PAY AS YOU THROW (PAYT)

Successful Single / Multi-Family / Commercial Strategies

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PAYT – SINGLE FAMILY

- More than 7,100* communities nationwide (SERA 2006)
  - On-going SERA update / count shows biggest increases in SE, midwest / mountain / plains, some NE
  - Ohio – not that much change from SERA 2006 count (243, 23% population)
  - Project in 1999/2000 (workbook, statewide workshops, TA, etc.)

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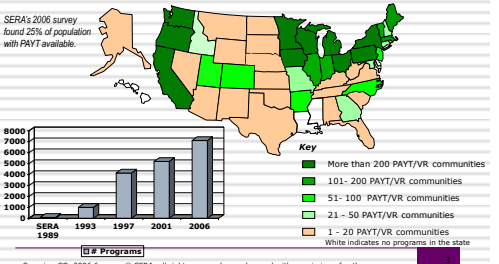
PAY-AS-YOU-THROW (PAYT)/ VARIABLE RATES COMMUNITIES

SERA's 2006 survey found almost 7,100 PAYT/VR communities and only 3 states without programs



Superior, CO, 2006 survey © SERA, all rights reserved, may be used with permission of author

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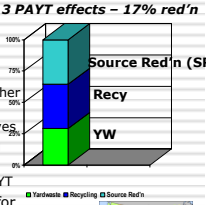
PAYT - EFFECTIVE

- Effects:
  - **Doubles** recycling (50-100%)
  - Diverts **1/5-1/6** from landfill
- Impacts:
  - More diversion than two dozen other possible changes
  - More effective than other incentives
- Top driver from national recycling leaders
  - Goals/measurement, funding, PAYT
- No increase in costs or workload for 2/3
- Self-funding & preferred by 90%+



Source for graphs and figures: Skumatz Economic Research Associates,© Source for [2]top 3 drivers, Skumatz & Freeman / SERA, [3]Colorado Roadmap Report, 2008.

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PAYT ISSUES

- Illegal dumping
- Large families
- Implementation / haulers / etc.
- MF… An issue…
- Technical issues rarely the problem…
- Pilot / phase in / flexible
- Education needed

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

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PAYT– BASIC SYSTEM TYPES

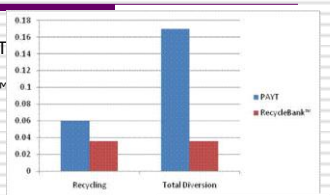
- Variable cans/subscription
- Bags
- Tags/stickers
- Hybrid
- Weight-based (GBTP – technology/RB)
- Drop-off variations

- Pros and cons for each
- Works in WIDE variety of situations
- Cheaper than alternatives…
  - Per ton, per MTCE, job creation…

Bag / Tag photos courtesy Resourceful Bag & Tag

MORE TONS THAN OTHER INCENTIVES

- Tonnage Effects – PAYT vs. RecycleBank™ or points systems
  - Disentangled from single stream and large carts

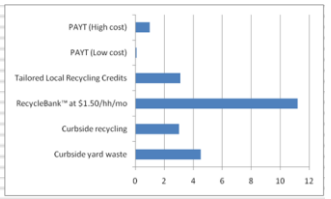


Source: Skumatz Economic Research Associates, 2011
May be used if cited.

CHEAPER PER TON THAN OTHER INCENTIVES

Relative Cost per Ton Diverted
(high PAYT=1)

PAYT (Low cost)	0.1
PAYT (High cost)	1
RB at $0.80/hh/mo	6
RB at $1.20/hh/mo	9
RB at $2.00/hh/mo	15
RB at $3.00/hh/mo	22
RB at $4.00/hh/mo	30
Tailored Local Recycling Credit System (RFID or Bar Code & Website rewards)	3



Source: Skumatz Economic Research Associates, 2011
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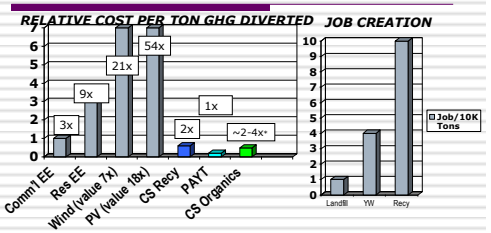
CHEAPER PER MTCE AND STRONG JOB CREATION IMPACTS



Results show key MSW programs cheaper to reduce CO2 than EE.
PV, Wind high cost per MTCe.

