

Recycling & Waste Management Practices in School Nutrition Programs

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Conducted by:

School Nutrition Association



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School Nutrition Foundation



Education, Research and Scholarship

National Dairy Council



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Executive Summary

The National Dairy Council, in conjunction with the School Nutrition Association and the Child Nutrition Foundation, conducted a study to understand the recycling and waste management practices within school nutrition programs. The information gained from this study will help the School Nutrition Association in developing educational programs and articles on this subject.

Overview of Findings

Respondents representing 675 school districts were surveyed regarding their current practices of waste management and recycling practices.

Waste Management

81% of respondents indicated that their school district pays for the district's trash pick-up.

63% of respondents indicated that the school nutrition program is not charged for waste removal. Of those that are charged, most (80%) are charged by the school district not directly by the waste hauler.

- Of the school nutrition programs that are charged by their school district, the most common method of being charged is by standard percent allocation/indirect costs (56% of those that are charged).

The estimated annual waste management costs for school nutrition programs that are charged by their district varies significantly depending on the size of the school district.

Recycling

58% of the respondents indicated that the school nutrition program recycles.

Of the school nutrition programs that recycle the following themes emerged:

Materials

- Cardboard is the most frequently recycled material in school nutrition programs, being recycled by 91% of the respondents.
- Office paper and steel/tin cans are also recycled by over 50% of the programs that recycle.
- Newspaper, plastic, and aluminum are recycled by at least one-third of school nutrition programs.

Recyclables Hauler

- 62% indicated that their waste hauler picks up their recyclables as well.
- 12% are not aware of who picks up their recyclables.
- 26% use a separate company (*see Appendix A for a list of the companies used by region*)

Bins

- About half of the district's recycling companies provide bins or containers for inside the school.
 - For the districts where the recycling company does not provide these containers, usually the school district provides or pays for these containers.

Recycling Charges and Revenue

- Similar to the charge structure for waste management, the school nutrition program is typically not charged for recycling (54% are not charged).
- Only a few programs receive revenue (i.e. rebated or profit sharing) from recycling (2%).

- Most of the respondents are unaware if the amount of materials going to waste removal helps to cover the cost of recycling – this is likely due to the fact that most districts do not have to pay for waste removal or recycling.

Of the school nutrition programs that **do not recycle** the most common reason for not recycling is that there is not a hauler for recyclables. Another common response is that the district does not recycle.

Recycling and Waste Management Practices in School Nutrition Programs

BACKGROUND AND OBJECTIVES

The National Dairy Council, in conjunction with the School Nutrition Association and the School Nutrition Foundation (formerly the Child Nutrition Foundation), conducted a survey to understand the recycling and waste management practices within school nutrition programs. The information gained from this study will help the School Nutrition Association in developing educational programs and articles for school nutrition professionals on this subject. These programs and information should be especially helpful to New Look of School Milk districts if they are interested in recycling the plastic milk bottles.

METHODOLOGY

A link to an online questionnaire was sent to approximately 4,816 e-mail addresses in the School Nutrition Association's membership database for director level members.

The survey was conducted from January 16, 2007 through February 6, 2007. The questionnaire included the following sections:

- School Demographics: Number of schools, Enrollment, Percentage of Free/Reduce Price
- Waste Management Practices
 - Hauler & Charge Policies
- Recycling Practices in School Nutrition
 - Participation in recycling, Recycled Items, Recyclable Hauler, Recycling Charges/Revenue
 - Reasons for not Recycling
 - Challenges/Obstacles to Recycling in School Nutrition
 - Incentives to Recycling

Survey Monkey was used as the online data collection and analysis tool. Microsoft Excel was used for data analysis and presentation.

RESULTS

Response Rate

A total of 701 responses were received. Therefore, the response rate was approximately 11.2%. However, this response rate does not factor in the number of invalid email addresses or addresses that were blocked or filtered before reaching the intended recipient. While 701 responses were received, 26 respondents were removed from the data set due to the number of incomplete questions (only filling out demographic data) and/or duplicate district responses resulting in 675 responses. Since the survey items were not dependant on one another, all responses were included in the analysis, even though not all respondents completed the entire survey.

