Waste Reduction Options

The Evolution of the Waste Can
A lovely addition to the landscaping plan?
What are our Goals:

- Reduce Trash - Save $ in the City/Town Budget

- Increase Recycling -
  - Less in trash Saves $
  - Increases jobs
  - Preserves natural resources
  - Have more recycling participation - Make it easy

28% of what is thrown out is paper and cardboard.

- Have Cleaner Streets
Options:

- Education
- Waste Ban Enforcement (WB)
- Municipal Recycling Enforcement Coor. (WB+ MREC)
- 3-bag or 4-bag limit
- SSR (without wheeled carts)
- SSR only (with carts)
- Automated SW (64-g)
- One bag limit, or 39-g barrel automated collection
- SSR + Automated SW collection (64-g carts)
- SSR + PAYT or Automated SW collection (<40-g carts)
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Updated Jan 2011  Prepared by Carolyn Dann
Waste Ban Enforcement

• Definition:
  – Hauler leaves behind any “visible recyclables”
  – Requires DPW and Selectmen/City Council support

• Examples and impact on Tons of SW per household served
  – North Andover (2/2005, 1.35 -> 1.2, down 12%)
  – Andover (5/2005, 1.4 -> 1.3, down 7%)
  – Chelmsford (2/2006, 1.18 -> 1.03, down 12%)
  – Tewksbury (9/2008, 1.48 -> 1.35, down 10%)
  – Billerica (10/2007, 1.54 -> 1.36, down 13%)
  – Lexington (9/2007, 0.82 -> 0.81, down 2%)

• Conclusion: Impact on SW = 7-13% if T/ hh > 1.0
  • If T/ hh < 1.0, then reduction less significant
Municipal Recycling Enforcement Coordinator

• Grants given to Billerica, Chelmsford, Tewksbury, Springfield, and Lynn for FY09 and FY10 for a MREC.

• Comparing FY08 to FY10 shows:
  – Chelmsford – SW down 3.6% from 1.00 to 0.96 TPH
  – Lynn - SW down 7.3% to 1.21 TPH
  – Springfield – SW down 7% to 1.07 TPH

  Note: in same time period, Waltham SW dropped 3% without a MREC or any changes to 0.95 TPH

• Conclusion: 0-4% less tonnage depending on starting point.
• Note: This can be enough to pay for coordinator’s salary
3- or 4-Bag Limit

Examples:
- Mansfield (FY07) reduced SW 15% from 1.3 to 1.1 T/hh
- Tyngsborough (FY07) reduced SW 5% from 1.06 to 1.0 T/hh
- Framingham (FY08) reduced SW 4% from 1.04 to 1.01 T/hh

• Conclusion: 3- or 4-bag limit drops SW to ~1.0 T/hh
• Two-bag limit is even better!
  • West Newbury (FY10) reduced SW 11% to 1.02 T/hh
  • Chelmsford (FY11) appears to be dropping another 15+%
• Enforcement is KEY!
Chelmsford Case Study

Start of two-bag or two-barrel limit, Jul 2010

Start of Enhanced Waste Ban Enforcement Feb 2006

Start of Recycling Enforcement Coordinator April 2008

Graph showing tons of waste from FY94 to FY11 with key events highlighted.
Chelmsford: 2 Bag/Barrel Limit

- **Start Date:** July 1, 2010
- **Program details:**
  - Curbside SW & bi-weekly R
  - Two 35-gallon bags “$2 overflow” bag,
  - Bulky Waste -
  - Curbside service provided to all residences including apartment complexes and multi-families
    - Stickers provided for multi-families
    - Dumpster rate provided for complexes
  - Total households served = 13,385
  - Population = 33,802
- **Town Manager** – made the decision
- **Political results** - almost no opposition
Chelmsford: Has 2 Bag limit with over flow bags

- It Works!
- Publicize early and often.
- Have something to “give” residents
- Be prepared to offer extra recycling pick-ups
- Work with your haulers AND enforcing the waste bans and trash limits.
Automated SW (64-g barrels)

- Truck with mechanical arm, residents receive free barrel, pay for 2nd barrel or overflow bags

- Examples from first year (Fy10):
  - Billerica reduced SW 18% from 1.31 T/hh to 1.07
  - Burlington reduced SW 22% from 1.24 T/hh to 0.97 (+ weekly R)
  - Tewksbury reduced SW 8% from 1.34 T/hh to 1.0 T/hh (and added 1900 condos)
  - Tyngsborough reduced SW 10% from 0.93 to 0.84
  - Lowell reduced SW 25% in first 12 mos, down from 1.46

- Conclusion #1: Starting Point Matters; Brings SW down to ~0.9 to 1.0 T/hh;
- Conclusion #2: Smaller barrels would bring SW down more
Single-Stream Recycling w/o Carts

- Residents use own containers but can mix paper and containers
- Examples:
  - N. Andover (weekly): FY10 SW down 7% vs. FY08 to 1.05
  - Braintree: FY10 SW down 5% from 1.36 to 1.27T/hh
  - Quincy: FY10 SW down 11% from 0.87 to 0.78
  - Weymouth: FY10 SW down 0% at 1.15
  - But, Belmont, w/ no changes, dropped 5% from FY08-FY10
- Conclusion: SSR alone will reduce SW 0-7%
Single-Stream Recycling With Carts

