
Changing the Way New Mexico Values Trash



Green Waste Solutions

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Questions for the Audience

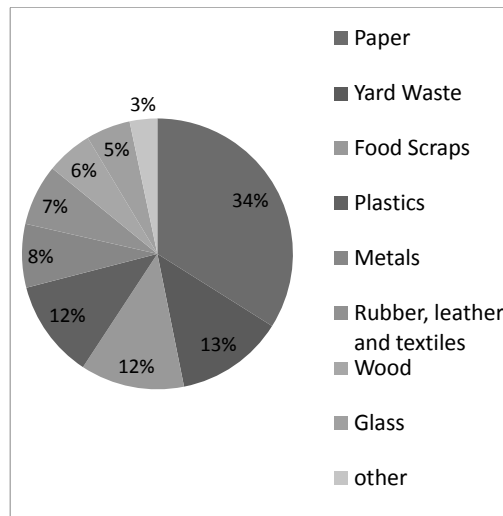
- How many are from Drop off communities
- How many are from Curbside communities
- Does any one have a PAYT program or a version of PAYT

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WHY IS WASTE REDUCTION IMPORTANT?

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New Mexico Waste Characterization

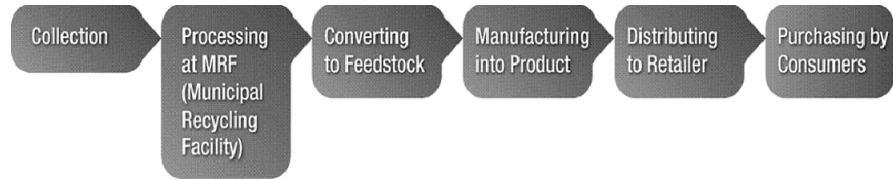


- 1,644,798 tons landfilled (2010)
- About ½ the material buried in landfills comes from packaging
- Most packaging is easily recyclable
- 49% of waste in New Mexico landfills comes from home
- New Mexico waste disposal cost based on an average tip cost of \$31.29 \$51,500,000 (2010)

Based on USEPA Franklin Associates 2009 metrics

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Recycling creates jobs



- Recycling creates JOBS: Recycling is a 240 Billion Dollar Industry in the US (waste industry is about 50 billion)
- NC recycling study shows that for every 100 jobs created in recycling only 13 are lost in waste management
- State of SC recycling industry sector has been growing over 12% per year for the last 5 years. All other industry sectors have been down or flat during the same period

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All kinds of Jobs - think out of the box



Mountainshadedesign
Even her hat and the rack that her clothes are displayed on are made of recycled material



High fashion Richie Rich



Sanuk makes shoes from recycled yoga mats



Inc magazine cover story – ecoscrap



Ethicalstyle.com
Recycled hand bags from used hand bags

New products appear daily on Eco daily deal websites like Milkshake.com planetshoe.com

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Commodities have environmental and economic value



\$27.73/ton to 113.17/ton

Recycling paper saves 40% energy



\$1,180/ton loose mixed

Recycling aluminum saves 85% energy



\$340/ton to 560/ton loose mixed

Recycling plastic saves 70% energy

New Mexico buried \$283 million in commodity materials (2010)

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Waste reduction saves money for NM residents

- Decreased tip fees paid by municipalities
 - Currently many municipalities are not meeting their solid waste budgets
- Decreased handling costs at landfills and transfer stations
 - Fixed costs will still exist
 - All but 3 Landfills are private – there is potential to restructure
- 8 landfills closing in NM in the next few years - great opportunity
- Cost of disposal in NM last year was (approximately) 51 Million based on an average tip fee of \$31.29 per ton
- Net savings in waste reduction with residential PAYT program 12 Million annually
- Per capita cost of waste burial \$26 per hh \$64 + depending on where they are tipping.