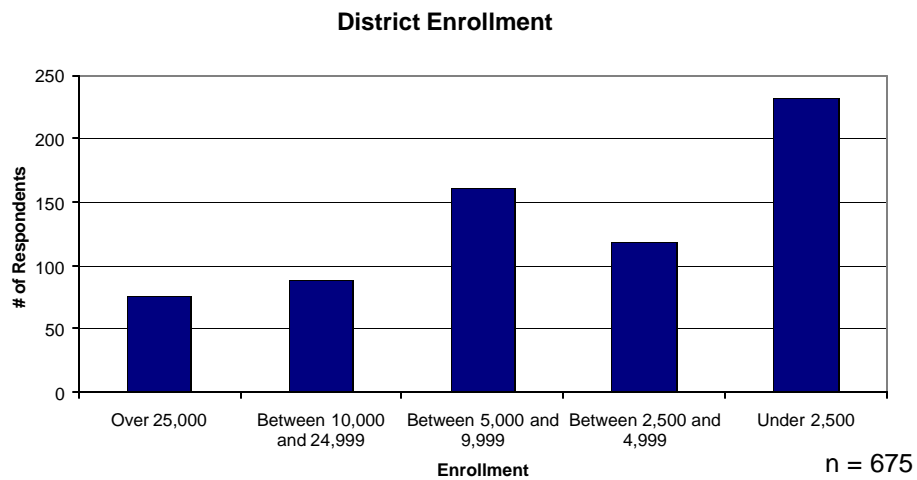
School Demographics

Responses were received from 45 states plus the District of Columbia representing all seven SNA geographic regions

SNA Region	% of Respondents
Northeast	19%
Mideast	15%
Midwest	14%
Southeast	12%
West	11%
Southwest	9%
Northwest	5%
Did not specify	22%

The number of schools in a district ranged from 1 to 326 with the median number of schools being 7 and the average number of schools 17.

Respondents represented varying sized districts.



Waste Management Practices

Waste Haulers

A variety of companies are used for waste removal and hauling. While most use local or regional companies, about 31% of the respondents indicated that their district uses one of the following national companies:

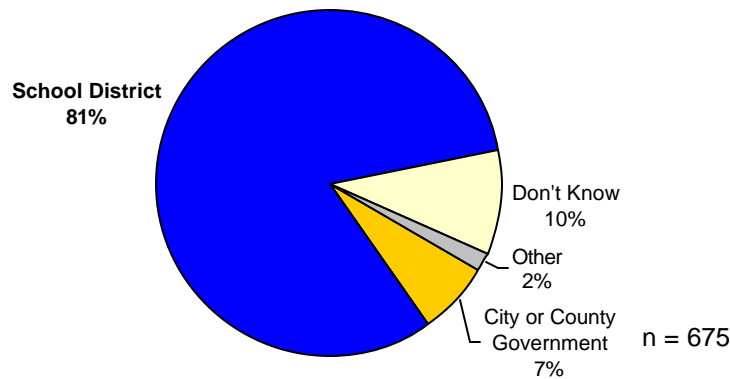
- Waste Management – used by 22% of respondents
- BFI – used by 6% of respondents
- Allied Waste – used by 3% of respondents.

Additionally 8% of respondents indicated that their city, town, municipality or county was their waste hauler. See Appendix A for a list of companies used by geographical region.

Waste Removal Costs for School Districts

81% of respondents indicated that their school district pays for the district's trash pick-up.

