

Resource Guide for Implementing Recycling on Multifamily Properties

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Table of Contents

1 Designing your Program.....	1
Identify a Program Leader	1
Contracting with a Collector	1
Signage.....	1
Container Size and Placement	1
Increasing Diversion Rates through Yard Trimmings.....	2
Wet/Dry Recycling	3
Property Alterations	3
Costs.....	3
2 Education for Residents	4
Outreach Opportunities and Methods	4
Important Outreach Themes	4
3 Common Issues and Solutions	5
Increasing Participation Rates	5
Mixed Use Developments.....	5
Fire Codes	5
Internal Storage	5
External Storage.....	6
Addressing Fire Code Issues.....	6
4 Case Studies	6
Local	6
Sheppard Square, Louisville, KY	6
Hite Avenue Gardens, Louisville KY	7
Clark County, IN	7
Outside Louisville Area	9
Charlotte, NC.....	9
Mecklenburg County, North Carolina	10
5 Resources.....	12
Select Municipal and State Multifamily Recycling Programs and Guides.....	12

6 References	13
7 Appendices.....	14
Appendix A: Sample Talking Points for Door-to-Door Outreach Volunteers.....	14
Appendix B: Haulers’ Questionnaire Results	15
Appendix C: Sample Lease Language to Mandate Resident Participation	17
Appendix D: Sheppard’s Square	18
Appendix E: QRS Recycling.....	23

Multifamily recycling programs manifest themselves quite differently than residential recycling programs for single-family properties, and similarly have different issues in terms of efficacy and efficiency, such as lower participation rates relative to single-family properties. Multifamily waste represents a fairly small fraction of the waste stream. Despite the perception that they are not being served, recycling service is offered at approximately 82 percent of multifamily developments nationwide. In two-thirds of these areas, all multifamily units are covered. This resource guide and collection of tips will be useful to those initiating new programs or seeking to improve existing efforts. Suggestions are drawn from a sampling of successful programs and associated materials across the country, including Mecklenburg County, NC; Alameda County, CA; Madison, WI; Palo Alto, CA; Phoenix, AZ; and the State of Georgia.

This guide was produced by the Environmental Finance Center at the University of Louisville (EFC@UofL) and authored by Daniel Weinstein and Carol Norton. The EFC@UofL, housed within the UofL Center for Environmental Policy and Management, provides technical assistance on sustainability and resiliency issues, programs, and policies to states, tribes, and municipalities within EPA Region 4 and nationwide.

1 Designing your Program

Identify a Program Leader

A program leader is a resident who can engage, motivate, and support other residents in their efforts to recycle.

Enlist staff support, with training for communication and outreach.

Contracting with a Collector

Contact current waste collector. If recycling services not offered, consider recycling service or self-haul to a facility.

Signage

Clear and visible signage should be used to indicate containers are for recycling only as well as list the materials that are acceptable.

Educational materials need to be posted in common areas (laundry, mail rooms, lobbies, and leasing offices).

Ask haulers if they make educational posters available. Local landfills, recycling centers, and some government agencies may also provide educational materials.

Container Size and Placement

The number of containers should be based on estimate of pounds of materials that will be generated on a weekly basis.

For once-a-week collection (the norm), a reasonable rule of thumb is to provide ¼ cubic yard (cy) of container capacity for every three residents. This can be a mix of garbage bins and recycling carts (or bins), with about half of the volume for garbage and half for recycling.

For example, a 60-unit complex with average occupancy of three people per unit would require 15 cubic yards of capacity (0.25 cy x 60). If the collection company uses 4-cubic-yard bins for garbage and 64-gallon carts for recyclables, this could be served by two bins and 22 carts. It is good practice to provide 20% to 35% excess capacity for seasonal variation, so in this example the design objective should be to accommodate three bins and 28 carts. Local demographics may change these assumptions; large or extended families will require more space, and senior citizens living alone may require less (Alameda County, 2014).

Waste haulers may be able to assist in determining the size and number of external containers as well as level of service.

Local government planning agencies may be able to assist in determining best location for containers.

Clear and visible signage should be used to indicate containers are for recycling only as well as list the materials that are acceptable.

Typically, containers are placed as close as possible to garbage containers to increase the convenience of occupants. This area should be easily accessible. In complexes with underground parking, storing bins underground is not recommended unless ceilings are 20 ft. or higher in order to provide clearance.

In complexes with exterior parking lots, the typical practice is to provide walled enclosures that contain bins and carts. These are more attractive and help confine discards to a specific area. Many cities have specific, highly detailed enclosure ordinances that govern size, appearance, access, durability, and other factors.

From the residents' perspective, trash enclosures should not be right below the window, but should be within a reasonable walking distance from their door.

Occupants should be provided with an in-unit container. If this is not feasible, it is recommended that property management informs occupants of various ways recyclables can be stored inside the residential unit (through bins, cloth bags, boxes, laundry nets, and so on).

