Incentive-based strategies for increasing recycling & program cost-effectiveness

Montgomery County MD Webinar
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PAYT/SAYT – PROS, CONS, AND HOW IT CAN WORK

PAYT BASICS

TOPICS
- PAYT Basics
- PAYT Nitty Gritty
- What Else Might Montgomery County Consider to Reach Goals?
- Wrap-up and Questions

Terminology: Embedded

PROGRAM EVOLUTION

SERA

Drop-offs, voluntary added fee recycling, education

Embedded recycling, MF and commercial ed. / assistance, expanded D/O

PAYT with embedded rates, yard waste, commercial programs, continued education

Add Res Food scraps, mandates / bans, address MF recycling, hauler incentives, PAYT+

Every-other-week MSW, mandatory commercial and MF, EPR, URD, zero waste

0 - 15% Diversion

10 - 25%

20 - 45%

40% +

50% +

Source: Skumatz Economic Research Associates, all rights reserved
WHAT IS PAY AS YOU THROW (PAYT)?

Pay more for More trash... Less for less.

Measured by bags or cans
Equity and incentive
Part of making Cost-Effective Choices...

Save as you throw (NY), Recycle & Save, Variable Rates, Unit based pricing ...

PAYT BY THE NUMBERS

 Majority of largest 100 cities have PAYT

PAYT takes 17% of total trash,
1/3 → Recycling,
1/3 → Organics,
1/3 → No City cost

Source: SERA research © all rights reserved

PAYT - EFFECTIVE AND COST-EFFECTIVE

Effectiveness:
- Biggest impact*
  - DOUBLES recycling
  - Diverts ~1/5-1/6 from landfill
  - Curbide & D/O impacts
- 3 effects / cost-effective; zero cost for the SR portion
- No cost increase for 2/3
- Top driver in leading states
- Goals/metrics, $, PAYT
- Lynchpin of leading jurisdictions
- No New Trucks
- Self-funding / paid by users

Concerns:
- Strengths & weaknesses-political will
- Haulers – link to contracting (not linked)
- Haulers – other ways of implementing
- Low income, dumping, implementation cost
- Capital, predictions, MF

Considerations:
- Known BMPs / history
- Com'1 PAYT

Source for graphs and figures: Skumatz Economic Research Associates ©
2D survey by Frable, Iowa.

Also least expensive for GHG reduction

# Communities with Access to PAYT/SAYT

# State Legislation on PAYT/SAYT

Source: SERA research © all rights reserved
### PAYT PROS / CONS

<table>
<thead>
<tr>
<th><strong>Key Advantages</strong></th>
<th><strong>Disadvantages</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Rewards all diversion activities</td>
<td>Concerns about illegal dumping, equity (low income, large families), MF (see FAQs), change…</td>
</tr>
<tr>
<td>No new trucks down street (wear/tear)</td>
<td>More complex rate study, outreach</td>
</tr>
<tr>
<td>Behavior / reminder; choice</td>
<td>Hauler concerns (alternate implementation methods)</td>
</tr>
<tr>
<td>Utility; equity</td>
<td>Costs &amp; savings - “Net” depends on local conditions</td>
</tr>
<tr>
<td>Works in variety of systems, tailor</td>
<td>NEEDS NO SEPARATE FUNDING! – OWN FUNDING SOURCE - JUST A DIFFERENT WAY OF BILLING</td>
</tr>
</tbody>
</table>

Source: SERA ©2008; Iowa State Survey by Frable.

### FOUR MAIN TYPES OF PAYT SYSTEMS

- **Carts** by size – strong and growing, works best with automated,
- **Bags or Tags** by Number (with/without base fee)
- **Hybrid**
- **By Weight**
- **Drop-offs**

All but last in place in US  
Each has pros / cons  
Regional patterns

### OTHER CONTAINER QUESTIONS

- Trends
- Automated or not
- Whose cart

Skumatz, 303/494-1178, skumatz@serainc.com
PAYT BEST PRACTICES

To get best effects, there are key elements of design (and ordinance).

