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KICK-STARTING STALLED RECYCLING PROGRESS:

Options and Efficiencies to Improve Diversion, Cost- Effectiveness & Sustainability

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OUTLINE

Goal: Strategies to Increase Diversion, Cost-effectiveness, & Sustainability for Residential Programs

1. Refining Residential Programs (Recycling & Composting)
2. Ordinances, Mandates, and Service Options
3. Education / Outreach

Abbreviations:

C/E=Cost-effectiveness,

PAYT=Pay as you throw incentive trash rates, same as VR / variable rates

D/O=dropoff; C/S=curbside; YW=yard waste; recy=recycling; SR=source red'n

EOW=every other week

MRF=material recovery facility / recycling sorting center

HH=household; SF=single family; MF=multifamily

1- REFINE EXISTING PROGRAMS FOR GREATER SUSTAINABILITY AND C/E

ANALYSIS OF RESIDENTIAL PROGRAM PERFORMANCE

- Costly to change programs – how to refine for best performance and maximize / optimize budget?
 - Sustainability
- Statistical work – not “case studies”; data from community surveys (see last slide)
- 3 types of factors affecting performance
 - Community & demographics
 - Financial factors
 - Program design
- Results “controlling for” other factors – attribution

DEMOGRAPHICS AFFECTING RESIDENTIAL DIVERSION AND COST- EFFECTIVENESS

Population, urban/rural, density

Education / income

Single family percentage

Tenure / years between moves

English as a second language

Region / climate

Older programs

These factors are NOT in the control of the recycling Program Manager, but are very important influencing factors...

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CATEGORIES OF CHANGES

- Categories of changes – NOT additive!
 - Incentives and collection frequency
 - Number of streams
 - Eligibility
 - Mandates and trash enhancements, and other
- Important Definitions:
 - Diversion: Presented in “percentage point” terms. “+4%” means add 4 percent to current diversion rate (if 12% now, goes to 16%)
 - Costs: Presented as percentage cost increases / decreases from current DIVERSION PROGRAM costs.
 - Cost effectiveness considers both cost & diversion
 - Also indirect effects: SERA work on greenhouse gas (GHG) and economic development multipliers (local, regional, nat’l) and show large effects from programs.

ATTRIBUTABLE RECYCLING IMPACTS – INDIVIDUAL CHANGES FROM “CURRENT PROGRAM”

Program Feature	Recycling Impact	Cost Impact	Comments
PAYT / VR	+5-8 percentage points	0-20%; 2/3 see no cost increase.	Largest single impact – very similar result for <u>drop-off recycling</u> pgms; cost increases mostly due to incr. recy tons. Total impact (recy+yw+SR)=17% reduction in residential trash tons.
No separate recycling charge	+3-5 percentage points	n.a.	Embedded fees effective; send signal/eliminate barrier; impact may be larger depending on amount of fee...
Same day coll'n	+2-4%	n.a.	Parallel service, joint “prompt” / signal
Less frequent recy collection (EOW, mo.)	Lose 2-4%	Saves 35-45%	More frequent costs more and delivers more; can make up the difference on commingling or alternating YW & recy.

ATTRIBUTABLE RECYCLING IMPACTS – INDIVIDUAL CHANGES FROM “CURRENT PROGRAM”

Program Feature	Recycling Impact	Cost Impact	Comments
Moving from 3+ streams to Dual stream recycling	+3-5%	Saves 30-40%	Dual stream MRF, coll'n & container options, works well with EOW, simple / fairly convenient
Moving from Dual Stream to Single Stream recycling	+3-4 points	Saves 10-25%+	Need processing capabilities; HH's recycle more with simple program, bins; larger containers, parallel convenience; Coll'n savings; market, contamination issues
Bins	+1-2%	+	Indications are larger bins more effective; protects product; supports automated
EOW recy alternating with YW	BIG increase – depends on climate	Costs nearly same	Same collections per week as weekly C/S recycling; whole new stream; can be seasonal; Options for fees/policy reasons to consider charges for YW; starts move toward EOW trash

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ATTRIBUTABLE RECYCLING IMPACTS – INDIVIDUAL CHANGES FROM “CURRENT PROGRAM”

Program Feature	Recycling Impact	Cost Impact	Comments
No separate sign-up for recycling	+2-3%	n.a.	Reduces barrier
Eligibility past Single Family (SF)	+1-3%	n.a.	Expanding to up to 6 plex, small businesses, Mobile Homes, etc.
Mandatory recycling program	n.a.	Saves 15-25%+	Helps C/E; enforcement varies...

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ATTRIBUTABLE RECYCLING IMPACTS – INDIVIDUAL CHANGES FROM “CURRENT PROGRAM”

Program Feature	Recycling Impact	Cost Impact	Comments
Mandatory garbage	+3-5%	n.a.	Recycling parallel
Less frequent garbage coll'n	+4-5%	n.a.	Incentive to divert
Higher landfill fees	Positive (indicative)	n.a.	Cheaper disposal hinders cost effectiveness, interest / crisis

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ATTRIBUTABLE YARD WASTE PROGRAM IMPACTS

Program Feature	Diversion Impact	Cost Impact	Comments
PAYT / VR	+4-5 percentage points	0-10%	Also incentive for composting
No separate fee	+6-8%	n.a.	Gains diversion, but discourages composting; consider policy implications / larger goals...
Ban Y/W disp.	+5-7%	n.a.	Enforcement varies
Mandatory YW	+5-7%	n.a.	Enforcement varies; mandatory fee?
Less frequent collection (EOW)	Lose 3-5%	Saves 40-50%	Similarly, more frequent coll'n costs more and delivers more
Add material	+4-6%	n.a.	Going beyond leaves / grass...