Increasing Diversion Rates through Yard Trimmings

Most communities are finding that to exceed 50 percent diversion of residential waste, it is necessary to recycle yard trimmings and, in some cases, food waste (StopWaste.org, 2014). For enclosure placement and design that will meet this need, the key is to place an enclosure at a

location that is convenient for landscapers. This could be a smaller, lockable enclosure (for use by landscapers, not residents) holding large carts or other yard-trimmings containers provided by the collection company.

Wet/Dry Recycling

Wet/dry recycling is a method of recycling which can capture very high levels of recoverable material from recyclables. Typically, wet waste –waste which is typically produced in bathrooms, break areas, and kitchens – is collected in parallel with dry waste. The latter may be considered as consisting of “traditional” recyclables such as aluminum, metal, glass, and so on. One collection truck, with separate compartments for wet and dry items, typically picks up both streams of waste from collection sites. This material is transferred to a common facility where the dry stream is subjected to manual and mechanical sorting techniques to recover paper, plastic, metal and glass. The wet stream is essentially composted. In the few Metropolitan areas where it has been implemented in the United States and Canada, it has featured diversion rates over 60 percent for all waste and, in ideal situations with full participation, may be capable of diversion rates over 90 percent. Louisville’s wet-dry initiative in the Central Business District, along with wet-dry programs in just a handful of other communities, provide empirical support that higher levels of diversification rates are highly related to real savings in economic and ecological dimensions for communities and their members.

Property Alterations

If it is determined that structural alternations need to be made to the property to accommodate recycling containers, recycling areas, or recycling enclosures, it is advisable to consult with local planning departments to learn about applicable local building or zoning codes. This issue may also arise if parking spaces on a property need to be reduced in order to provide adequate space.

Costs

In most communities, multifamily development (MFD) solid waste service costs are based on container size and collection frequency. Many haulers (both public and private) collect recyclables and/or yard debris at a lower cost than collection and disposal of an equal volume of trash. Other haulers provide recycling and yard debris collection to their trash customers at no additional cost. According to a nationwide survey conducted by the Environmental Protection Agency (EPA) (Environmental Protection Agency [EPA], 2001), multifamily recycling costs, on average, \$20.50 per household per year. Single-family recycling tends to be more expensive, averaging \$28.76/household annually. In many cases, MFD management will see little cost increase when adding recycling service because recycling pick-up is often cheaper than trash pick-up; in addition savings may be found when waste containers can be downsized and collected less frequently as is the case when recyclable diversion rates are substantial. This notion has empirical support locally, based upon our limited survey of haulers in the Jefferson County area.

EPA evaluations of MFD recycling provide some insight (ibid). San Jose, CA, charges MFDs for trash service and provides recycling and yard debris collection at no additional cost. One area MFD complex, Blossom Hill Estates, avoided almost \$60,000 in trash disposal fees in 1997 through

recycling and composting. In many cases, the community or hauler provides collection carts and bins. Apartment management can often reduce their total solid waste management costs if residents recycle enough to reduce needed trash container size or collection frequency. The Commodore Club in Key Biscayne, Fla., reduced trash collection and disposal costs after implementing its recycling program. Building management saves approximately \$1,600 per year on waste management costs.

Most weeks of the year, buildings tend to generate the same amount of refuse in total, and collection rates are based on bin types and sizes. It is important for buildings to match the volume of service to the volume generated and not oversubscribe to service. Remember that diversion discount: by recycling and composting everything that can be recycled and composted, buildings can reduce the number and size of their trash containers, a key to managing disposal costs (StopWaste.org, 2014).

Another great way for apartment complexes to reduce costs is to roll their bins to the curb on collection day. That eliminates distance and elevation costs, which can add up, especially if a building has a lot of inside bins. The bins typically have handles and wheels, so in most cases an onsite manager or other able-bodied person can wheel them to the curb.

2 Education for Residents

Prior to program implementation, educate staff on requirements of program and information occupants will need. Local governments may provide training sessions for multi-family recycling organizers in many areas. It is advisable to use as many different forms of communication as possible several times per year, **and for move-ins in particular**. Recycling may be included in the lease agreement (see Appendix C for example language of such an agreement). The nature of the audience should also be considered: materials should also be available in the languages that tenant populations at particular MFDs. (Gamba and Oskamp, 1993; Katsev et al., 1993)

Outreach Opportunities and Methods

- Meetings with residents
- Training sessions with small groups
- Newsletters, brochures, fliers
- Door hangers
- Door-to-door outreach
- Surveys (to understand concerns or increase participation rates)
- Email lists
- Web presence
- Establish occupant volunteers as information sources
- Posters

Important Outreach Themes

Stress benefits of recycling for individuals, communities, and the planet.

