

Dover Pay-As-You-Throw (PAYT) Proposal



**Dover Town Meeting
Lindquist Commons, Regional Schools
May 1, 2017**

Dover PAYT Planning Team:

Christopher Poulsen, *Dover Recycling Committee*

Carol Lisbon, *Dover Recycling Committee*

Janit Greenwood, *Dover Recycling Committee*

Craig Hughes, *Superintendent, Dover Highway Department*

Kathi Mirza, *MassDEP Municipal Assistance Coordinator*



The Dover Transfer Station



Perception vs Reality... The Data

Notable Rankings in 2014 Among 240 Municipalities That Reported with Mass DEP...

Solid Waste Per Household

155 th	Medfield	226 th	Dover
156 th	Concord	234 th	Lynn
167 th	Westwood	235 th	Waltham
200 th	Hingham	236 th	Burlington
201 st	Sherborn	237 th	Lawrence

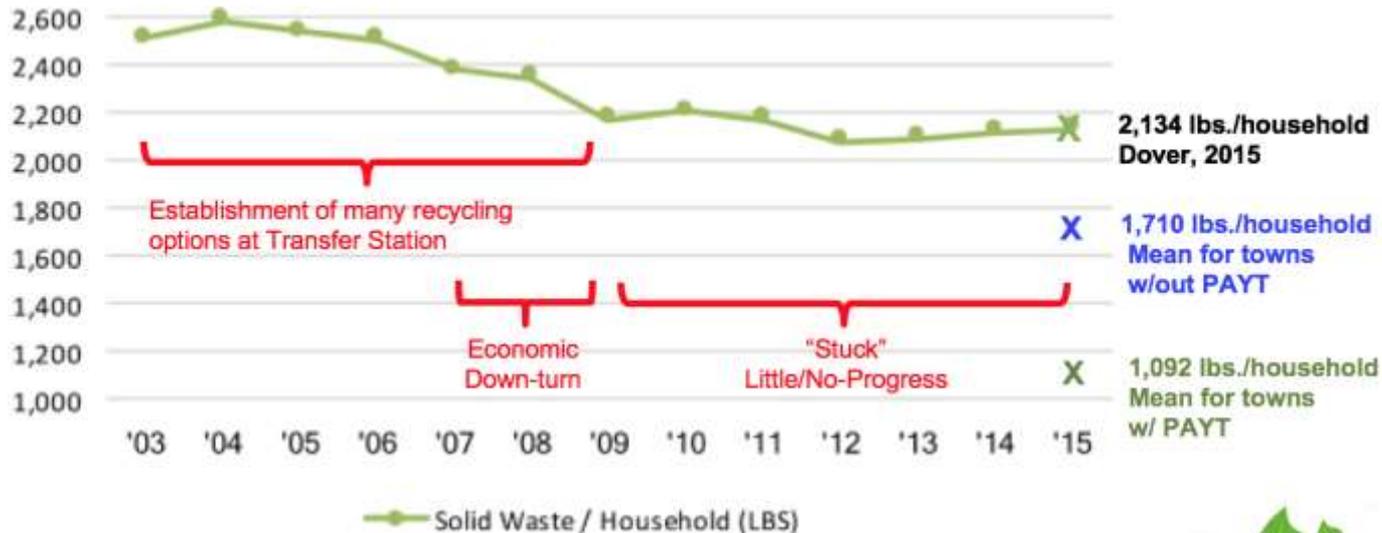
2015.... 238th of 253, Solid Waste Per Household

159 th Concord	238th Dover
170 th Hingham	246 th Methuen
193 rd Medfield	248 th Waltham
222 nd Sherborn	249 th Lawrence

Notable Comparisons w/ PAYT and Transfer Stations::

25 th Wellfleet	94 th Cohasset
37 th Wayland	101 st Sandwich
60 th Sudbury	105 th Littleton
77 th Duxbury	

Dover's Solid Waste Per Household



Dover is twice avg of towns with PAYT



Perception vs Reality... The Reality



- **Sample of Dover's Trash 3/17/17**
- **Estimate 30% is Recyclable**



Perception vs Reality (2)



Perception vs Reality (3)



- **Compactor**
4/25/17



We Have Tried Many Initiatives, Education & Awareness...

Recent Years

- New signage, web pages, pamphlet
- Promotions, food scraps, recycle bins
- Promotion of recycle bins
- New recycling options...Textiles, Book Re-use, Rigid Plastics, Tires, Bikes, Mattresses
- Integrated Plastics
- Special events... Shred-it Day, rigid plastics, bikes, tires, mattresses; Dover Day; Spring Clean-up
- Newspaper Pieces
- New Regulations
- MassDEP Grants

2017

- Recycle Bins for sale at Transfer Station (Mass DEP Grants – Containers & Shed)
- Furniture staging and re-use (Mass DEP Grant – Roof Staging Area)
- Rigid plastics re-use (Mass DEP Grant – Roll-off)
- Select Construction & Demolition re-use
- **Introduce Dover Bags (PAYT w/ Mass DEP Grant)**



We Have Researched & Incorporated Best Practices...

EFFORT	Key Findings
2003 SPECIAL COMMITTEE PAYT FOR DOVER	<i>Conclusion: Too Soon / Not for Dover</i>
2014 DRC STUDY BEST PRACTICES TO REDUCE WASTE <ul style="list-style-type: none"> • Best Practices Among Municipalities For Waste Reduction & Recycling. <u>Interviews w/ Wellesley, Needham, Medfield, Sherborn, Mass DEP</u> • Best Practices Among Municipalities For Managing a Sustainable Environment 	<ul style="list-style-type: none"> • <i>Single Stream Not a Best Practice; Improves Recycling 5% (Avg) but Raises Costs \$15-\$30/ton (\$10-\$20k);</i> • <i>PAYT Reduces Solid Waste 37%; Improves Recycling 10% (Avg) (\$20-\$30k Savings)</i> • <i>Towns are ad-hoc / subject oriented. No comprehensive approaches</i>
2015 DRC STUDY PAYT <ul style="list-style-type: none"> • State of PAYT In Mass; Best Practices; Design & Implementation Considerations. <u>Interviews w/ North Brookfield, Duxbury, Littleton, Sandwich, Needham</u> • Technical Assistance Mass DEP 	<ul style="list-style-type: none"> • <i>143 Towns / 40% have PAYT ('14)</i> • <i>Solid Waste Reductions Range 20-50% (Big Savings to Budget)</i> • <i>Program Changes Are Relatively Simple</i> • <i>Program Can Be Net Zero Cost to Taxpayer</i>
2016 PAYT PLANNING TEAM (3 DRC Members, Superint. Streets, Mass DEP Tech'I Assistance) <ul style="list-style-type: none"> • <u>Visited & Interviewed the Transfer Stations of Littleton, Duxbury, Sandwich</u>; Drafted Program Design and Implementation Recommends 	<ul style="list-style-type: none"> • <i>Citizen satisfaction at 9-10 out of 10</i> • <i>Solid waste reduced 30-40%</i> • <i>Recycling increased 10-40%</i> • <i>No increase in personnel requirements</i> • <i>No notable increase in illegal dumping</i>



Remaining Best Practice For Dover... Reduce Solid Waste

According to MassDEP and US EPA...

