



Iowa City

Apartment &
Condominium
Recycling

Best Management Practices Manual

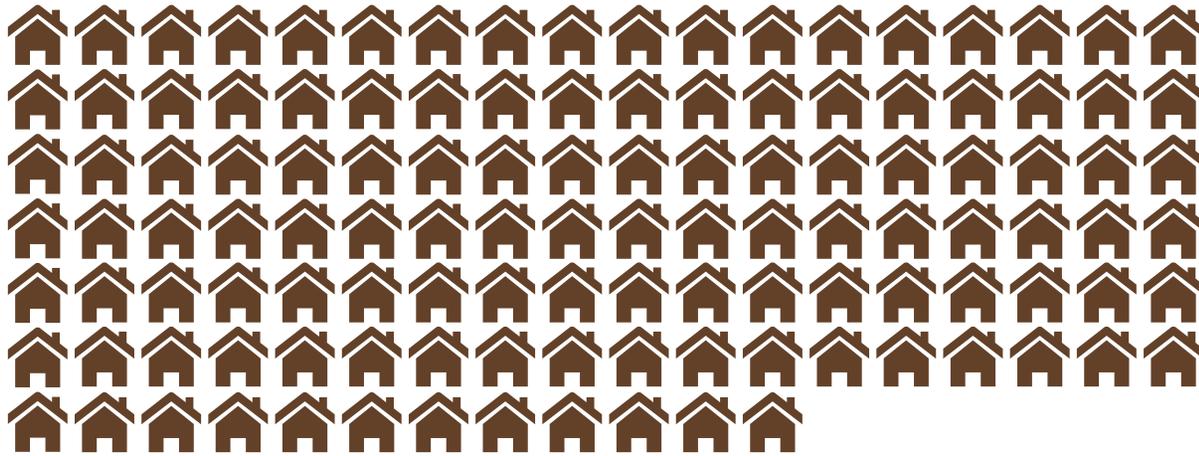
The intent of this manual is to help Iowa City multifamily apartment and condominium tenants, landlords, managers, owners associations learn about options for multifamily and condominium recycling services. This project will help bring awareness that private recycling service is available and affordable and that the City can help representatives from the multifamily and condominium community work through the logistics of implementing a recycling program and assist with education and outreach.

The pilot project discussed below and this manual were funded in part by participating apartment landlords/managers and condominium associations, the Iowa City Landfill and Recycling Center and a forgivable loan from the Iowa Department of Natural Resources' Solid Waste Alternative Program.

This manual was prepared with the support of the Iowa Department of Natural Resources Agreement Number 12-G550-14FL. However, any opinions, findings, conclusions or recommendations expressed herein are those of the author(s) and do not necessarily reflect the view of IDNR.

Table of Contents

01	Introduction
03	Need for Pilot Program
05	Overview of Pilot Program
06	Results of Pilot Program
07	Fire Code
10	Space/Logistics
12	Potential Costs
14	Ongoing Education
16	Contamination
18	Conclusion



**45%, or 12,000 households
in Iowa City do not receive City
recycling service**



Introduction

The City of Iowa City is continually working to improve the community's recycling services and options. The City serves about 15,000 households—single-family homes and multifamily homes with four units or fewer—with curbside pick-up of refuse, dual-stream recycling and yard waste, as well as electronics and bulky waste by appointment.