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Reducing waste reduces GHG emissions

Approximately 1/3 of green house gasses come from the waste lifecycle



Energy



Transportation

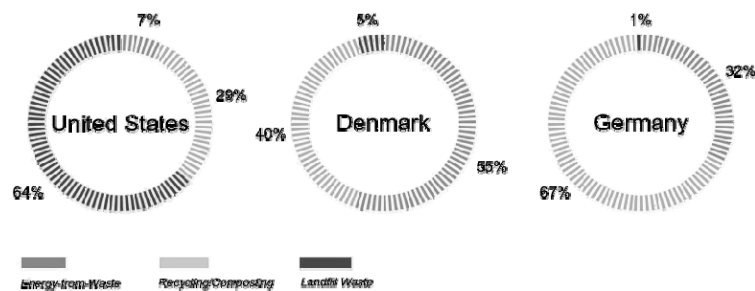


Solid Waste

Global Warming & Garbage???

The United States compared to Europe

What a Contrast!



Aggressive State waste reduction goals

- Vermont – Zero Waste
- Florida 75% waste reduction
- Connecticut 57% waste reduction
- California 50% waste reduction
- Delaware 51% waste reduction
- Cities working toward Zero Waste

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WHAT IS PAYT?

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PAYT is S-M-A-R-T

- Save
- Money
- And
- Reduce
- Trash



PAYT is long-proven to be the most cost effective, environmentally sustainable MSW program that EPA can promote. While other initiatives may have positive benefits, PAYT is the single best way to prevent waste and reduce green house gases while generating an equitable revenue stream for MSW departments."

SOURCE Office of Solid Waste US EPA 2008

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Do You Have A S-M-A-R-T Waste Reduction Program?

- Utility
- Unit Based Pricing (UBP)
- Equitable
- “Financially incentivizes people to make the right choice” *Jared Bloomenfeld,
Director of Environment San Francisco Fortune Magazine
2/10/07*

**HOW DO WE KNOW PAYT
WORKS?**

Important to compare Apples to Apples

- Mattapoisette MA 53% recycling rate

- Large yards – yard debris from landscapers included as residential recycling



- North Attleboro MA 35%

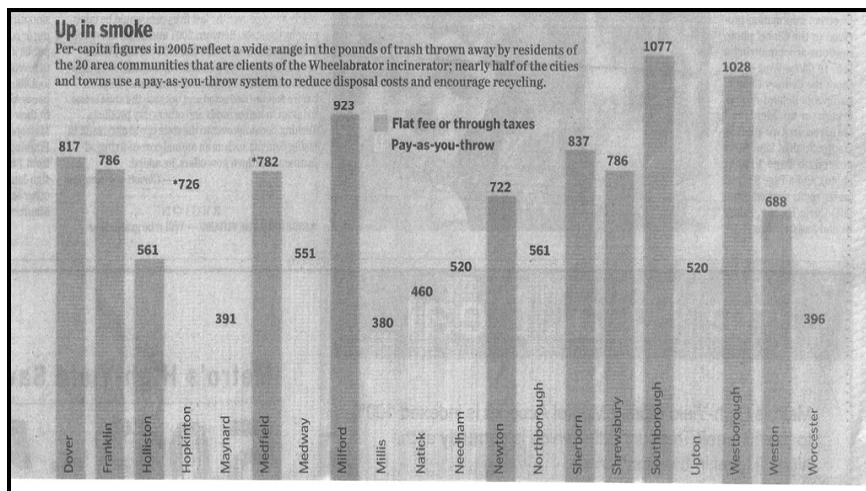
- Small yards yard debris from landscapers included under commercial recycling

Formula for percapita
Total residential tonnage [only]
/ Total residents associated with its production