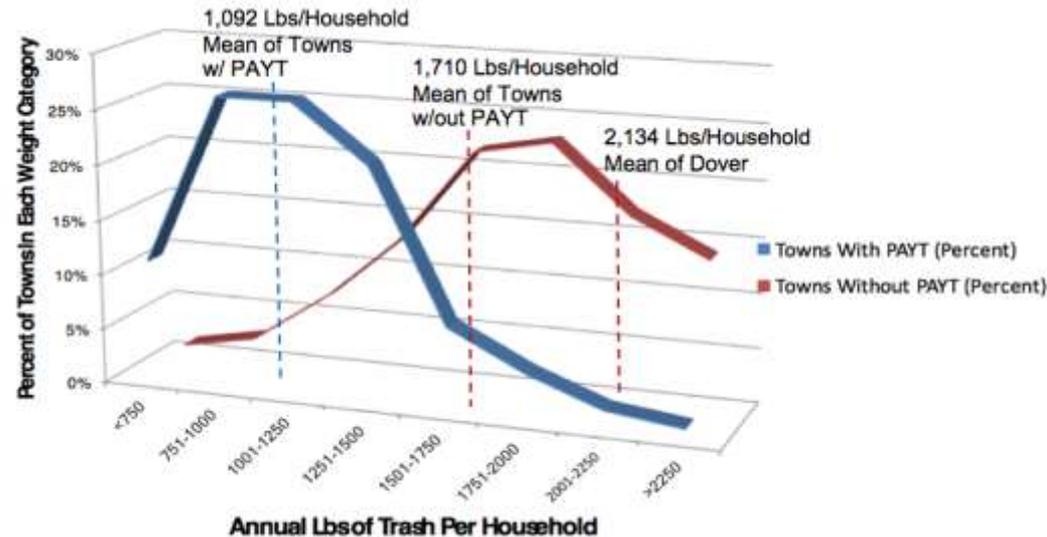
- Education, awareness and options for recycling will only take a town so far (as Dover has experienced).
- The best practice implemented over the last few decades by nearly half of all communities in Massachusetts and across much of the US is to address solid waste using a pricing structure for trash disposal that incents waste reduction, re-use and recycling... a pay-as-you-throw model
- Currently in Dover there is no direct impact on residents relative to the amount of trash they dispose, e.g., 1 bag of trash each week or 50 bags. No difference for households regardless of their efforts to recycle 0% or 40% of discards.
- Result = high trash generation / disposal
- More waste = higher costs to the Town and to the Environment



Pay As You Throw Is SMART

- SMART= **Save Money And Reduce Trash**
- **Savings** to towns in reduced tipping fees, transportation, maintenance are commensurate and long-term
- It is the most **direct** means of incentive and is more **equitable** for residents who reduce waste, recycle, compost, reuse and donate

Performance of Towns w/ and w/out PAYT



- Works **like a utility**, pay for what you use: water, electricity, oil, gas, telephone, cable
- Gives residents **control** over their waste disposal costs, promotes personal responsibility
- Reducing waste **lessens negative impacts to public health and the environment**
- Most effective way / **best practice** to reduce solid waste: MassDEP and US EPA (MassDEP has awarded ~\$6M in PAYT grants to 83 communities since 1998)
- 42% of MA cities and towns, have implemented PAYT (145 towns through 2016) and experienced **reductions in solid waste of 20%-50%**



Dover PAYT Proposal



Just one simple change...

- **Must use "Dover bags" for trash at transfer station, rather than brand or generic bags**

Purchased at surrounding grocery stores*

\$.50 for 15 gal. bag

\$1.00 for 30 gal. bag



- *No cost for "bulky items" that are too big for bags*
- *No changes to existing recycling program*
- *No changes to commercial hauler pick-up*

*Dover Market, Roche Brothers, Sudbury Farms, Star Market, Stop & Shop
Equivalent to an additional \$.30-.70 cost per bag or additional \$26-44 per household per year
Will work with COA to provide bags to those in need*



Impacts on Dover & Transfer Station

- **Annual Savings to Transfer Station Budget ***

- \$18,000 Tipping Fees & Transport
- Additional savings not quantified (55 less trips to Worcester)
 - Less truck use, less maintenance, fewer tire replacements
 - Time savings / reallocation of personnel
- No Additional Labor Required

- **Annual Revenue to Town General Fund ***

- Net Revenue \$48,000 for Bags

- **TS Set-up Is Ideally Organized For Compliance**

- **3 Month Phase-in To Educate And Ease Compliance**

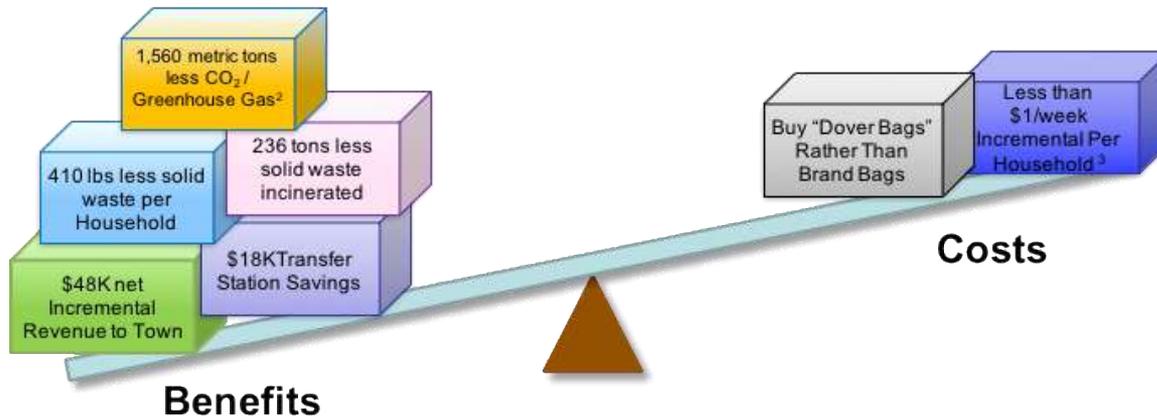
**\$66,000
Net Financial
Benefit to
Town Budget**

* Assumes 20% solid waste reduction. Mass average of 36% for 145 towns w/ PAYT would further improve benefits and reduce incremental household costs



Summary...

1. A "NO" TONIGHT IS THE STATUS-QUO AND **THE STATUS-QUO IS NOT SUSTAINABLE**. MOST OF US KNOW OUR CURRENT GREEN HOUSE GAS & CO2 RATES ARE NOT SUSTAINABLE
2. A "NO" TONIGHT IS KICKING THE CAN DOWN THE ROAD AGAIN AND IS **ROBBING OUR CHILDREN** AND GRANDCHILDREN OF THE CLEAN VIABLE PLANET AND QUALITY OF LIFE THEY DESERVE.
3. WE HAVE GOT TO MAKE CHANGES TO OUR WAY OF LIFE AND THIS PROPOSAL IS ASKING FOR **SO LITTLE FOR SO MUCH IN RETURN**...
4. A "YES" TONIGHT IS ABOUT DOING THE RIGHT THING AND SIMPLE MEANS BUYING "DOVER BAGS" RATHER THAN BRAND BAGS AT AN EXTRA COST OF LESS THAN \$1/WEEK AND THE BENEFITS ARE SUBSTANTIAL...
 - 20% Less Greenhouse Gas and CO₂
 - 20% Less Solid Waste
 - \$66,000 estimated savings and revenues to Dover



Appendix



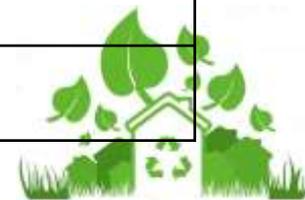
PAYT Implementation Plan...

