016, and April 3, 2016. The last monthly Waste Management dumpster survey was completed on Sunday, June 18, 2016.

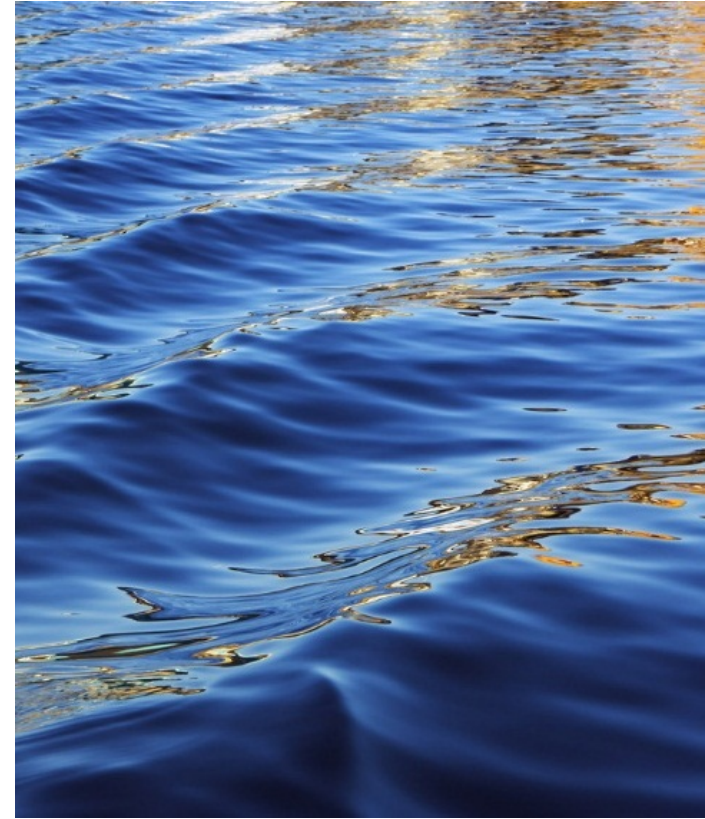


Ypsilanti Middle School



Education

Katy Adams (The Ecology Center)



Establishing Recycling Value for Schools



- Empowers teaching staff and students through school curriculum
- Peer to peer education and friendly competitions (student creativity)
- Increases quality and quantity control
- Reduces waste hauling costs
- Improves purchase planning
- Engaging community through recycle events via school planned events (parents, siblings, grandparents and other staff)

Help Adults Recognize Need for Education



Mark those items that you think belong in your school recycle cart.

_____ Piece of paper

_____ Old clothes

_____ Plastic grocery bag

_____ Empty juice box

_____ Yogurt container

_____ Orange peels

_____ Straw

_____ Magazine

_____ Candy wrapper

_____ Plastic Bottle

_____ Paper towel

_____ Paper coffee cup

_____ Styrofoam cup

_____ Aluminum can

_____ Aluminum foil



Learning about the System

- MRF determines recycling rules
- Understanding how a MRF works helps rules to “make sense”
- Do not ask or expect people to memorize the recycling rules
- Provide simple categories to identify what is recyclable
- Accompany each category with physical/visual demonstration
- Technology and markets change – causing recycling rules to change



Recycling truck takes all recyclables to Materials Recovery Facility (MRF).

Materials are sorted at the MRF: all aluminum cans put with other aluminum.

Aluminum cans are bundled together, then put on a truck.

Learning about Contamination



Learning about Recycling in our Daily Lives

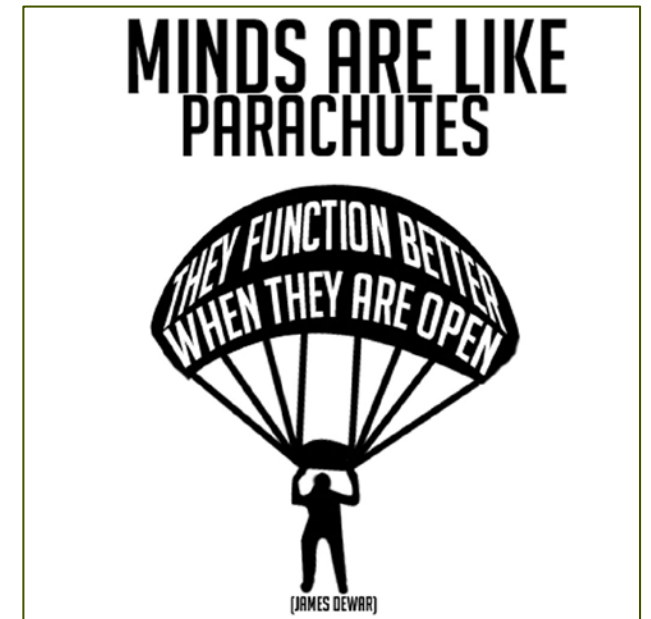


- Recycled products
- Employment and economics
- Technology and invention



Keys to a Successful Program

1. Communication
2. Outreach and Education
3. MRF Selection
4. Program flexibility and adaptability
5. Recycling School Culture



Communication is Key!



