

SMART Waste Management

The Connecticut Department of Environmental Protection and
The US EPA Office of Solid Waste Campaign 2008



Re-Defining
the Way
Connecticut
Residents
Value Trash

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

- Save
- Money
- And
- Reduce
- Trash

S-M-A-R-T Waste Reduction

- 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*

UBP Works...Coast to Coast

Worcester, MA

Pop. 172,648



San Francisco, CA

Pop. 776,733



Where is *UBP*?

- ❑ 7000 U.S. Municipalities use a form of *UBP**
- ❑ Minnesota, Washington, Oregon mandatory *UBP*
Iowa mandatory under 25% recycling
- ❑ 1997 Massachusetts DEP promotes *UBP*
 - Currently 120 communities participate
 - Projected 25 additional in 2008

*Skumatz, Lisa A., and David J. Freeman, "Pay As You Throw (PAYT) in the US: 2006 Update and Analyses", USEPA (Washington DC) and Skumatz Economic Research Associates, Inc. (Superior, CO), December 30, 2006.

Boston Globe

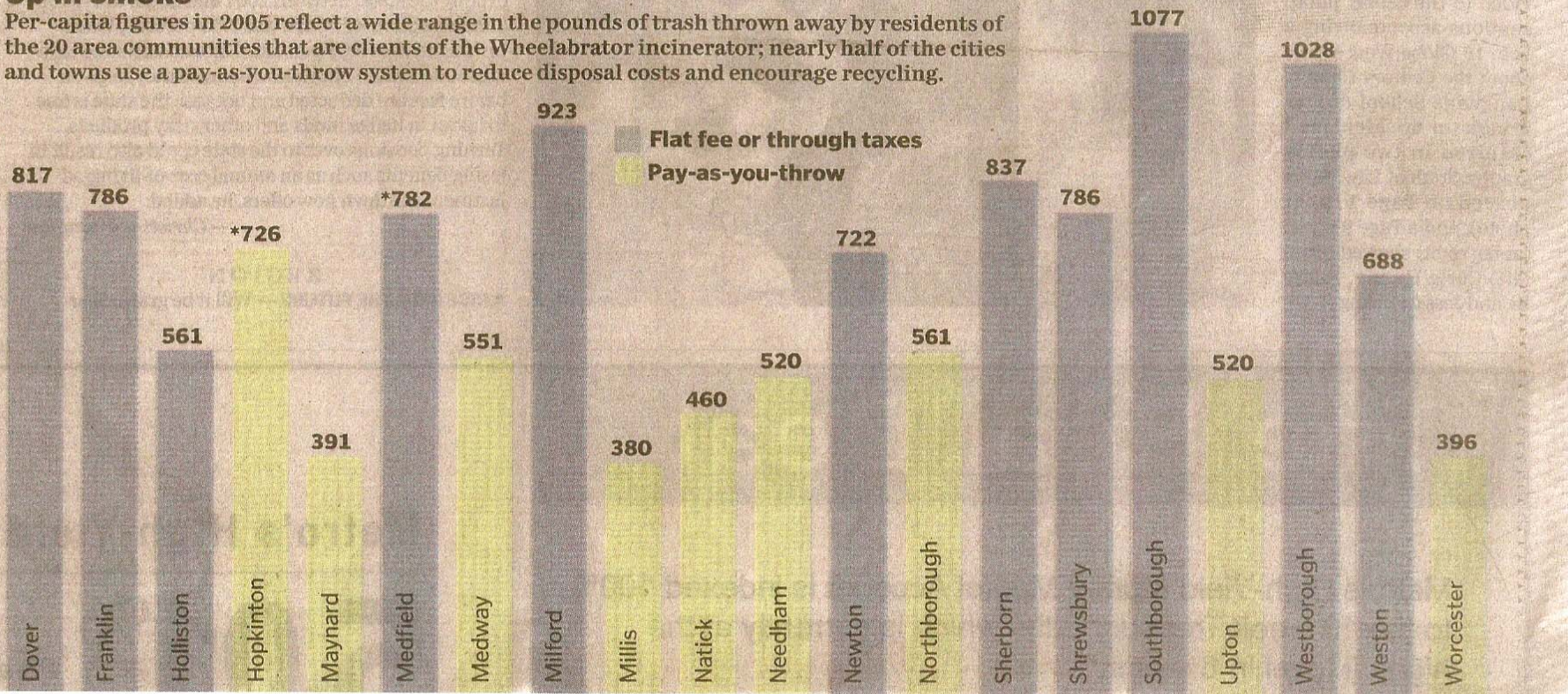
Burning Bucks

Communities try to save on trash costs by boosting recycling by residents

Thursday, February 22, 2007

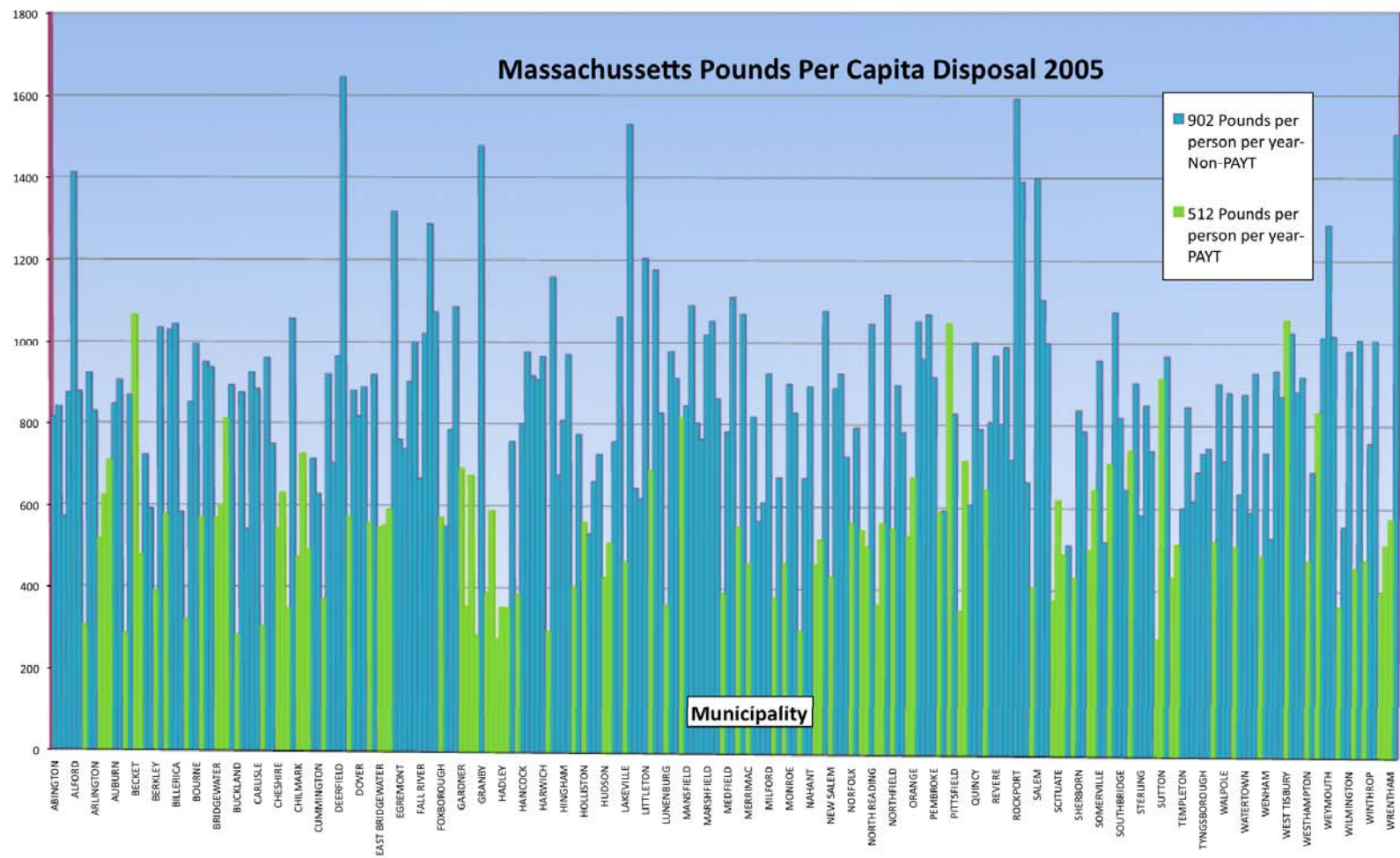
Up in smoke

Per-capita figures in 2005 reflect a wide range in the pounds of trash thrown away by residents of the 20 area communities that are clients of the Wheelabrator incinerator; nearly half of the cities and towns use a pay-as-you-throw system to reduce disposal costs and encourage recycling.



Massachusetts Residential Pounds Per Capita

MA DEP 2005



Seoul Korea VGCF (Volume based garbage Collection fee system)

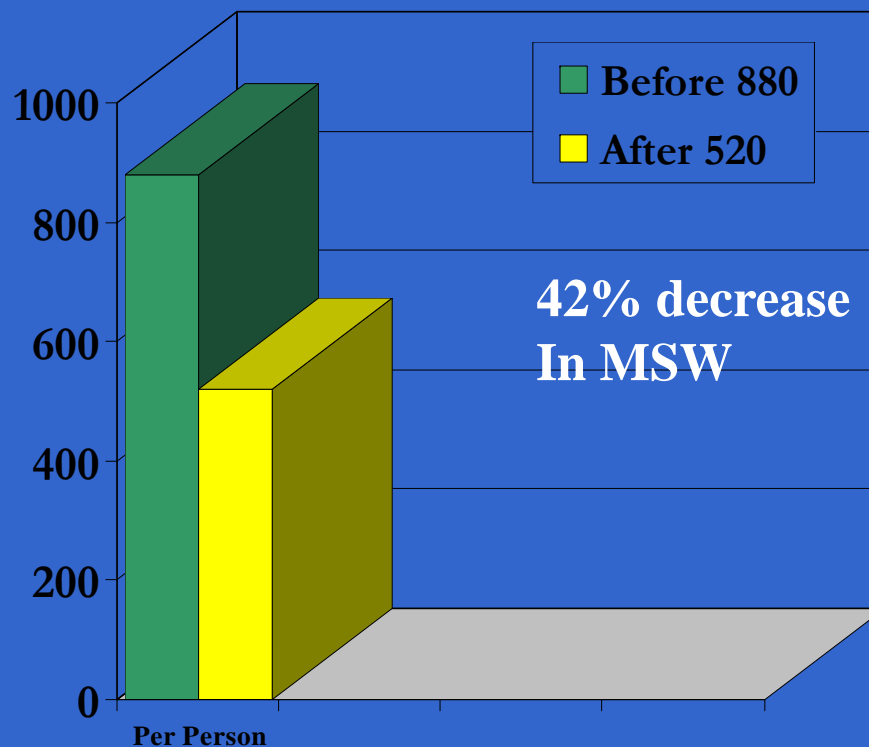
J.H. Kim; Sustainable Urban Waste Management System Metropolitan Seoul South Korea