3/20/17	Warrant Committee Open Hearing
5/1/17	Town Meeting
May-Jul '17	Bag Vendor Selection & Implementation Planning
Jun-Aug '17	Education & Awareness <ul style="list-style-type: none">– Town website: Notice, Instructions, Video– Updated Transfer Station Instructions/Brochure w/ Tax Bills– "How To" Information Sessions– Information article in newspapers– Information handouts and Recycling Cmmttee members at Transfer Station– "1-800 Number" Information Line
Aug '17	Bags Available at Local Stores
Sep '17	1 st Month Implementation – Signs, Instructions, Assistance at TS
Oct '17	2 nd Month Implementation – Signs, Instructions, Assistance at TS
Nov '17	3 rd Month Implementation – Compliance / Full Implementation



Open Process on PAYT To Date

Date	Subject	Presented To
9/6/14	Study: Best Practices for Reducing Household Waste	DRC, DSHS Superintendent, Principle, Teacher Liaison; Open Mtg; Cable
9/1/15	Study: State of PAYT in Mass Best Practices; Potential Timeline	DRC, DSHS Superintendent, Principle, Teacher Liaison; Open Mtg; Cable
10/22/15	State of PAYT in Mass Best Practices; Potential Timeline	Selectmen & Town Administrator Open Mtg; Cable
6/9/16	PAYT Proposal For Dover; Implementation Plan for Dover; Proposed updates to Town Regs (Transfer Station; Com'l Haulers; Dumpsters; PAYT)	Selectmen & Town Administrator Open Mtg; Cable
7/25/16	Background and review of reg updates	Dover Board of Health; Open Mtg;
8/6/16 9/22/16	Review of reg updates	Town Administrator Selectmen; Open Mtg; Cable
11/17/16 12/12/16	Approval Commercial Hauler Ban Transfer Station	Selectmen and Board of Health, Open Mtgs
11/30/16	Review of Plans and Financial Analysis	Warrant Committee; Open Mtg
3/1/17	Public Forum on PAYT	Town Residents; Cable
3/20/17	Warrant Committee Open Hearing – Warrant Article	Town Residents; Cable



Dover Town Report Solid Waste & Recycling Data

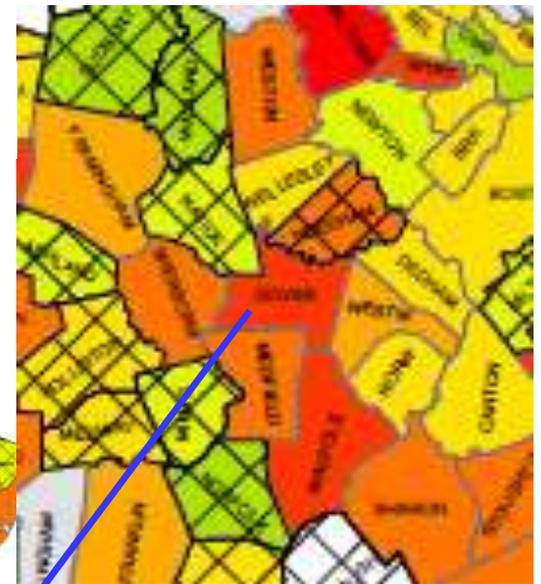
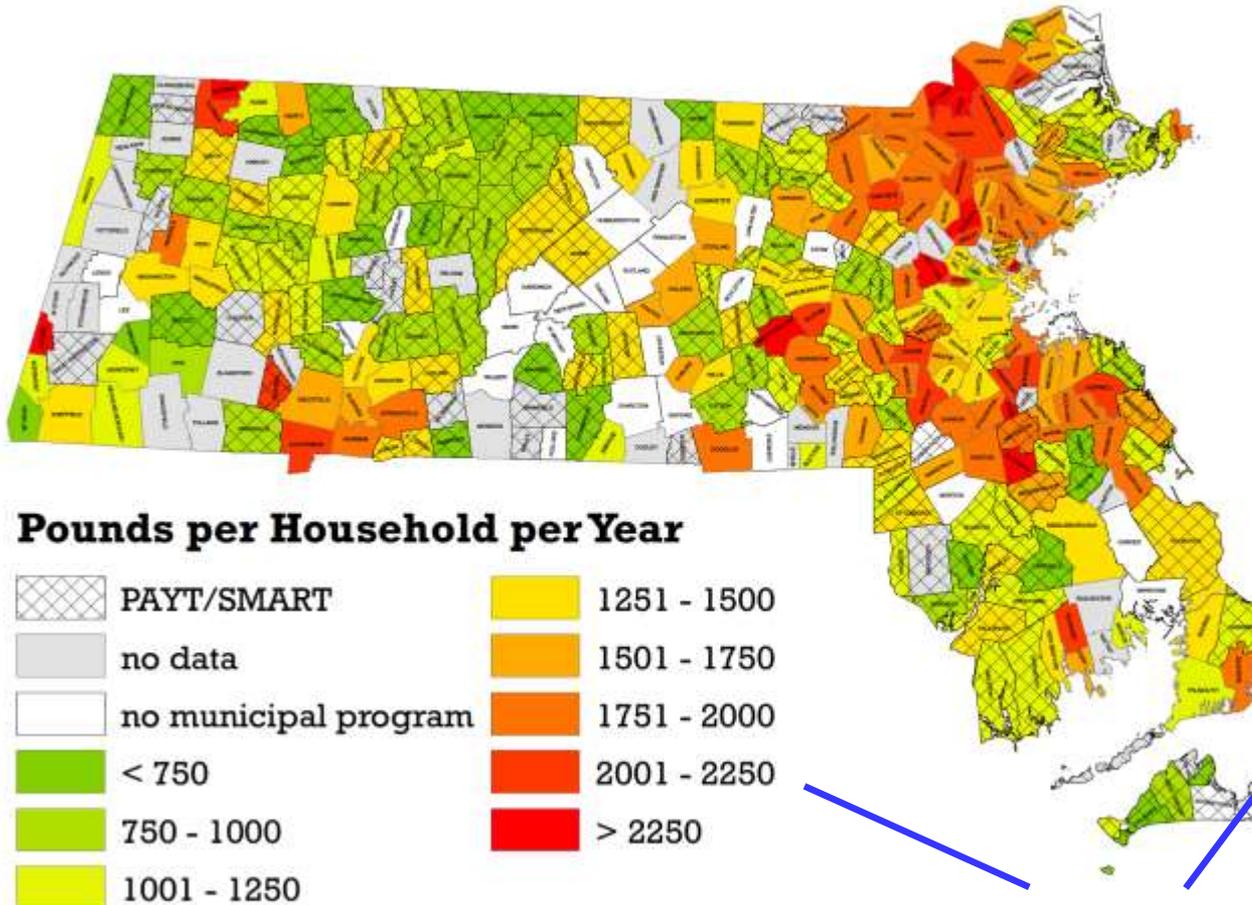
Dover Town Reports Recycling Data	'15	'14	'13	'12	'11	'10	'09	'08	'07	'06	'05	'04	'03
NUMBER OF HOUSEHOLDS ⁵	1,995	2,004	1,999	1,995	1,989	1,985	1,958	1,958	1,958	1,958	1,958	1,958	1,958
TOWN POPULATION ⁵	6,199	6,128	6,082	6,061	5,980	6,034	6,049	5,987	6,018	6,082	6,088	6,000	6,000
SOLID WASTE by tons ¹	2,128	2,123	2,096	2,079	2,164	2,194	2,130	2,298	2,329	2,452	2,488	2,530	2,462
SOLID WASTE (LBS) PER CAPITA	687	693	689	684	724	727	704	768	774	806	817	843	821
SOLID WASTE (LBS) PER HOUSEHOLD	2,134	2,119	2,096	2,084	2,176	2,211	2,176	2,347	2,379	2,505	2,541	2,584	2,515
RECYCLABLES by tons	744	691	707	703	732	693	707	739	733	756	815	848	795
MIXED PAPER ¹	190	183	217	283	285	288	312	349	390	371	431	440	444
CARDBOARD	131	119	122	117	114	113	99	87	86	82	82	80	83
GLASS	93	97	95	89	100	101	97	102	87	88	88	88	88
SINGLE STREAM ²	117	95	65	n/a									
METAL	51	52	67	53	68	67	81	84	101	129	135	163	142
PLASTIC	46	42	43	44	45	41	37	31	13	16	16	9	6
ELECTRONICS	25	29	28	29	30	36	39	39	24	32	32	36	n/a
TEXTILES ³	12	8	n/a	n/a	n/a	10	10	11	n/a	9	n/a	n/a	19
BOOKS ⁴	8	2	n/a										
AUTO BATTERIES	n/a	n/a	n/a	n/a	n/a	n/a	3	2	3	3	3	3	2
CO-MINGLES ²	0	0	7	24	24	22	17	21	17	15	17	18	n/a
FOOD WASTE ⁸	52	52	52	52	52	n/a							
SPECIAL EVENTS ⁷	4	n/a											
DEPOSIT TRAILER CONTAINERS (tons) ⁹	14	12	12	12	13	12	13	12	12	11	11	11	11
TOTAL SOLID WASTE & RECYCLABLES	2,872	2,814	2,802	2,782	2,896	2,887	2,837	3,037	3,062	3,208	3,303	3,378	3,257
% RECYCLABLES TO TOTAL	25.9%	24.6%	25.2%	25.3%	25.3%	24.0%	24.9%	24.3%	23.9%	23.6%	24.7%	25.1%	24.4%
Deposit Containers (units) ⁶	259,100	220,421	211,000	211,000	#####	#####	#####	#####	#####	#####	#####	#####	#####
Motor Oil (gallons)	550	650	750	750	800	650	800	1,250	1,050	1,150	800	1,150	n/a
Fluorescent Bulbs (units)	2,732	2,461	1,843	2,231	1,530	847	1,376	847	902	855	1,005	n/a	n/a
Small Batteries (non-auto, pounds)	377	n/a	n/a	n/a	n/a	n/a	209	145	150	138	72	n/a	n/a
Propane Tanks	n/a	n/a	n/a	n/a	n/a	n/a	73	79	n/a	n/a	n/a	n/a	n/a
Recycle Containers Sold (units)													
Compost Bins	n/a												
Rain Barrels	n/a												
Recycle Bins	n/a												
Food Scrap Bins Garage	n/a												
Food Scrap Bins Kitchen	n/a												
¹ Includes Dover Trucking (mixed paper only includes DT for '03-'12)													
² Dover Trucking (started single stream in '13 eliminating contributions to mixed paper and co-mingles)													
³ Textile Bins Transfer Station (Red Cross & Bay State), excludes D5 Regional HS & M5 (Bay State Textiles)													
⁴ Book Bin (Big Hearted Books & Clothing Inc.)													
⁵ Population/Households per Town Report/Census Data													
⁶ Estimated Quantity Based on Proceeds													
⁷ Private document shredding; mattress and tire recycling; bicycle and rigid plastic re-use													
⁸ Estimate based on 10lbs/week/household participating (versus 14% or 5.4lbs/week per Mass-DEP and 20lbs/week per Sherborn)													
⁹ Estimate based on 23% of containers are glass and 2.67 glass bottles/lb (170 grams per bottle) and 30.23 cans/plastic per lb. (15 grams per can/plastic)													



