

Residential Recycling Options for the City of Chattanooga

Presented by the Chattanooga
Recycling Committee
Michael Mallen-Chair



Background

- ❑ The City has provided curbside collection of recyclable materials since 1994 and has worked jointly with the Orange Grove Center (OGC) in the processing of materials collected.
- ❑ Additionally, the city and OGC conducted a recycle education outreach program through the year 2003.
- ❑ Despite the outreach program the number of participants in the program as well as the volume of materials collected remained essentially static.
- ❑ In 2005 a curbside recycling enrollment program was implemented in an effort to identify residents interested in the program as well informing the city's residents that glass would no longer be accepted in the curbside program.

Where we are today

- ❑ In 2006 and in response to rapidly increasing collection costs coupled with static interest and participation rates, curbside collection was eliminated from the city budget.
- ❑ A proposal was made to increase the number of recycle convenience centers from one (1) to five (5).
- ❑ In July 2006 a recycling committee was formed to research best practices, education and communication, and economics and logistics of curbside recycling.

Sub-committee recommendations

- ❑ Complete recommendations developed by the three subcommittees are included in the packets provided to each Council member.

Facts bearing on the issue

- ❑ Cost of curbside collection has increased over time.
- ❑ Collection vehicles must be replaced.
- ❑ Volume of materials collected remains static.
- ❑ Orange Grove Center (OGC) is a valuable partner.
- ❑ Funding for curbside collection is not in the FY07 budget.
- ❑ The City has exceeded state mandated 25% diversion requirement of material entering the City's landfill.

Facts bearing on the issue

- ❑ 13% participation rate.
- ❑ No educational outreach program.
- ❑ OGC operates an efficient drop-off center at Warner Park.
- ❑ The residue rate at OGC is 35% to 50%.
- ❑ Glass is not collected.
- ❑ The city can not mandate a solid waste fee without county or higher level government approval.

Recommendations for consideration

- ❑ The information in this presentation is based on the following assumptions:
 - The City will maintain a residential recycling program.
 - The City will fund an educational outreach program.
 - The City will continue partnership with the OGC.
- ❑ This committee recommends extending curbside recycling while City Council considers options.
- ❑ City Council should appoint a new committee to flesh out its decision.

Education

- An educational component is recommended for each option. Efforts should include but not limited to:
 - Direct mail
 - Billboards
 - Special events
 - Schools
 - Media relations
 - Media partnerships
 - Corporate partnerships
 - Speakers bureau

Option 1

- ❑ Continue curbside recycling and add education and communication outreach.

Option 1

□ Advantages

- Collection routes are established and city personnel are already trained.
- Residents are familiar with the program.
- City literature and Web site focuses on curbside recycling.
- OCG already sorts curbside recycling.

Option 1

❑ Disadvantages

- Collection costs continue to increase.
- Collection vehicles must be replaced in FY 07.
- Contaminated material is an issue.
- Residue amounts are high.
- Participation rates and volumes are low.
- This option may not present the best training opportunities for OGC clients.
- Uses non-renewable resources in collection.
- Continues negative impact on air quality.

Option 1

■ Year one estimated cost: \$1,775,000

<u>OPTION ONE - ESTIMATED COST (Year One):</u>	
ITEM/TASK	COST
Collection, Rear Load, Four Trucks/Crews	\$587,000
Orange Grove Material Processing	\$300,000
Capital Costs (four rear loaders)	\$700,000 (7 year life expectancy)
Roll-off support & Residue Removal	\$88,000
Educational outreach	\$100,000
<u>TOTAL</u>	<u>\$1,775,000</u>

■ Yearly estimated cost: \$1,203,700

<u>OPTION ONE - ESTIMATED COST (Yearly)</u>	
ITEM/TASK	COST
Collection, Rear Load, Four Trucks/Crews	\$645,700
Orange Grove Material Processing	\$300,000
Capital Costs (four rear loaders)	\$70,000 (funding future replacement costs)
Roll-off support & Residue Removal	\$88,000
Educational outreach	\$100,000
<u>TOTAL</u>	<u>\$1,203,700</u>

Option 2

- ❑ Continue curbside recycling and add education and communication outreach.
- ❑ Create a perpetual, independent, non-profit to oversee education and implementation.
- ❑ Furnish bins to all residents.
- ❑ Collect glass containers curbside once per month.
- ❑ Make recycling mandatory.
- ❑ Impose a solid waste fee on all property owners.
- ❑ Add refuse inspectors and conduct compliance checks.
- ❑ Place recycling containers in public places.
- ❑ Continue relationship with OGC.