Before and After VGCF System

Municipal Solid Waste Disposal Before VGCF was
12,238 ton/day

Municipal Solid Waste Disposal After VGCF was
7,013 ton/day

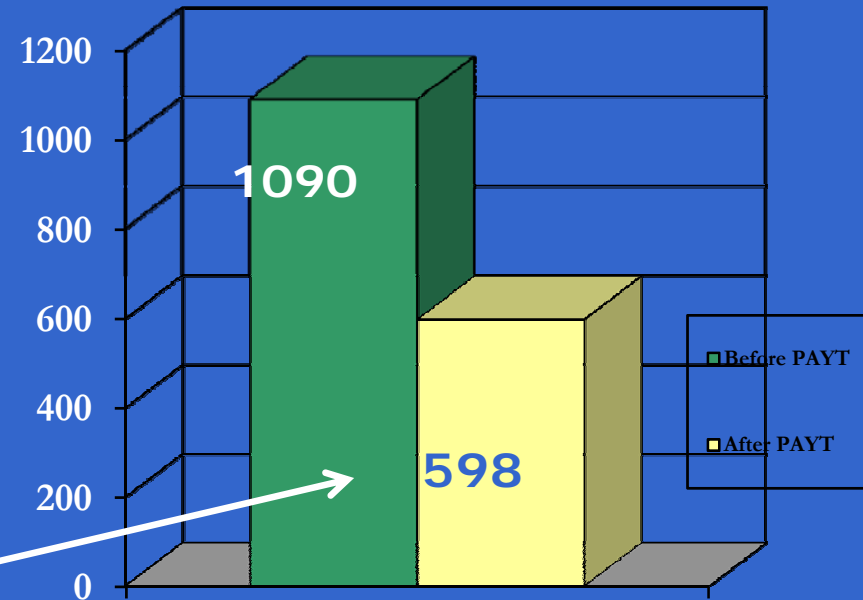


Zürich, Switzerland

❑ Polluter Pays System

❑ The cost of Züri-sack is 4.25

❑ The average household uses one per week



41% decrease
in MSW

Zürich Switzerland

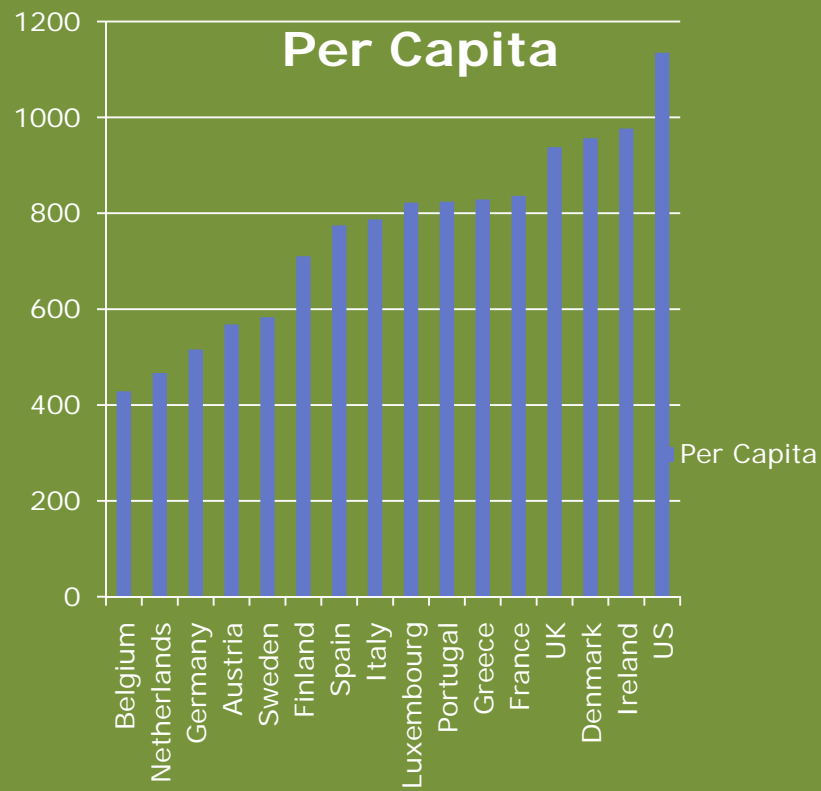


The U.N. of PAYT

- Australia
- Canada
- China/Taiwan/ Hong Kong
- Germany
- Greece
- Iceland
- Ireland
- Italy
- Korea
- Netherlands
- Palestine/Palestinian Authority
- Mexico
- Slovak Republic/Slovakia
- Thailand
- Vietnam



Europe per capita disposal Polluter Pays Principle



Source: Institute for Public Policy Research 2007

Financially incentivizing residents to think **Green** puts cities in the **Black**

Residential Per Capita Disposal

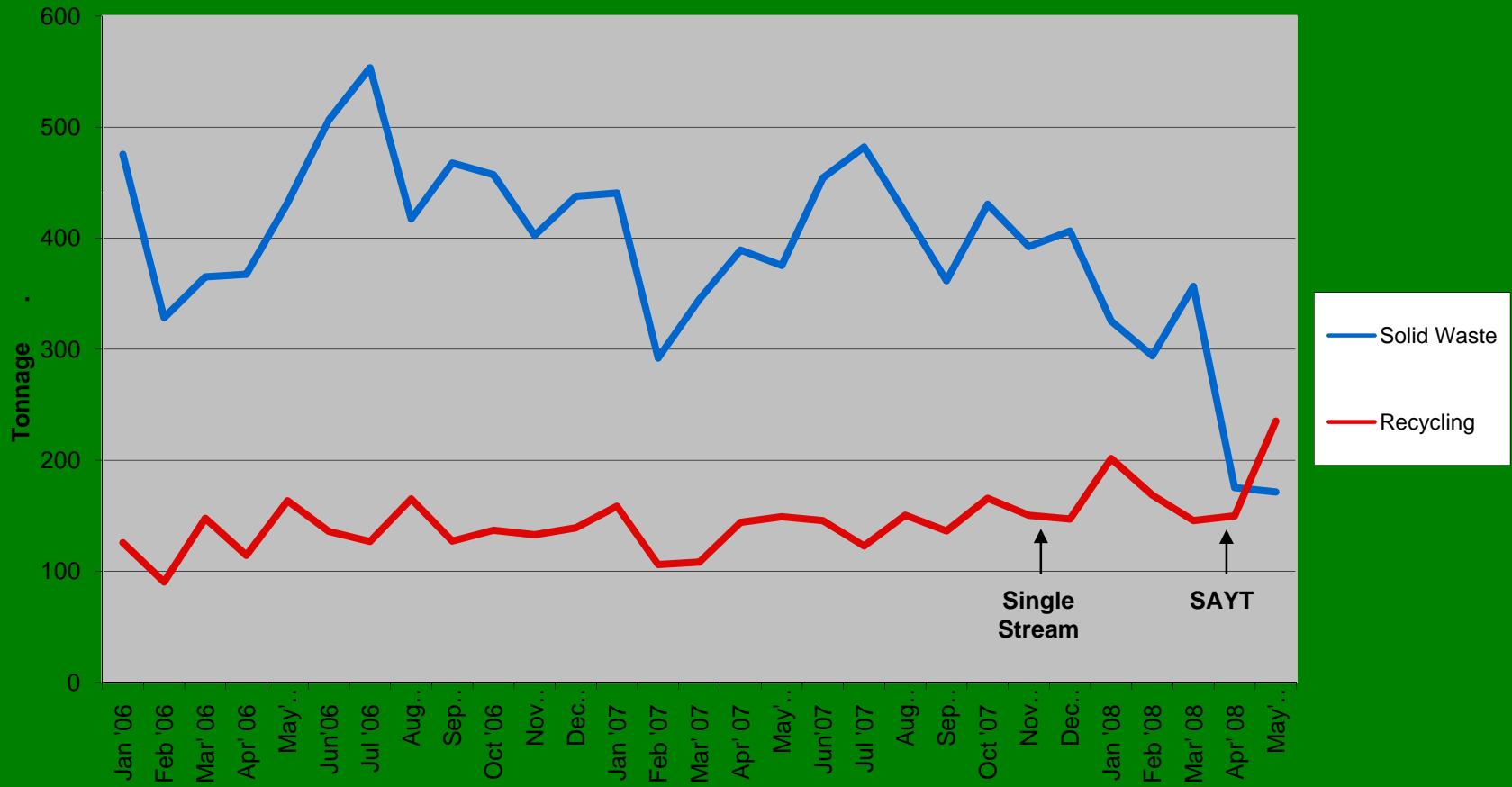
Citify	Population	Per capita Residential Waste Disposal	Tip Fee	PAYT Savings Based on National per capita disposal Average
Portland OR	537,081	448	71	\$13,098,600
Portland ME	64,249	357	88	\$2,199,372
Binghamton NY	45217	551	40	\$528,135
Worcester MA	175,454	390	68	\$4,444,250
*San Francisco CA	744,041	513	117	\$27,073,420
Grand Rapids MI	193,083	529	79	\$4,621,828
Bath ME	9184	325	90	\$334,757
Fayetteville AK	67158	544	25	\$496,130
Middletown RI	16,431	359	32	\$204,007
United States	293,000,000	1,135	37	\$3,076,133,750

Numbers represent 2005, 2006, 2007 estimates of tonnages sent to lands or waste to energy facilities