State of PAYT & Trash/Household in Mass 2015

How Much Trash Did We Throw Out in 2015?

- 1,710 lbs per Household (towns w/out PAYT)
- 1,092 lbs per Household (towns w/ PAYT)



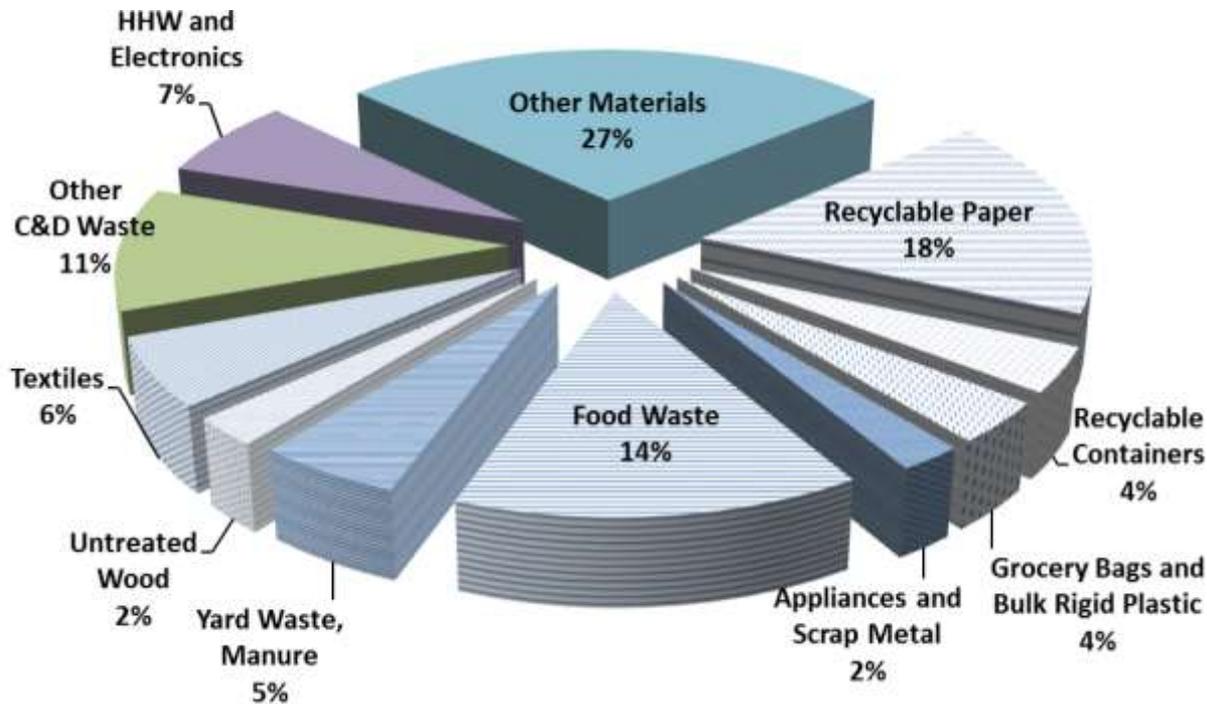
**Dover 2,184 lbs
Per Household
Ranked 238th of 253
Communities**