Materials accepted and not accepted
How to prepare recyclables
Where receptacles are located
Whom to contact with questions

3 Common Issues and Solutions¹

Increasing Participation Rates

Consider incentivizing recycling and/or adopting the role of resident advocate. Create a friendly competition. Highlight and thank resident advocates and others who participate in ways beyond recycling their own waste. Another way to reward residents of MFDs with successful programs is to provide recycling credits on bills for other municipal services, such as municipal water or electric service. While such a system could not reward tenants based on their individual recycling efforts, tenants would receive a savings related directly to the building's recycling progress. The potential for further rate reductions may increase peer pressure on non-recyclers to participate. (De Young et al., 1995)

Mixed Use Developments

These developments may have retail and/or office space on the ground floor and several stories of residences above, with frontage on a commercial street and parking behind (or, sometimes, in an underground garage). Businesses' needs for garbage and recycling space depend on the types of activities they are engaged in. Note that garbage compactors can hinder recycling by taking up space and preventing the monitoring of discarded materials. There may be opportunities for residents to make use of recycling amenities installed for businesses. For example, if the businesses use a cardboard baler and have a cage where cardboard is accumulated, residents may add their cardboard to the cage if they have access. Or, if food outlets use a special container for food waste recycling, it could be upsized to handle food waste from residents as well. Even the smallest cafes can generate significant quantities of food waste – coffee shops and juice bars in particular – so it could be well worth planning for food waste collection to serve both the building's commercial and residential occupants.

Fire Codes

Internal Storage

Internal storage of recycling containers may conflict with fire safety codes.

Recycling bins are typically not allowed to be stored in hallways.

Containers may not obstruct exists and, generally, must leave a minimum of 2 feet of clearance between the top of the container and the ceiling.

Rooms used for inside storage must have an approved one hour fire-rated sprinkler, an automatic sprinkler system, and a 20 minute self-closing fire door with a latch.

¹ Adapted in part from Twin Cities, 2014.
October 2014

Equipment rooms, attics, and similar spaces cannot be used for combustible storage.

External Storage

Dumpsters and other metal containers must have tight-fitting lids and be stored at least five feet away from combustible walls, openings, or roofs.

Addressing Fire Code Issues

Be sure to check your local regulations and ordinances for compliance.

Do not provide indoor communal bins

Provide individual units with a small recycling bin designed for in-unit storage.

Use a laundry room or other area that already has sprinkler coverage as the communal recycling area.

4 Case Studies

Local

Sheppard Square, Louisville, KY

Sheppard Square, Louisville's third HOPE VI Revitalization project, is located in the Smoketown neighborhood. When completed the housing project will fill city blocks and will include two parks and nine multi-family buildings containing 310 housing units. Four storm-resistant homes, multi-family residential buildings, duplexes and 23 single-family homes comprise the housing project.

Much of the design and function of Sheppard Square is based on criteria found in the Enterprise Green Community rating system; components of LEED ratings for homes and neighborhoods were also integrated into the planning of Sheppard Square.

Sheppard Square mandates that its residents actively participate in both its recycling and composting programs. The recycling program began in May 2014. Announcements and information regarding recycling has been included in the residents' newsletters. Information about the mandatory recycling procedures and processes are included in Sheppard Square's Enterprise Green Communities Residents Manual. This manual is distributed to each household and referenced in an addendum to the renter's lease agreement with Louisville Metro Housing Authority².

- Activities have been organized to educate and motivate residents about recycling. These include:

² Louisville Metro Housing Authority provided materials that include Enterprise Green Community Criteria, Enterprise Green Communities Resident Manual (addendum to the LMHA Lease Agreement), recycling announcements in Sheppard Square newsletters, Sheppard Square dumpster station signs, and the Sheppard Square Block Party flyer. October 2014

- A June 2014, LMHA-sponsored Sheppard's Square block party which included recycling-themed games, door prizes, and free recycling tote bags. Children's activities were included since parents often follow the lead of their children when incorporating recycling practices in the home.
- A tenant appreciation day sponsored by QRS that included gifts such as reusable containers, lunch boxes, dishes, dish towels, dish rags, local food, and snacks.
- A training program about single-stream recycling provided by QRS at a nearby school for residents and school staff; translators were on hand for Somali residents who did not speak English.
- A dumpster corral was architecturally designed for the HOPE VI housing project and the recycling bins are located along a brick wall near the garbage/trash bins. There is signage mounted on this wall (photo on file) directing residents to the proper recycling bins.

LMHA officials understand that the key to a successful recycling program is convenience for the residents. Residents are reminded to recycle through flyers and newsletters. Since residents are mandated to recycle (and compost), LMHA provides educational training through events that include food and free gifts and giveaways (K. O'Neil and N. Ward, personal communication, August 27, 2014).

Hite Avenue Gardens, Louisville KY

In 2012, the Hite Avenue Gardens Homeowners Association (HOA) asked the property manager to set up a recycling program at the condominium development; the monthly costs of recycle pick-up would be covered by the HOA using revenues generated by homeowner dues and membership fees. QRS Recycling was contracted to provide a recycling bin/dumpster and provide pick-up of recyclable items. The recycling bin was clearly marked for recycling-only and placed in a central location along with three existing trash bins.

Information on recycling is provided to residents in form of handouts and email announcements. The property manager for Hite Avenue Gardens could not provide a participation rate but did comment that the recycling program is well-received and seems to be working (C. Evans, personal communication, September 22, 2014).

Clark County, IN

In January 1998, Clark County, IN passed an ordinance mandating residential recycling whereby all residential property owners must pay an annual curbside recycling fee. The annual fee is currently

October 2014

set at \$34 and is included on the owner's property tax statement. Though the fee is mandatory, the householder has the choice to participate or not participate. The county has contracted Glotzbach Hauling and Recycling to provide curbside pickup for residents of Clark County as well as residents living in Clarksville, Jeffersonville, and Sellersburg. Multifamily residential units are covered for recyclable pickup.