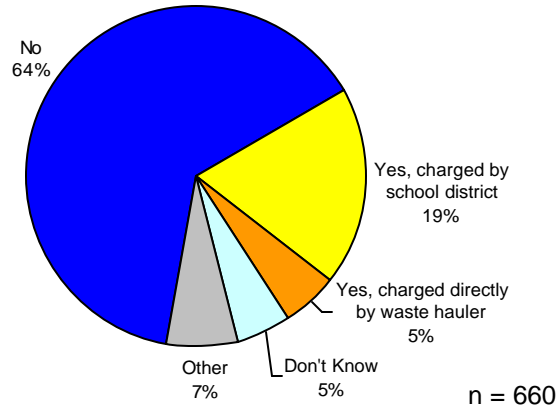
Who Pays for Trash Pick-Up



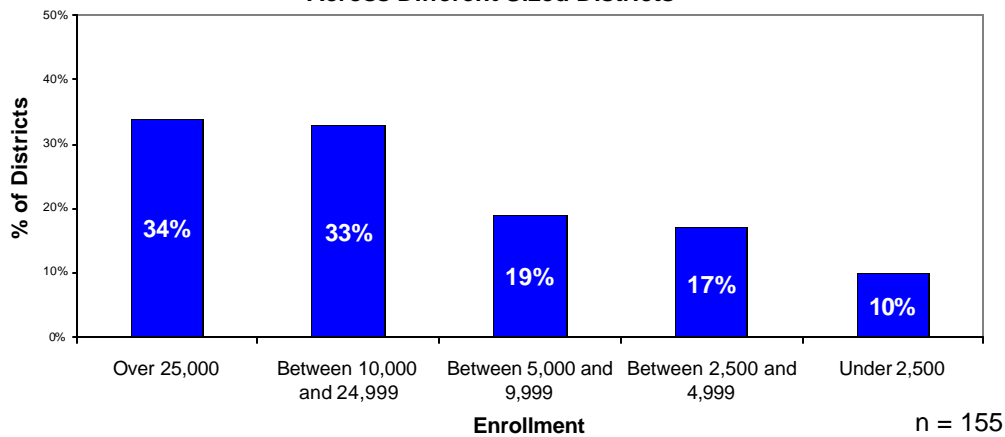
Waste Removal Costs for School Nutrition Programs

Overall 63% of respondents indicated that the school nutrition program is not charged for waste removal. Of the school nutrition programs that are charged, most (80%) are charged by the school district not directly by the waste hauler. School nutrition programs in larger districts were more frequently charged by their school district for waste removal compared to smaller districts.

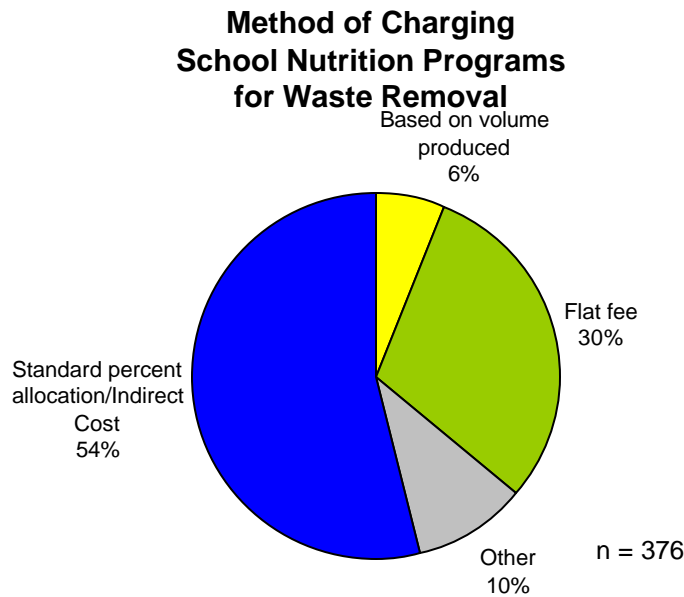
Is the School Nutrition Program Charged for Waste Removal?



Percentage of School Nutrition Programs Charged by Their District for Waste Removal Across Different Sized Districts



Of the programs that are charged for waste removal, the most common method of charging a program is through a standard percent allocation or indirect cost (used in 54% of programs that are charged). Another common method used to charge school nutrition programs is through a flat fee (used in 30% of programs that are charged). While both of these methods are commonly used across different size school districts, smaller districts (enrollments under 5,000) tend to use the flat fee method more often relative to larger districts (used by 40% of smaller districts versus 27% of larger districts).



The estimated annual waste management/removal cost for school nutrition programs that are charged by their school district varies depending on the enrollment of the district.

**Annual Charges for Waste Management/Removal by
School Nutrition Programs**

Enrollment	Average Charge	Median Charge	Range
Under 2,500 students	\$5,869	\$4,750	\$750 - \$20,000
Between 2,500 – 4,999 students	\$14,260	\$6,100	\$300 - \$90,000
Between 5,000 – 9,999 students	\$13,880	\$10,000	\$1,200 - \$65,000
Between 10,000 – 24,999 students	\$50,9013	\$37,185	\$1,00 - \$200,000
Over 25,000 students	\$105,324	\$67,237	\$4500 - \$500,000

n = 124 (the table reflects responses that were over \$0)

Recycling Practices in School Nutrition

Prevalence of Recycling in School Nutrition

58% of respondents indicated that the school nutrition program recycles. There is a significant variation in the prevalence of recycling in school nutrition programs by region. Recycling in school nutrition programs is more prevalent in the Northwest* (74% of programs) and Northeast (72% of programs). Recycling in school nutrition programs is less prevalent in the Southwest (45% of programs) and the Southeast (48% of programs).