Map by David Quinn; Tonnage/HH Data from MassDEP CY2015 Solid Waste and Recycling Survey & DEP Municipal Assistance Coordinators; Massachusetts Municipal Boundaries from MassGIS



Our Trash and Climate Change

- Over half of the trash going to Wheelabrator Milbury could be recycled or composted
- Full life cycle of consumer goods and food contribute 42% of Greenhouse Gases



Impact of PAYT - New Programs 2008–2015

From Mass-DEP 2016 PAYT Database				Percentage Reduction in Solid Waste vs Year Before PAYT					Savings
Town/City	Start Date	Population	Households	1st Yr PAYT	2nd Yr PAYT	3rd Yr PAYT	4th Yr PAYT	5th Yr PAYT	1st Full Year
ACTON	01-Sep-15	21,924	9,742	13%	36%				\$79k
FALL RIVER	04-Aug-14	88857	42000	27%	36%				
HANSON	01-Jul-14	10209	3557	32%	64%				
WELLFLEET	01-Dec-13	2750	3660	32%	36%				\$34k
BREWSTER	03-Oct-13	9820	7545	40%	44%				\$60k
PLYMOUTH	01-Jul-13	56468	21405	23%	40%	46%			
LUDLOW	01-Jul-12	21103	6965	22%	28%	28%			
GRANBY	07-Feb-12	6240	2200	69%	78%	76%			
STURBRIDGE	01-Oct-11	9268	4123	67%	34%	35%			
SANDWICH	01-Jul-11	20675	8500	9%	37%	44%	42%		\$120k
HADLEY	01-Jul-11	17514	7040	36%	47%	47%	38%		
LITTLETON	01-Oct-10	8924	3582	37%	39%	40%	37%		\$114k
FREETOWN	01-Jul-10	8870	2932	27%	47%	no data	no data	57%	
IPSWICH	01-Jul-10	13175	6000	13%	20%	22%	25%	25%	
DUXBURY	02-Apr-08	15059	5356	no data	48%	48%	48%	48%	\$190k

“Red text” are towns with drop-off / transfer station similar to Dover



Strategy for Dover PAYT Proposal...

- **Strategy – MINIMUM CHANGE**

- Minimum Changes to Gain Public Support & Approval
- Based on 143 PAYT cases and all towns interviewed and visited, these changes should yield a 20-30% reduction in the trash portion of solid waste (versus 36% avg savings experienced by all towns w/ PAYT)

- **Design Changes – ONE SMALL CHANGE**

- Require use of approved bags for trash that are purchased at surrounding grocery stores. Two sizes 30 gal. and 15 gal.
- Ruled-out charging for bulky items and introducing sticker/use fees... not necessary to get SW reductions
- Ruled-out introduction of Revolving/Enterprise Fund to fund a large portion of Transfer Station Budget (as much as \$100-200k, depending on bag prices)... as “too much change” so, bag revenue goes to Gen'l Fund
- Ruled-out issuing free bags and reduced tax assess or \$75 rebate w/ tax assess for “zero-impact” to resident

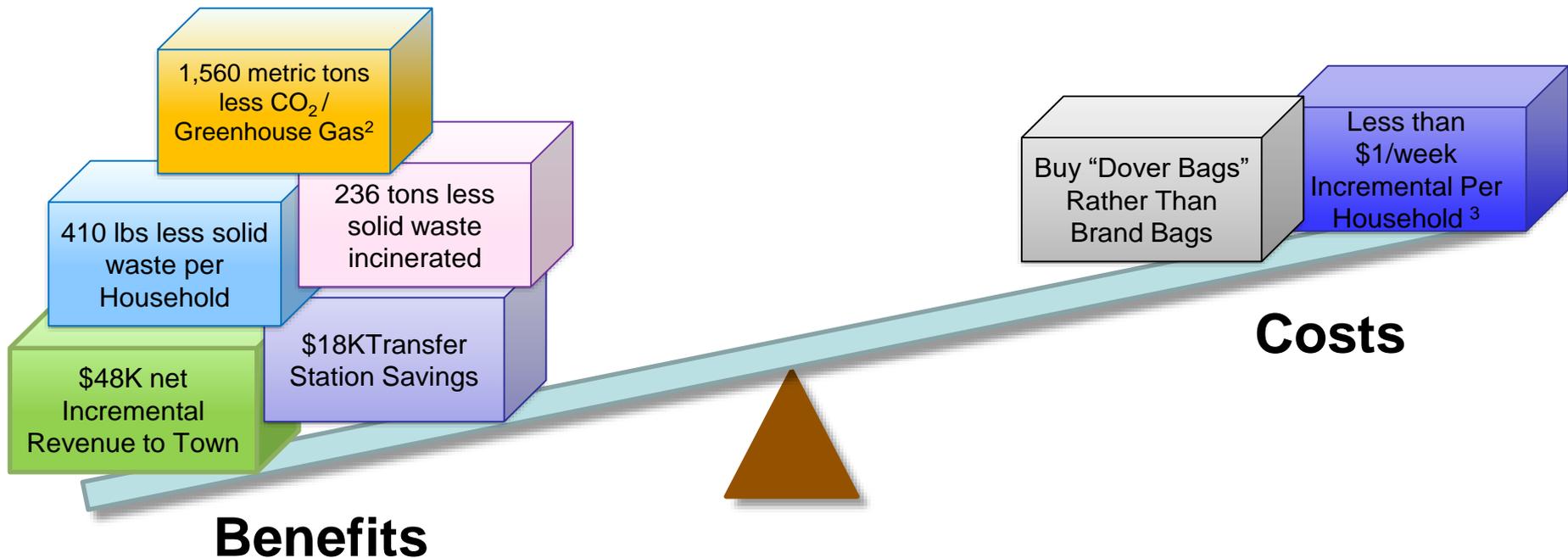
- **Operation Changes – NONE**

- No additional personnel required
- Vendor manages bag distribution, inventories, accounting, and proceeds



Cost / Benefit Analysis

Benefits Far Outweigh Inconveniences and Costs ¹



¹ Figures assume 20% solid waste reduction. Mass average of 36% for 145 towns would further improve benefits and reduce incremental household costs

² MassDEP's Municipal Waste Combustor Waste Characterization Studies 2010-2011 and EPA's WARM Model for Waste Reduction

³ \$39 for household for year (Gross SW less bulky less 20% / 25lbs/bag (56 bags) x \$1.00-\$.30 avg bag price)