*San Francisco has a local tip fee of \$117 per ton

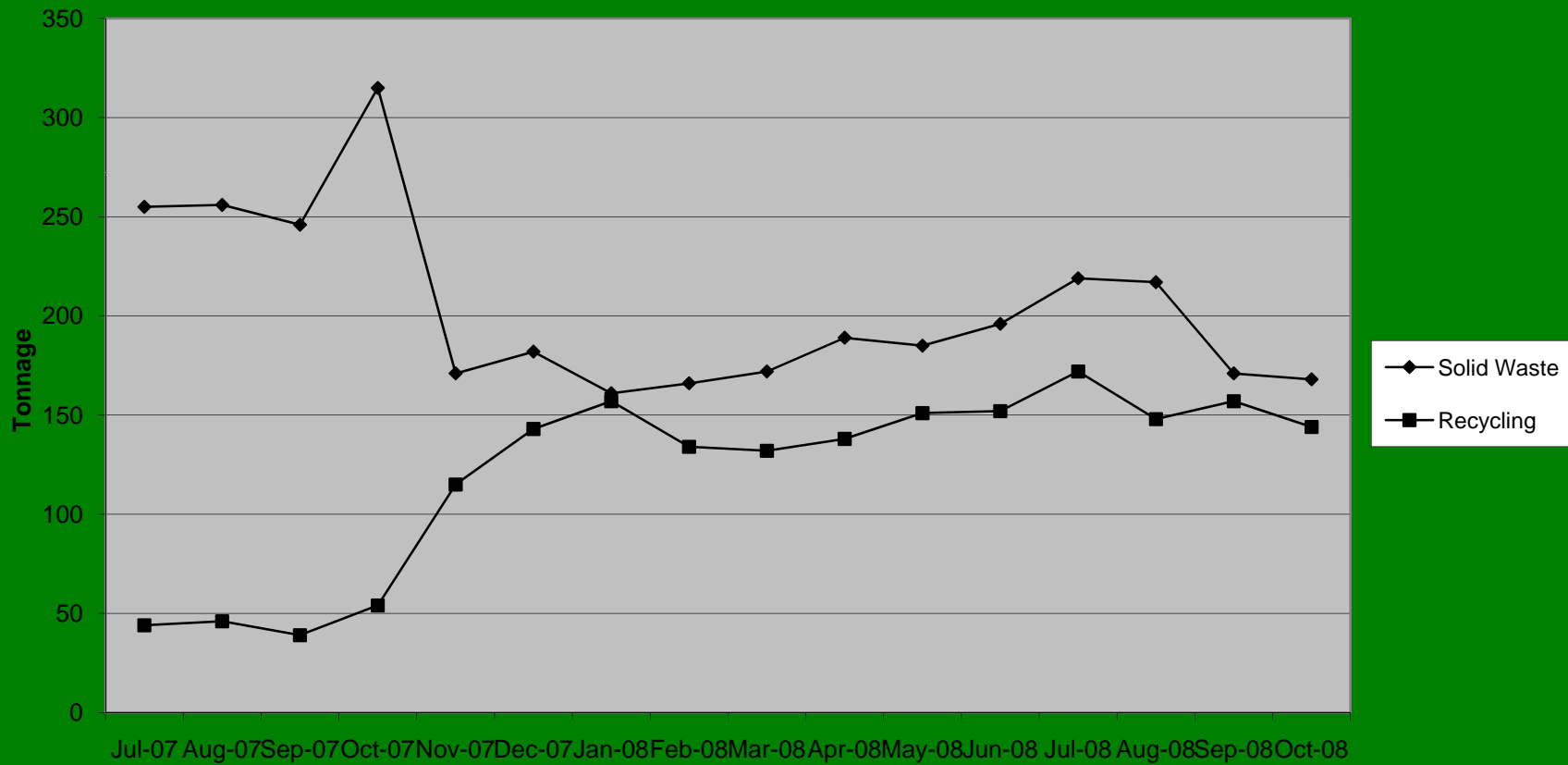
Duxbury MA One Month After Implementation July 2007

Town of Duxbury Solid Waste and Recycling Tonnage History



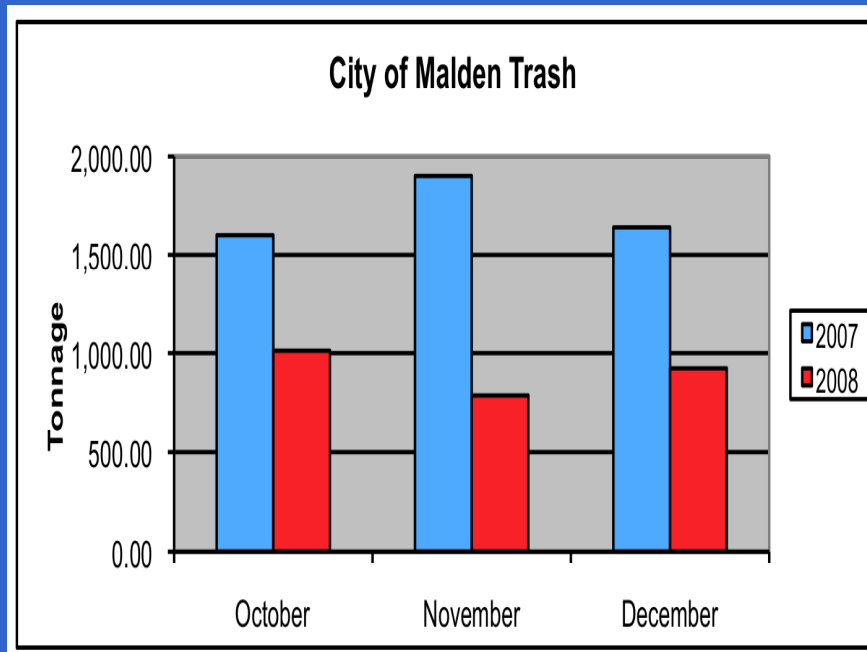
Middletown Rhode Island SMART

Middletown, RI PAYT Results



City of Malden MA SMART Results

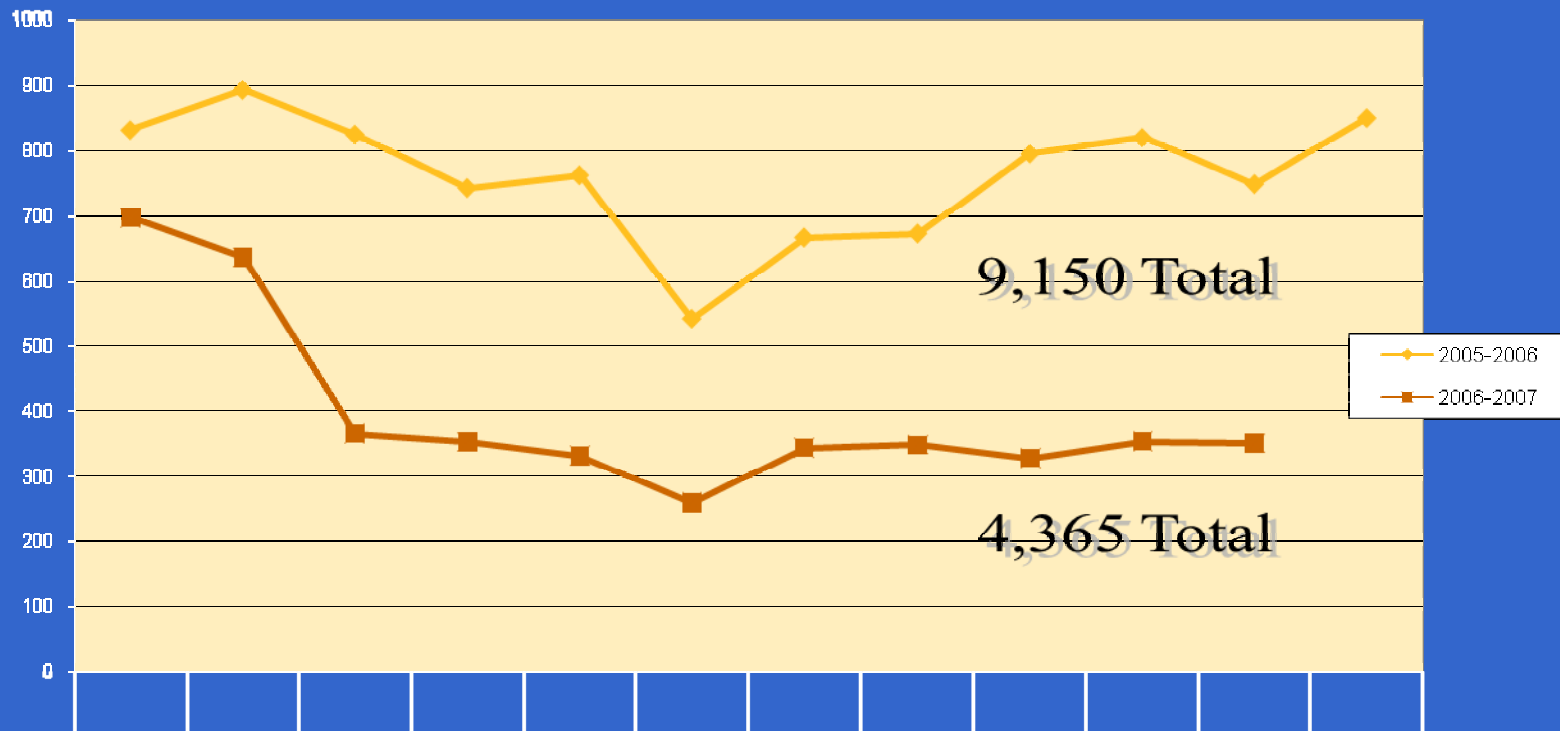
Massachusetts Department of the Environment