- Pre surveys-connect with onsite staff and students in each school (meet each school where they are)
- Gain feedback from service provider
- Brainstorm with partners
- Provide feedback and recommendations
- Provide measurements (growth or problems)
- Post surveys to improve program

Surveys



Pre Survey Study:

- Describe program to administration staff (history, funding, logistics)
- Pre history of recycling at school (school culture in building)
- Grade levels serviced
- Total number of students in building
- Total number of classrooms (bins)
- Tour school (document existing bins and system) determine additional bins and signage needed
- Student and staff recycling knowledge surveys

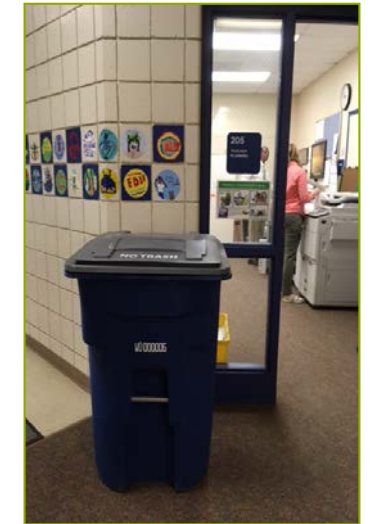


STUDENT _____



8. Write the letter **R** by those items you think belong in RECYCLING cart at school.

____ Piece of paper 	____ Yogurt container 	____ Glass jar 
____ Paper bag 	____ Candy wrapper 	____ String or yarn 
____ Paper plate 	____ Plastic bottle 	____ Potato chip bag 
____ Paper towel 	____ Plastic bag 	____ Bottle caps 
____ Empty juice box 	____ Sandwich bag 	____ Pop can 
____ Pizza Box 	____ Plastic spoon 	____ Soup can 
____ Empty milk carton 	____ Styrofoam cup 	____ Go-Squeeze Pack 
____ Cardboard box 	____ Banana peel 	____ Straw 
____ Plastic toy 	____ Battery 	____ Magazine 
____ Aluminum foil 	____ Old clothes 	




Surveys continued...


Post Survey Study:

- What worked and didn't work?
- What school team efforts were to fix issues?
- Things we could do to improve this program?
- How did the staff and student educational trainings work?
- How was your dumpster service?
- How was your cart service?
- Student and staff recycling knowledge surveys

STUDENT _____

 ECOLOGYCENTER
Healthy People. Healthy Planet.

Student Recycling Survey



School Name: _____ My Grade: _____

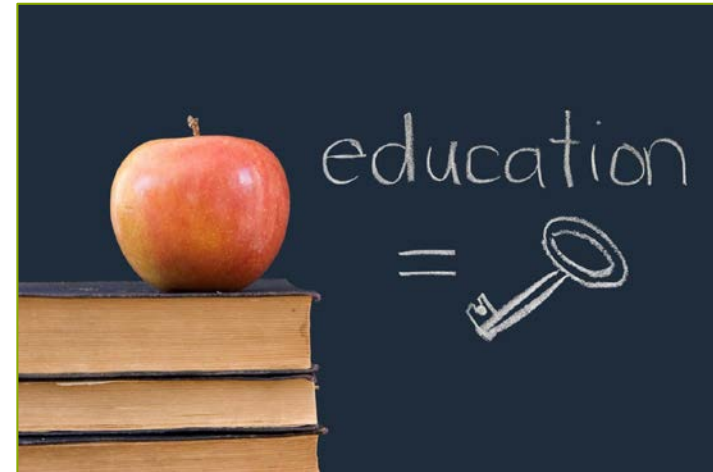
1. It is useful for me to know about recycling.	<input type="radio"/> No	<input type="radio"/> Sometimes	<input type="radio"/> Yes
2. Recycling is hard to do.	<input type="radio"/> No	<input type="radio"/> Sometimes	<input type="radio"/> Yes
3. I am confused about what I can recycle.	<input type="radio"/> No	<input type="radio"/> Sometimes	<input type="radio"/> Yes
4. I would go out of my way to find a recycle bin.	<input type="radio"/> No	<input type="radio"/> Sometimes	<input type="radio"/> Yes
5. I wish more people cared about recycling.	<input type="radio"/> No	<input type="radio"/> Sometimes	<input type="radio"/> Yes
6. My family cares about recycling.	<input type="radio"/> No	<input type="radio"/> Not sure	<input type="radio"/> Yes

7. Do you think recycling is important? No Yes
Please explain why or why not.



Outreach and Education

- School District Facilitation Director
- Administration Staff
- Teachers
- Custodians
- Students
- Parent visitors and volunteers



Material Recovery Facility determines....