PAYT PRICING – MA Towns w/ Transfer Station

Town/City	Population	Bags, Stickers,	1st Option Dollar	1st Option Unit Type	2nd Option Dollar	2nd Option Unit Type	Property tax or fee?	Fee Amount
ACTON	21924	Bags	\$1.50	30-gal	\$0.80	15-gal	Fee	\$100 (\$10 seniors)
AMHERST	37819	Bags	\$3.00	33-gal			Fee	50
AQUINNAH	311	Bags	\$4.00	33-gal	\$2.00	17-gal	Tax	
ASHBURNHAM	6081	Stickers	\$5.00	35-gal		0		\$5 per visit
ASHBY	3074	Bags	\$4.00	33-gal			Tax	
ASHFIELD	1737	Bags	\$2.00	30-gal				25
ATHOL	11584	Bags	\$2.50	33-gal			Fee	30 (non residents)
AYER	7427	Bags	\$2.00	33-gal	\$1.00	15-gal	Fee	\$80 (seniors \$50)
BARRE	5398	Bags	\$1.00	33-gal	\$0.50	13-gal	Fee	\$35 (\$100 businesses)
BECKET	1779	Stickers	\$1.00	30-gal				40
BELCHERTOWN	14649	Bags	\$1.10	30-gal	\$0.80	16-gal	Fee	90
BERKLEY	6411	Bags	\$1.50	33-gal	\$1.00	16-gal	Fee	30
BERNARDSTON	2129	Bags	\$2.00	33-gal			Tax	
BOLTON	4897	Stickers	\$2.25	33-gal	\$1.25	15-gal	Tax	
BREWSTER	9820	Bags Punch	\$2.00	33-gal	\$1.00	15-gal	Tax and Fee	45
BRIDGEWATER	26563	Card	\$3.00	30 lbs.	\$1.50	15 lbs.	Fee	30
BROOKFIELD	3390	Bags	\$1.25	33-gal			Fee	85
BUCKLAND	1902	Bags	\$2.00	33-gal			Tax	

Source: Mass DEP – PAYT Database 2016
 "Red Text", Towns w/ Pricing Similar to Dover Proposal



PAYT PRICING – MA Towns w/ Transfer Station

Town/City	Population	Bags, Stickers,	1st Option Dollar	1st Option Unit Type	2nd Option Dollar	2nd Option Unit Type	Property tax or fee?	Fee Amount
CHARLEMONT	1266	Bags	\$2.00	33-gal	\$1.00	33-gal for seniors	Tax	
CHESHIRE	3235	Bags	\$2.00	33-gal			Tax	80
CHESTER	1337	Stickers	\$1.25	33-gal				
CHESTERFIELD	1222	Punch Card	\$1.50	33-gal	\$0.75	15-gal		25
CHILMARK	866	Bags	\$4.00	33-gal	\$2.00	17-gal	Tax	
COHASSET	7542	Bags	\$2.00	33-gal	\$1.00	16-gal	Tax	TS sticker \$50 or \$15 ≥ 60 yrs.
COLRAIN	1671	Bags	\$2.00	33-gal	\$1.00	15-gal	Tax	
DALTON	6756	Bags	\$2.75	30-gal	\$2.25	15-gal	Fee	65
DEERFIELD	5125	Bags	\$2.00	33-gal			Tax and Fee	65
DUNSTABLE	3179	Stickers	\$1.00	sticker			Tax and Fee	50
DUXBURY	15059	Bags	\$1.50	33-gal	\$1.00	13-gal	Tax and Fee	25
EDGARTOWN	4067	Bags	\$4.00	33-gal	\$2.00	17-gal	Tax	
GEORGETOWN	8183	Scale	\$2.00	>25-gal	\$1.00	<25-gal		
GOSHEN	1054	Punch Card	\$2.25	30-gal				25
GRANVILLE	1566	punch card	\$2.00	33-gal			Tax	
GREAT BARRINGTON	7104	Stickers	\$2.90	30-gal	\$1.25	13-gal		
GROTON	10646	Bags	\$1.60	33 gal	\$0.80	15 gal	Tax and Fee	\$47 (sr. \$11)
HADLEY	5250	Bags	\$1.50	30-gal	\$0.75	15-gal		75

Source: Mass DEP – PAYT Database 2016
 "Red Text", Towns w/ Pricing Similar to Dover Proposal



PAYT PRICING – MA Towns w/ Transfer Station

Town/City	Population	Bags, Stickers,	1st Option Dollar	1st Option Unit Type	2nd Option Dollar	2nd Option Unit Type	Property tax or fee?	Fee Amount
HAMPDEN	5139	Bags	\$2.00	33-gal	\$1.00	16-gal		
HANSON	10209	Bags	\$2.00	30-gal	\$1.25	15-gal	Tax	0
HATFIELD	3279	Stickers	\$2.00	30-gal	\$1.00	15-gal	Fee	50
HUDSON	19063	Bags	\$3.00	33-gal	\$1.00	15-gal	Fee	10
HUNTINGTON	2180	Bags	\$2.00	30-gal	\$1.00	15-gal		
LAKEVILLE	10602	Bags	\$2.00	30-gal	\$1.50	17-gal	Tax and Fee	40
LEVERETT	1851	Bags & Stickers	\$2.00	32-gal	\$1.00	16-gal	Tax & Fee	25
LITTLETON	8924	bags	\$2.00	33-gal	\$1.00	15-gal	fee	100 (seniors \$30)
MILLIS	7891	Bags	\$1.75	33-gal 30-gal, <25		15-gal, <12	Tax and Fee	\$85 (Sr. \$30)
NEEDHAM	28886	Bags	\$1.90	lbs	\$1.05	lbs	Tax and Fee	95
NEW SALEM	990	Bags	\$1.50	33-gal			Tax and Fee	20
NEWBURY	6666	Bags	\$2.00	35-gal	\$1.00	15-gal		
NORFOLK	11227	Stickers	\$2.50	35 lb. Limit			Fee	\$60 (Sr. \$5)
NORTH ADAMS	13708	Stickers	\$1.75	30-gal	\$1.00	15-gal		60
NORTH BROOKFIELD	4680	Bags	\$1.50	33-gal	\$1.00	15-gal	Fee	40
NORTHAMPTON	28549	Bags	\$1.00	40-gal	\$0.50	20-gal	Tax	\$10 (Sr. \$2)
NORTHFIELD	3032	Bags	\$1.50	30-gal	\$0.75	15-gal	Tax	

Source: Mass DEP – PAYT Database 2016
 "Red Text", Towns w/ Pricing Similar to Dover Proposal



PAYT PRICING – MA Towns w/ Transfer Station

Town/City	Population	Bags, Stickers,	1st Option Dollar	1st Option Unit Type	2nd Option Dollar	2nd Option Unit Type	Property tax or fee?	Fee Amount
ORANGE	7839	Bags	\$2.00	33-gal			Tax	20
PEPPERELL	11497	Stickers	\$2.00	33-gal			Fee	69
PETERSHAM	1234	Bags	\$2.00	33-gal			Tax and Fee	25
PHILLIPSTON	1682	Bags	\$2.00	33-gal			Tax	
PLAINFIELD	648	Punch Card	\$1.50	30-gal	\$0.75	15-gal		
RAYNHAM	13383	Stickers Punch	\$1.50	<50 lbs			Fee	50
REHOBOTH	11608	card	\$2.25	punchcard			Fee	25
ROYALSTON	1258	Stickers	\$2.50	33-gal			Tax and Fee	15/ 50 Non residents
RUSSELL	1775	Bags	\$1.00	30-gal	\$0.60	16-gal		
SANDWICH	20675	Bags	\$1.20	30-gal	\$0.60	15-gal	Tax and Fee	55
SAVOY	692	Bags	\$1.50	single bag			Tax	35
SCITUATE	18133	Bags	\$2.00	30-gal	\$1.00	15-gal	Fee	\$80.00 TS sticker fee
SHELBURNE	1893	Stickers	\$2.00	33-gal			Tax	
SOUTHAMPTON	5792	Bags	\$1.00	33-gal	\$0.50	15-gal		70
SPENCER	11688	Bags, Stickers	\$1.50	33-gal	\$1.00	15-gal		50
STURBRIDGE	9268	Bags	\$1.00	33-gal	\$0.50	15-gal	Tax	
SUDBURY	18317	Bags	\$2.00	30-gal	\$1.00	15-gal	Fee	155
SUTTON	8963	Bags	\$2.50	33-gal	\$1.25	13-gal	Fee	40
WALES	1838	Bags	\$1.50	33-gal				