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Up in smoke

Boston Globe 2007

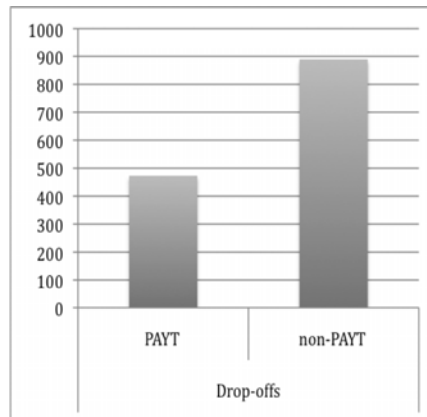


Municipalities generate 45% less waste in PAYT communities

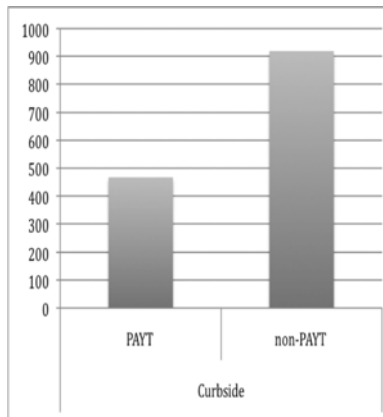
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PAYT: an incentive to Reduce Reuse and Recycle

Drop-offs 114 communities



Curbside 115 communities

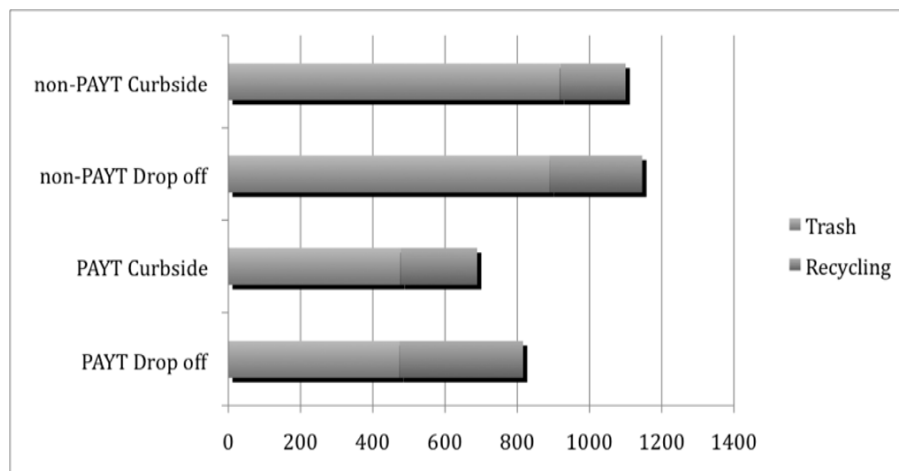


New England Case Study [2010 GWS and ICF]

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33% source reduction in PAYT communities

Overall generation (per capita waste + per capita commodity recycling)

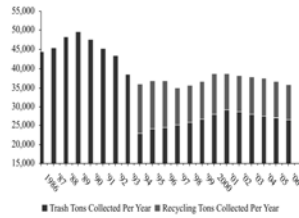


New England Case Study, [2010 GWS and ICF]

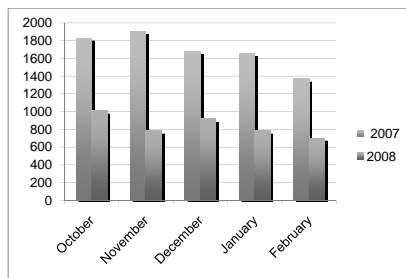
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Immediate sustainable change