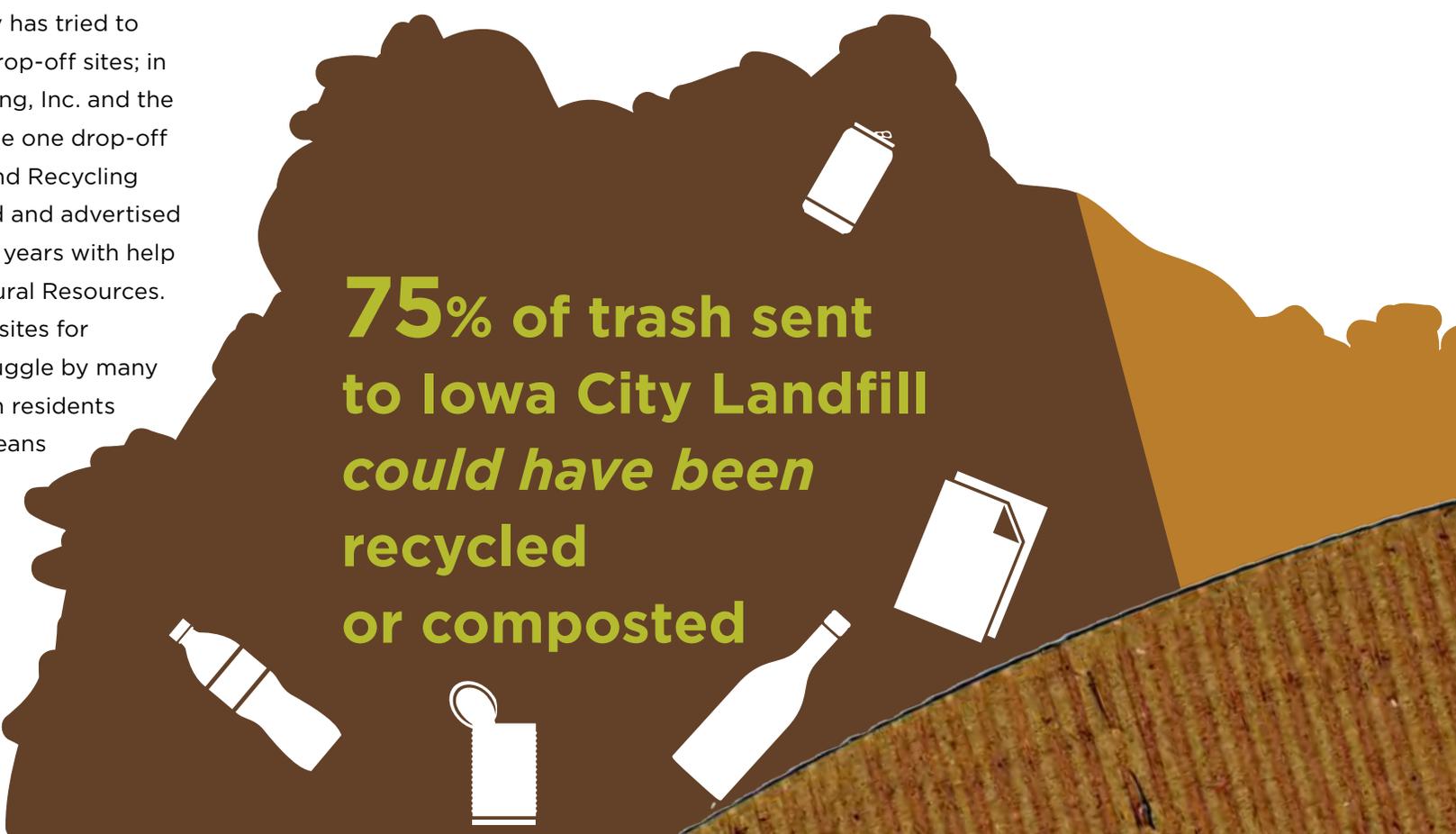
As both a popular retirement location and home to the University of Iowa and Kirkwood Community College, the community has a high percentage of condominiums and multifamily apartments with five or more units. Those apartments and condominiums with five or more units are required by law to provide trash services; most do so via private waste haulers who provide dumpsters with monthly service fees.

While some landlords and condominium associations have chosen to hire a private hauler to provide recycling services, it is not required by law and most do not. Approximately 1,030 multifamily apartments and condominium complexes exist in Iowa City that do not receive City curbside service, or about 12,000 households. Very few of those complexes have recycling at their apartment or condominium.

Combined, three private companies recycle at approximately 37 apartment complexes and condominium associations in Iowa City (ABC Disposal Company, Inc., et al, 2012). This only constitutes 3.6% of the total apartment complexes and condominium complexes.

As the City and other stakeholders work to improve the community's recycling and waste reduction programs, this leaves a large gap in service. The City has tried to fill the gap with five public drop-off sites; in addition, City Carton Recycling, Inc. and the City of Coralville each provide one drop-off site. The Iowa City Landfill and Recycling Center has actively improved and advertised these sites over the past five years with help from the Department of Natural Resources. However, using the drop-off sites for recycling is considered a struggle by many apartment and condominium residents as they often have limited means of transportation.

The options for multifamily recycling in Iowa City have increased in the last decade with several local private waste haulers offering commercial recycling programs. While some of these programs are limited to cardboard or office paper, at least three local haulers (ABC Disposal Systems, Inc., Johnson County Refuse, Inc. and Waste Management) offer single stream recycling collection for commercial entities, including apartment buildings and condominiums.