Recycling in School Nutrition Programs



Region	Recycles	Does Not Recycle
Northwest*	74%	26%
Northeast	72%	28%
Midwest	69%	31%
Mideast	56%	44%
West	54%	46%
Southeast	48%	52%
Southwest	45%	55%

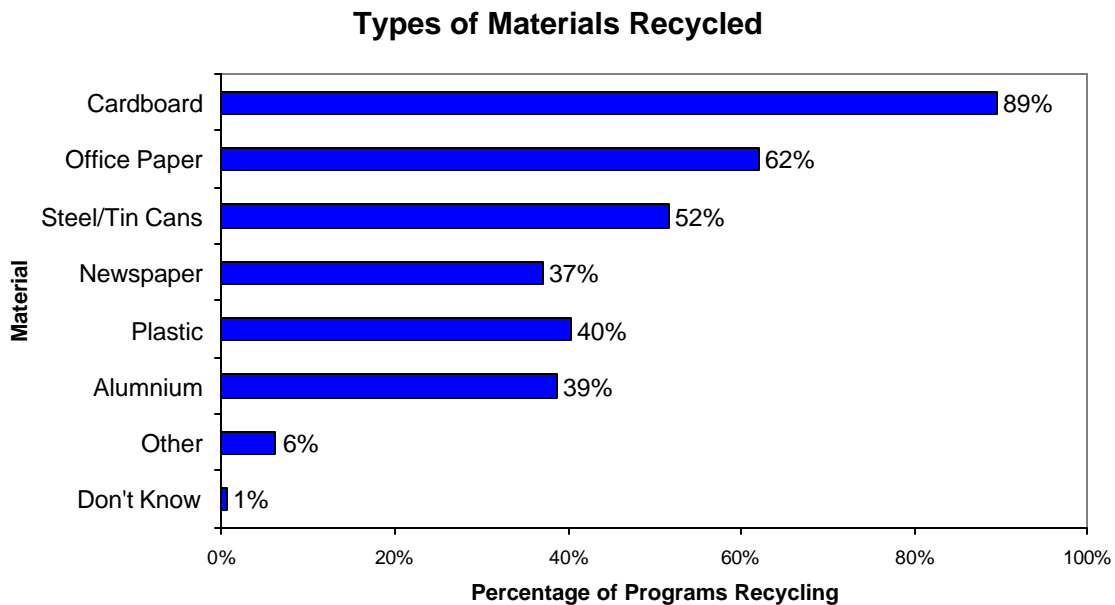
n = 525

* Only 31 respondents in this region

The following information is based on the 58% of respondents that indicate their district's school nutrition program recycles.

Type of Materials Recycled

- Cardboard is the most frequently recycled material, being recycled by 89% of the respondents
 - Office paper and steel/tin cans are also recycled by over half of these programs.
 - Newspaper, plastic and aluminum are recycled by at least one-third of school nutrition programs.
- There is some variation in the types of material that are commonly recycled by region.
 - The Northeast, Midwest and Northwest* more frequently recycle aluminum (46% - 53% of programs) and steel/tin (62% - 71% of programs)
 - The Northeast and Midwest more frequently recycle plastic (51%-58% of programs)



n = 352

Recycling Management

- 62% of respondents indicate that their district's waste hauler also picks up their recyclables
 - 26% of respondents use a separate company or group to pick up their recyclables. Of those these respondents, 25% indicate that someone in the school district (custodian, food service, principal, or student group) hauls the recycled materials to the recycling facility.
 - 12% are not aware of who picks up their recyclables
- See Appendix B for a list of the companies that only pick up recycling for districts.

Large school districts (enrollments over 25,000) are more likely to use a separate hauler for their recyclables.

Recycling Bins

- 51% of the districts' recycling companies provide bins or containers for inside the school.
 - For the district where the recycling company does not provide these containers, usually the school district will provide or pay for them. Only 22% of the respondents indicate that the school nutrition program provides and/or pays for some of the containers.

Recycling Charges

77% of districts that recycle are not charged by their school district for recycling. Large districts (enrollments over 25,000) are more likely to be charged for recycling compared to other sized districts.