There are currently two condominium developments that have made arrangements for pickup of recyclable items.

Williamsburg Station is a 144-unit condominiums development located in Jeffersonville; many of its residents are elderly (P. Campbell, personal communication, September 22, 2014). Recycling information is posted on Williamsburg Station's website and includes a listing of items that *ARE* and *ARE NOT* accepted for pick-up. Residents are responsible for their own bins which can be purchased at the Williamsburg Station Office. Pick-up is bi-weekly and instead of curbside, the bins are picked up at and returned to the front door of each resident by the recycling hauler; this service is even available to condominium residents on the 2nd floor of the development. The recycling participation rate at Williamsburg station is 20 percent (P. Campbell, personal communication, September 22, 2014).

Before Clark County imposed the recycling tax, the Lakeshore Condominium Association and its members had been wrestling with trying to set up an efficient recycling program for the 72 units within the condominium development. The Association met with Waste Management who was contracted for trash pick-up at the complex. After the idea of having 72 separate bins sitting curbside was rejected by the Association, Waste Management suggested placing five 90+ gallon trash receptacles throughout the complex. This alternative was rejected as well; there were questions raised on how to secure these bins, the possibility of these bins being knocked over and trash strewn, and on ways to deter non-residents from filling bins with their recycling. The Condominium Association and Waste Management failed to come up with a recycling program that fit both the residents' and the hauler's needs and capabilities (M.A. Crabtree, personal communication, October 1, 2014).

Several years later when the property tax bills included the mandatory recycling fee, attention was once again setting up a recycling program that would work for the condominium residents. Since the county now had contracted with a recycling hauler, the Lakeshore Condominium Association met with Glotzbach Hauling and Recycling and a recycling program was developed. Glotzbach Hauling and

Recycling would rent a dumpster for recyclable items to be placed on the condominium complex; the dumpster would be emptied weekly (B. Glotzbach, personal communication, September 19, and September 29, 2014; M.A. Crabtree, personal communication, October 1, 2014).

Marketing material about the recycling program is included in welcome packages for new Lakeshore condominium residents. The recycling program is well-received with the residents and it is estimated that the participation rate is between 90-94 percent (M.A. Crabtree, personal communication, October 1, 2014).

Outside Louisville Area

Charlotte, NC

The City of Charlotte provides hauling recyclables at multifamily units; however, not every multifamily complex contracts with the city for its trash haulers. Of the 750 multifamily properties served by the City, 70 percent have recyclables pick-up (M. Gant, personal communication, August, 22, 2014); for those properties with 30 units or more, this translates to more than 110,000 residential units (Israel, 2014). Multifamily recycling represents 5 percent of the total amount of recyclable materials hauled in by the City which equates to about 4,300 tons/year.

There is no mandate to have recycle pick-up at multifamily properties, however, there is an ordinance ([Zoning, Chapter 12, Part 4, Section 12.403](#)), that states that all new properties with 30 or more residential units (*new* defined as being permitted after October 17, 2001) MUST provide space for recycle bins/recycling centers; the number of spaces required is based on the number of units in the development. There are exceptions for multifamily properties that pre-date October 17, 2001 may have the number of required spaces reduced due to existing conditions ([City of Charlotte, Code of Ordinances](#)).

The City has opted to use 95- or 96-gallon rollout carts that are grouped in designated areas/stations. A recycling station typically holds one to five rollouts and measures 144 square feet; stations can be placed throughout the complex to accommodate the residents (Israel, 2014; City of Charlotte, Code of Ordinances). The City does not provide individual residential recycling containers; residents are responsible for their personal recycling bins (M. Gant, personal communication, August, 22, 2014).

Promotional materials for residents is provided by the City and can be obtained by request from the property owners/managers/recycling coordinators; a link to a recycling brochure is at <http://charmeck.org/city/charlotte/SWS/Documents/Multi%20Family%20Curb%20It!%20Brochure.p>

df). Challenges cited by multifamily residents is the amount of space (or lack thereof) inside the residential unit to accumulate recyclables and that residents must carry two separate bags (one for trash and one for recyclables) to bins (M. Gant, personal communication, August, 22, 2014).

Mecklenburg County, North Carolina

In Mecklenburg County, North Carolina, multi-family recycling in apartment complexes is “hit ‘n miss’ (N. Crawford, Senior Environmental Specialist, and D. Harris, Environmental Supervisor, Mecklenburg County (NC) Solid Waste, personal communication, September 5, 2014). Both Crawford and Harris acknowledged that it is “tough to get buy in” from apartment managers and owners but the county is determined to bring more apartment complexes into the recycling program.

The Mecklenburg County Charlotte Materials Recovery Facility (MRF) is owned by the county and is managed by ReCommunity Recycling (<http://www.recommunity.com/>). Recycling is single-stream, and the company is also working with the county on a food waste recovery project (N. Crawford, Senior Environmental Specialist, and D. Harris, Environmental Supervisor, Mecklenburg County (NC) Solid Waste, personal communication, September 5, 2014).