**75% of trash sent
to Iowa City Landfill
could have been
recycled
or composted**

\$1.5 million: Value of recyclable material being landfilled in Iowa City each year



Need for Pilot Program

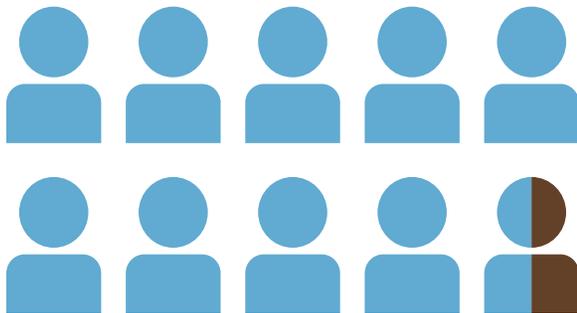
The motivation for organizing a recycling pilot came about from multiple factors:

- ▶ Approximately 55% of households in Iowa City receive recycling service through the City curbside program. This leaves 45% of households in a situation to either hire private service or not provide any recycling at all.
- ▶ Only about 3.6% of apartment complexes and condominiums without City curbside service have hired private recycling service.
- ▶ The value of recyclable items being landfilled is significant—estimated to be \$1.5 million annually. About 75% of the approximately 120,000 tons of refuse that goes into the Iowa City Landfill annually can be recycled or composted (MSW Consultants, 2011).

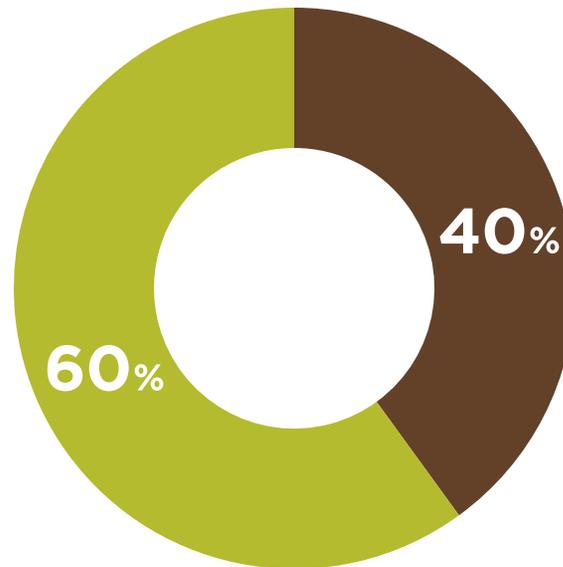
- ▶ The demand for improved recycling services from the public residing in apartments and condominiums is high. Since the City of Iowa City hired a Recycling Coordinator position in 2006, the primary question/complaint received from the public has been about the lack of curbside recycling services for apartments and condominiums.
- ▶ There is a general lack of knowledge regarding the availability and costs of current recycling programs for multifamily apartments and condominiums when citizens call for information.
- ▶ A misconception exists that recycling services are not available or are extremely expensive.

In the post-pilot project survey:

**94.5% said
“All apartments &
condominiums in
Iowa City should
have recycling
programs”**



**60% would be
willing to pay for
recycling service**



Recycling has become the social norm for most people—whether it’s using a curbside program, a drop-off site, through the Iowa Container Deposit Law or even donating items to or shopping at a second-hand store. As young adults move into their first apartment or retirees downsize into a condominium, they *expect* to have easy access to a recycling program. They expect recycling to be as easy as taking out the trash, as it most likely was where they grew up. People understand that recycling is good for the planet and can save resources; many have started to realize that recycling can save money as well.

While there are multiple environmental reasons to recycle, strong economic arguments also exist. The expectation and demand for convenient recycling programs translate into a marketing advantage for apartments and condominiums. Locations with recycling programs are more likely to attract environmentally-conscious tenants, which is an increasing portion of our population as people grow to expect more services. A recycling program can help attract new tenants and retain existing ones. This can translate into premium rent, as people are increasingly willing to pay for recycling services.



Overview of Pilot Program

In late 2011, the City of Iowa City applied for Solid Waste Alternative Program (SWAP) funding from the Iowa Department of Natural Resources to plan and implement a pilot recycling program for multifamily apartments and condominiums.

The pilot program sought participation from interested property managers and condominium associations and five locations were selected. The pilot began in February 2012 and covered 196 units in five different complexes. The pilot ended in September 2012. This manual is based on the results of the pilot program as well as research into other multifamily recycling programs across the United States.

Results of Pilot Program

In total, 130,388 pounds of trash and 73,339 pounds of recycling were collected from four of the five pilot locations. Per household, this translated to 28 pounds of trash and 16 pounds of recycling each week per household. Recycling rates varied between 29.8% and 53.8 % among the pilots that reported results.