➢ Convenient Recycling available, large container, embedded best
➢ Optimal incentive levels ($ / % thresholds)
➢ Small trash containers available, rewarding good recyclers
➢ Parallel containerization (best if provided)
➢ Education / information
➢ Clear bill & reporting
➢ Enforcement / Level playing field
➢ … (or it isn’t worth it)

Without these, there are “tons left on the table!”

MAIN WAYS TO GET PAYT IN PLACE

☐ Ordinance
  ■ If multiple haulers servicing area and want minimal disruption in service providers

☐ Contracting / districting / franchising
  ■ If multiple haulers servicing area and want economies of scale, single provider

☐ Municipalization
  ■ Do it yourself, local decision-making, local action

BACKGROUND – AUTHORITIES?

☐ …have the authority to provide or contract for solid waste trash collection services to the residential sector (<8 units)

☐ … can’t ban others from providing service

☐ … other tools available to assert increased authority over the residential and commercial sectors

GETTING PAYT IN PLACE: ORDINANCE VS. CONTRACT - COMMUNITY PERSPECTIVE

<table>
<thead>
<tr>
<th>Licensing / Ordinance Pros</th>
<th>Contract / Muni Pros</th>
</tr>
</thead>
<tbody>
<tr>
<td>❑ Fewer Hauler (“Taking”) &amp; Citizen Complaints (“Choice”)</td>
<td>❑ Lower Cost / bills</td>
</tr>
<tr>
<td>❑ Maintains competition</td>
<td>❑ Fewer trucks, “cleaner” set outs, reduced wear/tear on streets</td>
</tr>
<tr>
<td>❑ No need for “notice”</td>
<td>❑ One hauler to contact if problems arise.</td>
</tr>
<tr>
<td>❑ Quick</td>
<td>❑ City “control” including rates/setting, revenues</td>
</tr>
<tr>
<td>❑ Can specify rate “structure”</td>
<td>❑ More flexible / easier to enforce penalties than ordinance</td>
</tr>
<tr>
<td>❑ Minimal City effort (RFP, etc.)</td>
<td>❑ Can “designate” facility destinations for materials</td>
</tr>
<tr>
<td>❑ Retains “level playing field” for haulers – each implements the program and provides services knowing others will be operating under same rules.</td>
<td>❑ Potential revenue source</td>
</tr>
<tr>
<td>❑ (Similar for franchise / district)</td>
<td>❑ (Similar for franchise / district EXCEPT may not get lower bills if multiple awardees)</td>
</tr>
</tbody>
</table>

Sample language available for State legislation, contracts, ordinances, etc. at www.paytnow.org, paytwest.org, www.payinfo.org

Source: SERA publications

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**DECISIONS FOR ORGANIZING COLLECTION**

- **Economies of scale**
  - Control / mandates
  - Fewer trucks...
  - Substantial savings ... but...

- **Do you want to limit driving hours, require insurance, etc?**
  - NO
  - YES

- **Do you want to reduce number of trucks on the road?**
  - NO
  - YES

- **Do you want to encourage recycling / make it available?**
  - NO
  - YES

- **Do you want to use staff for collection?**
  - NO
  - YES

**License**

**License with ordinance**

**Contract – 1 hauler or multiple haulers**

**Municipalize**

*Source: SERA all rights reserved, may be used with permission of author*

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**WHY CITIES & HAULERS SHOULD LIKE PAYT**