Option 2

□ Advantages

- Standard containers for recycle materials
- Collection of glass separately from other recycle materials will mitigate contamination.
- Mandatory recycling will increase diversion rate from City landfill
- Solid waste fee provides funding source.
- Pay As You Throw (PAYT) system encourages recycling.

Option 2

- Advantages (cont)
 - Refuse inspections will decrease recyclable materials entering landfill.
 - Recycling containers in public places may increase recycling.
 - Continues the traditional relationship with OGC.
 - The involvement of an independent body with oversight responsibilities for education, communication and implementation of curbside recycling should lead to efficiencies of operations.

Option 2

❑ Disadvantages

- Furnishing bins for all residents will be expensive.
- Glass collection would require an additional vehicle and operator and will be confusing to residents.
- PAYT uses various size containers for garbage collection.
- Different size containers will lead to collection problems (adjustable grippers).
- Must hire compliance inspectors.

Option 2

- ❑ Disadvantages (cont)
 - New city code to address non-compliance issues.
 - Unattended collection containers will lead to misuse (garbage/fire) and will increase collection cost.
 - May increase illegal dumping.
 - Uses non-renewable resources in collection.
 - Continues negative impact on air quality.
 - Glass is not a highly valued recycle commodity.

Option 2

■ Year One cost estimate: \$4,393,750

■ Estimated cost per household (60,000 households) to cover all solid Waste Management operations is \$240 per year

OPTION TWO - ESTIMATED COST (Year One)	
ITEM/TASK	COST
Collection, Rear Load, Four Trucks/Crews	\$587,000
Orange Grove Material Processing	\$300,000
Capital Costs (four rear loaders)	\$700,000 (7 year life expectancy)
Roll-off support & Residue Removal	\$88,000
Educational outreach	\$100,000
Monthly Curbside Glass Collection	\$244,000
Recycle Bins (18 gallon) to each Resident	\$399,750 (\$6.15 each X 60,000 residents)
Delivery of recycling bins to residents	\$25,000
Various size garbage containers for Pay As You Throw Program (PAYT)	\$1,560,000 (\$52 each estimating that 50% will change container sizes)
Additional Refuse Inspectors	\$180,000 (four additional @ \$45,000 each/year)
Vehicles for Refuse Inspectors	\$80,000 (\$15,000 each plus \$4000/year Fuel & Maint)
Additional staff person and vehicle to maintain various can size swaps	\$100,000
Recycle containers for public areas Super Sorter All-In-One by Busch Systems	\$8,000 (\$800 each plus in-house installation costs)
Service for the public containers once/week	\$22,000 (\$2,200/Super Sorter/year X 10)
TOTAL	\$4,393,750

Option 2

□ Yearly estimated cost: \$1,946,200

OPTION TWO - ESTIMATED COST (Yearly)	
ITEM/TASK	COST
Collection, Rear Load, Four Trucks/Crews	\$645,700
Orange Grove Material Processing	\$300,000
Capital Costs (four rear loaders)	\$70,000 (funding future replacement costs)
Roll-off support & Residue Removal	\$88,000
Educational outreach	\$100,000
Monthly Curbside Glass Collection	\$244,000
Recycle Bins (18 gallon) for new residents and replacements	\$12,500 (\$6.15 each X 2,000/year)
Various size <u>garbage</u> containers for PAYT new residents and replacements	\$104,000 (\$52 each X 2000)
Additional Refuse Inspectors	\$180,000 (four additional @ \$45,000 each/year)
Vehicles for Refuse Inspectors	\$80,000 (\$15,000 each plus \$4000/year Fuel & Maint)
Additional staff person and vehicle to maintain various can size swaps	\$100,000
Service for the public containers once/week	\$22,000 (\$2,200/Super Sorter/year X 10)
TOTAL	\$ 1,946,200

Option 3

- ❑ Implement a bi-weekly curbside recycling and add education and communication outreach.
- ❑ Create a perpetual, independent, non-profit to oversee education, communication and implementation.
- ❑ Furnish recycling bins to all city residents.
- ❑ Make recycling mandatory.
- ❑ Impose solid waste fee on all property owners.
- ❑ Recycling containers in public places.
- ❑ Continue relationship with the OGC.

Option 3

□ Advantages

- Standard containers for recycle materials.
- Mandatory recycling will increase diversion rate from landfill.
- A solid waste fee will provide funding source.
- A solid waste fee based on a Pay As You Throw (PAYT) system will encourage recycling among city residents.
- Recycling containers in public places may increase recycling.
- Continues the traditional relationship with OGC.
- The involvement of an independent body with oversight responsibilities for education, communication and implementation of curbside recycling should lead to efficiencies of operations.