The average recycling rate was 36%. While statistical data is not available for the fifth pilot (a 16-unit one-building condo), the condo was able to reduce its trash collection from twice weekly to once weekly.

The average multifamily recycling rate in an EPA study published in 2001 was 14.6% (US EPA, 2001). The Environmental Protection Agency considers multifamily diversion rates over 20% to be “high performers” (US EPA, 1999).

Costs

The cost of private recycling service via private waste haulers was far less than anticipated in the pilot. In the SWAP funding application, staff estimated the cost for recycling hauling to be around \$18,000 for the entire project—in reality, the cost ended up being approximately \$2,300.

Landfill staff’s significant overestimate of the cost of private recycling service supports the idea that many people, including landfill staff, have been wrong in assumptions about the cost of apartment and condominium recycling.

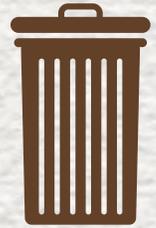
The recycling costs for the pilot program ranged from \$39.99 per month per complex to \$312 per month. The per-unit monthly cost ranged from \$1.88 to \$3.33 per month.

On average, this equated to \$2.57 per month per household for recycling. All five pilot locations continued recycling after the pilot program at their own expense.

Time

City staff time dedicated to the project was initially estimated at 15 hours per week; in reality, the time spent on this project was only about 1.5 hours per week. Each pilot participant’s recycling coordinator was asked to set aside one hour per week to check dumpsters and occasionally help hand out educational materials.

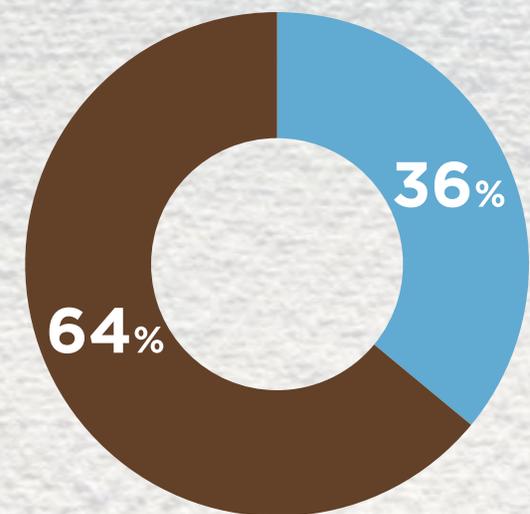
130,388
lbs trash



73,339
lbs recycling



36% average
recycling rate



Potential Obstacles

While challenges exist to implementing recycling programs in multifamily apartment housing and condominiums, none are insurmountable. The challenges for Iowa City landlords/managers and condominium association representatives are detailed below with ideas to address each challenge as well as recommendations.

► **Issue: Fire code**

Compliance with fire code can be a problem with recycling containers in apartments and condominiums but the main issue is with internal storage. According to the 2009 International Fire Code (Chapter 3: General Requirements, sections 304.2 through 304.3.4), recycling bins and materials cannot be stored in apartment or condominium hallways; hallways must remain completely free of obstructions.

Sections pertinent to *indoor* recycling containers and storage include:

- Containers with a capacity exceeding 5.33 cubic feet (40 gallons) shall be provided with lids. Containers and lids must be constructed of non-combustible materials or of combustible materials with a peak rate of heat release that meets ASTM E 1354 standards.

- The maximum container size is 1.0 cubic yards (200 gallons). If the container is larger than 1.0 cubic yard, it must be stored outside or be in an automatic fire-sprinklered area.
- Containers cannot be stored in a manner that obstructs exit corridors or emergency exits. A 24" clearance must be maintained the ceiling and combustible materials.
- Rooms used for inside storage must be an approved one hour fire-rated area, equipped with an automatic sprinkler system, and have a 20 minute self-closing fire-rated door with a latch.
- Equipment rooms should not be used for combustible storage.
- Combustible storage should not be stored in attic areas or similar spaces.

Fire code requirements for *external* storage:

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

Accommodating fire code requirements need not be a burden for apartment owners or condominium associations. In the pilot, only one location provided indoor communal recycling areas in a storage closet that had a sprinkler system. The building owner/manager then took the recycling to ten 65 gallon carts in the underground parking garage and wheeled the carts to the curb on a weekly basis. The estimated time commitment in this case was one hour per week.

In the other four locations, indoor communal recycling areas were NOT provided. In these cases, external containers were provided along-side existing two-cubic-yard (2-cy) trash dumpsters.