<table>
<thead>
<tr>
<th>Cities</th>
<th>Haulers</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Meet recycling goals</td>
<td>□ Business opportunity – more revenues – REQUIRE more services and reimbursed for it</td>
</tr>
<tr>
<td>□ Easy to remove from taxes / bill</td>
<td>□ Distinguishes from competitors – extra service to customer</td>
</tr>
<tr>
<td>□ Equity / &quot;utility&quot;</td>
<td>□ Options for customers to save</td>
</tr>
<tr>
<td>□ Options for customers to save</td>
<td>□ Satisfies green customers</td>
</tr>
<tr>
<td>□ Keep city &quot;clean&quot;</td>
<td>□ Options that don’t require “single hauler” (contracting) issue</td>
</tr>
<tr>
<td>□ Lower bills for residents like HOAs</td>
<td>□ Growth, positive perception from customers &amp; cities</td>
</tr>
<tr>
<td>□ Vertical integrated haulers may like recycling; recycling not limited like Landfills</td>
<td>□ Don’t have a choice / get on the band wagon?</td>
</tr>
</tbody>
</table>

*Source: SERA publications*

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**GETTING PAYT APPROVAL - POLITICIANS**

**Political Pros**

- Equity
- Environ citizen group rec’m
- Meeting goals; link to ultimate goal (recy, econ, enviro, jobs)
- Underperforming recycling/improve cost-effectiveness
- Citizens demanding / moved from other places
- Reduce costs (landfills)
- Overconsumption / “buffet”; reduce tax burden; lasts
- No one wants to waste
- (Maybe enviro; depends)

**Motivating**

- Make sure enviro council-member / champion brings in others...
- Get enviros (and others) to your meetings – ALL the meetings
- Have information on myths ready – naysayer comments to expect and be honest
- Note hauler opportunities; small hauler case studies
- Speaker from successful town
- If planning a rate change...

*Source: Skumatz publications*

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**GETTING PAYT IN PLACE - ADDRESSING CONCERNS**

- **Getting In Place**: Local level – ordinance vs. contract, muni (other / state legislation)
- **Haulers** – consider different ways to implement; level playing field
- **Small haulers** – educate, more skills, talk through issues in one-on-one meetings
- **Electeds** – Surveys, case studies, the math
- **Citizens** – different ways to implement? Options to save money. Surveys positive. Public process important (bills vs. rates)
- CAN’T OVEREMPHASIZE EDUCATION

*Source: Skumatz, 303/494-1178, skumatz@serainc.com*
MAJOR CONCERNS - ILLEGAL DUMPING

- Surveys of 1000 communities - Bigger fear than reality
- Multiple surveys showed issues in 10-30% of communities; solved after 3 months. Some communities showed improvements!

PAYT CONCERNS / ISSUES TO ADDRESS

- Illegal dumping
- Large / poor families
- Too costly
- Change
- Billing system
- Capital cost
- Doesn’t work
- Taking away my hauler
- Government stay out of trash / works fine

PROBLEMS: FEARS GREATER THAN REALITY

Solvable... see faqs

<table>
<thead>
<tr>
<th>Reality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illegal dumping</td>
</tr>
<tr>
<td>Confusion, resistance to change</td>
</tr>
<tr>
<td>Non-compliance</td>
</tr>
<tr>
<td>Contamination</td>
</tr>
<tr>
<td>Burning</td>
</tr>
<tr>
<td>Self-haul and by-pass</td>
</tr>
<tr>
<td>Revenues (esp. haulers)</td>
</tr>
<tr>
<td>Private/multiple haulers</td>
</tr>
<tr>
<td>Local and regional economics</td>
</tr>
</tbody>
</table>

PAYT NITTY-GRITTY

- Don’t charge more for more kids in school...
- Recycling goes to landfill
- Put folks out of business
- Benefits big haulers...
- Others...

Source: SERA publications
**PREDICTABILITY - RATE SETTING & DESIGN**

- Number of “revenue items” is key
  - Prediction challenges, data
- Revenue risk
  - System type (can or fixed fee or hybrid)
  - Customer charge, per capita charges,
  - Set Outs are KEY
- 3 x30g historically – often down to 1 or 1.5 x 30 gal.
- Research AND PHASE In differential

**OPTIMAL PAYT RATE DIFFERENTIALS?**

- Not too high...
- Not too low...