Source: Skumatz Economic Research Associates, Inc. SERA, Superior, CO
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Source for Job Creation – Institute for Local Self Reliance website

*Organics figures
Vary based on model used

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GETTING PAYT & DIVERSION PROGRAMS IN PLACE

State, County, Local Level…
Legislation, ordinance, contract, muni…

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BMP FOR PAYT PROGRAM

- Level playing field
  - Haulers willing if…
- Recycling
  - Service definition, embedded fee, parallel containerization
- Incentive:
  - Small container option (32 gallon)
  - Price incentive (80%)
  - Reporting & access for compliance
- Do-able at city, county, state level
  - Several states mandate, or mandate if…

PAYT/VARIABLE RATES LEGISLATION AT THE STATE LEVEL

Sample Ordinances & case studies on web site www.paytwest.org, Paytnow.org, paytinfo.org

map from © SERA all rights reserved

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GETTING PAYT IN PLACE: ORDINANCE VS. CONTRACT

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

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

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SINGLE FAMILY PAYT

- Suburban / town implementation
  - Ordinance, contract, district/franchise, muni
  - Usually cans; embedded recycling, less often YW
  - Often "can is a can" pricing; rule of thumb
  - Subscription shifts
- Urban successes
- Rural variations
  - Bag-based options, cards, drop-off
- Addressing (small) hauler concerns (+)
- Failures

MULTI-FAMILY PAYT

- Small multifamily, condos, etc. usually treated as part of SF
  - Dumpsters / larger buildings the issue
- Problems:
  - Disconnect generator / payer, anonymous
  - Contamination, turnover, education, ESL
  - Inconvenient recycling, space constraints
  - Equipment / structural barriers
  - No building savings / no link to behavior

MULTI-FAMILY PAYT

- Many proposed options; largely unsuccessful (20+ years)
  - Structural: Lazy susans / chutes, other
  - Incentives: Hauler incentives (bounties), resident rebates, building rebates
  - Social: champions
- Because PAYT already, becomes recycling & savings issue…
- Multiple options are in place full-scale

MULTI-FAMILY PAYT- COMMON STRATEGIES

- Embedded recycling fees (with PAYT)
  - Paid by prop mgr / no HH incentive. Bill savings potential
  - Formulas for recycling share
  - Access, outreach, tools
  - More than a dozen states
- Discounted recycling fees
  - Reduced fees for recycling (range of %)
  - Savings depends…

MULTI-FAMILY PAYT- COMMON STRATEGIES

- Mandatory recycling
  - A few cities have mandatory MF recycling
  - Paid by property managers
- Extensive education
  - Pilots or full-scale programs with block leaders, free containers, parties, CBSM…

MULTI-FAMILY PAYT- LESS COMMON STRATEGIES

- Less common strategies
  - Service options for MF managers
  - Bags in cans, dumpsters
  - Hybrid
  - Rebates
  - Weight-based
- Failures / fall-back strategies
- Helpful - in-house soft containers

COMMERCIAL PAYT EXAMPLES

- Embedded recycling
- Discounts
  - Small commercial an issue
- Mandates
  - Small commercial issue
- Less common options

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MF AND COMMERCIAL PAYT - ISSUES

- Big issue - Rate studies much more complex – subscriptions shifts more elusive…
- Small businesses / buildings – not always savings
- Disconnect
- Other

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PAYT SUMMARY

- The single cheapest, most effective strategy for increasing diversion
- Flexible, self-funding
- SF first step (not a barrier), but MF (and commercial) moving forward
  - HUGE potential
  - Can remove key barriers
  - Complexities in ratesetting / revenue recovery
  - Haven't solved "disconnect" (except a few)… more work needed

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DISCUSSION / QUESTIONS:

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WHAT WORKS IN RECYCLING EDUCATION & OUTREACH?

Does Education / Outreach / Social Marketing Pay for Itself?

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THE CHALLENGE – ENCOURAGING "GREEN" BEHAVIOR

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EDUCATION / OUTREACH / ADVERTISING

- Traditional approach to move consumers from:
  - unaware ➔ aware ➔ consider ➔ intent ➔ purchase / modify behavior
- Led to focus on awareness-product basis
  - Literature review
  - Important, but not enough…especially in this day of cluttered marketplace and sophisticated messages
  - Poor data on effects, poor measurement / methods, insufficient sample sizes

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EDUCATION / OUTREACH / ADVERTISING

- Three quick walk-throughs…
  - Traditional education; then evolving to "human side" with
  - Self-efficacy & omitted effects
  - Social marketing