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ANALYSIS OF FACTORS IMPROVING COST-EFFECTIVENESS (C/E)

Factor	Recycling C/E	YW C/E
Rural, small	+	+
More Education	+	
Higher %SF in community		+
Higher % Households speaking English	+	+
PAYT	+	+
Higher trash tipping fee	+	+
Mandatory recycling	+	
Alternate week recycling	+	
Reach threshold diversion	+	+

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2 - ORDINANCES & MANDATES

ORDINANCES TO MAXIMIZE COST-EFFECTIVENESS

- Legislation - can have state mandates
 - Many effective ones out there, requiring programs, PAYT, etc.
 - Some states reluctant
- Ordinances – city, county can be effective alternative
 - Can be more palatable than other market interventions (contracting, franchising, etc.) to achieve goals of cost savings, recycling access, uniform service, etc.
- Easier to implement – if “champion”

ORDINANCES TO MAXIMIZE COST-EFFECTIVENESS

- Key elements to maximize diversion
 - Level playing field; truck safety, etc.
 - Recycling embedded – no extra fee
 - Define minimum program, frequency, materials, container, coverage
 - PAYT
 - Mandatory, (or mandatory IF... at state level)
 - Small containers
 - Significant increments in rates (SERA recommends 80% more for double service) (rate "structure")
 - Reporting, ability to audit / enforce
 - Education responsibilities
 - Possibly mandatory service... MF space, lease, etc.

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BANS AND MANDATES

Bans

- Can be successful; politically sensitive
- E-waste bans popular and easily passed – low tonnage but changes behavior, reduces toxics, signals to manufacturers.
- Recyclables – often include “key” materials (cardboard, containers, etc.)
- YW examples

Enforcement examples

- At curb
- At landfill

MANDATORY RECYCLING

- Improves cost-effectiveness
- Examples:
 - Must provide service to get hauler license
 - Embedded fee, other examples
- Outreach necessary; enforcement as education first, on-call, penalties, audits of records often used
- Mandatory recycling & recycling bans overlap / similar

3-EDUCATION & OUTREACH

EDUCATION AND OUTREACH

- Higher educational expenditures associated with higher diversion
- Add 1-3% with extra \$1/hh/yr spent; doubling expenditure added 1% (SERA);
- Variations in performance of media:
 - Newspaper / newsletter / bill stuffer
 - Brochures, direct mail
 - Electronic media
- Consider attitudes / beliefs / social

EDUCATION AND OUTREACH

- Consider social marketing; impacts can be large; costs less well analyzed
 - commitments to behavioral change (written commitments, public or group commitments, active involvement, leveraging from existing points of contact, helping people view themselves as concerned);
 - prompts (noticeable, self-explanatory, proximate, encouraging);
 - norms (evolution of visible community norms, reinforced by personal contact);
 - incentives (paired to behavior, rewarding, visible, monetary and non-monetary); and
 - communication (credible, well-framed, personalized, memorable, goal-oriented, feedback-providing) to effect changes and participation.

SUMMARY - RESIDENTIAL PROGRAM REFINEMENTS

- Residential recycling performance can be refined... real world data to guide...
- Considerations of:
 - Convenience, incentives, service delivery, eligibility, parallel service, trash refinements, and other drivers to refine community programs
- Ordinances for recycling, PAYT, bans / mandates
- Effective education
- Integrated options to improve diversion, costs, cost-effectiveness
- Most effective program is one that is sustainable – and cost-effectiveness is a key element...
 - Keep pace with improvements in trash collection
 - Strong carbon footprint and economic development effects

FOR MORE INFORMATION:

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- Other resources on these topics – call SERA & see www.serainc.com
- See also www.paytwest.org – for info on PAYT - Sponsored by EPA Region 8 and Region 9 (or payt.org)
- Fill out** NATIONAL survey on www.paytwest.org or www.serainc.com to provide data for future studies like this.

BIOGRAPHY - SKUMATZ



- DR. LISA SKUMATZ is a “hands-on” economist with the research and consulting firm Skumatz Economic Research Associates, Inc. (www.serainc.com). For more than 15 years, Lisa has helped communities across the US analyze practical economic and policy issues in solid waste. Her work concentrates on integrated planning, program evaluation, benchmarking, cost-effectiveness and rates for the variety of solid waste programs. She has published extensively, and is best known for her pioneering work in incentive-based rates (Pay as you Throw and “Garbage by the Pound”) and for her detailed analyses of single stream recycling, source reduction, education programs, and commercial diversion options.
- Lisa has a strong “numbers” orientation – focusing on “what do real-world, operating programs tell us”. She maintains a database of recycling in more than 1,300 communities across North America, and has analyzed programmatic features that increase diversion and cost-effectiveness.
- She has received numerous national awards, including SWANA’s Nationwide Distinguished Service Lifetime Achievement Award (2007), “National Recycler of the Year – Lifetime Achievement” (2001) from the National Recycling Coalition, and a similar award from the Colorado Association for Recycling (CAFR, 2007). She served as a board member of NRC for 10 years and a member of SWANA and numerous other state and regional recycling associations. She was recently re-elected to the CAFR Board.
- She and SERA have worked with communities (large and small), counties, states, non-profits, and others across North America and internationally.

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