**EVEN IN CALIFORNIA – TONS LEFT ON THE TABLE!**

(work for EPA)

**BAG VS. CART**

- Some evidence for greater recycling incentive with bags (logical) – not statistically significant
- Collection and enforcement issues / visually at each stop
- Cost for households higher with Bags; and if bags in cans, you incur the can cost...

源：Econservation Institute and SERA

![Image](image-url)
OTHER OPTIONS – RECYCLEBANK
PAYT MORE TONS, LESS COST THAN OTHER INCENTIVE OPTIONS

Incentives for recycling ONLY = <1/3

- RecycleBank™ incentive (also towns & haulers)
  - Towns considering because: Hauler partnerships, “turnkey”,
    jumpstart stalled recycling, no new billing (HOAs like it), strong
    marketing; having trouble getting recycling or PAYT in place... other

- Impacts – tons BEYOND single stream / containers; fees; rebates;
  - cost per ton; redemptions
  - See if it pencils out... can have both as well...

- Study "MATH", outcomes & “deals” for other options...

PAYT MORE TONS, LESS COST
(than other incentives, RecycleBank™)

PAYT (Low cost)  0/1
PAYT (High cost)  1
RB at $0.00/tonne  6
RB at $1.00/tonne  9
RB at $2.00/tonne  15
RB at $3.00/tonne  22
RB at $4.00/tonne  30

Takeda’s Recycling Credit System (FFC) or 
Bill Code B, Rebate award(s)  3

Source: First graph from figures from EPA newsletter, 2009; 2nd graph from Skumatz study.

WHAT ELSE MIGHT MONTGOMERY COUNTY CONSIDER TO REACH GOALS?

COMMMUNITY DRIVERS?...

May not be what you think...

3 Key factors:
- Goals / plans
- Activist Staff
- Residential progress

Cities can MAKE THIS HAPPEN

- Staff activity
- Regional planning agency
- Council / commissioners (elected)
- Voters
- Haulers
- Local task forces
- State planners

Source: Skumatz Economic Research Associates research ©
EFFICIENT, EFFECTIVE OPTIONS FOR STEPPING IT UP NOW

<table>
<thead>
<tr>
<th></th>
<th>High Diversion Impact</th>
<th>Savings / C/E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential: Pay As You Throw (PAYT), optimized collections, PAYT enhancements, organics and recycling without barriers, organized collection</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Commercial: barriers, PAYT, new delivery, C&amp;D</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Incentives / taxes, mandates / bans</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Education</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>Measuring to goal</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

Source: Skumatz Economic Research Associates, Inc. analysis

MONTGOMERY COUNTY...

- Issues / Gaps for getting to 70+%:
  - PAYT (understand predictability issues)
  - Small recycling containers a big problem
  - Don’t need weekly recycling
  - No food waste collection; yard waste decals
  - Commercial inaction?
  - Measurement - we’ll see about the waste sort!
  - Independent cities and authorities; not uniform, contracted / not contracted areas

- Optimizing performance / bang for the buck
  - Get more for the same cost (program improvements)
  - Or Pay less for the same
  - Examine cost-effectiveness of changes

PAYT & RESIDENTIAL OPTIMIZATION

- Mini or micro can
  - Well-established, years
  - Successful, integrates

- EOW recycling (-1-3%, ½ the collections!)

- Add Food / organics, embedded, without barriers - All organics adds 20% plus

- EOW Trash
  - Drives use of food if organics weekly / seasonal, trash EOW

Source: Skumatz, all rights reserved

See SERA article in Resource Recycling

Source: SERA

Every-Other-Week Garbage Collection

Portland (54%=>70%) - citywide, trash down 38%
Renton: +25% R; +44%G; -20%G

Source: SERA

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## OTHER RESIDENTIAL CHANGES TO CONSIDER

- **Single stream** - depends. Data says increase of 40% in recycling collection, and 15% savings
- **Consider (additional) contracting** - stronger enforcement, economies of scale / savings (SERA research shows 10-25% savings from not splitting, plus density benefits)
- **Bans/ mandates** - 3-11x the tons of voluntary (SERA research)
- **Education** - do more with your funds (not the most cost-effective) - not same old same old
  - Self-efficacy,
  - Motivate / don’t inform,
  - Targeting / their values,
  - Social marketing for barriers / trust, and retention of change (and door-to-door works!)
- **Overall**, look at Cost-effectiveness and MEASURE.