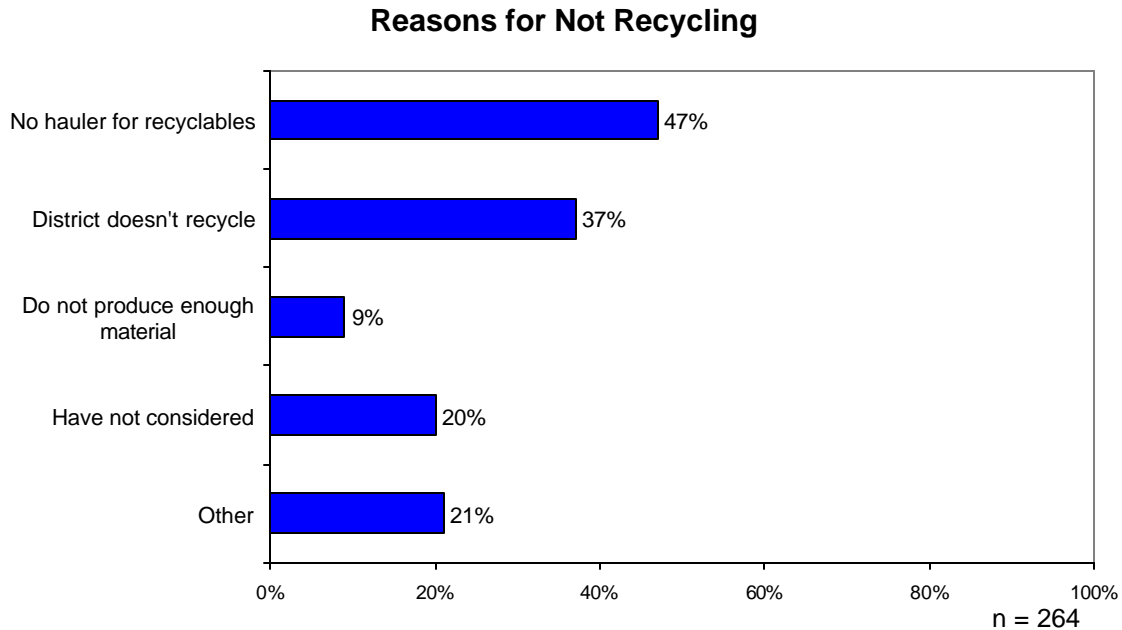
For school nutrition programs that are charged, flat fees (38%) and standard percent allocation/indirect costs (33%) are the most common charge structures.

Only 2% of school nutrition programs receive revenue via rebated or profit sharing from recycling revenue from recycling. For the few that do, revenue is most commonly determined by the weight of the product that is recycled.

Most school nutrition programs (63%) do not know whether the decrease in the amount of materials going to waste removal helps to cover the cost of recycling. This is likely driven by the fact that 77% of the programs are not charged for recycling. But 11% of respondents indicated that the decrease in the amount of materials going to waste removal helped to cover the cost of recycling.

Reasons for Not Recycling

The most common reason school nutrition programs do not recycle is because there is not a hauler for recyclables, noted by 47% of respondents whose programs do not currently recycle. Another common reason is because the district doesn't recycle, noted by 37% of respondents.



Smaller districts (enrollments under 2,500) tend to more frequently indicate that their reason for not recycling is due to not being able to produce enough material (24% of respondents).

