



Houston-Galveston Area Council

Recycling Efficiency Case Studies Workshop

AUGUST 29, 2007

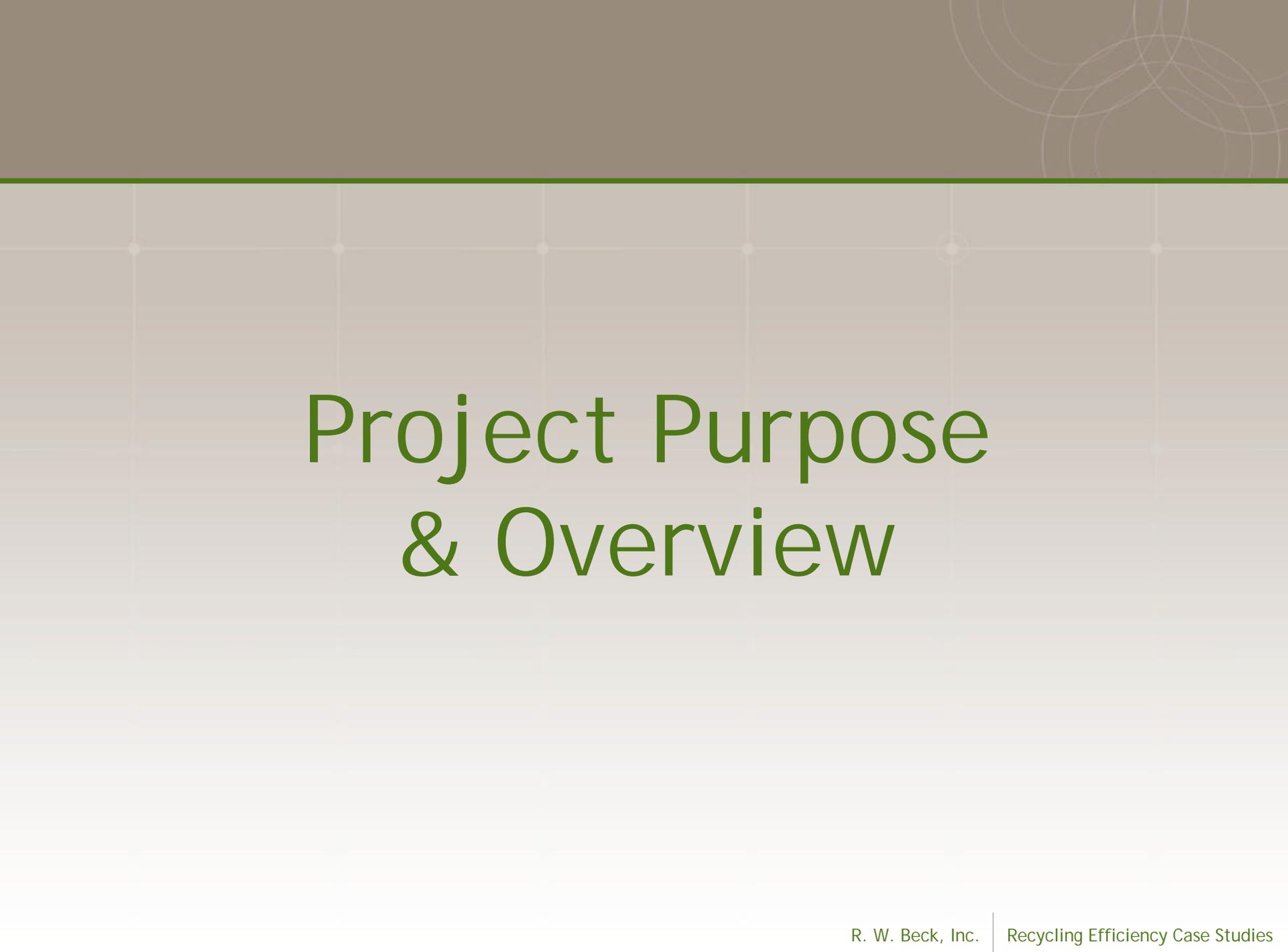


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Mind Powered: Insight with Impact.