In addition to external containers, each tenant and condo owner in the pilot program was given either a six-gallon apartment recycling bin or a recycled plastic tote.



Trash and recycling dumpsters from ABC Disposal, differentiated for easier use by color



Trash and recycling dumpsters from Johnson County Refuse, differentiated for easier use by color



Recycling bin signage from Johnson County Refuse.



Recycling bin signage from ABC Disposal.

Several ways to address the potential challenge of meeting fire code include:

- Do not provide indoor communal bins.
- Provide individual units with a small recycling bin for in-unit storage, such as in a hall closet or under the sink.
- Use a room such as a laundry area or storage closet that is already sprinklered as the communal recycling area (keep in mind this means that someone has to take the recycling to the external containers weekly or as needed).
- Add firewalls and sprinkler systems to isolate recycling area from main building.



Recommendations

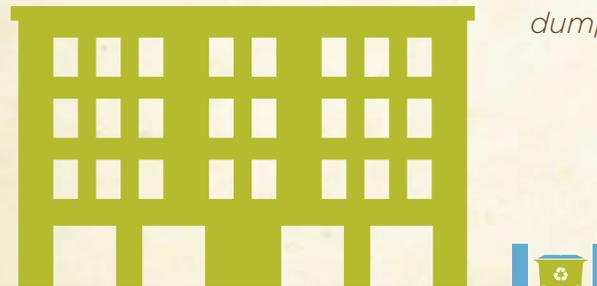


Provide each unit a small recycling bin or tote bag that each tenant or condo owner can use to transport materials to an exterior container.



Work with your existing trash hauler to evaluate the best type of container to use in your situation. In the pilot, a two cubic-yard recycling dumpster seemed to be the most efficient outdoor container.

Work with your existing trash hauler to determine the best placement for the external container, taking into account the next section regarding City of Iowa City zoning code for dumpster placement.



► **Issue: Space/logistics**

Regardless of apartment or condominium complex size, external space is needed for a recycling dumpster or carts. Since all apartments and condominiums are required to have private trash collection, all have to have some sort of container to store the trash—generally that is a dumpster.

Any *new* apartments and condominiums are required to have an enclosed dumpster area regardless of their location. City of Iowa City zoning code does not differentiate between trash and recycling dumpsters or containers. If there is room in the dumpster enclosure, adding recycling bins or a dumpster there is the most logical and inexpensive option.

If the existing trash dumpster is not in an enclosure, it may have been grandfathered in and be acceptable. However, it is *not* safe to assume a recycling dumpster can be added legally. In this case, adding an enclosure for the trash and recycling may be an option. Owners/managers should check with the City of Iowa City Housing and Inspection Services Department. Parking space and green space requirements only compete with recycling space if an existing dumpster closure has to be expanded or if an enclosure has to be added to meet zoning code requirements.

Alternately, containers may be stored indoors, such as in an underground parking area, and taken out the evening prior to collection (similar to City curbside services). One pilot used ten 65-gallon wheeled carts; the property manager wheeled the bins to the curb and back weekly.

This increases the time requirement of the building management/custodial staff and is probably not feasible for most locations. Fire code may also be an issue; owners/managers should check with City of Iowa City Housing and Inspection Services Department to ensure compliance.

Downtown apartments likely will have more space restrictions than those outside of the downtown or near downtown neighborhoods. Space was not an issue for any of the five pilot locations. This could in part be because none of the complexes were in the downtown area and all had ample area for an additional recycling dumpster either in their existing enclosure or directly beside it. Sharing recycling containers with neighbors may be a solution for locations with limited space.



Several ways to address the potential challenge of space and logistics include:

- Place recycling containers or dumpster inside existing enclosure.
- Expand dumpster area/enclosure to fit external bins or dumpster.
- In some cases, it may be feasible and legal to place external bins or a recycling dumpster beside the existing trash dumpster without an enclosure. Owners/managers and condo associations should check with the City of Iowa City Housing and Inspection Services Department to ensure code compliance.
- Construct new dumpster enclosure for both trash and recycling dumpsters.
- Store containers indoors and roll them to the curb weekly for collection. This will need to be set up with your private waste hauler and may affect the price of service.
- Share recycling containers with your neighbors.

Recommendations



If possible, place recycling containers in existing dumpster enclosure.



Check with the City of Iowa City Housing and Inspection Services Department to see if one of these options will work in your location:

Place the recycling container beside the existing trash enclosure.