Worcester MA

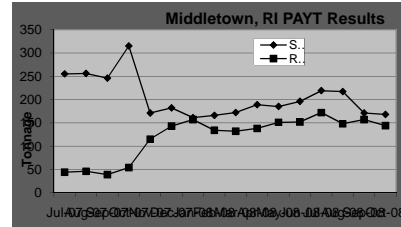


Malden MA

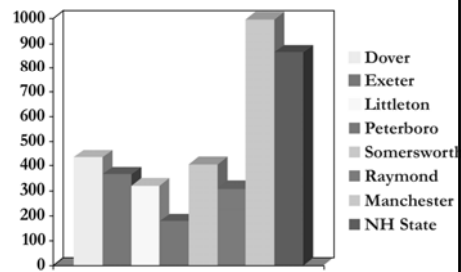


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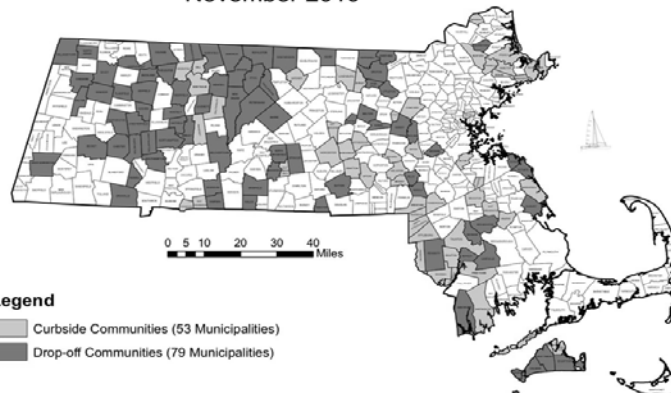
Middletown RI



New Hampshire



Municipal Solid Waste Pay-As-You-Throw Communities in Massachusetts November 2010



Legend

- Curbside Communities (53 Municipalities)
- Drop-off Communities (79 Municipalities)



Deval Patrick
Governor
Ian Bowles
Secretary of Energy and
Environmental Affairs

Data Sources:
Pay As You Throw Communities - BWP Consumer Programs 2010
W:BWP:SWMpaytData/paytlist.xls
Massachusetts Municipalities - MassGIS 2004

W:BWP:SWMpaytgraphics/GISmaps PAYT_0710.xls

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Towns with transfer stations

Municipality	Contact	Population
Duxbury, MA	Chris Smythe 781-934-1100. Ext. 130	1,476
Scituate, MA	Al Bangert 781-545-8731	5,250
Needham, MA	Mario Araya 781-801-6835	29,128
Wayland, MA	George Russell 508-742-5984	13,503
Rockport, MA	Joe Parisi 978-546-3525	5,565
Dartmouth, MA	Michele Defranco 508-999-0740 Ext. 208	34,420
South Berwick, ME	Gary Boucher 603-978-1669	7,146



scribbleville.wordpress.com

HOW DO WE GET STARTED?

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PAYT is very customizable

- Rate Structures
 - Two-tiered Program
 - Proportional / Linear
- Design Styles
 - Hauler program in conjunction with a drop off
 - Curbside

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Two-tiered Rate Structure

- Worcester MA
- Population 165,000
- 60% diversion rate
- Part of the cost is in the tax base
 - (fixed costs)
- Part of the cost is in a unit based
 - bag cost (tip cost)
- Can be achieved as an overflow
- Can be achieved curbside or drop off



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Proportional / Linear Rate Structure

- San Francisco
- Population 750,000
- 75% diversion rate
- All costs are built into the container
- Billion quarterly or annually
- Pricing based on the trash can
- Recycling and compost cans available in any size with not additional cost
- Can also be achieved through a drop off program with a bag



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Hauler program in conjunction with a drop off

- Haulers create their own unit based program and are monitored during annual permit process
- Transfer station or drop off uses a bag or tag or punch card or credit card
- Haulers and drop off use a special color bag – residents pay tip as they go



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Recycling is a must for PAYT

- Yard waste
- Brush
- Metals
- Households
 - Plastics 1&2
 - Paper
 - Cardboard
 - Newspaper / Phone books
 - Metal aluminum steel
- Electronics



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DROP OFF COMMUNITIES PRIMARILY HAULER? PRIMARILY SELF HAUL?

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Drop off Design Option 1 – 52 free bags

- **Municipalities where the majority of households are bringing trash to the drop-off or landfill can easily shift to PAYT through an overflow bag or a sticker program**
 - Each participating household is provided with 52 free special colored trash bags or stickers/coded tags.
 - Each household gets one bag of garbage per week for free [included in the current rate structure].
 - Households that need additional space - bag or sticker at the town hall or a participating retail location.
 - The bag makes it easier for the landfill attendant to monitor compliance.
 - Allows residents an opportunity to recycle more without incurring additional expense.
 - This system will provide a reduced tip expense to the municipality; most households are expected to decrease the quantity of waste they set out for collection by approximately 45% (*2009 New England Study*).
 - Additional revenue from sales of extra bags or stickers can be used for recycling education and outreach.