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Project Purpose & Overview

Project Purpose

- Develop case studies on behalf of five cities
 - Evaluate the effectiveness of recycling and waste minimization programs
 - Provide specific recommendations for increasing diversion and improving program operations
- Use lessons learned to assist other member communities with:
 - Evaluating their own programs
 - Implementing best management practices
 - Improving diversion and operations

Scope of Work

- 5 cities selected: Bay City, Huntsville, Lake Jackson, Pearland and Texas City
- Collected recycling program data for:
 - Single-family ? HHW
 - Multi-family ? E-waste
 - Brush/yard waste ? Public education
 - White goods

Scope of Work

- Conducted on-site interviews and tours
- Developed case study write-ups
- Conducted follow-up on-site meetings to discuss write-ups



Summary of Participating Cities

Summary of Participating Cities

	Bay City	Huntsville	Lake Jackson	Pearland	Texas City
Population [1]	18,263	37,537 [2]	27,614	68,305	45,070
Recycling Programs:					
Single-Family Curbside			X	X	
Multi-Family On-Site			X		
Drop-Off	X	X	X	X	X
Brush/Yard Waste	X	X	X	X	X
C&D		X			
HHW	X [3]		X	X	
E-Waste	X [3]			X	

Notes: [1] Source: U.S. Census Bureau, 2006 Population Estimates, Census 2000. [2] If adjusted for group quarters, the city's population is 25,375. [3] Available to city residents; operated by Matagorda County.

Diversion Ranges

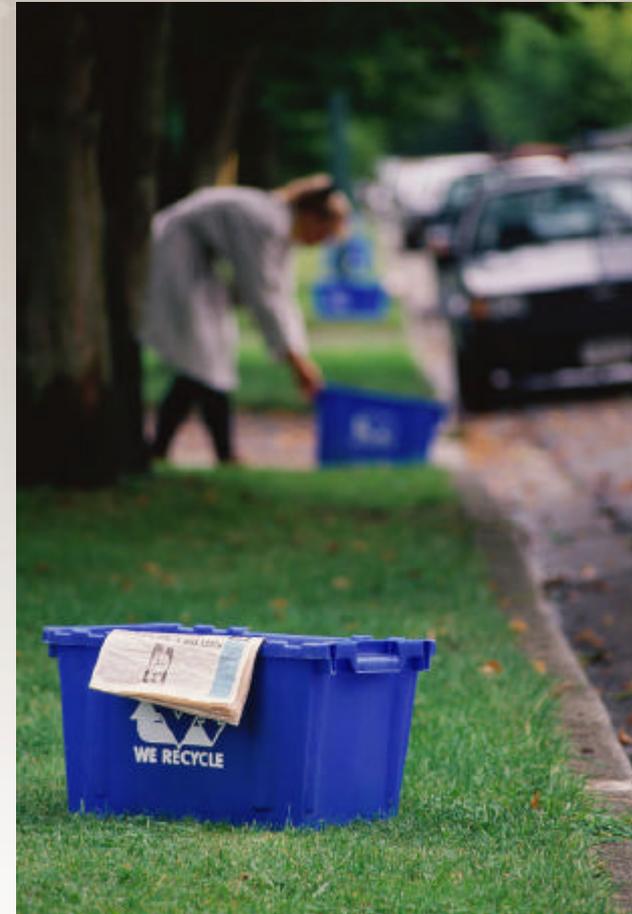
- Caveats
 - Data limitations - data not provided by all privates or tracked by all cities
 - Brush/yard waste estimates - estimate vs. weighed
 - Some cities are exclusive provider of recycling services, while others compete with privates
- 4.0 - 40.0 lbs/household/week
- Excluding outliers: 16.0 - 25.0 lbs/household/week



Industry Trends Assessment

Recent Industry Trends Encourage Diversion

- The “Greening of America”
- Increased commodity prices
- Avoided disposal cost
“incentive”





Best Management Practices

Political Buy-In

- Support needed to ensure sufficient:
 - Funding
 - Personnel
 - Equipment
- Local politicians and senior level management must be committed
- Need to actively convey commitment to employees and residents