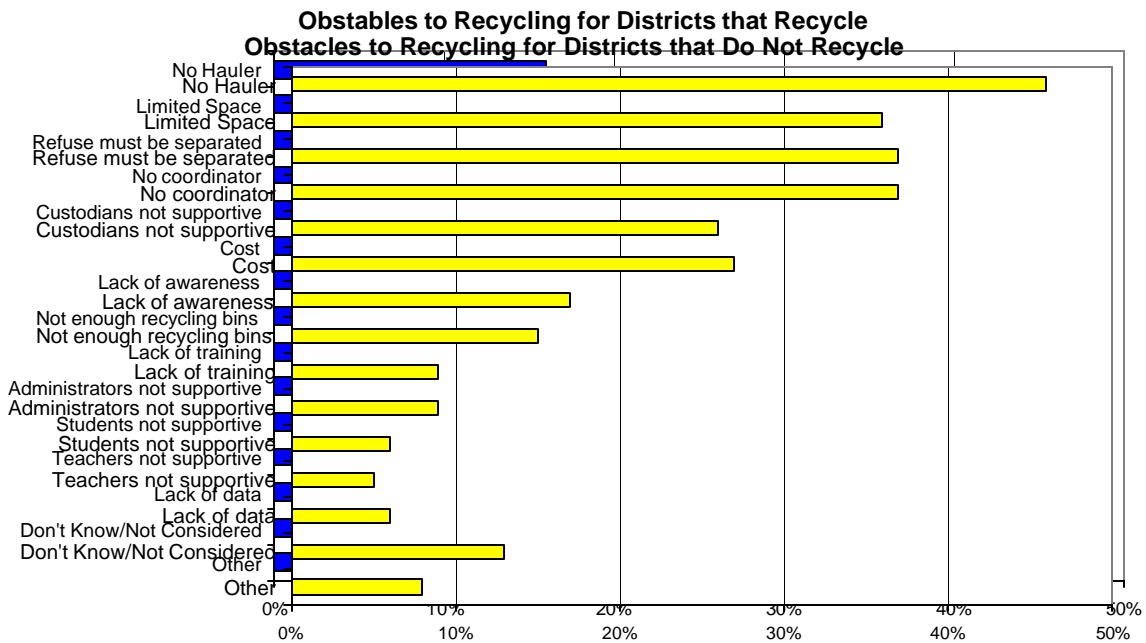
Recycling Challenges

School nutrition programs that do not recycle indicate the following challenges are the biggest obstacles to recycling in their district:

1. No hauler for recyclables (46%)
2. No coordinator to oversee (37%)
3. Refuse must be separated (37%)
4. Limited Space (36%)

School nutrition programs that currently recycle indicate the following challenges are the biggest obstacles to recycling in their district:

1. Limited Space (41%)
2. Refuse must be separated (31%)
3. No coordinator to oversee (26%)



Comments included in the “Other” category included the lack of priority of recycling, sanitation/pest control, coordination with city/county, and having to rinse materials before recycling.

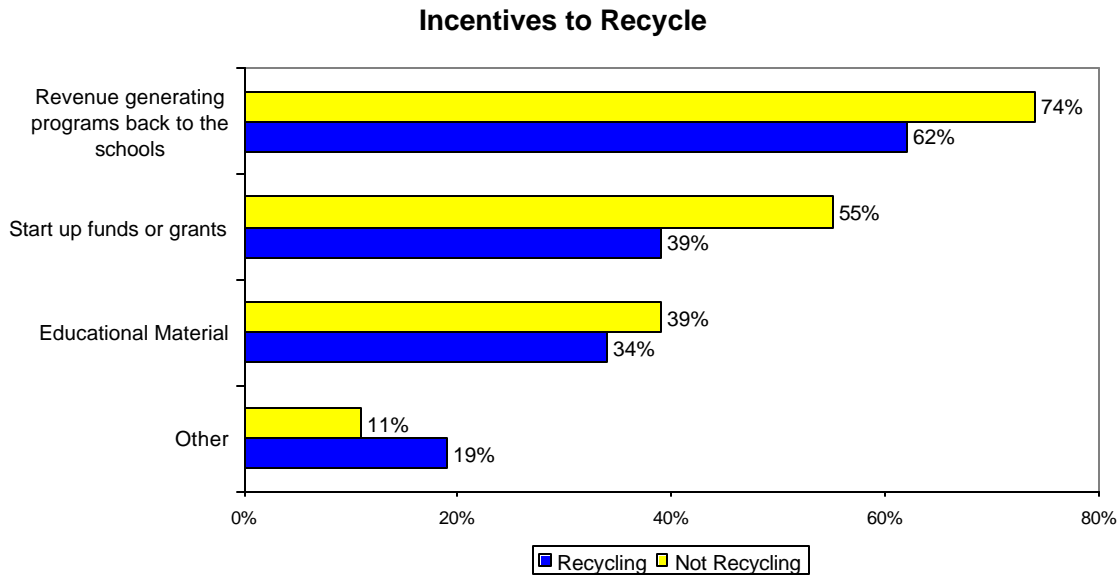
n = 574

Both respondents who recycle and those that do not recycle indicate similar ways of how these obstacles can be overcome. The following are the most frequently selected solutions to overcoming these obstacles.

1. Training and education of students, teachers, and administrators (46%)
2. Student recycling clubs (36%)
3. Grants and loans (34%)
4. Pilot testing and data (31%)
5. Training and education for school nutrition programs (27%)
6. Community service projects (23%)
7. Other (19%) – this included suggestions to develop space solutions, training and education of city/county governments, incentives for companies to haul recyclables, and developing markets for recycled materials.