	Trash		%	Disposal
	2007	2008	CHANGE	Cost avoided
October	1,600.00	1,012.00	-37%	\$ 45,287.76
November	1,901.00	786.00	-59%	\$ 85,877.30
December	1,640.00	923.00	-44%	\$ 55,223.34

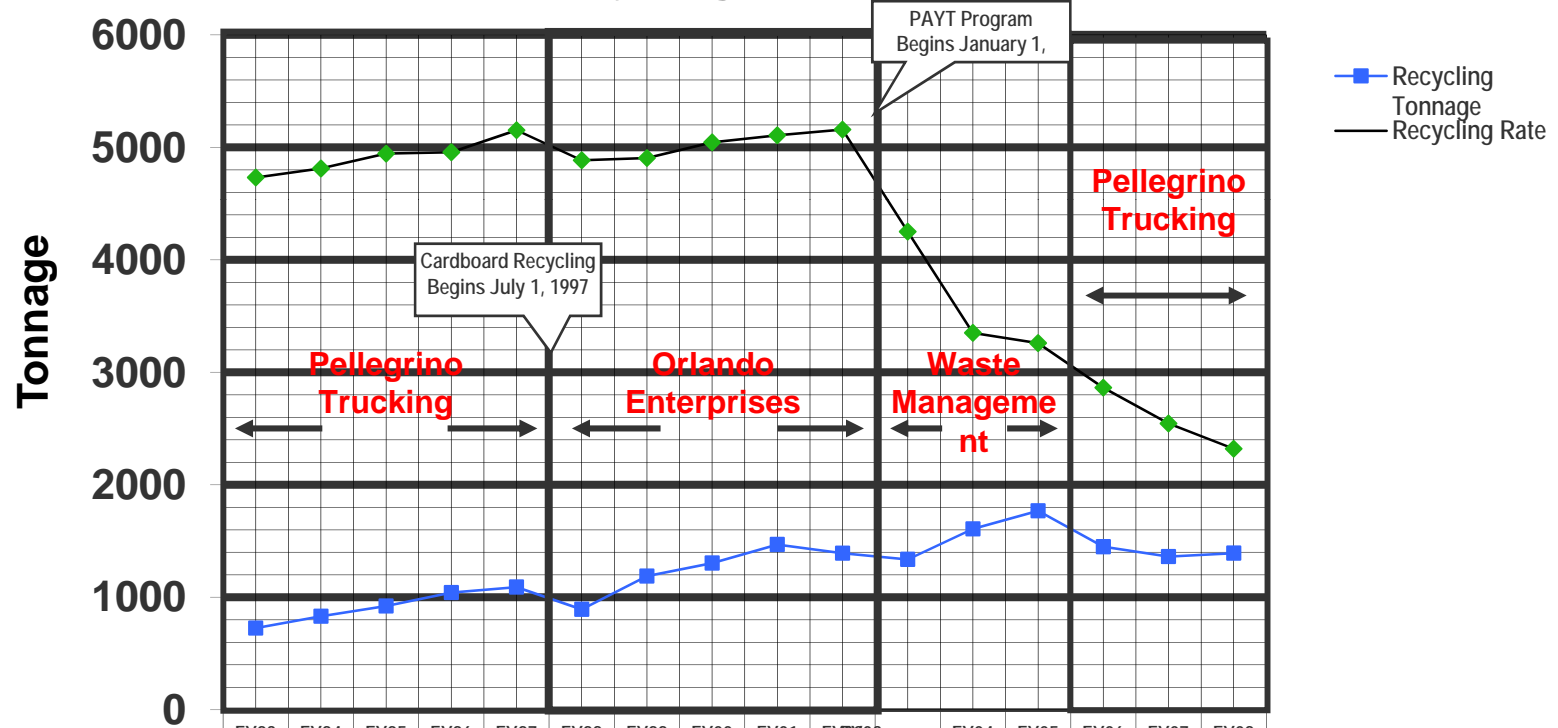
MSW for the Town of Stafford, CT

MUNICIPAL SOLID WASTE



Northborough MA Sustainable Behavioral Change

Trash and Recycling Comparison Chart FY93 - FY08

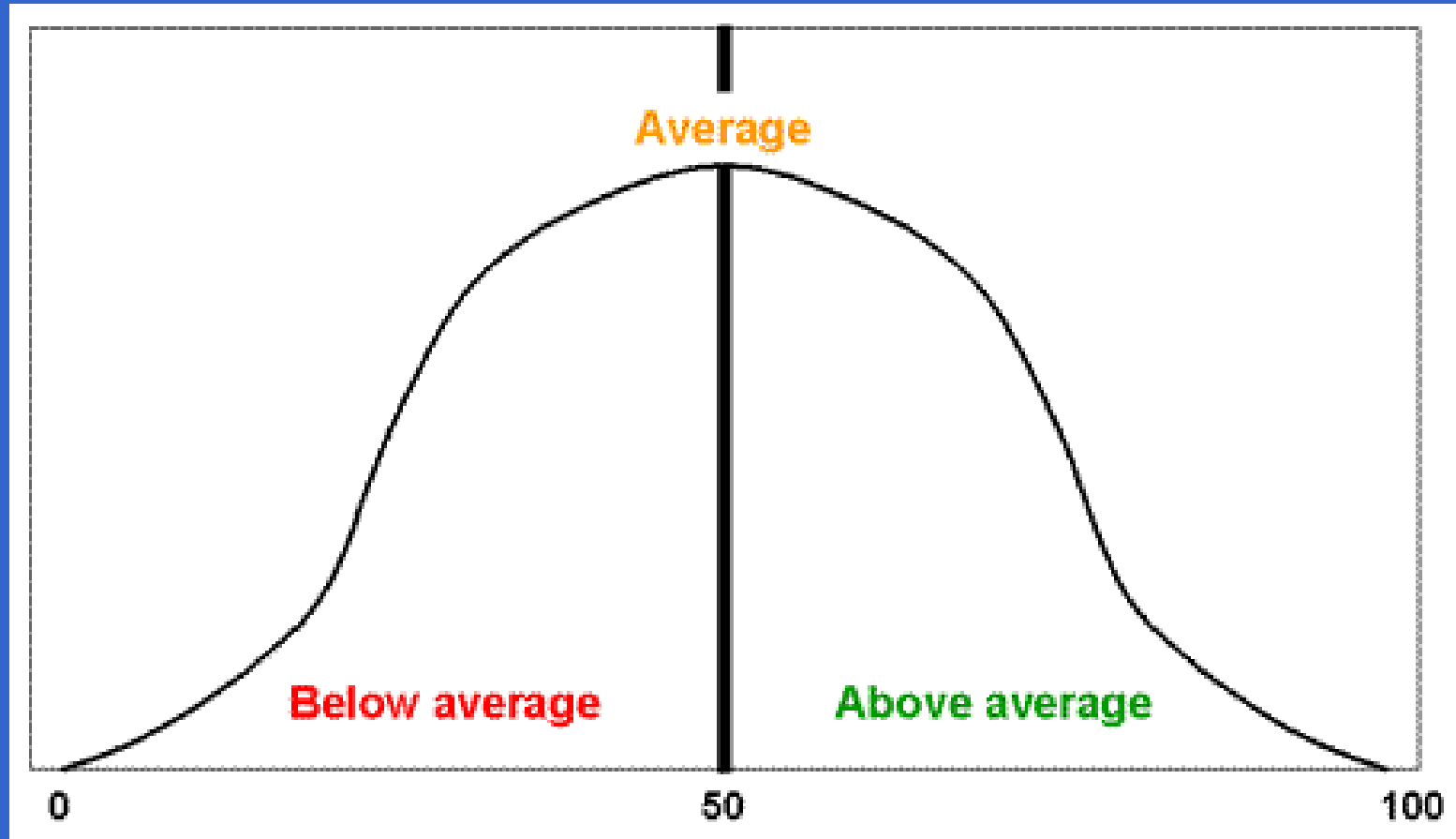


	FY93	FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05	FY06	FY07	FY08
—◆— Trash Tonnage	4732.3	4812.2	4944.7	4956.8	5152.6	4885.1	4905.0	5044.8	5107.2	5158.4	4250.9	3351.2	3260.1	2864.1	2545.3	2320.9
—■— Recycling Tonnage	726.30	831.31	922.24	1042.0	1090.8	893.22	1187.9	1304.0	1469.0	1391.7	1336.7	1607.9	1768.3	1449.3	1361.3	1392.1
— Recycling Rate	13.3%	14.7%	15.7%	17.4%	17.5%	15.5%	19.5%	20.5%	22.3%	21.2%	23.9%	32.4%	35.2%	33.6%	34.8%	37.5%