Place the recycling container beside the existing trash dumpster with no enclosure.

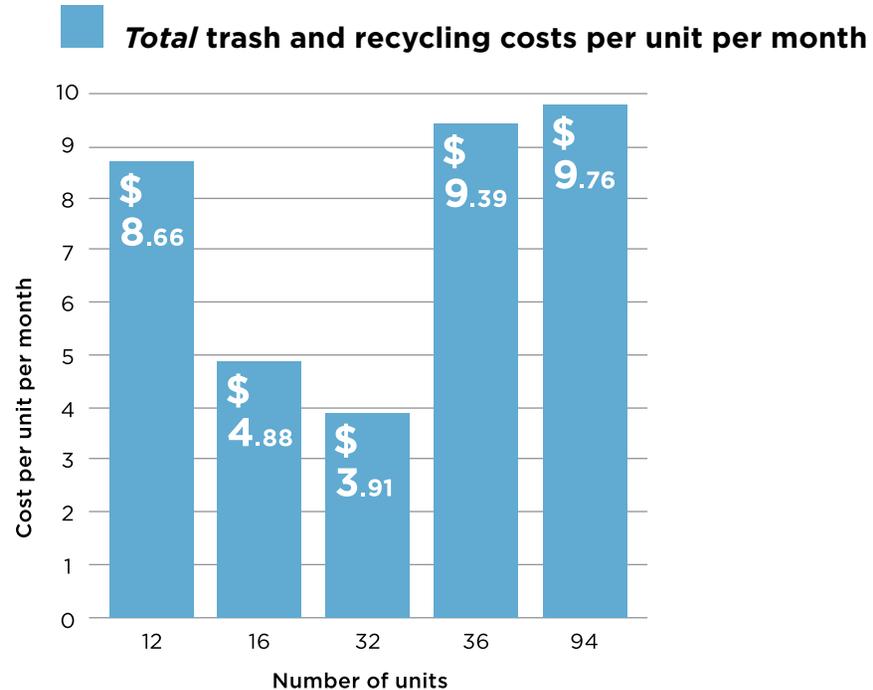
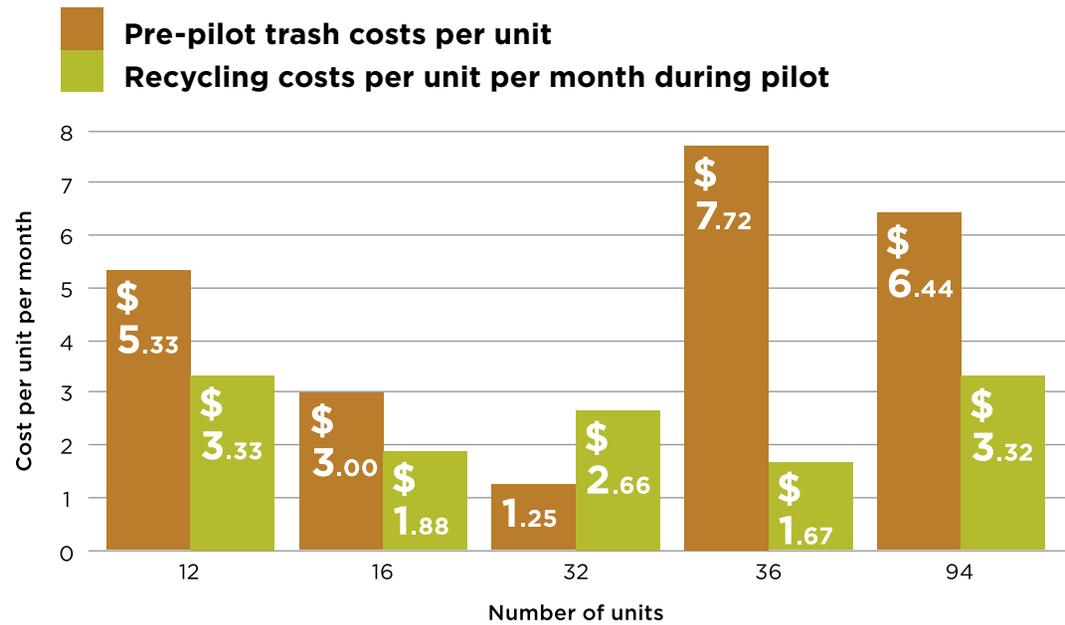


Call the Recycling Coordinator for assistance at 319-887-6160.