Recycling Incentives

Overall respondents who are not currently recycling in their program were interested in more incentives than those who are currently recycling (especially the revenue generating programs and the start up funds).



Comments in “other” category included revenue specifically for school nutrition and improving. n = 472

CONCLUSIONS

To date, little information on the waste management and recycling practices of school nutrition programs exist. The information in this report helps to build a base of information on this topic and to identify and understand the logistics, financial impact of waste management and the prevalence of waste management and recycling in school nutrition programs. Additionally, school nutrition directors provided insights into the challenges and barriers to recycling within their programs.

Waste Management Logistics

School districts are typically the entity that is responsible for waste management and recycling practices – in 81% of districts. A wide variety of companies are used for waste management including national companies (such as Waste Management and BFI), local government entities, and local haulers.

In district/programs that recycle, recyclables are typically picked up by the same company that hauls the trash (62% of districts). The districts that do not use their waste hauler for recyclables either hire a separate company or identify someone within the district to haul the recyclables to the recycling facility. The recycling bins are most commonly provided by the recycling hauler/company or by the school district. Only 22% of school nutrition programs that recycle provide their own recycling bins.

Financial Impact

The majority of school nutrition programs (63%) are not charged for waste removal. However, it is more common for larger districts to be charged for this service compared to smaller districts. Standard percent allocation and indirect costs are the most commonly used methods for districts to charge school nutrition programs for waste management. Flat fees are also a commonly used method, especially in smaller districts. For the school nutrition programs that are charged, the actual amounts vary, but generally increase as the size of the district increases.

School nutrition programs that recycle are typically not charged for recycling (77%). If these programs are charged, it is usually a standard percent allocation or a flat fee. Only 2% of school nutrition programs receive recycling revenue (from rebates or profit sharing) and few know whether recycling helps to defray the cost of waste management.

Prevalence of Recycling

Recycling in school nutrition programs is relatively common, as recycling programs exist in over half of school nutrition programs. Cardboard is the most commonly recycled material followed by office paper and steel/tin cans. Recycling in school nutrition programs is most prevalent in the Northwest, Northeast, and Midwest and is least prevalent in the Southeast and Southwest regions of the U.S.

Barriers and Challenges to Recycling

For school districts that currently do not recycle, it is usually because there is not a hauler for recyclables in their area. School nutrition programs that do and do not recycle identified the same obstacles to recycling including not having a coordinator to oversee, that refuse must be separated, and that they have limited space for recycling. School nutrition programs that do not recycle also noted not being able to identify a hauler for recyclables. Training and education of students, teachers, and administrators was identified as the best way to overcome these obstacles. Student recycling clubs, grants and loans, and pilot testing were also identified as ways to overcome these challenges. In general, programs that were not currently recycling were more interested in incentives to recycle than those that were currently recycling. The most popular incentive was revenue-generating programs that would provide funds back to the schools.

Overall the information gained from this research helps to identify that there is an opportunity to educate and assist school districts and school nutrition programs in efficient waste management and recycling practices and a need to develop solutions to overcome the barriers associated with recycling in school nutrition programs. While many districts currently have a recycling program there is an opportunity to improve and expand these programs by sharing best practices. An example of such an opportunity might be with districts that participate in the ***New Look of School Milk***, a program that focuses on serving a variety of flavors of milk in plastic bottles. These districts generate a significant amount of recyclable plastic from the milk bottles. Developing recycling programs could be especially attractive to these districts, particularly if recycling decreases costs associated with waste management and/or if recycling programs generate other cost savings or a profit.

Appendix A

Waste Management Companies by Geographical Region

Companies followed by a number indicate the number of districts that use the company within the region.