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Variation – no free bags

- **If a municipality is not currently covering their solid waste costs the municipality could charge for all bags instead of providing free bags. The additional revenue would cover the cost of the current shortfall.**
- **Some communities start out with free bags and then ease back each year.**
- **Its about the 'Politics'**

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Drop off Design Option 2 – Haulers are primary collector

Bag Program:

- Official colored municipal bags are easy to identify. This allows both drop-off customers and hauler customers to use the same bag.
- Tip to the hauler upon entry to the landfill should to be eliminated. Instead, the bag revenue will cover the tip cost.
- Household tax or a fee for landfill drop-off (associated with actual trash), would also need to be eliminated.
- If municipality is not covering their solid waste costs (can be added to the bag).
- Bag revenue would go directly to municipality or landfill to cover the cost of tipping.
- All homes within the municipal area sending trash to the landfill though hauler or drop-off would need to purchase special colored bags for disposal.
- Haulers would be required to monitor bags as they drop in their trucks.
- Hauler loads should be monitored by landfill floor attendants. Non-compliant bags would be the responsibility of the hauler. Municipality would need to assist in enforcing when residents are repeat offenders.

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Variation – Hauler primary collector

Container Program for haulers:

- Where the majority of trash is being handled by the hauler and not taken directly to the drop-off or landfill by the resident, and where the haulers are 100% automated, a container program could be implemented. Each hauler could have the option of creating their own rate structure. Generally haulers do not like sharing this information with the municipality. Haulers would be able to develop their own structure based on container size. Haulers would need to meet a specific per capita benchmark [see hauler compliance section below].
- Residents not using hauler services and bringing trash to the drop-off or landfill could use a sticker system similar to the above option.

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Hauler compliance suggestions

Haulers opting to **create their own PAYT rate structures** should be required to meet per capita benchmarks equal to the average municipal per capita.

This will encourage them to create a rate structure that is fair to residents, but that also provides an incentive to reduce waste. In order to determine benchmarks, haulers must be required to report the number of households using their services.

The municipality can determine an official per capita disposal annually for each hauler by dividing the participating population by the total tonnage the hauler delivers to the landfill. If haulers pick up residential and commercial in the same truck, all commercial waste must be averaged and taken out of the load.

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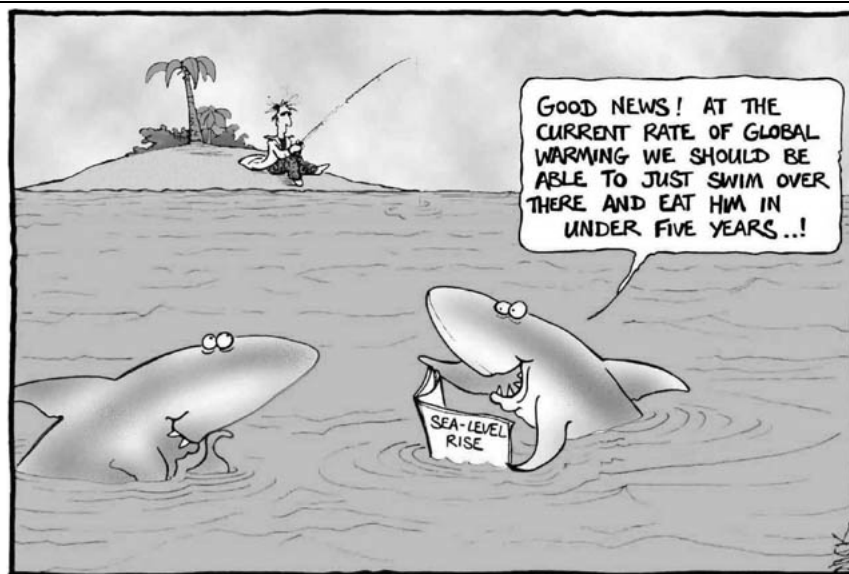
Sample Rate Structures for Bags and Stickers