National Recycling Coalition

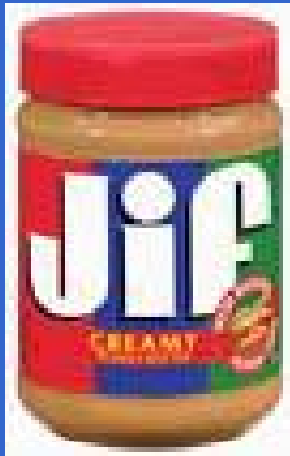
February 2008 Federal Trade Commission

'Uncovering the Drivers of Consumer Recycling Behavior'



SMART creates an immediate reason to learn.
Once the rules are understood recycling becomes easy.

Take the Recycling Test



Recycling Creates Local Jobs



‘For every 100 Jobs created by recycling only 13 jobs are lost in Solid Waste and Virgin Material Extraction.’

North Carolina Office of Waste Reduction Department of the
Environment Health and Natural Resources

SW is a Major Climate Sector of Greenhouse Gases



Energy



Transportation



Solid Waste

Global Warming & Garbage???

SW is a Major Climate Sector of Greenhouse Gases



Energy



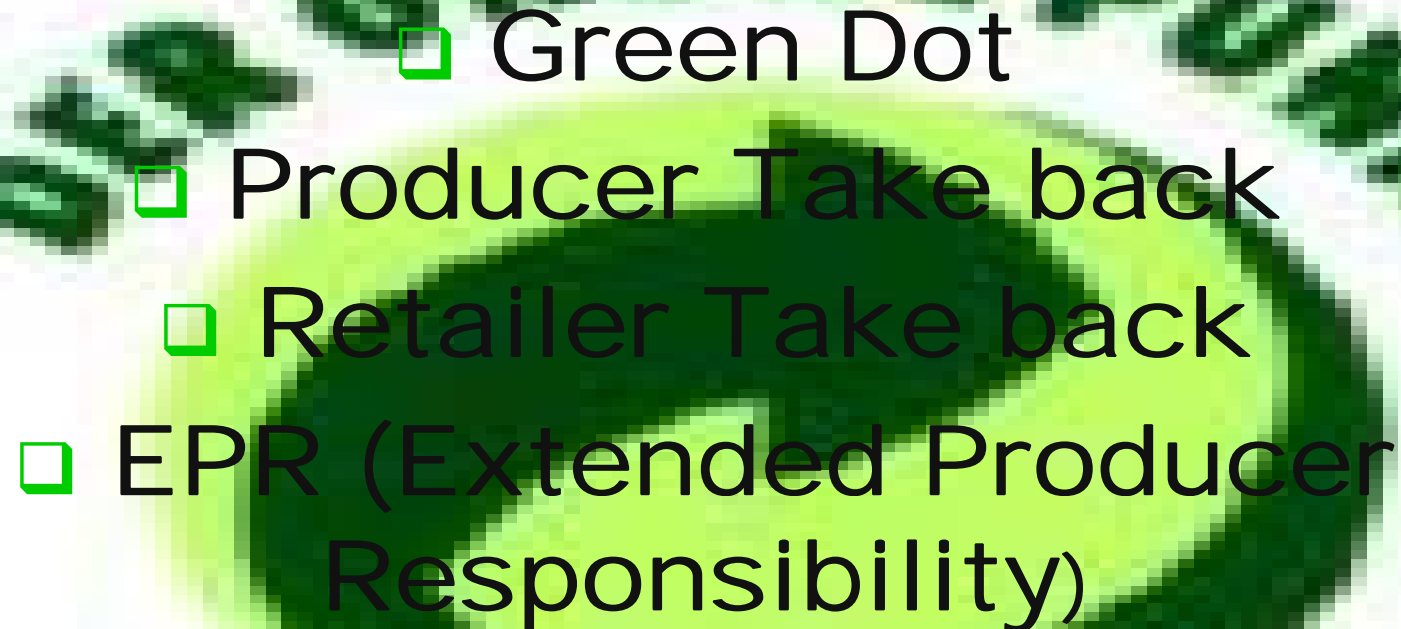
Transportation



Solid Waste

Global Warming & Garbage???