Political Buy-In Creates Opportunities for Success

- Texas City
 - Biosphere 1 Recycle Center
 - Developed as part of City's "Goals 2000" Projects initiated by mayor
 - Just received approval for facility expansion and new e-waste program



Need to Actively Educate Officials

- Helps build consensus among local decision-makers about the importance and value of programs
- Pearland
 - KPB sponsors local Chamber of Commerce social events
 - Instrumental in advocating for curbside recycling program



Ideas for Improving Political Buy-in

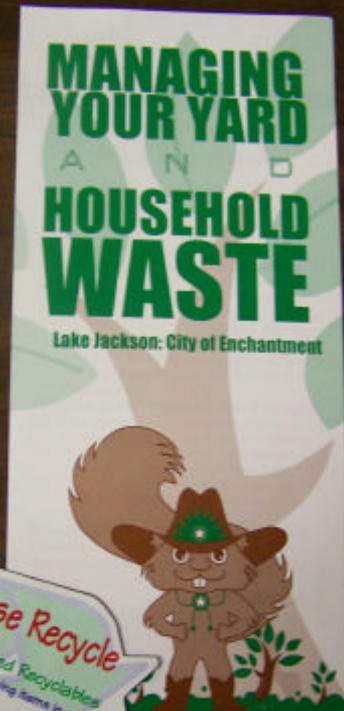
- Goal: Create awareness and understanding
- Adequately promote your program's successes
- Use examples of successful programs in other communities
- Organize workshops or presentations to officials that highlight:
 - Tangible measures of program success
 - Specific goals and objectives
- Present information personally or through someone who is a trusted source in the community

Public Education & Outreach

- Key to developing, expanding or maintaining a program
- Can help yield increases in volume and quality of recyclable material
- Promotes economically sustainable recycling programs
- Program success is directly related to the amount of participation



Communicate “How” and “Why” to Recycle



- Lake Jackson
 - Full-time recycling educator
 - Use brochures, newsletters, special events and school educational programs to communicate with residents

Target Your Message to Key Audiences



- Pearland targets residents through variety of methods
 - Direct mail to addresses activating utility service
 - Mass mailings in newly annexed areas
 - Presentations to community groups
 - Teacher/student programs
 - Special events
 - Information on City and KPB websites
 - Promotional items/give-aways
 - Weekly recycling column in paper
 - Print ads in Houston Chronicle
 - Facility tours

Keys to Effective Public Education

- Capture the attention of your target audience
- Deliver effective message in target audience's own language
- Motivate audience to take action
- Provide feedback to reinforce behavior
- Encourage feedback from program participants
- Consistency is key (programming, funding and staff)

Public Education Costs

- Industry standard
 - \$1.00-\$2.00/household/year
 - Can be more during start-up phase of programs
- Case study cities
 - \$0.45-\$5.00/household/year
 - Those on higher end include cost of salaries for recycling education staff
 - Without staff costs: \$0.45-\$3.10/household/year

Contracting

- Frames the long-term relationship between city and contractor
 - Contract length
 - Materials
 - Collection method
 - Operating requirements
 - Customer service
 - Personnel
 - City responsibilities
 - Enforcement
 - Fees
 - Reporting requirements
- Greater detail yields better contracts



Contract Should Include Support for Public Education



- Pearland
 - City requires contractor to contribute to public education
 - Contractor's support is coordinated through City and KPB
 - Ensures uniform messaging
 - Prevents redundancies
 - Benefits both City and Contractor

Innovative Contracting for Drop-Off Collection

- Bay City
 - Operates drop-off facility in cooperation with non-profit, Matagorda Services, Inc.
 - Funding provided by City and Matagorda Association for Retarded Citizens
 - Matagorda Services has contract with City to operate the facility
 - Provides training and employment for mentally challenged citizens



WhaMCo
RECYCLING CENTER
1812 AVE H
979-245-1692
CITY OF BAY CITY FACILITY



Revenue Sharing Drives Diversion

- Revenue sharing - City and processor share revenue generated from sale of recyclables
- Processor typically sells recyclables on open market, then pays City its share of revenue earned on each ton
- As share of revenue to contractor increases, contractor has greater incentive to:
 - Contribute to public education
 - Process recyclables more efficiently
 - Identify other means of increasing diversion