One of the biggest obstacles in getting property managers and owners to set up a recycling program for apartment dweller is the low tipping fee for trash at the local landfill. The tipping fee for residential trash is \$27.50/ton (Solid Waste and Recycling, Mecklenburg County, NC, 2014); an estimated cost for commercial businesses is \$40-\$50/ton (N. Crawford, Senior Environmental Specialist, and D. Harris, Environmental Supervisor, Mecklenburg County (NC) Solid Waste, personal communication, September 5, 2014). North Carolina does have a statewide law that prohibits the dumping of certain recyclable items (such as aluminum cans and plastic bottles) in landfills, but there is little if any enforcement (N. Crawford, Senior Environmental Specialist, and D. Harris, Environmental Supervisor, Mecklenburg County (NC) Solid Waste, personal communication, September 5, 2014).

Nick Crawford, a Senior Environmental Specialist, and Derrick Harris, an Environmental Supervisor, with Mecklenburg County (NC) Solid Waste Services have employed several strategies to market the county’s multi-family recycling program.

Crawford noted that property owner and property manager buy in is necessary to set up a program. But getting the property managers to work with the county to set up a recycling program is even more difficult if the apartment complex is owned by a large national real estate development

company. Crawford's strategy is to start with some of the most senior decision and policy makers; he will approach the regional manager of the facilities and get a commitment to set up a recycling program at the company's apartment complexes located in Mecklenburg County. Once the directive is given from the regional director to set up a multifamily program, the local property managers comply.

The county's Solid Waste Services also has a seat on the Greater Charlotte Apartment Association's (GCAA) *Green Committee*; this committee is modeled after the National Apartment Association's *Green & Sustainability* group. Having a seat at the Apartment Associations Green Committee table gives the Mecklenburg Solid Waste Services an opportunity to provide information to apartment owners/managers as well as gain feedback on the county's recycling program.

According to GCAA, sustainability is key to apartment development; GCAA contends that apartments are an approach to green housing. It is an efficient use of land and infrastructure, as opposed to low density, sprawling single-family developments. Recycling fits into the apartment association's green mission (<http://www.greatercaa.org/?page=54&hhSearchTerms=%22Green+and+Committee%22>) and GCAA educates its members on ways to minimize waste with the ultimate goal of hauling only non-recyclable waste to the landfill (K. Szymanski, Executive Director, Greater Charlotte Apartment Association, personal communication, October 7, 2014).

Szymanski also noted that recycling education for apartment dwellers is the key to a success recycling program; he contends there is a direct relationship between an understanding of environmental issues and the willingness to recycle (K. Szymanski, Executive Director, Greater Charlotte Apartment Association, personal communication, October 7, 2014)³.

³ CEPM contacted the Louisville Apartment Association (LAA) and found the attitude toward recycling was completely opposite from that of the Greater Charlotte Apartment Association (GCAA). Though both organizations are members of the National Apartment Association, it seems that LAA's executive director is not optimistic about recycling programs for Louisville apartment dwellers; she stated that the subject of recycling has never been brought up at any of their meetings (G. Lively, Executive Director, Louisville Apartment Association, personal communication, October 7, 2014).

5 Resources

Stopwaste.org – <http://stopwaste.org>

Beginning in 2002, Stopwaste.org has provided grant funding, technical assistance and resources to members. Approximately \$130,000 in funding has been awarded and outreach has been conducted to over 20,000 units. The average cost for program implementation was less than \$10 per unit. Based on the results, the grant program appears to be successful and cost effective.

National Recycling Coalition – <http://nrcrecycles.org>

The National Recycling Coalition is a non-profit organization focused on promoting and enhancing recycling in the United States. Their network of more than 6,000 members extends across waste reduction, reuse, recycling, and composting. They also provide educational resources and webinars for related topics.

Biocycle Magazine – <http://www.biocycle.net>

Published since the 1960s, Biocycle presents up-to-date information on processing remains of organic products into value-added products, including compost, fertilizer, biogas-derived electricity, and vehicle fuels. This magazine, while not squarely aimed at MFD recycling, offers solutions for promoting sustainability that MFD residents and others may wish to adopt.

Select Municipal and State Multifamily Recycling Programs and Guides

Cities, counties, and states throughout the U.S. have implemented recycling programs for residents of multifamily residential complexes. Many of these program guidelines and regulations can be found online on municipal and state websites. Below is a sampling of what is available:

Denver, CO

www.denvergov.org/DenverRecycles

Georgia

www.georgiarecycles.org/environmental-education/citizen-resource-guides/

Madison, WI

www.cityofmadison.com/streets/

Marion County, OR

www.co.marion.or.us/PW/ES/wastereduction/multifamily/index.htm

New York, NY

www.nyc.gov/recycle

Palo Alto, CA

www.cityofpaloalto.org/gov/depts/pwd/zerowaste/thingstodo/mfdtoolkit.asp

Phoenix, AZ

www.phoenix.gov/menu/resutilgarbrec.html

San Antonio, TX

www.sanantonio.gov/swmd

San José, CA

www.sjrecycles.org/

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- Twin City's Solid Waste Management Coordinating Board. *Rethink Recycling*. Accessed September 2014. Available at: <http://www.rethinkrecycling.com/>.
- Solid Waste and Recycling, Mecklenburg County, NC. Retrieved from <http://charmec.org/mecklenburg/county/LUESA/SolidWaste/LandfillInformation/Pages/tipfee.aspx> on October 7, 2014.