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ANALYSIS OF TRADITIONAL RECYCLING OUTREACH

- Goal – impact and costs for education
  - Cross section study; 140 campaigns
  - Pop. 700-200K, U/S/R, wide budget range
- Findings
  - Higher diversion in towns with higher expenditures
  - News/bill stuffers in urban; direct mail in rural; brochures in suburban
  - ➔ Could measure impact – 1-3 percentage point bump in recycling for adding $1/hh/yr; diminishing returns (implications for unconverted)

Source: SERA study

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HUMAN ELEMENT: SELF-EFFICACY AS AN EXAMPLE

- Awareness not enough… for green at least
- Attitudes as underlying factor to reach next level – beyond demographics
- Self-efficacy – similar to empowerment
- Recycling findings
  - 300 households; 11% higher recycling for households with high self-efficacy scores
  - Impacts BEYOND quality of information, number of "exposures"
- Also studied / valued indirect effects & barriers

Source: Skumatz Economic Research Associates Study, 2002, may be used if cited

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SELF-EFFICACY

- *Perception of impact of personal actions / empowerment…*

'How Bad For The Environment Can Throwing Away One Plastic Bottle Be?' 30 Million People Wonder

WASHINGTON—Wishing to dispose of the empty plastic container used taking to work a bottle of Ocean Spray cranberry juice, 30-year-old American asked Bustacho Mosley how bad throwing away a single bottle of water could really be.

"It's fine, it's fine," thought Mitlin native to himself as he tossed the empty bottle out of his company minivan. Philly-Magnolia, an area Florida transplant Margaret Lowery, and Kansas City business owner Brian McMillan, as they tossed the polyethylene terephthalate object into an awaiting trash can, "It's just one bottle. And I'm usually pretty good about this sort of thing."

"Not a big deal," continued roughly one-tenth of the nation's population, choosing to "throw away" the cellophane of a cigarette pack or the wrapper of a candy bar, while not necessarily treat throwing away one empty bottle probably wouldn't make that much of

— EMBARRASSED, page 7

A local resident discards a plastic bottle—just as he has done his whole life—with no perceivable effect on the environment.

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SELF-EFFICACY RESULTS

- K-12 program evaluation (SERA)

Self Efficacy / Empower	# Green Actions Pre	# Green Actions During
High scores	5.5	7.7 (25% increase)
Low scores	4.3	4.8 (12% increase

Source: Skumatz Economic Research Associates Study, 2008, may be used if cited

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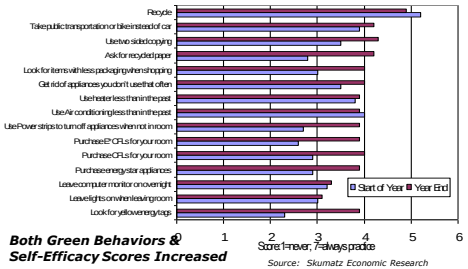
MOST GREEN ACTIONS INCREASED (COLLEGE PROGRAM)



Both Green Behaviors & Self-Efficacy Scores Increased

Source: Skumatz Economic Research Associates Study, 2002, may be used if cited

SELF EFFICACY CONCLUSIONS

- More likely to recycle
  - Those who feel what they do makes a difference regardless of what others do
  - Those who believe the amount of energy / waste has impact on future generations
  - Those who feel we are using resources too fast
- ➔ Consider advertising local actions to encourage feelings of empowerment to move toward converted – especially for "next" group

SOCIAL MARKETING (CBSM) LITERATURE REVIEW

- Workshops & projects since 1990s
- Over 150 studies reviewed (15+ yrs)
- Pallak, Cook, & Sullivan, Iowa City 1973
  - Public commitment, 10-20% reduction vs. 0%
- Save the Bay Foundation, MD 2008
  - Save the crabs… then eat 'em.
- Entertaining, but ID'd two key gaps (SERA 2001, 2010)
  - Costs & impacts (C/E)
  - Persistence
- NEED info to ID relative performance for portfolio

BASIC CBSM STEPS

- Background research
- Set goals
- Identify audience/Barriers
- Develop message/interventions
- Deliver and monitor (pilot)
- Evaluate
- Go full scale

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SOCIAL MARKETING ANALYSIS

- Three similar routes
  - Control
  - Limited CBSM (no door-to-door)
  - Full CBSM (incl. door-to-door)
- In addition to delivering social marketing… We measured EVERYTHING! Control, pre, post, post-post. Designed, set goals, delivered, measured.