Tips for Building Better Contracts

- Include incentives for collector to divert as much clean material as possible
- Include specific data and reporting requirements
- Set standards for maximum allowable contamination rates
- Specify who is responsible for reducing contamination, should it become necessary
- Include provisions for revenue sharing
- Specifying processing fees, floor prices and market indices for each type of commodity collected
- Consider inclusion of educational initiatives paid for by the operator
- Contract provisions that allow for additional processing capacity

Operational Issues

- Keys to daily operation of safe and effective programs
- Varies depending on type of recycling program
- May include items such as:
 - Access Control
 - Signage
 - Layout
 - Staffing
 - Sorting
 - Storage



Key Operational Issues for Drop-Off



- Hours of Operation
- Access Control
- Signage
- Layout
- Staffing
- Sorting
- Storage
- Aesthetics

Key Operational Issues for Curbside

- Days/hours of collection
- Collection method
- Collection vehicles
- Customer service
- Personnel
- Acceptable materials
- Containers



Key Operational Issues for HHW Collection



- Frequency of collection
- Vendor selection
- Handling practices
- Storage
- Staffing

Materials

- Common recyclables in the waste stream:
 - Newspaper
 - Cardboard
 - Paper
 - Plastics
 - ? Glass
 - ? Steel cans
 - ? Aluminum cans
- Consider doing a waste audit to determine what materials can be recycled within your community

Understand Revenues & Costs Associated with Materials

- Account for the cost of collecting, processing and transporting each commodity
- Consider commodity values
 - Fibers, plastics and metals most valuable commodities
 - Glass least valuable commodity
 - Fiber may generate most revenue since it makes up large portion of recyclable stream



Tons Diverted by Material Among Case Study Cities (2006)

Material	Tons Diverted (2006)	Percent of Total
Cardboard	437.62	1.8%
Glass	37.11	0.2%
Metals	578.43	2.4%
Paper	1,414.79	5.9%
Plastics	148.69	0.6%
Brush	21,330.46	89.0%
Total	23,947.10	100%

Note: Figures do not include tonnages collected through City of Pearland's curbside recycling program. Private contractor only reports tonnages broken out into co-mingled (glass, aluminum, plastic and steel) and newspaper. This is another 1,498.25 tons of material unaccounted for in this table.

Glass Recycling is a Region-Wide Issue

- All case study cities having difficulties with glass recycling
 - Glass markets have dwindled driving up transport costs for many communities
 - Contamination standards set exceptionally high
 - Alternatives to container applications are not well established and have a lower value



Recycling Safety



- All recycling facility staff and customers have a right to expect the facility to be free of health and safety hazards
- Written procedures should be developed and training conducted for all staff

Develop a Manual of All Safety Policies & Procedures

- Safety procedures should address:
 - Emergencies
 - Building and site safety
 - Potential health hazards
 - Equipment safety
 - Operator safety
 - Material handling safety
- All recycling staff need to be familiar with safety policies and procedures



Documentation & Recordkeeping

- Data allows City to:
 - Monitor changes in tonnage and participation
 - Identify opportunities for improvement
 - Understand commodity market conditions
 - Ensure City is receiving proper revenue sharing
 - Promote the program to community and decision makers
 - Obtain grant funding



Recordkeeping Has Many Benefits



- **Huntsville**

- Helped City obtain more than \$400,000 in grant funding for drop-off facility
- Able to evaluate impact of private recycler on City recycling programs
- Better understanding of commodity market conditions

Documentation Improves Support & Funding

- Texas City
 - Able to demonstrate net savings from operation of recycling programs
 - City support for facility and program expansion
 - Have obtained grant funding for drop-off and brush recycling programs



Key Items to Track on an Annual Basis

- Tonnage by material
- Revenue by material
- Purchasers of recyclables
- Diversion per household
- Amount of residuals disposed
- Disposal cost avoided





Keys to Success

Keys to Success

- Maintain support of elected officials
- Education
 - Critical to success
- Operate safely
- Monitor performance
 - Diversion rates, revenues and costs
- Talk with other communities
 - Network, recycling roundtable, don't reinvent the wheel

Contacts Are Valuable Resources

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