Option 3

□ Disadvantages

- Furnishing bins for all residents will be expensive.
- Requires automated collection vehicles for curbside recycling.
- Bi-weekly collection may confuse participants.
- Requires different size containers for garbage collection
- PAYT using different sizes of containers will lead to collection problems (adjustable grippers).
- New city code to address non-compliance issues.
- Unattended collection containers in public spaces will lead to misuse (garbage/fire) and will increase collection cost.
- Traditional relationship with the OGC may not be the best training opportunity for OGC clients.
- Uses increasing amounts of a non-renewable resource (oil).

Option 3

Year one estimated cost: \$6,498,000

OPTION THREE - ESTIMATED COST (Year One)	
ITEM/TASK	COST
Biweekly Curbside Collection (automated)	\$650,000 (fuel, maintenance, & labor)
Orange Grove Material Processing	\$300,000
Capital Vehicle Costs	\$1,920,000 (\$240,000 each X 8)
Roll-off support & Residue Removal	\$88,000
Educational outreach	\$100,000
Automated Recycle Containers (96 gallon) to each resident	\$3,120,000 (\$52 each X 60,000 residents)
Delivery of recycling containers to residents	\$40,000 (conservative estimate)
Creation and Maintenance of a SW billing system	\$150,000
Additional staff person and vehicle to maintain various can size swaps	\$100,000
Recycle containers for public areas Super Sorter All-In-One by Busch Systems	\$8,000 (\$800 each plus in-house installation costs)
Service for the public containers once/week	\$22,000 (\$2,200/Super Sorter/year X 10)
TOTAL	\$6,498,000

Option 3

- Yearly estimated cost: \$1,852,286
- Estimated cost per house hold (60,000 households) to cover all solid Waste Management operations is \$240 per year.

OPTION THREE - ESTIMATED COST (Yearly)	
ITEM/TASK	COST
Biweekly Curbside Collection (automated)	\$715,000 (fuel, maintenance, & labor)
Orange Grove Material Processing	\$300,000
Capital Vehicle Costs	\$274,286 [(\$240,000 each X 8)/7] (funding future replacement costs)
Roll-off support & Residue Removal	\$88,000
Educational outreach	\$100,000
Recycling containers for new residents and replacements	\$104,000 (\$52 each X 2000)
Maintenance of a SW billing system	\$150,000
Additional staff person and vehicle to maintain containers	\$100,000
Service for the public containers once/week	\$22,000 (\$2,200/Super Sorter/year X 10)
TOTAL	\$1,853,286

Option 4

- ❑ Implement a monthly curbside collection program with education and communication.
- ❑ Furnish recycling bins to all residents and place recycling containers in public places.
- ❑ Continue relationship with the OGC.

Option 4

□ Advantages

- Standard containers for recycle materials.
- Recycling containers in public places may increase recycling.
- Continues the traditional relationship with the OGC.
- May reduce fuel usage and expense.

Option 4

❑ Disadvantages

- Furnishing bins for all residents will be expensive.
- Will require automated collection vehicles.
- Monthly collection may confuse participants.
- Unattended containers in public spaces will lead to misuse (garbage/fire) and will increase collection cost.
- Traditional relationship with the OGC may not be best training opportunity for OGC clients.
- Idle equipment and personnel expense.

Option 4

- Year one estimated cost: \$4,795,000

OPTION FOUR - ESTIMATED COST (Year One)	
ITEM/TASK	COST
Monthly Curbside Collection (automated)	\$297,000 (fuel, maintenance, & labor)
Orange Grove Material Processing	\$300,000
Capital Vehicle Costs (3 automated trucks)	\$720,000 (\$240,000 each X 3)
Roll-off support & Residue Removal	\$88,000
Educational outreach	\$100,000
Automated Recycle Containers (96 gallon) to each resident	\$3,120,000 (\$52 each X 60,000 residents)
Delivery of recycling containers to residents	\$40,000 (conservative estimate)
Additional staff person and vehicle to maintain recycling containers	\$100,000
Recycle containers for public areas Super Sorter All-In-One by Busch Systems	\$8,000 (\$800 each plus in-house installation costs)
Service for the public containers once/week	\$22,000 (\$2,200/Super Sorter/year X 10)
TOTAL	\$4,795,000

Option 4

□ Yearly estimated cost: \$1,144,575

OPTION FOUR - ESTIMATED COST (Yearly)	
ITEM/TASK	COST
Monthly Curbside Collection (automated)	\$326,700 (fuel, maintenance, & labor)
Orange Grove Material Processing	\$300,000
Capital Vehicle Costs (3 automated trucks)	\$102,875 (7 year life cycle) (funding future replacement costs)
Roll-off support & Residue Removal	\$88,000
Educational outreach	\$100,000
Recycling containers for new residents and replacements	\$104,000 (\$52 each X 2000)
Additional staff person and vehicle to maintain various can size swaps	\$100,000
Service for the public containers once/week	\$22,000 (\$2,200/Super Sorter/year X 10)
TOTAL	\$1,143,575

Option 5

- ❑ Eliminate curbside recycling and implement recycling education and communication.
- ❑ Open four (4) more drop-off centers and have five (5) manned recycle trailers located in high participation neighborhoods on the same day as garbage collection.
- ❑ OGC will provide all personnel.