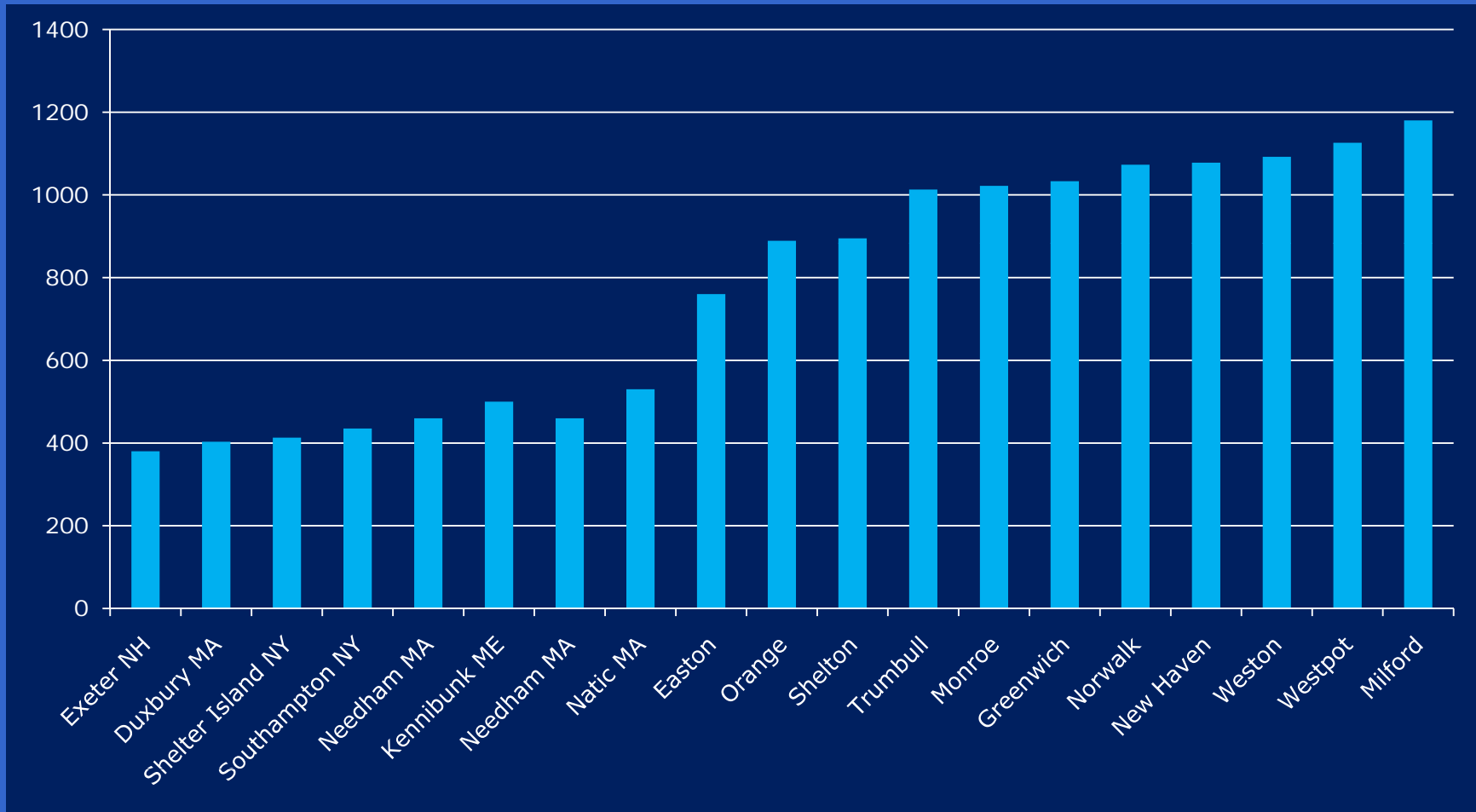
SMART encourages Upstream Producer Responsibility

- 
- Green Dot
 - Producer Take back
 - Retailer Take back
 - EPR (Extended Producer Responsibility)

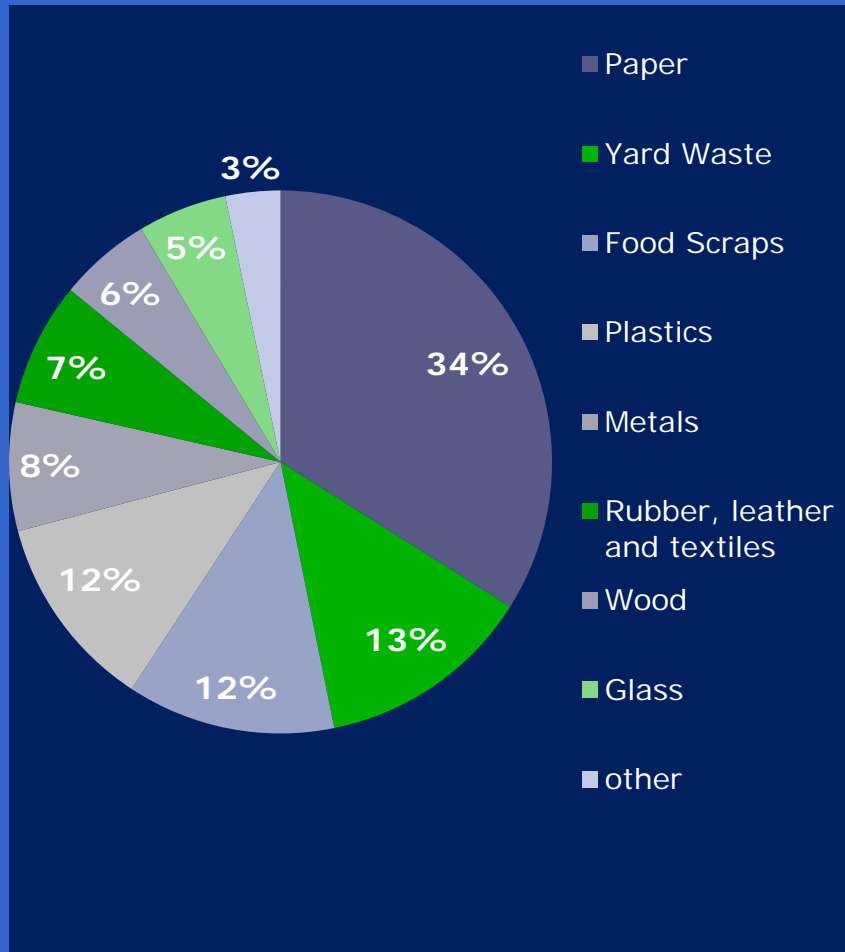
Participating Municipalities

- Weston
- Westport
- Greenwich
- Trumbull
- Shelton
- Monroe
- Eaton
- Orange
- Norwalk
- Milford
- New Haven