## HOW TIDE DOESN’T SELL

**BUY TIDE BECAUSE IT HELPS US MAKE LOTS AND LOTS OF MONEY!**

**BUY TIDE BECAUSE IT HAS ONE OF OUR LARGEST PROFIT MARGINS**

**It does sell miracles**

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** TRADE A STOP - IT'S ALL ABOUT THE COLLECTIONS! **

<table>
<thead>
<tr>
<th>MONTHLY CHANGE IN TIPPING PORTION</th>
<th>Moving to Organics from disposal - positive (red) means increase in costs.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Tip fee per ton</th>
<th>$10</th>
<th>$20</th>
<th>$30</th>
<th>$40</th>
<th>$50</th>
<th>$60</th>
<th>$70</th>
<th>$80</th>
<th>$90</th>
<th>$100</th>
</tr>
</thead>
<tbody>
<tr>
<td>YW tip down</td>
<td>$0.00</td>
<td>-$0.35</td>
<td>-$0.70</td>
<td>-$1.05</td>
<td>-$1.40</td>
<td>-$1.75</td>
<td>-$2.10</td>
<td>-$2.45</td>
<td>-$2.80</td>
<td>-$3.15</td>
</tr>
<tr>
<td>LF Tip across</td>
<td>$0.00</td>
<td>$0.35</td>
<td>$0.70</td>
<td>$1.05</td>
<td>$1.40</td>
<td>$1.75</td>
<td>$2.10</td>
<td>$2.45</td>
<td>$2.80</td>
<td>$3.15</td>
</tr>
<tr>
<td>tip fee</td>
<td>$0.00</td>
<td>$0.35</td>
<td>$0.70</td>
<td>$1.05</td>
<td>$1.40</td>
<td>$1.75</td>
<td>$2.10</td>
<td>$2.45</td>
<td>$2.80</td>
<td>$3.15</td>
</tr>
<tr>
<td>Organics</td>
<td>$1.05</td>
<td>$0.70</td>
<td>$0.35</td>
<td>$0.00</td>
<td>$-0.35</td>
<td>$-0.70</td>
<td>$-1.05</td>
<td>$-1.40</td>
<td>$-1.75</td>
<td>$-2.10</td>
</tr>
<tr>
<td>per ton</td>
<td>$1.05</td>
<td>$0.70</td>
<td>$0.35</td>
<td>$0.00</td>
<td>$-0.35</td>
<td>$-0.70</td>
<td>$-1.05</td>
<td>$-1.40</td>
<td>$-1.75</td>
<td>$-2.10</td>
</tr>
<tr>
<td>matrix</td>
<td>$1.05</td>
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<td>$-1.40</td>
<td>$-1.75</td>
<td>$-2.10</td>
</tr>
</tbody>
</table>

Tip Difference $0.00 $10.00 $20.00 $30.00 $40.00 $50.00 $60.00 $70.00 $80.00 $90.00 $100.00

Source: Skumatz, all rights reserved ©SERA 2016

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** MORE EDUCATION!?!? **
METRICS – REFLECTING GOALS & IMPACTS

- Successful diversion of recyclables & hierarchy
- Successful diversion of organics & hierarchy
- Reuse and Source reduction
- Diversion of HHW; Toxics reduction
- Cost-effectiveness
- Upstream change, stewardship
- Sustainability
- Triple Bottom Line (TBL)
- Satisfaction, participation, set outs, indirect effects, others...