Option 5

□ Advantages

- Full service convenience centers collect 10 categories of recyclables including electronics and glass.
- Eliminates the personnel, equipment, and fuel cost of curbside recycling.
- Will provide a cleaner, presorted product for OGC.
- Will enhance training opportunities for OGC clients.
- Will address high recycling participation neighborhoods.
- Educational opportunities with the trailers.
- Recycling trailers placed on same day as garbage collection will facilitate usage.
- Less use of non-renewable resources (oil).

Option 5

❑ Disadvantages

- Requires purchase of trailers and towing vehicles.
- Trailers must be parked near rest rooms.
- Limited trailer volume.
- Trailers must be unloaded at the OGC facility.
- Requires four (4) new full service convenience centers.
- Requires educational program.
- The aged, ill, infirm, and non-drivers will be less likely to participate.

Option 5

- Year one estimated cost: \$1,851,000

OPTION FIVE - ESTIMATED COST (Year One)	
ITEM/TASK	COST
Additional Recycling Collection Center Construction	\$612,000 (\$153,000 each X 4)
Recycling Containers (Roll-Off Type)	\$293,000 (\$68,700/Center + 3 extra containers)
OGC Operation of Recycle Centers, Recycle Express, and Processing	\$400,000
Roll-Off support for transport of recyclables	\$71,000
Recycling Trailers (Alley Cats)	\$100,000 (\$20,000 each X 5)
Trucks to pull Alley Cats	\$125,000 (\$25,000 each X 5)
OGC Operation of Alley Cats	\$150,000 (5 x \$30,000)
Educational outreach	\$100,000
TOTAL	\$1,851,000

Option 5

- Yearly estimated cost: \$745,000

<u>OPTION FIVE - ESTIMATED COST (Yearly)</u>	
ITEM/TASK	COST
OGC Operation of Recycle Centers, Recycle Express, and Processing	\$400,000
Roll-Off support for transport of recyclables	\$71,000
Maintenance and fuel for Trucks and Recycling Trailers (Alley Cats)	\$14,500 (\$6,000/truck and \$500/Alley Cat)
Capital Vehicle Costs (funding future replacement costs)	\$10,000 (10 year life cycle, Trucks only)
OGC Operation of Alley Cats	\$150,000
Educational outreach	\$100,000
TOTAL	\$745,500

Option 6

- ❑ Eliminate curbside recycling and implements recycling education and communication.
- ❑ Build four (4) new full service recycling drop-off centers.
- ❑ OGC will provide all personnel.

Option 6

□ Advantages

- Full service convenience centers collect 10 categories of recyclables including electronics and glass.
- Eliminates the personnel, equipment, and fuel cost of curbside recycling.
- Will provide a cleaner, presorted product for OGC.
- Will enhance training opportunities for OGC clients.

Option 6

❑ Disadvantages

- Not as convenient as curbside recycling and/or trailers.
- Requires construction of four (4) new full service drop-off centers.
- Requires educational program.
- The aged, ill, infirm, and non-drivers will be less likely to participate.

Option 6

- Year one estimated cost: \$1,457,800

<u>OPTION SIX - ESTIMATED COST (Year One)</u>	
ITEM/TASK	COST
Additional Recycling Collection Center Construction	\$612,000 (\$153,000 each X 4)
Recycling Containers (Roll-Off Type)	\$274,800 (\$68,700/Center)
OGC Operation of Recycle Centers, Recycle Express, and Processing	\$400,000
Roll-Off support for transport of recyclables	\$71,000
Educational outreach	\$100,000
TOTAL	\$1,457,800

Option 6

- Yearly estimated cost: \$581,000

<u>OPTION SIX - ESTIMATED COST (Yearly)</u>	
ITEM/TASK	COST
OGC Operation of Recycle Centers, Recycle Express, and Processing	\$400,000
Roll-Off support for transport of recyclables	\$71,000
Educational outreach	\$100,000
Participant Reward Program	\$10,000
TOTAL	\$581,000

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