7 Appendices

Appendix A: Sample Talking Points for Door-to-Door Outreach Volunteers

Adapted from www.rethinkrecycling.com;
www.uos.harvard.edu/fmo/recycling/myths.shtml; and
<http://www.hennepin.us/~media/hennepinus/residents/recycling/>

Goals of door knocking

Raising awareness about the new recycling program in this complex.
Educating residents on how to recycle.
Gathering support and commitment from residents to recycle.

Tips

Smile!
Let residents know you are volunteering to help other residents learn about the recycling program.
You aren't a salesperson, and it may be helpful to identify yourself as a fellow resident.
End conversations with something friendly to avoid "sales pitch" perception.

General Points to Review with Residents

"I'm here to let you know how you can participate in recycling and contribute to the program's success in our community."
Review and provide educational materials.
Ask if residents would like to become advocates themselves, and explain the role (reporting problems, educating neighbors, generally monitoring the program)

The Benefits of Recycling

Making new products from recycled materials uses less energy and natural resources, and therefore mitigates pollution which would otherwise be generated as new products are made.
Aluminum, steel cans, cardboard, glass bottles, paper, newspapers, and plastic bottles are all recyclable. These items can be used to make new bottles or cans, or even school buses, playground equipment, and building materials.
Glass and aluminum do not wear out and can be recycled over and over.
The amount of energy saved from recycling one aluminum can is enough to power a TV for three hours.

Frequently Asked Questions and Responses

- “What I throw away doesn’t amount to much.”
 - Explain that small amounts from each individual add up to a LOT in the big picture. Can you think of anything else you can do to help recycling in our community? Do you already recycle, for example, your junk mail? On average, Americans receive 50 pounds of junk mail a year.
- “There is already someone who takes our cans for recycling.”
 - More than aluminum can be recycled (go over materials accepted and how to prepare them).
- “We have plenty of landfills and recycling isn’t important.”
 - Recycling’s value comes from preventing pollution and conserving resources and energy, not conserving landfill space.
- “It’s someone else’s job to separate recyclables from trash, so I don’t need to do it.”
 - Labor requirements for sorting recyclables from trash after it is mixed are very cost-prohibitive and almost never happen.
 - The only feasible way to separate recyclables is prior to throwing them away and takes minimal effort. Add a second container for recyclables next to your trash can, it’s that easy.

Appendix B: Haulers’ Questionnaire Results

Utilizing a list of seven companies who provide recyclable hauling service for Jefferson County, we were successfully able to collect information about their practices from two companies. We discussed the following with each company: scale and type of services, logistics, financial impacts of including recycling, ideas about best practices, outreach and expansion of service plans, and willingness to participate in a pilot study. We also discussed reasons why some clients decline recycling services

Respondents identify strong management as the primary driver towards implementation of MFD recycling programs. In response to question three, one respondent reports that businesses may get garbage pickup anywhere from one to five times a week, while recycling is almost never more frequent than on a weekly basis. The other respondent reports that their clients typically have two front-end containers for trash and recycling respectively. The fourth question – asking about the financial impact of implementing recycling in MFDs – had mixed results. One respondent reported that the impact is “VERY little” (emphasis original) whereas the other respondent reported that there are “very limited savings on the trash side.” Both respondents report that “density for routing” is the best method for providing recycling, with a respondent adding that front-end containers are preferred. Both respondents identify MFD management as their target audience for finding new customers. Both emphasize very strongly – more saliently than responses to any other question asked – that education of residents and management of MFDs is crucial to increasing resident usage rates. The respondents differed on whether they would be willing to provide data for pilot studies, with one affirming and the other declining. Finally, only one respondent answered the last question,

suggesting that when “services are not wanted [, it] is due to cost, space restrictions and a non-willingness of the majority of tenants to participate.

While it is important to point out the low response rates for both the survey and various questions therein, what stands out in these responses is the need for better-educated residents. While other questions had differing and even conflicting answers, it is clear that the respondents believe if residents want recycling, then management will follow. While in some cases management may lead the way in implementing recycling programs, it is also the case that the converse can also push implementation along.

Appendix C: Sample Lease Language to Mandate Resident Participation

This addendum serves as your required notification of the recycling program on this property.

(Instructions on how to prepare/separate items for recycling. Be clear and provide references [infographics are a good idea] to show residents how to prepare their waste for recycling pickup.)

It is the tenants' responsibility to participate in the recycling program. You are required to prepare your recycling as covered in the attached recycling guide. Failure to comply will be considered to be a material violation of this rental agreement and local and state law, which could result in termination of your tenancy as permitted by law.