- Accepted items in your recycling program
- MRF processing costs impact recycle program \$\$\$ (now and in future)
- Your future program viability - transportation costs and continuum program
- Recycling market growth (end markets)

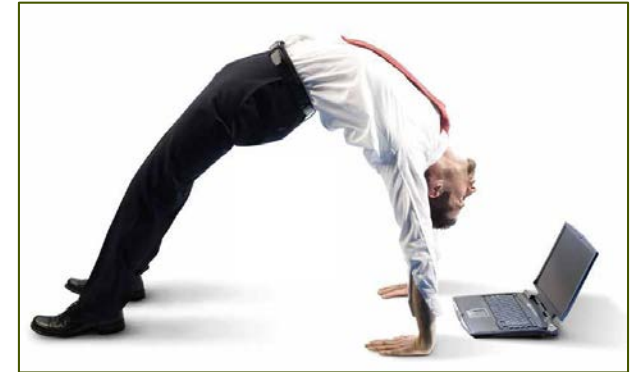


KEYS TO
SUCCESS



Flexible and Adaptable Programming

- Engage stakeholders
- Ensure use and share lessons learned
- Identify new and existing gaps
- Collaborate to improve outcomes
- Make informed decisions and changes
- Stay open to new ideas and similar ways of doing things



Open minded people do not impose their beliefs on others. They accept that we all have a different perspective on life, and do their own thing in peace without judgement.

Steven Aitchison

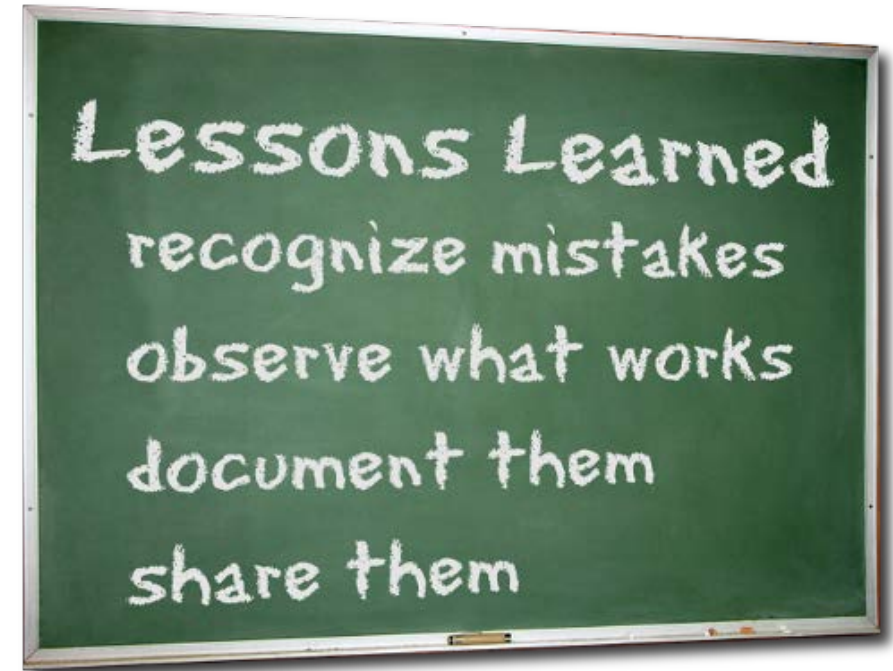
Creating a Culture of Recycling



Leadership, participation, results, and recognition!

Take Away Lessons Learned...

- ✓ Supporting Policy Investment—
Letter of understanding (roles and responsibility of partners)
- ✓ Economic Benefits reduce solid waste expenses
MRF reduced tipping fees
High Quality material (less contamination)
- ✓ Legacy of Continuity
Habits of repetition for building culture
Ongoing Education and Communication (change in staff, students, reminders)
Washtenaw County School Recycling Newsletter



TAK  take
away
knowledge



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