- Residents receive standardized cart, collected with automated truck,
- Examples:
  - Boston: FY10 SW down 9% over 2 years from 0.8 to 0.74
  - Newton: FY10 SW down 19% over 2 years from 1.03 to 0.83 with SSR carts and 64-g SW carts
- Conclusion: More impact when combined with SW limits, PAYT, or dedicated carts for SW.
- 2nd Conclusion: When SSR carts are added to 64-g carts, can bring SW T/HH down to 0.8 range (1600 lbs).
2 Cart Program

64 gallon Weekly Pickup

95 gallon Bi-Weekly Pickup
SSR+Automated SW Collection or PAYT

- Residents receive 2 barrels: one for SW, one for recycling, “Zero sort”
- Examples:
  - Ashland (SSR+PAYT): FY10 SW = 0.6 T/hh
  - Newton (SSR+64-gal carts): FY10 SW = 0.83
  - Holden (SSR+64 gal carts): FY10 SW = 0.83
  - North Attleborough (SSR+PAYT): FY10 SW = 0.54 T/hh

- Conclusion:
  - SS-R + PAYT can reduce SW to 0.6 T/hh (1,200 lbs)
  - SS-R + 64-gal carts can reduce to 0.8 T/hh (1,600 lbs)
Holden: Automated with 64-gal

- **Program details:**
  - 64-gallon SW containers
  - 96-gallon R containers

- **Total households served = 5425**

- **30% reduction in SW**

- **Before” (FY06, FY07)**
  SW Total = 6111 Tons, 6051 Tons
  1.13, 1.12 SW tons per household
  (2,260 lbs per hh per year)

- **“After” (FY08, FY09, FY10)**
  SW Total = 4348, 4296, 4221 Tons
  .8, .82, .83 SW Tons per household
  (1,660 lbs per hh per year)
One “Free” Barrel

- Residents allowed first barrel (up to 36-g), have to buy bag for extra trash at ~$2/bag

Examples:
- East Longmeadow: WRP since FY06, FY10 SW = 0.71 T/hh
- Longmeadow: WRP since FY07, FY10 SW = 0.65
- Hamilton: WRP since FY09, FY10 SW = 0.74
- Wenham: WRP since FY10, FY10 SW = 0.84

Conclusion: WRP reduces SW to 0.7-0.8 T/hh
Full PAYT

- Residents pay for every bag of trash

Examples:
- Natick: PAYT since FY04, FY10 SW = 0.70 T/hh
- Malden – PAYT since FY09, FY10 SW down 50% to 0.59 T/hh
- Gloucester – FY10 SW = 0.54 T/hh
- Shrewsbury – PAYT since FY09, FY10 SW = 0.66 T/hh
- Greenfield – PAYT since FY05, FY10 SW = 0.75 T/hh
- Worcester – PAYT for many years, FY10 SW = 0.41! (w/o BW)

Conclusion: Full PAYT reduces SW to 0.5-0.7 T/hh;
Littleton: Pay As You Throw

- **Start Date:** October 1,
  - Population = 9,272
  - Total households served = FY-10 2,048, FY-11 1,813

- **Program details:**
  - Annual fee dropped from $300 to $100
  - All trash must be in PAYT bags
  - 33-gallon bag costs $2.00
  - 15-gallon bag costs $1.00
  - 8.5-gallon bag costs $0.75
  - NO illegal dumping

- Comparing same 5 months, from October through February
- “**Before**”
  - SW Total CY09 = 2186
  - October, November ‘10= 389 T
  - 1.13 SW tons per household
  - (2,260 lbs per hh per year)

- “**After**” (Oct, Nov 2010)
  - SW Total = 231 T
  - 0.72 SW Tons per hh if trend continues
  - (1,440 lbs per hh per year) Bulky included
  - 41 % reduction in SW
SMARTR (PAYT) WORKS

NO Change in Program

Have a PAYT Program

TOWNSEND  TYNGSBOROUGH  SHIRLEY  GARDNER  LUNENBURG  MAYNARD  NORTHBOROUGH

pounds per participating household

- red: trash
- green: recycling

0  500  1000  1500  2000  2500  3000
Conclusions

- **Starting point matters** - Always ask about “before”!

- **Program matters**
  - 5-10% reduction possible with WB, MREC, 3-4 bag/barrel limit, SS-R only
  - 25-35% reduction with one free, Automated SW*
  - 35-50% reduction with PAYT, Automated SW&SSR*

- **Barrel size matters!**
  - 0-10% reduction if 1.0 T/hh or less, with Automated SW w 64-g barrels
The Bottom Line:

With Smaller trash Carts, TRASH Goes DOWN

With Larger recycling Carts, RECYCLING Goes UP
An “Ideal” Program Evolution

1. MREC + a 1-2 bag limit
2. Full PAYT
3. Automated SW w 35-gal carts + Automated SS-R w 96-gal carts
4. Automated SW, Automated SS-R, co-collected weekly, plus Organics collected weekly
5. Then, ....
Goals:

- Reduce Trash
- Increase Recycling
- Clean streets
- To have the most efficient and fair program
- Promote Zero Waste
Thank you!
Now, Your Questions?

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978-597-9191