Recycling bins are located on this property at:

Recycling bins are emptied on:

Tenant's Signature

Date

Appendix D: Sheppard's Square

<http://www.enterprisecommunity.com/resources/ResourceDetails?ID=67453.pdf>



October 2014

Resource Guide and Tips for Implementing Recycling in Multifamily Residential Development

Page

18 |

Lease Agreement

LOUISVILLE METRO HOUSING AUTHORITY

LEASE ADDENDUM

ENTERPRISE GREEN COMMUNITIES RESIDENT MANUAL

Lessee hereby acknowledges receipt of the Enterprise Green Communities Resident Manual (the "Manual"), and agrees to comply with the requirements contained therein, including mandatory recycling and composting procedures.

The purpose of this Manual is to provide a guide for homeowners and renters that explain the intent, benefits, use and maintenance of the green features in Lessee's residence. The Manual also includes detailed instructions for recycling and composting at Sheppard Square.

The proper understanding of the operation and maintenance of Lessee's dwelling unit, and the procedures for recycling and composting, will help Lessee to more fully realize the environmental, health, and economic benefits that Lessee's green housing and community offers.

Notwithstanding anything to the contrary herein, in the event of a conflict between the requirements of this Enterprise Green Communities Resident Manual Lease Addendum and any provision of the Lease, LIHTC Lease Addendum and/or the Public Housing Unit Lease Addendum (as applicable), the requirements of the Lease, LIHTC Lease Addendum and/or the Public Housing Unit Lease Addendum (as applicable) shall control.

Resident (Lessee) _____ Date: _____

Resident (Lessee) _____ Date: _____

Property Manager: _____ Date: _____

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Recycling and Composting Update

May 2014



Which Is Which ?

<p>Green Dumpster</p> <p>Brown Toters</p> <p>Black Toters</p>	<p>Recyclables Only. No garbage or Styrofoam please.</p> <p>Food and other organic plant materials only.</p> <p>Garbage only. No recyclables or food waste please!</p>
--	--

Ready... Set... Let's Recycle

At long last – the green recycling dumpsters have arrived! We apologize for the delay and appreciate your patience with getting the recycling and composting programs started here at Sheppard Square. There are now green recycling dumpsters at both waste/recycling/composting stations (also called corrals) to accept all your household recyclable materials. Since Louisville does "mixed stream" recycling, you can put all your recyclables into the same dumpster including aluminum, plastic bottles, jugs and containers, steel and tin cans, clean foil trays, boxes, cardboard, newspapers, brown paper bags, mail, envelopes, phone books, paperback books and magazines.

If you haven't received your 41-quart black recycling container for your apartment or your laminated flier showing recyclable items, please contact the Management Office at 561-0078.



Off to the Landfill We Go

Please use the black waste toters at the corrals for garbage only. Everything that can't be recycled or composted – such as diapers, restroom waste, car litter, and styrofoam – goes into these containers and is then hauled to the City's landfill.

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Recycling and Composting Update



June 2014

Free Replacement Liners for your Compost Pails

Everyone is doing a great job of composting your organic wastes. Hundreds of pounds of organic wastes have been diverted from the landfill and taken to a processing facility where it will be made into compost.

As a special thank you for your efforts, the Management Office will have **free** replacement liners for your compost pails during June and July. Stop by the office between 8:00 a.m. and 5:00 p.m., Monday through Friday to pick up your **free** roll. Thanks again for your part in making Sheppard Square Louisville's greenest community.

East versus West Recycling Contest

While our composting program at Sheppard Square is going really well, we need your help in improving our recycling program. Garbage, including plastic bags, is still winding up in the recycling dumpster. Unfortunately, when garbage is put in the green recycling dumpster, everything in the container must then be treated as trash and taken to the landfill. We've also noticed that many recyclable items (especially cardboard, plastic jugs, and bottles) are being thrown into the black waste totes so they are overflowing by pick-up time.

To help improve our recycling efforts, we're starting some friendly competition between neighbors on the East side (Hancock St. and 501-515 E. Jacob) versus the West side (Jackson St. and 517-531 E. Jacob). Each time the green dumpster is filled with just recyclables and only trash goes into the black totes, all residents on that side will get entered into a drawing. Prizes include a 4-piece place setting set of stoneware, other kitchen and household items, and gift certificates. We'll hold our first drawing at the upcoming Block Party for all residents on June 14th. You need not be present to win.

JUNE 14TH BLOCK PARTY

Come get to know your neighbors at a Block Party for all Sheppard Square residents on Saturday, June 14th at noon in the parking lot. We'll be serving lunch, playing games, and holding a drawing for the recycling contest prizes. Bring your children, your appetite, and be ready for some fun!

Block Party Announcement

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BLOCK PARTY FOR ALL SHEPPARD RESIDENTS
SATURDAY, JUNE 14TH AT NOON

Come get to know your neighbors and enjoy some lunch and recycling games.

We will also be drawing for some recycling contest prizes. Bring your kids, your appetite, and be ready for some fun!

The Block Party will held be in the parking lot off Finzer Street.



1 – Recycling Dumpster 2 – Compost Toter 3 – Garbage Toter

Get even more chances to win in the June 14th drawing by writing in the number of the container where you put each of the items below. Bring your form to the Management office before the June 14th Block Party where you can check your answers. Correct any that are wrong, then give your corrected form to management staff and you'll be entered to win! Or you can bring your completed form to the Block Party.