Source: Mass DEP – PAYT Database 2016
 "Red Text", Towns w/ Pricing Similar to Dover Proposal



PAYT PRICING – MA Towns w/ Transfer Station

Town/City	Population	Bags, Stickers,	1st Option Dollar	1st Option Unit Type	2nd Option Dollar	2nd Option Unit Type	Property tax or fee?	Fee Amount
WARREN	5135	Bags	\$2.00	33-gal	\$1.25	15-gal	Fee	\$50
WARWICK	780	Bags	\$2.50	33-gal	\$1.50	15-gal	Tax and Fee	\$20 res., \$45 biz
WAYLAND	12994	Bags unit based	\$3.33	30-gal	\$1.00	14-gal	Fee	150
WEBSTER	16767	Bags unit based	\$5.00	30-gal	\$3.00	13-gal		
WELLFLEET	2750	Bags	\$1.50	33-gal	\$1.00	15-gal	Fee	25
WENDELL	848	Bags	\$1.50	33-gal			Tax	15
WEST TISBURY	2740	Bags	\$4.00	32-gal	\$2.00	17-gal	Tax and Fee	10
WESTHAMPTON	1607	Stickers	\$1.00	30-gal	\$0.50	15-gal		
WESTPORT	15532	Punch card	\$3.00	<42 lbs			Tax	
WHATELY	1496	Bags	\$2.00	33-gal			Tax	0
WILBRAHAM	14219	Stickers	\$2.25	33-gal	\$1.25	16-gal		100
WILLIAMSTOWN	7754	Bags	\$2.50	33-gal	\$1.25	15-gal		75
WINCHENDON	10300	Bags	\$4.00	33-gal	\$2.00	15-gal	Tax and Fee	50
WINDSOR	899	Bags	\$1.00	34-gal	\$0.50	15-gal		50
WORTHINGTON	1156	Punch Card	\$2.00	30-gal	\$1.00	15-gal		35

Source: Mass DEP – PAYT Database 2016
 "Red Text", Towns w/ Pricing Similar to Dover Proposal



Dover Solid Waste Per Household w/ and w/out Commercial Trucking

Dover Solid Waste Per Household (Including Commercial Trucking) - 2015

$$\frac{2,128 \text{ tons solid waste}}{1,995 \text{ Dover Households}} \times 2,000 \text{ lbs} = 2,134 \text{ lbs per household}$$

Dover Solid Waste Per Household (Excluding Commercial Trucking) - 2015

$$\frac{2,128 \text{ tons solid waste} - 600 \text{ tons Com'l Trkg}}{1,995 \text{ Dover Households} - 560 \text{ Com'l Trkg Households}} \times 2,000 \text{ lbs} = 2,130 \text{ lbs per household}$$



PAYT Financial Analysis - Assumptions

DOVER PAYT MODEL			
Step 1: Enter Projected \$ and Amounts w/o PAYT	# or Cost	Notes	
Actual SW Tons	2,128	FY2015 including private hauler tons delivered to TS	225 HH at 1 ton each
Municipal Tonnage only	NA	Muni bldgs, schools, public barrels	
Bulky Waste Tonnage only	294	2015 actual	
Actual SW tons less 5% for estimated # opt outs	2,022		
Estimated # households served by com'l haulers	560		
SW tons: less 5% opt outs & HH served by priv haulers	1,462	assumes 1 ton per HH served	
Actual R Tons	372	MP, OCC, B&C, metal only 2015	Direct impact on cost-rev
Cost per SW ton	\$ 68	est for 3-4 years out	
Recycling Revenue per ton	\$ 13.00	Est proportioning fiber (85% @\$11/ton) & metal (15% @\$24/ton)	
SW transportation cost	\$ 11,868	est 86.5% of 13710	
Rec transportation cost	\$ 1,852	est 13.5% of 13710	493 tons est 3.75 per ton
No of households	1,995	per 2015 town report	
No of households less 5% for estimated # opt outs	1,895		
HH: Deducts 5% opt outs & priv hlr HH served	1,335	estimated households served accounting for opt outs and priv hauler customers	
Current flat fee/hh, if any	\$ -		
Other Services	\$ -	for Electronics, YW and HHW	
Step 2: Estimate New Costs with PAYT			
Staffing Costs to be covered	\$ -	DPW salaries	
DPW TS costs	\$ -	deducts SEMASS, LF monit and Other Veh Fuel	
Retirement-Health -Insurance- Gen'l O/H	\$ -		
Capital Improvement Plan	\$ -		
Enforcement	\$ -	Possibly add transition staff?	
Publicity for PAYT	\$ -	Estimated \$ for publicity and outreach, \$2/household or more	
Decreased cost for SW transportation		Included with tip fee	
Increased cost for Rec collection		Assuming no added cost	
Increased cost for YW/year	\$ -	Assuming no added cost	
Increased cost for bulky waste/yr	\$ -	Assuming no added cost	
Cost per large bag	\$ 0.36	WZ 33or 35 gal bag, contract price with inv and dist	
Cost per small bag	\$ 0.24	WZ 15 gal bag, contract price with inv and dist	