- The cost of the trash bag should include cost of the bag itself plus the cost to dispose of the contents within, based on weight.
- Based on an average of \$40 per ton disposal rate in New Mexico and a 25-cent (bag and distribution) cost, and assuming the average bag weight is 23 lbs (EPA standard)
- The average cost of the trash bag will be around 71 cents (round up to 75 cents).
- Drop-off and administrative costs currently included in residents fees – could be included in the bag to create a proportional structure
- The price point should be just high enough to incentivize change without making people feel like they are being unfairly taxed.

Sample cost structure

Average cost per ton disposal	\$40.00
Average cost per pound [cost per ton divided by 2000 lbs]	\$0.02
Average cost per bag [manufactured and distributed to muni office or direct to retail location]	\$0.25
Average cost per sticker [manufactured and delivered]	\$0.03
Total suggested bag cost [based on 23 lb weight] 33 gallon bag	\$0.71
Total suggested sticker cost [based on 23 lb weight] 33 gallon bag	\$0.49

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CURBSIDE COMMUNITIES

HOW MANY?

HOW MANY ARE CONSIDERING?

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Curbside - Bags

- Residents pay as they go for what they use.
- Creating a two-tiered rate (reducing the tax or fee by the tipping expense (only) or creating a bag charge to cover a current budget short fall)
- In manual and semi-automated systems, bags are an easy, cost-effective way to get started.
- Bags could also be used with fully automated collection using 96-gallon containers. Installing a camera on the truck to monitor bag compliance during pick up is a less expensive option then the expense of new, smaller containers

○ Sample simplified cost structure:

Average cost per ton disposal	\$40.00
Average cost per pound [cost per ton divided by 2000 lbs]	\$0.02
Average cost per bag [manufactured and distributed to muni office or direct to retail location]	\$0.25
Total suggested bag cost [based on 23 lb weight] 33-gallon bag	\$0.71

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Curbside- Containers

- Two-tiered container structure could be developed by reducing the tax or fee to the household or determining a cost to cover the current budget shortfall.
- The container cost should be based on the assumption that all or most homes would choose the smallest container size of 32 gallons.
- In semi-automated and fully-automated collection systems, changing container sizes as part of a PAYT program is initially more costly, but over a 10-year period containers are a more cost effective option than the bag approach.
- A container system can be achieved using a proportional or two-tiered rate.

- Sample simplified cost structure:

	32-Gallon	64-Gallon	96-Gallon
Container cost amortized over 4 years	10	15	20
Estimated annual cost per container of trash	36.5	73	109.5
Sub total	46.5	88	129.5
Round up to cover replacement or damaged carts, billing, collections and cart inventory	50	100	150

Curbside - Hybrid

- All households receive one 32-gallon trash container for no fee or charge.
- There is no rate structure change.
- All residents are required to purchase a special color overflow bag for additional trash
- All households receive a larger container for recycling – if applicable. Generally, municipalities will use the old waste receptacles for recycling by simply adding a sticker. Using a small trash container creates an automatic shift in waste and recycling tonnages.
- Municipalities that are ready to purchase new containers or are switching from dual stream to single stream recycling have an opportunity to use an overflow program.
- The municipality is able to use the savings from reduced waste within the department for other services such as education.

Community Dumpster

- The dumpster system is somewhat unique to New Mexico and may be more difficult to enforce PAYT compliance.
- Official 'colored trash bags' would make the process especially easy. Any resident that is seen dumping in an inappropriate bag by a neighbor will feel 'some' guilt that their neighbor has paid and followed the rules.
- Appoint a community monitor to watch over local dumping [similar to NYC]
- In PAYT programs we find that most residents comply with the rules immediately, regardless of being watched.
- Spot check at the landfill when loads arrive from dumpster routes. Landfill attendants could look through non-compliant bags to find out who dumped.
 - If a particular route or neighborhood has excessive non-compliance a compliance officer could be sent out to inspect the dumpsters.
 - If a household is caught with a non-compliant bag, the resident could be fined heavily [like a litter or illegal dumping fine].
- Carts could also be a great solution if there are not space or logistic limitations