► **Issue: Potential for Additional Costs**

Each pilot was required to include the cost of their current trash hauling services in the initial application to participate. The costs for trash removal ranged from \$48 to \$605 per month. The monthly cost range per unit for trash was between \$1.25 and \$7.73 per month with the average at \$4.75 per unit per month. (The owner/manager of the 32-plex hauls his own trash to the Iowa City so the cost per unit per month reflects only the tipping fee at the landfill, not the cost of his time, fuel or equipment and is therefore significantly lower than the other four pilots' costs.) The chart to the right breaks the cost down per unit based on the number of units.

For comparison, the trash fee for City of Iowa City curbside customers (single family homes through four-plex apartments) is \$11.40 per month for once-weekly pick-up of a 65-gallon cart, charged monthly on residents' utility bills. The City of Coralville monthly charge for a 65-gallon container picked up once weekly is \$19 but this includes the cost of recycling.



The recycling costs for the pilot program ranged from \$39.99 to \$312 per complex per month. All five locations received one service/pull weekly and this was sufficient in all cases. The per-unit monthly cost ranged from \$1.88 to \$3.33 per month; **the average cost was \$2.57 per unit per month.** City of Iowa City curbside recycling services cost \$4.10 per month.

Combined trash and recycling costs range from \$78 to \$917 per month, or \$3.91 to \$9.76 per unit. City of Iowa City combined monthly trash and recycling costs are \$15.50; Coralville's combined monthly trash and recycling costs are \$19.00. The lower unit cost for multi-family units reflects the economy of using a single large container to serve a number of households.

In addition, monthly dumpster and trash fees may be reduced if enough tenants recycle enough materials. For example, one of the five pilots reduced their trash hauling service from twice to once weekly and saved \$20 monthly on the overall monthly fee.

\$2.57:
average
recycling cost
per unit per
month



Existing trash cost per month
(two pulls weekly, 2-cy dumpster)

Additional recycling cost per month
(one pull weekly, 2-cy dumpster)

Trash savings
(trash reduced to one pull per week)

Overall cost
(once-weekly trash and recycling
services)

60% of tenants
surveyed would
be willing to pay
for recycling
service

► **Issue: Ongoing education**

Relevant recycling information is difficult to keep current and motivational in any scenario. It is particularly challenging in a multifamily apartment situation as the turnover rates are likely much higher than single family homes or condominiums.

In the pilot, information about the recycling program was conveyed to tenants and condo owners via posters in communal areas as well as posters and postcards to individual households. Printing costs were about \$2 per unit for the total six-month pilot program. These costs are consistent with other communities' programs for outreach and education. The City of Champaign, Illinois, recently rolled out a new multifamily recycling program; their initial outreach costs were \$3.25 per unit and the City expects to spend about \$2.25 per unit per year on ongoing education and outreach (Adams, 2012).

One pilot project location has the additional challenge of language barriers and cultural norms for several tenants. While the overall recycling participation was high in this instance (one 32-unit apartment), the few

households which did not recycle were all non-native English students. It was not determined if the lack of recycling was an actual language barrier (i.e., the tenant did not understand the posters and postcards) or if the cultural norm was different so the tenant did not feel the need to recycle, even with repeated efforts through the pilot project and individual contact by the apartment manager.

Several ways to address the potential challenge of outreach and education include:

- Solicit a tenant or condo owner to be a “recycling coordinator” who can help pass out posters, check on bins, etc.
- Hang recycling posters in communal spaces:
 - » Ask your hauler for their educational posters.
 - » The Iowa City Landfill and Recycling Center has generic recycling posters that may work at your apartment or condo association.
- Direct contact, such as postcards under tenants' doors, can help people feel like their participation matters.



- If you already have tenants' email addresses, simple periodic emails reminding them to recycle can help more people get involved.
- Discuss new programs at tenant or association meetings. Use examples so those with language barriers have a better chance of understanding.
- Work with a translator to translate signage into additional languages as needed. The City of Iowa City has access to a translation service but the cost was prohibitive (\$150 per document) given that it would only benefit the two to three households which did not recycle.



Recommendations:



Ask your solid waste and recycling hauler what they can offer for posters, education, etc.



Find a “champion” among tenants or homeowners—someone who can serve as a recycling coordinator to help hang posters, share information, check recycling bins, etc.



Use as many avenues as feasible to reach tenants, including posters, direct contact such as emails and postcards under doors, and face-to-face meetings. More contact means that more tenants are more likely to use the program correctly.



Provide outreach and education several times per year. Suggested times include move-in, one month after move-in, mid-way through lease.

Include a line about contamination being unacceptable.