Peer Community Comparison



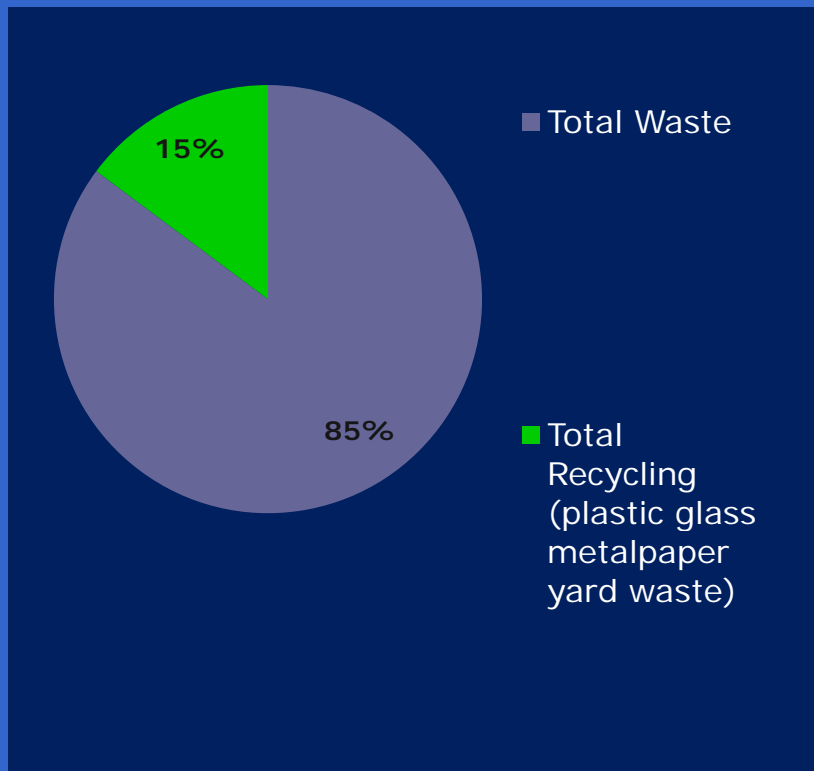
New Haven Waste Characterization



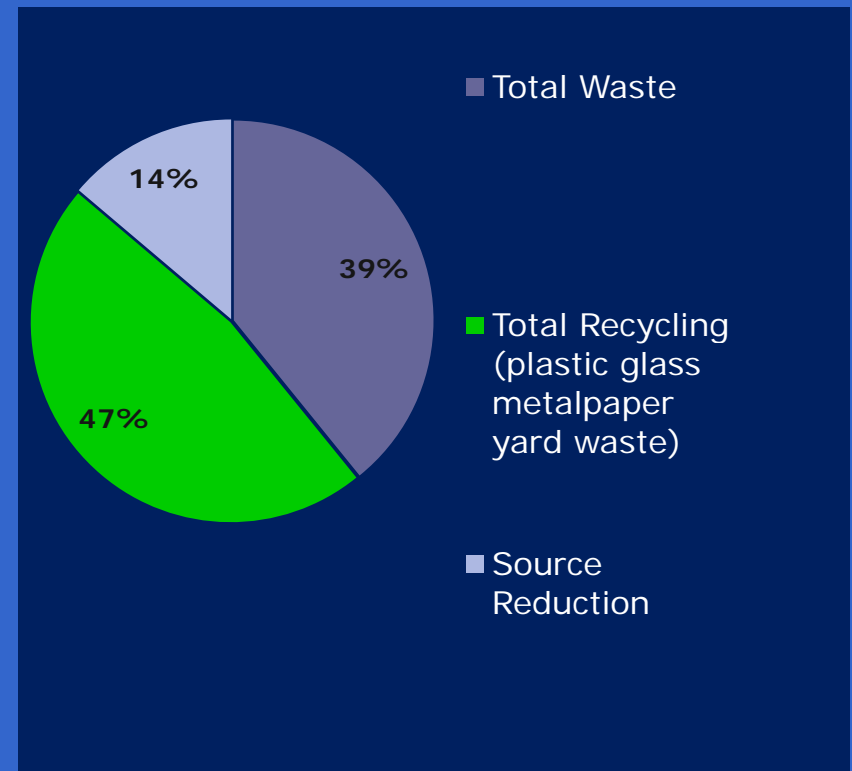
New Haven	Per Capita
Paper	364
Yard Waste	138
Food Scraps	133
Plastics	125
Metals	82
Rubber, leather and textiles	79
Wood	59
Glass	57
other	35
	1072

Weston Waste Stream Before and After SMART waste management

Before SMART



After SMART



Estimated change in waste stream if SMART approach taken

3 Steps to get SMART

1. Initial meeting / phone calls to find a coach (ideally Mayor or First Selectman)
2. Create an easy cost effective implementation strategy (work with current system)
3. Create an advisory committee to follow through the implementation

Where does the money go?



The Town of Westport spends 1,275,000 in disposal fees



SMART will save 700,000 or 50+% of Total disposal costs



Decreased Taxes to Residents



General Fund

Similarities

- ❑ Municipal Collection- New Haven, Milford, Shelton, Norwalk
- ❑ Multiple Haulers (tip paid through tax base) Greenwich, Westport, Orange, Trumbull
- ❑ Multiple Haulers (no tax base) Easton, Weston, Monroe,
- ❑ Per capita disposal about 1000 lbs per capita
- ❑ Approximately \$100 / per month / house hold for tip/disposal fees

Some Implementation Strategies

- New Haven – Considering Recycle Bank and overflow containers
- Easton – Municipal Bid Proportional UBP bag cost for collection and disposal
- Weston – rebate to haulers UBP bag
- Greenwich – Reduce taxes or use UBP bag costs to offset increases
- Norwalk – Automated with Bags

Projected Benefits of SMART

- 100,000 tons Waste Reduction
- \$8,500,000 Disposal Cost Reduction
- 75,000 MTCE GHG Reduction
- Increase in Jobs through diverted commodities
- Stimulates the economy through rebates or tax decreases

Projected Diversion

Municipality	Tonnage Diversion	Avoided disposal cost
Weston 10,000	4,900	\$250,000
Easton 7,300	950	\$95,000
Orange 13,000	1,600	\$212,000
Westport 26,000	8,000	\$700,000
Greenwich 61,000	16,000	\$1,300,000
Trumbull 34,000	8,000	\$750,000
Shelton 38,000	7,000	\$ 600,000
Monroe 19,000	5,000	\$410,000
New Haven 123,000	24,000	\$1,800,000
Norwalk 83,000	16,000	\$1,400,000
Milford 53,000	16,000	\$1,300,000

Results

Municipality	Status	Goal for Implementation
Weston	Yes	2009
Easton	Yes committee	2009
Orange	Committee	
Westport	Committee	
Greenwich	Committee	2009
Milford	Committee	
Monroe	Committee	
New Haven	Test	Test March of 2009
Shelton	Thinking of Implementing	
Trumbull	Thinking of Implementing	
Norwalk	Not moving forward	

Suggestions

- ❑ Create an advisory committee to review feasibility of SMART for New Haven
- ❑ Say YES to becoming a SMART community
- ❑ Review ways to deal with multi-family, and rental properties, and illegal dumping
- ❑ Review recycling logistics
- ❑ Review recyclable items.
- ❑ Create bag / bin specifications for bid
- ❑ Create public relations strategy for moving forward.

Westport Bans Plastic Bags

- Great first step to changing behavior. Eliminating the use of disposable bags will **save 3 lbs** per person per year in waste.
- SMART will **save 500 lbs** per person per year in waste. Significant long-term behavioral change.



2010 the decade of Conservation not Consumption

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

Kristen Brown

Green Waste Solutions

843-241-3276

Kristen@thewastesolution.com