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Be creative break the barriers

Low Income and high renter population

- One free container
- Waste limit
- Free bags
- Life line rate

Other excuses

- Political fear of change
- Our community is too small
- Our community is a Drop off

Illegal dumping

- Duke University study shows minimal dumping
- Follow - no additional cost for enforcement
- New England study confirms minimal dumping – helps to have strict enforcement the first weeks

Residents want the right to choose

THE WALL STREET JOURNAL

'Kicking the Cans 'July 29, 2008

Should people who throw out more trash pay higher disposal bills?

84% - YES 16% - NO

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Take the recycling test



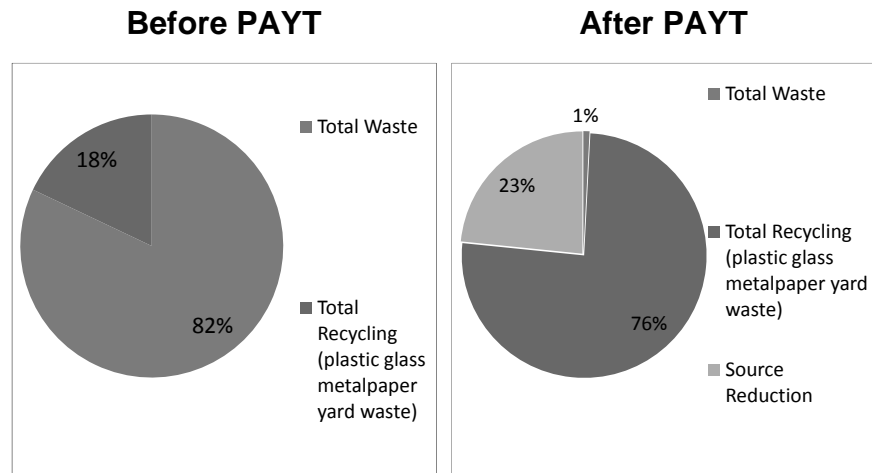
SMART BET			
Saving Money and Reducing Trash Benefit Evaluation Tool			
1. General Information			
City	New Mexico	State	New Mexico
Year of data:	2020	City population affected by SMART:	1,700,000
2. Disposal Data			
Current residential disposal:	822,399 tons per year	Landfill/combustion tip fee:	\$31.29 per ton
Waste Disposal Breakdown (tons)		Disposal Practice (%):	
Landfill	822,399		100%
Waste-to-energy (WTE)		Distance to landfill	50 miles
		Distance to WTE facility	miles
Current residential combined recycling and composting:	180,000 tons per year	Recycling cost:	0 per ton
3. Waste Stream Composition			
Current disposal stream composition by weight (%):		Current combined recycling and compost stream composition by weight (%):	
Metal	9%	Metal	9%
Glass	7%	Glass	3%
Plastic	20%	Plastic	3%
Paper	26%	Paper	56%
Wood	9%	Wood	2%
Food Scraps	21%	Food Scraps	1%
Yard Trimmings	8%	Yard Trimmings	26%
Total	100%	Total	100%

SMART BET [benefit evaluation tool]

SMART BET	
Saving Money and Reducing Trash Benefit Evaluation Tool	
Results for Stamford, Connecticut for 2009	
Results	
Estimated cost savings from implementing SMART:	\$12,434,615*
Estimated GHG savings from implementing SMART:	798,460 metric tons CO ₂ equivalent per year*
(compared to current disposal practice)	
Equivalent to annual emissions from:	146,238 passenger vehicles*
* Positive number indicates cost savings or GHG savings; negative number indicates increased cost or GHG emissions.	

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SMART BET prediction – New Mexico



Assumptions:
 49% of total disposal is residential
 67% of total recycling is residential

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Green Waste Solutions

www.thewastesolution.com

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