► Issue: Contamination

Contamination was not an issue for any of the pilots or the haulers. While one recycling coordinator reported examples of contamination each week (ranging from furnace filters to broken plastic shelves to fast food containers) and most of the locations had an occasional bag of trash in the recycling dumpsters, no haulers or processors reported excessive contamination.

Several ways to address the potential challenge of contamination include:

- Make sure that recycling containers are easily identifiable.
- Use consistent, clear educational signage on containers.
- Advertise the recycling program with tenants through posters and other means listed in the previous Education section to help residents learn what materials are acceptable.
- Discuss new programs at tenant or association meetings. Use examples to help people understand what materials are acceptable.
- Ask tenants to keep recycling clean.
- Ask hauler to provide feedback on contamination levels.



Recommendations:



Work with your hauler to provide distinctly different containers for trash and recycling.



If containers of different colors are not available, work with your hauler to properly label containers in a way that is highly visible and obvious to tenants.

See recommendations for outreach and education in the previous section.

Conclusion

Multifamily apartment and condominium dwellers without City curbside recycling service constitute 45% of Iowa City residents; most do not use the drop-off recycling bins provided around the community. The City would like to see more residents have access to recycling services and completed a pilot project to gather information about costs and other perceived barriers of apartment and condominium recycling.

Through the pilot project, it was determined that perceived barriers such as fire code issues, cost, logistics, contamination and ongoing education to tenants and condominium owners are not significant. Furthermore, multifamily apartment and condominium dwellers are demanding recycling services and the majority are willing to pay for the service.

Apartment owners and managers as well as condominium associations can significantly reduce the amount of trash their complexes landfill each month by providing recycling

services. Multiple private solid waste haulers provide recycling services in Iowa City at reasonable rates. Some complexes will likely be able to break even or potentially save money with recycling.

On average, each apartment or condominium in the pilot recycled an average of 16 pounds per week. If each of the 12,000 apartments and condominium units in Iowa City was provided recycling and reached the average recycling rate that was obtained in the pilot program, an additional 5,150 tons of material would be diverted from the landfill annually.

Many other communities mandate apartment and condominium owners and managers to provide recycling services; in some cases the City provides the services. While the City of Iowa City may consider these options, the City would like to see apartment and condominium owners and managers voluntarily provide recycling programs through private haulers for their tenants and owners.



The City can provide assistance in the following ways:

- City staff is available to meet with property owners and managers to assist in starting recycling programs, including:
 - » Waste sorts to determine how much of a complex's trash is recyclable.
 - » Gathering cost data for individual complexes.
 - » Assisting in determining best placement for external recycling containers.
- The landfill can provide assistance with education/outreach to tenants and condo owners through:
 - » Templates for email, postcards, letters and posters.
 - » Printed materials for distribution.
 - » Staff for presentations to tenants and condo owners.
- Landfill staff will work with owners and managers to bulk purchase recycling containers for individual tenants.

More information about the pilot project as well as education for tenants is available through the City. Please visit www.icgov.org/recyclepilot for more information.

Bibliography

ABC Disposal Systems, Inc., Johnson County Refuse, Inc., and Waste Management, Inc. October 10, 2012. Telephone interview with staff at ABC Disposal Systems, Inc., Johnson County Refuse, Inc. and Waste Management.

Adams, Angela. 2012. "Making Multifamily Recycling Work." Resource Recycling. January 2012. Pages 24-27.

MSW Consultants, 2011. 2011 Iowa Statewide Waste Characterization Study. Final Report. Prepared for: Iowa Department of Natural Resources. September 14, 2011. Available online at: <http://www.iowadnr.gov/Portals/idnr/uploads/waste/wastecharacterization2011.pdf>.

US Environmental Protection Agency. April 1999. Multifamily Recycling: A Golden Opportunity for Solid Waste Reduction. <http://www.epa.gov/wastes/conserve/rrr/pubs/multi.pdf>. Accessed November 5, 2012.

US Environmental Protection Agency. November 2001. Multifamily Recycling: A National Study. EPA530-R-01-018.

Staff contacts

Jennifer Jordan

Recycling Coordinator
jennifer-jordan@iowa-city.org
319-887-6160

Stan Laverman

Senior Housing Inspector
stan-laverman@iowa-city.org
319-356-5135

John Grier

Fire Marshal
john-grier@iowa-city.org
319-356-5257

Learn about
opportunities to
recycle at apartments
& condominiums
in Iowa City!

[www.icgov.org/
recyclepilot](http://www.icgov.org/recyclepilot)