Source: SERA study

IMPACTS AND MEASUREMENT

- Impacts
  - Diversion
  - Committed Actions
  - GHG Impacts
  - Behaviors
- Costs
  - Cost for outreach
  - Incremental costs between routes
- Cost-Effectiveness
  - Cost per impact, action, commitment
  - Relative to other programs
- Other

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SOCIAL MARKETING TOOLS

- Prompts
- Feedback

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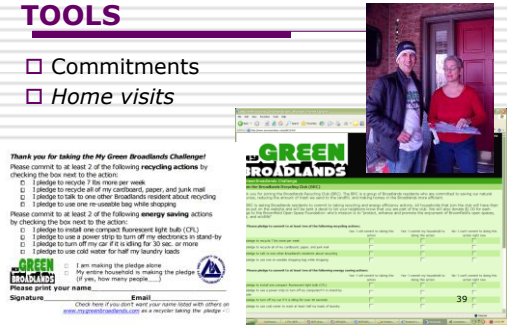
SOCIAL MARKETING TOOLS

- Contests
- Social Norms

SOCIAL MARKETING TOOLS

- Commitments
- *Home visits*



SOCIAL MARKETING TOOLS

- Website
  - On-line commitment
  - Prompts
  - Feedback
  - On-line community/ Facebook
  - Quiz
  - Tips, etc.

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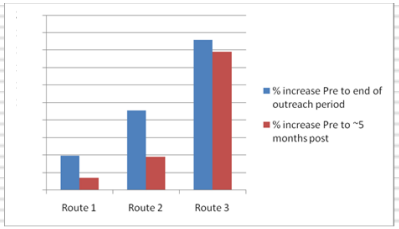
IMPACT ON RECYCLING TONS AND RETENTION



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COMMITMENTS AND GHG

- 500+ people committed to 2,400 actions
  - Commitments 4% - 42% - 60%+
- Impacts on MTCO2e (~150/yr)

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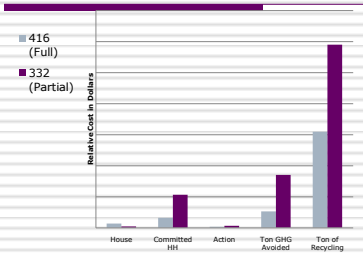
COST PER IMPACT - CBSM WITH VISITS VS. PARTIAL (NO VISITS)



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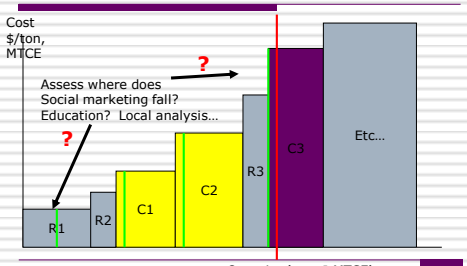
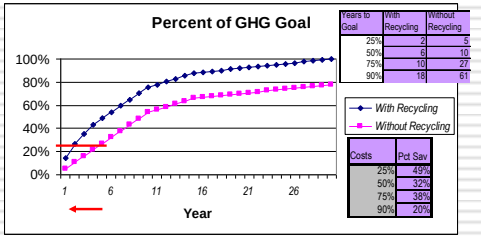
DEVELOPING DIVERSION PROGRAM PORTFOLIO / "SUPPLY" CURVE



MAPPING PATH TO GHG – OR AVOIDED GHG SUPPLY CURVE: SPEED, COST…

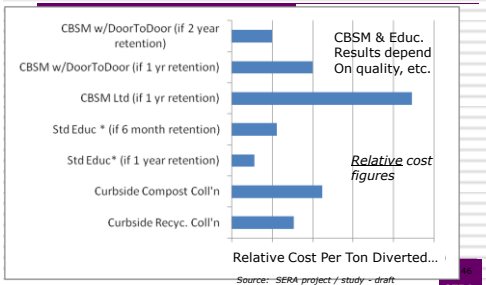


Years to Goal	With Recycling	Without Recycling
25%	2	5
50%	6	10
75%	10	27
90%	18	61

Costs	Pct Sav
25%	49%
50%	32%
75%	38%
90%	20%

Hypothetical / template program assumptions…Illustrative Purposes Only

RELATIVE COST PER TON DIVERTED



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OUTREACH LESSONS

- Education important -
  - Standard outreach has hard time breaking through and connecting… No retention info. Consider human element
- Increasing self-efficacy an important intervention
  - "Message" to clarify power of the individual – steps they can take (even small) to move to "empowered". No retention info.
- Social marketing is a powerful tool
  - Social marketing / door-to-door / personal connection is cost-effective (worth the investment)
  - Performs comparably to some other waste options
  - "Best Practices" developed; addressed gaps – cost-effectiveness & retention (stay tuned for more on retention!)
- All about the tradeoffs (& informed tradeoffs are better!). Local, tailored is a key for C/E…

DISCUSSION / QUESTIONS:

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