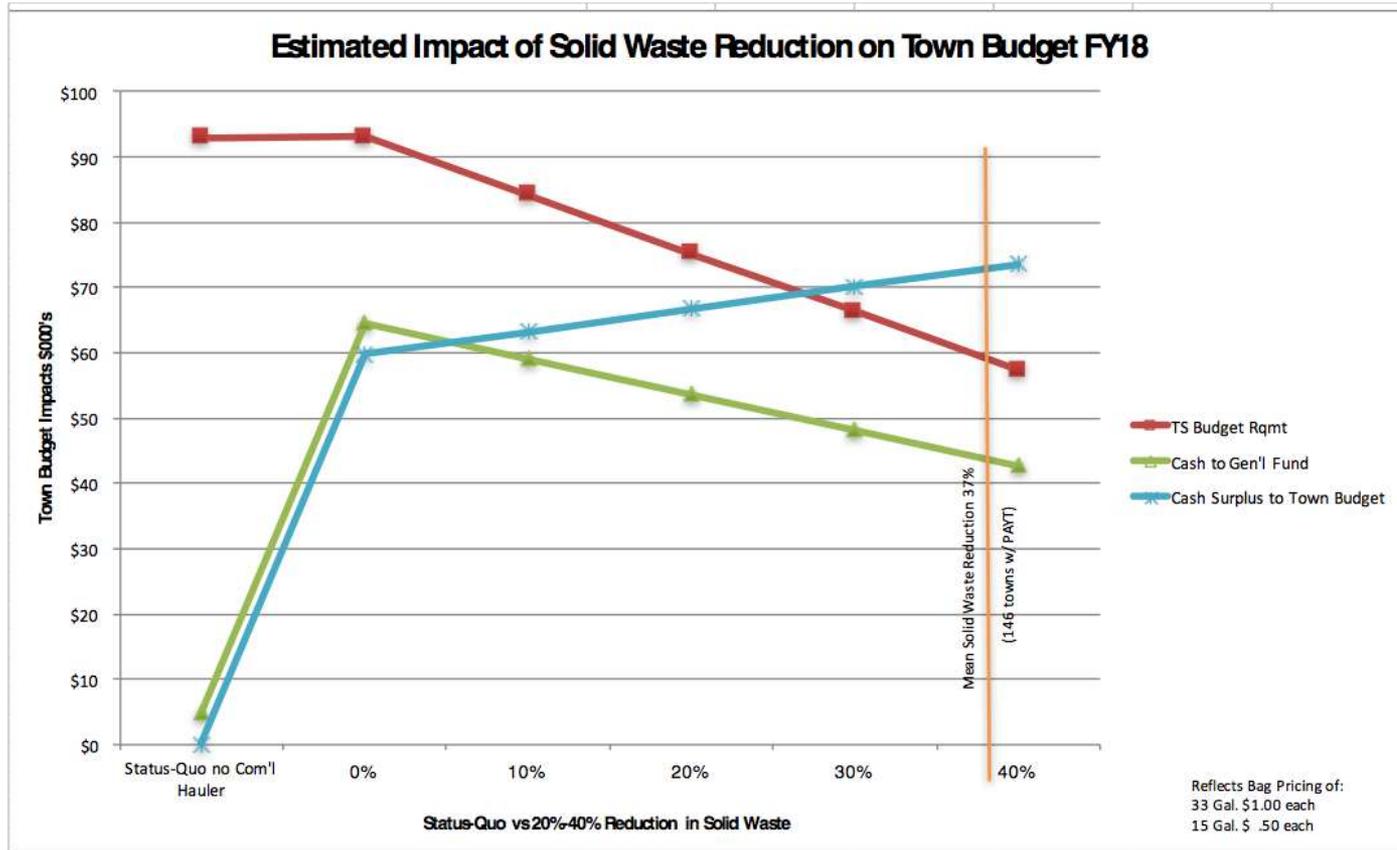


PAYT Financial Analysis – Forecast Costs / Revenues

		Options for FY17						
		w/ Priv Hlr	W/out Private Hauler					
Alternatives and Results	2	Status Quo	Model Z	Model AAA	Model AA	Model A	Model B	Model C
		tax funded	Status-Quo w/out Com'l Hlr	PAYT bags (0% reduction)	PAYT bags (10% reduction)	PAYT bags (20% reduction)	PAYT bags (30% reduction)	PAYT bags (40% reduction)
30%, and 40% diversion								
Step 3: Enter Assumptions and Inputs								
Projected Reduction in SW		0%	0%	0%	10%	20%	30%	40%
Margin for retailers - rarely needed		\$ -	\$ -				\$ -	\$ -
Flat fee/hh		\$ -	\$ -					
Sale price per bag (large)		\$ -	\$ -	\$ 1.00	\$ 1.00	\$ 1.00	\$ 1.00	\$ 1.00
# Bags/tags "Free"		-	-	-	-	-	-	-
lbs/33-g bag		25	25	25	25	25	25	25
Step 4: Check Results, then revisit Step 3								
SW Tons (bagged trash only- deducts bulky tonnage)		1,728	1,168	1,168	1,051	934	817	701
Rec Tons (2015 actual +1/3 of diversion for Models A&B)		372	372	372	411	449	488	526
Costs								
SW Transportation cost		\$ 11,868	\$ 11,868	\$ 11,868	\$ 10,681	\$ 9,494	\$ 8,308	\$ 7,121
Rec Transportation cost		\$ 1,852	\$ 1,852	\$ 1,852	\$ 2,044	\$ 2,236	\$ 2,427	\$ 2,619
SW Disposal cost		\$ 117,477	\$ 79,397	\$ 79,397	\$ 71,457	\$ 63,517	\$ 55,578	\$ 47,638
Implementation Costs (outreach)		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Bag costs (if not vendor managed)		NA	NA	NA	NA	NA	NA	NA
Mass DEP PAYT New Program Grant (\$10x1,300 HHs)		NA	NA	NA	NA	NA	NA	NA
Subtotal Costs (Transfer Station Budget)		\$ 131,197	\$ 93,117	\$ 93,117	\$ 84,182	\$ 75,247	\$ 66,313	\$ 57,378
Revenues								
Recycling Revenue (Est. \$13/ton revenue overall)		\$ 4,836	\$ 4,836	\$ 4,836	\$ 5,337	\$ 5,838	\$ 6,339	\$ 6,840
Bag revenue		\$ -	\$ -	\$ 93,408	\$ 84,067	\$ 74,726	\$ 65,386	\$ 56,045
Bag Costs (if vendor managed)		NA	NA	\$ (33,627)	\$ (30,264)	\$ (26,902)	\$ (23,539)	\$ (20,176)
Flat fee revenue		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Subtotal Revenues (To Gen'l Fund)		\$ 4,836	\$ 4,836	\$ 64,617	\$ 59,140	\$ 53,663	\$ 48,185	\$ 42,708
Net Rev/(Cost) to Town		\$ (126,361)	\$ (88,281)	\$ (28,500)	\$ (25,042)	\$ (21,585)	\$ (18,127)	\$ (14,670)
Net Change to Town (Status-Quo No Com'l Haulers)		\$ -	\$ -	\$ 59,781	\$ 63,239	\$ 66,696	\$ 70,153	\$ 73,611
Net Change to Transfer Station Budget/Costs			\$ 38,080	\$ -	\$ 8,935	\$ 17,869	\$ 26,804	\$ 35,739
Average annual cost for bags per HH per year		NA	NA	\$ 70	\$ 63	\$ 56	\$ 49	\$ 42
Existing Avg annual cost for bags per HH per yr (if use bags)				\$ 21	\$ 19	\$ 17	\$ 15	\$ 13
Est'd Incremental Cost to Family Already Using Bags				\$ 49	\$ 44	\$ 39	\$ 34	\$ 29
Est'd number bags per household per year		0		25 lbs per bag	25 lbs per bag	25 lbs per bag	25 lbs per bag	25 lbs per bag
Dover Approved Trash Bag \$1.00 30 Gal; \$.50 15 Gal (assume all \$1.00 bags)				69.96	62.96	55.96	48.97	41.97
				\$ 70	\$ 63	\$ 56	\$ 49	\$ 42
Existing cost for families that use 13 Gal Tall Kitchen Bags or 30 Gal Large Indoor/Outdoor Bags (assume \$.30 per bag)				\$ 21	\$ 19	\$ 17	\$ 15	\$ 13
Hefty "Extra Strong" Multi Purpose 30 Gal Bags (Amazon) \$14.94 56 bags (\$.2667/bag)								
Hefty "Ultra Strong" Tall Kitchen Trash Bags 13 Gal (Amazon) \$27.90 80 bags (\$.3475/bag)								
Net Incremental Cost in bags for family that used bags prior				\$ 49	\$ 44	\$ 39	\$ 34	\$ 29



PAYT Financial Analysis - Sensitivities



Projected Trash Reduction	Status-Quo no Com'l Hauler	0%	10%	20%	30%	40%
TS Budget Rqmt	\$93	\$93	\$84	\$75	\$66	\$57
Cash to Gen'l Fund	5	65	59	54	48	43
Savings to TS Budget Rqmt	38	0	9	18	27	36
Cash Surplus to Town Budget	0	60	63	67	70	74
Annual Cost for Bags per Hshld ¹		70	63	56	49	42
Net Increm Cost to Hshld's Already Using Bags		\$ 49	\$ 44	\$ 39	\$ 34	\$ 29