Example: Bones 2

Cardboard _____	Plastic containers _____	Cheese _____
Diapers _____	Plastic bags _____	Meat _____
Envelopes _____	Coffee grounds _____	Milk jugs _____
Eggshells _____	Paper towels _____	Cat litter _____
Styrofoam _____	Aluminum cans _____	Tea bags _____
Flowers _____	Soiled tissues _____	Glass jars _____
Sticky notes _____	Paper back books _____	Magazines _____
	Aluminum foil _____	Paper bags _____

Contact Information:

Name: _____

Street Address: _____

Apartment Number: _____

Phone Number(s): _____

2

Recycling Signage



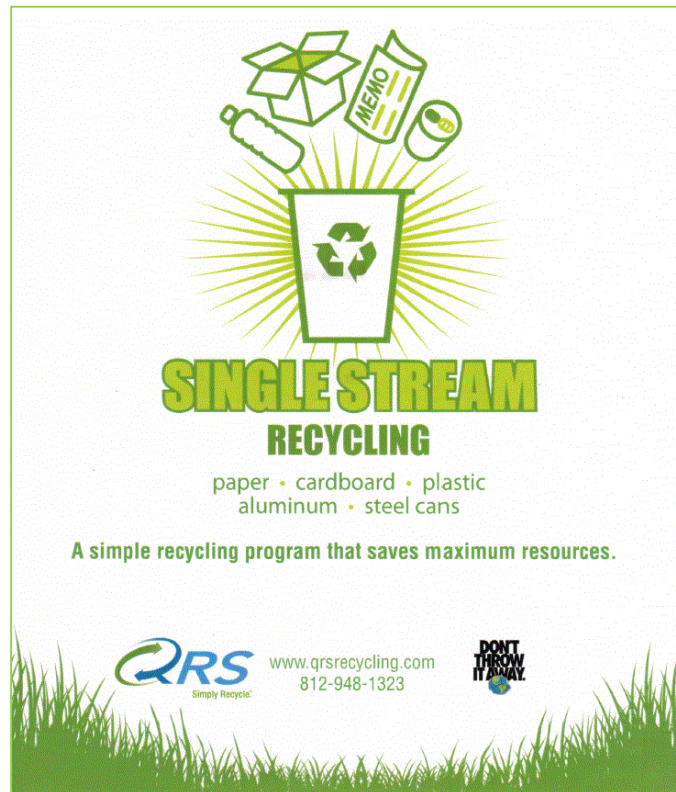
Appendix E: QRS Recycling

QRS Recycling, based in Louisville and with recycling centers in Louisville, New Albany, IN, and Atlanta, GA, offers single-stream recycling service for its customers. Single-stream recycling offers businesses and other organizations the opportunity to have all of their recyclables co-mingled. Single-stream recycling therefore may potentially mitigate common problems on the customer's side of the recycling process. In addition, single-stream recycling may save companies and other organizations money by being less expensive than trash pick-up, mostly because QRS does not have to pay dumping fees as trash haulers in Jefferson County do.

The only separation required on-site is filtering out the "good trash" from the "bad trash." Good trash, or the materials QRS accepts, may consist of: office paper waste (including spiral notebooks), paperback books, magazines and telephone books, cardboard, newspaper, soda and beer can carrying cases, any aluminum cans/trays/foil, steel cans and tins, plastic buckets, food containers, milk and juice cartons/jugs, paper bags, pvc containers, and bottles for soda, water, and other flavored beverages.

Additional information is provided on QRS' website (<http://www.qrsrecycling.com>). QRS provides informational brochures about the process and materials accepted, and can also provide rough estimates of the amount of savings a company will experience, based on the number of employees within an office (Brian Bogo, personal communication, July 16, 2014).

Recycling Signage



October 2014

Resource Guide and Tips for Implementing Recycling in Multifamily Residential Development

23 |



SINGLE STREAM RECYCLING

MATERIALS ACCEPTED



Office Paper, Newspaper, Envelopes,
Folders & Spiral Notebooks



Paper Back Books
(no hard cover books)



Magazines, Catalogs &
Telephone Books



Cardboard
(no glued cardboard)



Newspaper, including inserts
(no plastic sleeves)



Kraft Brown Paper Bags



Carrier Stock
(jumbo & bear can carrying cartons)



Milk and Juice Jugs



Food Containers



PVC Narrow Neck Containers
(#3 Plastic Resin: such as bottle &
spray and pump, household cleaners)



Aluminum Cans, Trays
& Foil



Steel Cans and Tins



Plastic Buckets



Gable Top Containers
(milk and juice cartons)



PET Soda, Water & Flavored
Beverage Bottles
(#1 plastic resin)

NO Styrofoam NO Food NO Wood

Notes: 1. No motor oil, insecticide, herbicide or hazardous chemical containers. 2. All containers must be emptied.
3. No expanded foam containers, restroom papers or papers that contain synthetic materials.



Simply Recycle.

www.qrsrecycling.com