See Resource Recycling Article last year
Source: Skumatz, all rights reserved

MEASUREMENT DATA ISSUES

- Fragmented haulers
  - Relatively few contracts / franchises or municipal collection services
- Private landfills / disposal sites
- Little authority (invoked); “estimates”
- Costs and authority affect data availability
- ... and that’s just even talking residential!
  - Commercial even more complicated / fragmented
- Measuring at collection doesn’t account for what really goes to market – should be at end point
- ➔ With this in mind – major pros / cons

Source: Skumatz, all rights reserved

TRADITIONAL TON-BASED METRICS

# 1 CONCERN – NOT PROSPECTIVE

PRO: Reflects potential remaining CON: Needs trash & recy streams from all sources – Hard with multi haulers & disposal sites; no SR

- Recy or Diversion % Rate
- Landfill Diversion %
- Common Metrics
- Gen or Recy Tons per capita

PRO: Captures Source Red util only trash tons needed
CON: Needs base year and trash from all sources for base & current year; doesn’t adjust for growth; no attribution to program credit

Source: Skumatz, all rights reserved

PERCENT RECOVERABLES REMAINING (PPR) – 3 SUB-CALCULATIONS FOR PRIORITIES & PROGRESS

- Basic PRR: What hasn’t gotten recovered / what remains to capture?
  - Source: Waste composition study of basic recoverables
  - Reported as: Percent remaining of key recoverables – TARGETS for programs / policies / outreach; measure progress over time
- Value-based PRR: Reflects which remaining materials are worth most
  - Source: Waste composition multiplied times net market prices
  - Reported as: Dollars of value being buried – best targets on market or value criteria
- Environmental-based PRR: Biggest GHG contributors not recovered
  - Source: Waste composition multiplied times GHG factors by material*
  - Reported as: Relative amounts of MTCE not recovered – best targets on key climate change / sustainability criteria

NOT AT POINT OF COLLECTION – NOT INFLATED

Source: Skumatz, all rights reserved
KEY COMMERCIAL STRATEGIES

- #1 PAYT
  - Mandate recycling cost embedded in trash fee (50%-150% of trash size)
  - Organics embedded
  - Small commercial
  - Eliminates barrier of ‘recycling adds avoidable cost’
  - Space / screening issues

- C&D
  - Require recycling with trash bins
  - Rebate program a la San Jose (need infrastructure)

KEY COMMERCIAL STRATEGIES

- Tip Fee Incentives
  - Surcharges; tax forgiveness
  - SERA Research on uptake of programs

- ABC Law
  - Invoicing / bidding improvements for recycling uptake & savings
    - Barrier
    - Invoice & contract issues
    - Encourage bidding / education / website

INTEGRATED DECISIONS – AFFECTED BY...

- Are trucks flexible...? Site / destination limitations...
  - Fully-automated helps... easily shift between materials
  - Don’t have to bring materials to same location like split trucks

- Recycling processing
  - Single stream (& large containers) helps... one collection, large containers that can wait
  - Can do dual stream by alternating material weeks

- Organics processing essential

- Education concerns
  - Which week? Very manageable

- Perception & containerization

- Health departments & regulators
  - For every other week collection
  - For food scraps composting

PAYT - WHAT ABOUT...

- HOAs?
- MF?
- Commercial?
PAYT SUMMARY

- Effective, cost-effective, strong track record
- Technical issues rarely the problem ➔ performs
  - Pilot test / phase in
  - Strong diversion (all types), speedy, attitudes, retention, track record (7,100 towns), flexible / tailorable ➔ local
- Public process, public education. Good customer education / understanding crucial
  - Education / why, how it works, how to make it work for me, packages for move-ins

- Politics, political will is the key stumbling block
  - Suggestions from communities; & champion
  - Negatives manageable if political will

THANK YOU!!

Questions?

PAYT Resources: Fact sheets, FAQ, case studies, Data, Rate model, peer match, webinars, manuals...

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Web resources: www.paytnow.org; www.paytinfo.org; serainc.com