Southeast	Northwest	Southwest	West	Mid east	Midwest	Northeast
AAA	Allied Waste (2)	Allied Waste (2)	Ace	Allen Co. Refuge	A-I	Accurate Disposal Company (2)
Advantage	Archbold Refuse	Blue Bonnet	Allied Waste (3)	Allied Waste (3)	Allied Waste (4)	Allied Waste (2)
Allied Waste (3)	Basin Disposal Inc.	American Reclamation Inc	Athens (2)	Best Way	American Sanitation (2)	Appleton (2)
Appalachian Waste Systems	Butlers Cove Refuse	BFI (9)	Bertolotti	BFI (5)	Ankeny Sanitation	AWD (2)
Best Disposal	City/County (4)	City/County (10)	BFI (2)	City (3)	Artistic	B & W Disposal
BFI (11)	Douglas Disposal	DCI	Blue Barrel	Country Side	BFI (6)	B. E. Newman
City or County (17)	Evergreen Waste	Deffenbaugh	Burtec	Disposal Management	Bluff Trash	BFI (5)
CWI	Fox Sanitation	Duncan Disposal	City/County (8)	Granger	Brad's Sanitation	Burgmeier's Hauling
GDS	LaMay	El Paso Disposal	CR & R	Hoosier Disposal	Buster	C.R.Rogers
Kearns Septic Tank Pumping	Latah Sanitation Services	Get Rid of It	EMI	Key Waste	Central Waste Disposal (2)	Calahan
Private Vendors	Meridian Disposal	GREEN COUNTRY REFUSE	Fallbrook Refuse	Larry Marshall	City/County (2)	Capital
Roberson Sanitation	Miller Ent.	IESI	GI Rubbish	Loscutto	Deffenbaugh (3)	City/County (9)
Southern Waste	Nooksack Disposal	L & K Disposal Services	JW Disposal	Modelle Sanitation	Denver Construction	Coggins
Southland Waste	Pride	North End Disposal	Kanab City	National Serv-all (2)	Edgerton	Dan Barnett Rubbish Removal
Tropical Trash	Sanitary Service/ Nooksack Valley	Parish Garbage Trucks	Mid Valley disposal	New Philadelphia City Department	Flaherty Recycling Center	Davis trash removal
Veoli	SSC	Platte Valley Disposal	Mission	Perry's Waste disposal	Great Lakes Waste Management	Diamond
Waste Industries (2)	Waste Connections	Republic Waste	Mosdel Sanitation	Rays Trash (4)	Groot	Gott's Disposal
Waste Management (22)	Waste Management (4)	Roll off	Osage Waste Disposal, Inc.	Republic Services	IEFI Missouri	Heberle
Waste Services of Florida	Westbank Trash	Salina Waste Management	Paradise Waste Mgmt (2)	Richmond Sanitary District	Keith's Sanitation	Ireland's Rubbish
	Western Oregon Waste	Sprint Waste Services	PSI	Rizzo	Konfrst Trash Service	Lower Township MUA
	Westown's Disposal	SweeDee	Rancho Disposal	Rumpke (4)	Land and Lakes	Master Garbologist
		Triano	Republic Sanitation	Serv-all	Onyx (3)	McNeals
		V & K Trash Removal	Valley Waste	Smith Trash and Hauling	Phillips Sanitation	North Brookfield Waste Station
		Waste Connection	Wasatch County	Southern Scavenger	Ray's Sanitation	Northern Recy
		Waste Management (11)	Waste Management (18)	Veolia Environmental Services	Sherman sanitation	Pinard
		Western Waste	WHS	Starman	Pine Tree Waste (4)	
		Why Waste	Wabash Valley (2)	Veolia ES Solid Waste Midwest (3)	R H Herrick	
		Winton Disposal	Waste Management (25)	Walters	R. C. Rogers and sons	
		Yuba Sutter Disposal (NorCal)	Winski	Waste Management (27)	Ray Robins	
			Wolfe	Waterman Sanitation	Sanitary District Number 1	
				Western	Sawyer	
					Somers Sanitation	
					Spoon	
					Waste Management (40)	
					Waste Stream Management	
					Weaver Sanitation	

Appendix B

Recycling Haulers

Companies followed by a number indicate the number of districts that use the company within the region.

School District (25)

City/County Government (11)

Accu

Abitibi (2)

Barthold Farms picks up food waste

Bartow County

Bestway

Bi-County Solid Waste Management

Cogle's Recycling

Crandall Corporation

Dart Container Company

Eureka

Evergreen

Ferguson Grease Service

GDS

Glenwood Resource Center

Groot Waste and Recycling

Kennebec Reg. Recycling

KISD

Orange Recycling

Ozark Regional Planning Committee

Pine Tree

Recycling Center

SHELTERED WORK SHOP

Sheltered Workshop

Solid Waste Management

Sunflower Diversified

Sunshine Recycling

Tidewater Fibre

Tri-County Recycling

Turlock Recycling

Valley Proteins

Ventura Rending Service

Waste Management (2)

Community Organizations (2)